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Amended Complaint.

New Jersey Supreme Court

HUDSON COUNTY.

DINA BOELE, Administratrix *ad prosequendum* of the goods and chattels of ANTON M. BOELE, Deceased, Plaintiff, *vs.* COLONIAL WESTERN AIRWAYS, INC., a corporation, Defendant.	Action at Law. Amended Complaint.

The plaintiff, Dina Boele, residing in the Town of Weehawken, County of Hudson and State of New Jersey, says:

1. On or about March 17th, 1929, and for some time previous and subsequent thereto the defendant, Colonial Western Airways, Inc., was engaged in the business of transporting passengers for hire.

2. That at said time it owned, maintained or operated an aeroplane bearing the license number N. C. 7683 at what is commonly known and referred to as Newark Airport.

3. That at the above time and place it owned or rented storage and repair space or quarters at said Newark Airport, for the storage and repairing of its aeroplanes.

4. That at the aforesaid time and place the said Newark Airport was used by the defendant as one of the termini of its airplane lines.

5. That at the aforesaid time and place it conducted flights by airplane from the aforesaid Newark Airport to and over the City of New York and adjoining territory, and made and demanded a certain charge for the transportation of passengers on said trips.

6. That at the aforesaid time and place said defendant accepted Anton M. Boele, as a passenger for hire in one of its airplanes, bearing the license number NC—7683, for the purpose of being transported by air in said airplane from said Newark Airport for a flight to or over the City of New York, in the State of New York, and a return flight to said Newark Airport.

7. That at said time and place aforementioned this defendant had in its employ, as operator of said airplane, one Lou or Louis Foote.

8. That the said Foote was the sole operator of the airplane in which the said plaintiff's intestate, Anton M. Boele, was a passenger at the aforesaid time and place.

9. That in the conduct of its business as aforesaid, it became and was the duty of the defendant, Colonial Western Airways, Inc., to carry passengers safely so far as the utmost care and skill of the most prudent man practically obtainable could secure it under the particular circumstances; to employ only reasonably careful and competent agents or servants to operate, maintain, inspect, repair or control said airplanes; to make frequent and careful inspection of airplanes being used by it in its business as common carriers of passengers; to use only airplanes capable of being controlled while in flight by the operator thereof; to refrain from overloading said airplane either in numbers or by the weight of the passengers to

be so carried or transported; to refrain from sending out on a flight with passengers for hire an airplane the operator of which was unfamiliar and known to be unfamiliar with the terrain or territory over which said flight was to be made; to refrain from undertaking to operate an airplane containing passengers for hire when the operator thereof was unfamiliar with the terrain or territory over which said flight was to be made; to refrain from sending out or from taking out an airplane containing passengers for hire until the operator thereof had been given a reasonable opportunity to familiarize himself with conditions and safe places of landing if the necessity arose on said flight; to at all times maintain control over the operation of said airplane while in flight with passengers for hire; to refrain from permitting or allowing said airplane to escape from or pass out of the custody and control of the driver or operator thereof; on the first and slightest sign or indication that said airplane was not functioning properly on said flight to immediately endeavor to return to the flying field which it had just left; to refrain from sending out or taking out an airplane with passengers for hire when the defendant, Colonial Western Airways, Inc., knew, or by the exercise of reasonable care should have known, that it was dangerous or unsafe so to do under conditions as they then existed; to refrain from sending out on a flight, with passengers for hire an airplane without making reasonable and careful tests of the skill and competency of the operator thereof before entrusting the safety of passengers to that operator; to on the first visible or audible sign of trouble with or improper functioning of said airplane execute any or all flying manoeuvers necessary to land

said plane in a place of safety or reasonable safety; to refrain from driving or operating an airplane containing passengers for hire when it was known or should have been known to the defendant that said airplane did not and could not reach an altitude from the surface of the earth where flying could be done with reasonable safety for the passengers in said airplane; to refrain from sending out or taking out an airplane containing passengers for hire in the custody of an operator whose sense of distance, direction and speed was faulty and defective; to use the greatest possible skill to land said airplane in a place of safety upon the first indication of faulty operation of the same; to refrain from taking out an airplane with passengers for hire when it was the opinion of the operator thereof that the same was overloaded as to weight; to heed and observe the direction and velocity of the wind at the time said flight was undertaken; to make a reasonably careful and proper inspection between flights of the operating parts of said airplane, and particularly of those parts which if they failed to function properly on a subsequent flight would likely necessitate a forced landing; to refrain from undertaking to turn in the air before said airplane had reached a safe and proper altitude for a turn to be made with the wind in the direction or the velocity which it was at that time and place; to refrain from turning in the direction in which said airplane was turned under conditions as they then existed; to refrain from holding out to the public that flight by air could be made with reasonable safety to the passengers under conditions as they then and there existed; to refrain from soliciting or inducing members of the public to embark in said airplane as passengers for hire under conditions

then and there existing; to refrain from permitting any passengers to occupy the cockpit or a seat in the cockpit or that portion of the airplane reserved for the operator or operators thereof; to refrain from sending said airplane out on a flight with a large number of passengers in the custody and control of only one operator; each and all of which duties the defendant, by its agent, servant or operator, did negligently, recklessly and carelessly fail to perform.

10. That as a direct and proximate result of the foregoing negligence of the defendant, its agents and servants, the said airplane escaped from the control of the operator thereof and crashed violently to earth.

11. That as a direct and proximate result of the violence with which said airplane struck or landed, Anton M. Boele, deceased, sustained injuries which immediately or very shortly thereafter caused his death.

12. That the plaintiff's decedent, Anton M. Boele, then domiciled in the Town of Weehawken, in the County of Hudson and State of New Jersey, as a direct and proximate result of the bodily injuries sustained in the said accident and directly and proximately due the negligence, recklessness and carelessness of the defendant, its agents or servants, hitherto in this complaint alleged, did depart this life and die, intestate, on Sunday, the 17th day of March, 1929.

13. That on the 27th day of March, 1929, plaintiff was duly appointed administratrix *ad prosequendum* upon the estate of Anton Boele, deceased, by the Surrogate of the County of Hudson in the state of New Jersey.

14. That the said Anton M. Boele was married and left him surviving, his wife, the plaintiff herein, Dina Boele of the age of twenty-seven years, and who has suffered pecuniary loss by reason of his death.

15. That the plaintiff as administratrix *ad prosequendum* of the Estate of Anton M. Boele, deceased, for the benefit of the said next of kin, is vested, by virtue of the statute in such case made and provided, with a cause of action against the defendant for negligently causing the death of decedent, which action is commenced within two years after his death.

Plaintiff demands as damages from the defendant, Colonial Western Airways, Inc., the sum of One hundred thousand Dollars ($100,000.00), besides costs of suit.

JAMES A. COOLAHAN,
Attorney for Plaintiff.

Answer.

NEW JERSEY SUPREME COURT,

HUDSON COUNTY.

DINA BOELE, Administratrix *ad prosequendum* of the goods, and chattels of Anton M. Boele, Deceased, Plaintiff, *vs.* COLONIAL WESTERN AIRWAYS, INC., a Corporation of Delaware, Defendant.	Action at Law. Answer.

The Answer of Colonial Western Airways, Inc., a corporation of the State of Delaware, with its principal office at 270 Madison Avenue, in the City, County and State of New York.

1. This defendant denies the allegations of the amended complaint.

First separate defense:

1. This defendant says that the said deceased, Anton M. Boele, assumed the risk of travel by air at the time and place of the alleged accident charged in the complaint. The said deceased at said time and place assumed the risk incidental to and arising out of air currents, wind, air pockets, the weather, unavoidable accidents, and risks of air navigation, including forced landing at or about the place where the said flight was made.

Answer.

Second separate defense:

1. This defendant says that it used the degree of care and skill required by law in employing competent aviators, to operate said airplanes and in employing competent agents and servants to maintain and inspect and keep said airplanes in repair, and to make the proper and necessary inspection of airplanes used in said business. At all times herein mentioned the defendant complied with its legal duty owing to passengers in said plane, and the said alleged accident charged in the complaint was without fault or negligence on the part of this defendant.

Third separate defense:

1. This defendant says that the said alleged accident charged in the complaint was an unavoidable accident for which this defendant is not liable to the plaintiff and is not chargeable with the said alleged damages claimed by the plaintiff.

Fourth separate defense:

The said defendant at all times herein mentioned used the degree of care and skill required by law in furnishing and procuring an airplane of the best and highest grade of manufacture, equipment, power, and capacity. This defendant says that it used all the care and skill required by law, in the present state of the science of air navigation, to prevent and avoid any possible accident, such as is referred to in the complaint of the plaintiff. The said alleged accident was the result of the risk of travel by air, incidental to and arising out of air currents, wind, air pockets heat and cold, the weather, unavoidable accident and forced landing.

Answer.

Fifth separate defense:

1. The deceased assumed the risk of air travel incidental to the use of gasoline motors, in that with the exercise of the degree of care required by law, the said motors or one or more of them might stop, in its operation, and thereby cause the said alleged accident.

2. Without negligence on the part of defendant, one or more the said motors did stop and thereby caused the said accident. In so far as this defendant is concerned, in the exercise of the degree of care required by law, said accident was unavoidable.

TURNER AND STALTER,
Attorneys of Defendant.

Reply.

NEW JERSEY SUPREME COURT,

HUDSON COUNTY.

DINA BOELE, Administratrix *ad prosequendum* of the goods, chattels of Anton M. Boele, Deceased, Plaintiff, *vs.* COLONIAL WESTERN AIRWAYS, INC., a Corporation of Delaware, Defendant.	Action at Law. Reply.

The Reply of Dina Boele, Administratrix *ad prosequendum* of the goods, and chattels of Anton M. Boele, deceased:

1. Plaintiff denies each and ever allegation set forth in the first, second, third, fourth and fifth separate defenses set forth in the defendant's answer.

JAMES A. COOLAHAN,
Attorney of Plaintiff.

Amended Complaint.

NEW JERSEY SUPREME COURT,

HUDSON COUNTY.

MARY HENDERSON, Administratrix *ad prosequendum* of the goods and chattels of Thomas J. Henderson, deceased, Plaintiff, *vs.* COLONIAL WESTERN AIRWAYS, INC., a Corporation, Defendant.	Action at Law. Amended Complaint.

The plaintiff Mary Henderson, residing in the Town of Weehawken, County of Hudson and State of New Jersey, says:

1. On or about March 17th, 1929, and for some time previous and subsequent thereto the defendant, Colonial Western Airways, Inc., was engaged in the business of transporting passengers for hire.

2. That at said time it owned, maintained or operated an aeroplane bearing the license number N.C. 7683 at what is commonly known and referred to as Newark Airport.

3. That at the above time and place it owned or rented storage and repair space or quarters at said Newark Airport for the storage and repairing of its aeroplanes.

4. That at the aforesaid time and place the said Newark Airport was used by the defendant as one of the termini of its airplane lines.

5. That at the aforesaid time and place it conducted flights by airplane from the aforesaid Newark Airport to and over the City of New York and adjoining territory, and made and demanded a certain charge for the transportation of passengers on said trips.

6. That at the aforesaid time and place said defendant accepted Thomas J. Henderson as a passenger for hire in one of its airplanes, bearing the license number NC-7683, for the purpose of being transported by air in said airplane from said Newark Airport for a flight to or over the City of New York, in the State of New York, and a return flight to said Newark Airport.

7. That at said time anl place aforementioned this defendant had in its employ, as operator of said airplane, one Lou or Louis Foote.

8. That the said Foote was the sole operator of the airplane in which the said plaintiff's intestate, Thomas J. Henderson, was a passenger at the aforesaid time and place.

9. That in the conduct of its business as aforesaid it became and was the duty of the defendant, Colonial Western Airways, Inc., to carry passengers safely so far as the utmost care and skill of the most prudent man practically obtainable could secure it under the particular circumstances; to employ only reasonably careful and competent agents or servants to operate, maintain, inspect, repair or control said airplanes; to make frequent and careful inspection of airplanes being used by it in its business as common car-

riers of passengers; to use only airplanes capable of being controlled while in flight by the operator thereof; to refrain from overloading said airplane either in numbers or by the weight of the passengers to be so carried or transported; to refrain from sending out on a flight with passengers for hire an airplane the operator of which was unfamiliar and known to be unfamiliar with the terrain or territory over which said flight was to be made; to refrain from undertaking to operate an airplane containing passengers for hire when the operator thereof was unfamiliar with the terrain or territory over which said flight was to be made; to refrain from sending out or from taking out an airplane containing passengers for hire until the operator thereof had been given a reasonable opportunity to familiarize himself with conditions and safe places of landing if the necessity arose on said flight; to at all times maintain control over the operation of said airplane while in flight with passengers for hire; to refrain from permitting or allowing said airplane to escape from or pass out of the custody and control of the driver or operator thereof; on the first and slightest sign or indication that said airplane was not functioning properly on said flight to immediately endeavor to return to the flying field which it had just left; to refrain from sending out or taking out an airplane with passengers for hire when the defendant, Colonial Western Airways, Inc., knew, or by the exercise of reasonable care should have known, that it was dangerous or unsafe so to do under conditions as they then existed; to refrain from sending out on a flight, with passengers for hire, an airplane without making reasonable and careful tests of the skill and competency of the operator thereof before

entrusting the safety of passengers to that operator; to on the first visible or audible sign of trouble with or improper functioning of said airplane execute any or all flying manoeuvres necessary to land said plane in a place of safety or reasonable safety; to refrain from driving or operating an airplane containing passengers for hire when it was known or should have been known to the defendant that said airplane did not and could not reach an altitude from the surface of the earth where flying could be done with reasonable safety for the passengers in said airplane; to refrain from sending out or taking out an airplane containing passengers for hire in the custody of an operator whose sense of distance, direction and speed was faulty and defective; to use the greatest possible skill to land said airplane in a place of safety upon the first indication of faulty operation of the same; to refrain from taking out an airplane with passengers for hire when it was the opinion of the operator thereof that the same was overloaded as to weight; to heed and observe the direction and velocity of the wind at the time said flight was undertaken; to make a reasonably careful and proper inspection between flights of the operating parts of said airplane, and particularly of those parts which if they failed to function properly on a subsequent flight would likely necessitate a forced landing; to refrain from undertaking to turn in the air before said airplane had reached a safe and proper altitude for a turn to be made with the wind in the direction or the velocity which it was at that time and place; to refrain from turning in the direction in which said airplane was turned under conditions as they then existed; to refrain from holding out to the public that flight by air could

be made with reasonable safety to the passengers under conditions as they then and there existed; to refrain from soliciting or inducing members of the public to embark in said airplane as passengers for hire under conditions then and there existing; to refrain from permitting any passengers to occupy the cockpit or a seat in the cockpit or that portion of the airplane reserved for the operator or operators thereof; to refrain from sending said airplane out on a flight with a large number of passengers in the custody and control of only one operator; each and all of which duties the defendant, by its agent, servant or operator, did negligently, recklessly and carelessly fail to perform.

10. That as a direct and proximate result of the foregoing negligence of the defendant, its agents and servants, the said airplane escaped from the control of the operator thereof and crashed violently to earth.

11. That as a direct and proximate result of the violence with which said airplane struck or landed, Thomas J. Henderson, deceased, sustained injuries which immediately or very shortly thereafter caused his death.

12. That the plaintiff's decedent, Thomas J. Henderson, then domiciled in the Town of Weehawken, in the County of Hudson and State of New Jersey, as a direct and proximate result of the bodily injuries sustained in the said accident and directly and proximately due to the negligence, recklessness and carelessness of the defendant, its agents or servants, hitherto in this complaint alleged, did depart this life and die, intestate, on Sunday, the 17th day of March, 1929.

13. That on the 27th day of March, 1929, plaintiff was duly appointed administratrix *ad prosequendum* upon the estate of Thomas J. Henderson, deceased, by the Surrogate of the County of Hudson in the State of New Jersey.

14. That the said Thomas J. Henderson, deceased, was never married, and left him surviving his mother, the plaintiff herein, of the age of fifty-eight years; his sister, Helen Henderson, of the age of thirty-three years; his sister, Alice Henderson, of the age of thirty-one years; his sister, Marion Henderson, of the age of twenty-five years; his brother, John Henderson, of the age of thirty-six years; his brother, Daniel Henderson, of the age of nineteen years; who are his next of kin, and who have suffered pecuniary loss by reason of his death.

15. That the plaintiff, as administratrix *ad prosequendum* of the Estate of Thomas J. Henderson, deceased, for the benefit of the said next of kin, is vested, by virtue of the statute in such case made and provided, with a cause of action against the defendant for negligently causing the death of decedent, which action is commenced within two years after his death.

Plaintiff demands as damages from the defendant, Colonial Western Airways, Inc., the sum of One hundred thousand dollars ($100,000.00), besides costs of suit.

JAMES A. COOLAHAN,
Attorney for Plaintiff.

Answer and Reply.

NEW JERSEY SUPREME COURT,

HUDSON COUNTY.

MARY HENDERSON, Administratrix *ad prosequendum* of the goods and chattels of THOMAS J. HENDERSON, Deceased,
Plaintiff,

vs.

COLONIAL WESTERN AIRWAYS, INC., a corporation of Delaware,
Defendant.

Answer and reply identical with those in the Dina Boele case.

Substitution of attorneys to McDermott, Enright & Carpenter in both cases.

Rule to Show Cause.

NEW JERSEY SUPREME COURT,

HUDSON COUNTY.

DINA BOELE, Administratrix *ad prosequendum* of the Estate of ANTON BOELE, Deceased, Plaintiff, *vs.* COLONIAL WESTERN AIRWAYS, INC., Defendant.	Action at Law. Rule to Show Cause.

Defendant applying for this rule within the time required by law:

IT IS on this 8th day of December, 1931,

ORDERED that the plaintiff in the above entitled cause show cause before Hon. Henry E. Ackerson, Jr., Circuit Court Judge before whom said cause was tried, at the Court House, Jersey City, on Friday, the 8th day of January, 1932, at 10 o'clock in the forenoon, why the verdict in favor of the plaintiff and against the defendant for Thirty-eight Thousand Dollars ($38,000) should not be set aside and a new trial be granted on the following grounds:

(1) Because the said verdict is excessive.

(2) Because the said verdict is against the weight of the evidence.

(3) Because the verdict was contrary to the charge of the Court.

Defendant's exceptions are reserved as grounds of appeal.

Let this rule be entered in the minutes.

HENRY E. ACKERSON, JR.,
Circuit Judge and Supreme Court
Commissioner.

Rule to Show Cause.

NEW JERSEY SUPREME COURT,

HUDSON COUNTY.

MARY HENDERSON, Administratrix *ad prosequendum* of the Estate of THOMAS J. HENDERSON, Deceased, Plaintiff, *vs.* COLONIAL WESTERN AIRWAYS, INC., Defendant.	Action at Law. Rule to Show Cause.

Defendant applying for this rule within the time required by law:

IT IS on this 8th day of December, 1931,

ORDERED that the plaintiff in the above entitled cause show cause before Hon. Henry E. Ackerson, Jr., Circuit Court Judge before whom said cause was tried, at the Court House, Jersey City, on Friday, the 8th day of January, 1932, at 10 o'clock in the forenoon, why the verdict in favor of the plaintiff and against the defendant for Thirty-three Thousand Nine Hundred Dollars ($33,900), should not be set aside and a new trial be granted on the following grounds:

(1) Because the said verdict is excessive.

(2) Because the said verdict is against the weight of the evidence.

(3) Because the verdict was contrary to the charge of the Court.

Defendant's exceptions are reserved as grounds of appeal.

Let this rule be entered in the minutes.

HENRY E. ACKERSON, JR.,
Circuit Judge and Supreme
Court Commissioner.

Memorandum.

NEW JERSEY SUPREME COURT,

HUDSON COUNTY.

DINA BOELE, administratrix *ad prosequendum* of the goods and chattels of Anton M. Boele, deceased,

Plaintiff,

vs.

COLONIAL WESTERN AIRWAYS, a corporation of Delaware,

Defendant.

MARY HENDERSON, administratrix *ad prosequendum* of the goods and chattels of Thomas J. Henderson, deceased,

Plaintiff,

vs.

COLONIAL WESTERN AIRWAYS, a corporation of Delaware,

Defendant.

Memorandum.

JAMES A. COOLAHAN, Esq., and WILLIAM GEORGE, Esq., Attorneys for Plaintiffs.

MCDERMOTT, ENRIGHT & CARPENTER, Esqs., Attorneys for Defendants.

ACKERSON, C. C. J.:

This matter comes before me upon a rule to show cause why the verdicts of $38,000, for the plaintiff, Dina Boele, administratrix, and $33,900,

for the plaintiff, Mary Henderson, administratrix, should not be set aside and a new trial granted upon the grounds that the verdicts are against the weight of the evidence and are excessive.

I have carefully read the voluminous transcript of the evidence while the case is still fresh in my mind, and have reached the conclusion that the verdicts are not against the weight of the evidence.

In regard to the verdict of $38,000, in favor of Dina Boele, administratrix, it appeared that the deceased, Anton M. Boele, was thirty-seven years of age at the time of his death, and his wife, the plaintiff, twenty-eight. There were no children, and the deceased had been turning over to his wife from sixty ($60) dollars to one hundred ($100) dollars per week for about two years before his death,—earned principally from speculating in the stock market. There is no evidence as to the average of such weekly payments, nor how much thereof was required for the living expenses of the deceased. The estate turned over to the widow amounted to approximately $28,000. Taking everything into account, I am convinced that all of this verdict over $25,000, is excessive.

If the plaintiff, Dina Boele, administratrix as aforesaid, will consent to accept a reduction of this verdict to $25,000, she may enter judgment for that amount. Otherwise the rule to show cause will be made absolute and a new trial ordered as to damages only.

In regard to the verdict of $33,900, in favor of Mary Henderson, administratrix, it appeared that she was fifty-eight years old, and her son twenty-seven years at the time of his death. He was unmarried and living with his mother to whom he turned over forty ($40) dollars to fifty ($50) dollars per week, realized principally from specula-

tions in the stock market in partnership with his friend, the above mentioned Anton M. Boele. Here again there is no evidence as to the average of such weekly payments, nor how much thereof was required for the board of the deceased. The estate received by Mrs. Henderson amounted to approximately $25,000. Considering the matter in the most favorable light for Mrs. Henderson, it would appear that the verdict should not exceed $15,000.

If the plaintiff, Mary Henderson, administratrix as aforesaid, will consent to a reduction of this verdict to $15,000, it may stand for that amount. Otherwise the rule to show cause will be made absolute, and a new trial ordered as to damages only.

HENRY E. ACKERSON, JR.,
C. C. J.

Acceptance.

NEW JERSEY SUPREME COURT,

HUDSON COUNTY.

DINA BOELE, administratrix *ad prosequendum* of the goods and chattels of Anton M. Boele, deceased, Plaintiff, *vs.* COLONIAL WESTERN AIRWAYS, a corporation of Delaware, Defendant.	On Rule to Show Cause. Acceptance.

A rule to show cause having been issued in the above cause and the Court having determined that the verdict heretofore rendered in the within cause should be reduced to the sum of Twenty-five thousand ($25,000.00) Dollars, or a new trial granted as to damages only, the plaintiff herein, by James A. Coolahan, her attorney, hereby files her written acceptance to the reduction of the said verdict to the sum of Twenty-five thousand ($25,000.00) Dollars, and elects to enter a judgment in the said cause for the sum of Twenty-five thousand ($25,000.00) Dollars, beside interest and costs.

Dated, February 10th, 1932.

JAMES A. COOLAHAN,
WILLIAM GEORGE,
Attorneys for Plaintiff.

Rule for Judgment.

NEW JERSEY SUPREME COURT,

HUDSON COUNTY.

DINA BOELE, administratrix *ad prosequendum* of the goods and chattels of Anton M. Boele, deceased, Plaintiff, *vs.* COLONIAL WESTERN AIRWAYS, a corporation of Delaware, Defendant.	Action at Law. Rule for Judgment.

This action was tried before Judge Henry E. Ackerson, Jr., with a jury at the Hudson Circuit, on November 23rd, 24th, 25th, 30th, December 1st, 2nd, 3rd and 4th, 1931.

And the cause having been heard and submitted to the jury, they returned their verdict as follows: They say they find a verdict in favor of the plaintiff and against the defendant and assess the damages of the plaintiff, on occasion of the premises, in the sum of Thirty-eight thousand ($38,000.00) Dollars.

And the plaintiff having thereupon, by her consent, by her attorney, James A. Coolahan, and duly filed, consented to accept the sum of Twenty-five thousand ($25,000.00) Dollars instead of the sum of Thirty-eight thousand Dollars ($38,000.00) as aforesaid found, for the plaintiff and against the defendant, it is on this 15th day of February, 1932,

Acceptance.

ORDERED, judgment to be entered in favor of the plainiff and against the defendant for the sum of Twenty-five thousand ($25,000.00) Dollars, besides costs of suit to be taxed.

Judgment entered this 15th day of February, 1932.

LUTHER A. CAMPBELL,
J. S. C.

Acceptance.

NEW JERSEY SUPREME COURT,

HUDSON COUNTY.

MARY HENDERSON, Administratrix *ad prosequendum* of the goods and chattels of Thomas J. Henderson, deceased, Plaintiff, *vs.* COLONIAL WESTERN AIRWAYS, a corporation of Delaware, Defendant.	On Rule to Show Cause. Acceptance.

A rule to show cause having been issued in the above cause and the Court having determined that the verdict heretofore rendered in the within cause should be reduced to the sum of Fifteen thousand ($15,000.00) Dollars, or a new trial granted as to damages only, the plaintiff herein, by James A. Coolahan, her attorney, hereby files

her written acceptance to the reduction of the said verdict to the sum of Fifteen thousand ($15,000.00) Dollars, and elects to enter a judgment in the said cause for the sum of Fifteen thousand ($15,000.00) Dollars, beside interest and costs.

Dated, February 10th, 1932.

JAMES A. COOLAHAN,
WILLIAM GEORGE,
Attorneys for Plaintiff.

Rule for Judgment.

NEW JERSEY SUPREME COURT,

HUDSON COUNTY.

MARY HENDERSON, Administratrix *ad prosequendum* of the goods and chattels of Thomas J. Henderson, deceased, Plaintiff, *vs.* COLONIAL WESTERN AIRWAYS, a corporation of Delaware, Defendant.	Action at Law. Rule for Judgment.

This action was tried before Judge Henry E. Ackerson, Jr., with a jury at the Hudson Circuit, on November 23rd, 24th, 25th, 30th, December 1st, 2nd, 3rd, and 4th, 1931.

And the cause having been heard and submitted to the jury, they returned their verdict as follows: They say they find a verdict in favor

of the plaintiff and against the defendant and assess the damages of the plaintiff, on occasion of the premises, in the sum of Thirty-three thousand nine hundred ($33,900.00) Dollars.

And the plaintiff having thereupon, by her consent, by her attorney, James A. Coolahan, and duly filed, consented to accept the sum of Fifteen thousand ($15,000.00) Dollars instead of the sum of Thirty-three thousand nine hundred ($33,900.00) Dollars, as aforesaid found, for the plaintiff and against the defendant, it is on this 15th day of February, 1932,

Ordered, judgment to be entered in favor of the plaintiff and against the defendant for the sum of Fifteen thousand ($15,000.00) Dollars, besides costs of suit to be taxed.

Judgment entered this 15th day of February, 1932.

Luther A. Campbell,
J. S. C.

Notice of Appeal.

NEW JERSEY SUPREME COURT.

DINA BOELE, Administratrix *ad prosequendum* of the goods and chattels of Anton M. Boele, deceased, Plaintiff, *vs.* COLONIAL WESTERN AIRWAYS, INC., a corporation of the State of Delaware, Defendant.	Action at Law. Notice of Appeal.

To James A. Coolahan, Esq., Attorney for Plaintiff:

TAKE NOTICE that the defendant hereby appeals to the New Jersey Court of Errors and Appeals, in the last Resort in all Causes, from the whole and every part of the final judgment dated and entered February 15, 1932, in favor of the plaintiff and against the defendant, for $25,000 damages and costs.

Dated: February 24, 1932.

Respectfully yours,

McDERMOTT, ENRIGHT & CARPENTER,
Attorneys for Defendant.

Grounds of Appeal.

NEW JERSEY COURT OF ERRORS AND APPEALS.

DINA BOELE, Administratrix *ad prosequendum* of the goods and chattels of Anton M. Boele, deceased, Plaintiff-Appellee, *vs.* COLONIAL WESTERN AIRWAYS, INC., a corporation of the State of Delaware, Defendant-Appellant.	Action at Law. On Appeal From Supreme Court. Grounds of Appeal.

Colonial Western Airways, Inc., the appellant in the above entitled cause, hereby assigns the following grounds, for appeal, which are urged and relied upon for the reversal of the judgment appealed from in this cause;

(1) Because the learned Judge of the Circuit Court, to whom the said cause was referred for trial, erred in refusing, over objection, to nonsuit the plaintiff.

(2) Because the learned Judge of the Circuit Court, to whom the said cause was referred for trial, erred in refusing to direct a verdict in favor of the defendant and against the plaintiff.

(3) Because the Supreme Court entered judgment in favor of the plaintiff and against the defendant for $25,000.00 damages.

(4) Because the learned Trial Judge erred in refusing to charge the jury defendant's second request as follows:

> "There is no evidence in this case that the pilot, Lou Foote, was guilty of any act of negligence which was the proximate cause of the accident in question".

(5) Because the learned Trial Judge erred in refusing to charge the jury defendant's third request as follows:

> "There is no evidence that the airplane in question was not properly inspected and properly serviced and cared for on and prior to March 17, 1929."

(6) Because the learned Trial Judge erred in refusing to charge the jury defendant's fourth request as follows:

> "There is positive evidence in this case that the airplane in question was properly serviced and properly inspected and cared for on and prior to March 17, 1929."

(7) Because the learned Trial Judge erred in refusing to charge the jury defendant's eighth request as follows:

> "There is no evidence that the failure of the left motor and the reving down of the center motor to a point where it had no power was in any way due to the negligence of the defendant."

(8) Because the learned Trial Judge erred in refusing to charge the jury defendant's ninth request as follows:

> "There is no evidence in this case that defendant's airplane on its last flight was flown in a wind of too great velocity, or in an improper wind."

(9) Because the learned Trial Judge erred in refusing to charge the jury defendant's tenth request as follows:

> "There is no evidence that the velocity or character of the wind at the time the airplane took off on its last flight was in any way the proximate cause of the accident."

(10) Because the learned Trial Judge erred in refusing to charge the jury defendant's twelfth request as follows:

> "It is uncontradicted that the proximate efficient cause of defendant's airplane coming down was engine failure. There is no evidence that such engine failure was in any way due to any negligence on the part of the defendant."

(11) Because the learned Trial Judge erred in refusing to charge the jury defendant's fourteenth request as follows:

> "The accident in question was due to causes over which the defendant had no control."

(12) Because the learned Trial Judge erred in refusing to charge the jury defendant's fifteenth request as follows:

> "The accident in question was an act of God."

(13) Because the learned Trial Judge erred in refusing to charge the jury defendant's nineteenth request as follows:

> "The jury must return a verdict in favor of the defendant because there is no proof that the defendant was guilty of any negligence which was the proximate cause of the accident."

(14) Because the learned Trial Judge erred in refusing to charge the jury defendant's twenty-fourth request as follows:

> "The defendant in making hopping flights with passengers in its Ford 4-AT airplane was a private carrier and not a common carrier of passengers."

(15) Because the learned Trial Judge erred in refusing to charge the jury defendant's twenty-fifth request as follows:

> "There is no evidence in this case that the defendant permitted the motors of its airplane, or other parts of said airplane, to become defective, insecure or insufficient."

(16) Because the learned Trial Judge erred in refusing to charge the jury defendant's twenty-sixth request as follows:

> "There is no evidence in this case that the defendant failed to make or have made through expert mechanics proper examination and inspection of the airplane."

(17) Because the learned Trial Judge erred in refusing to charge the jury defendant's twenty-seventh request as follows:

> "There is no evidence in this case that the pilot was ignorant of or unfamiliar with landing fields in and about the Newark Airport at the time of his last flight on March 17, 1929."

McDermott, Enright & Carpenter,
Attorneys for Defendant-Appellant.

Notice of Appeal.

NEW JERSEY SUPREME COURT.

MARY HENDERSON, Administratrix *ad prosequendum* of the goods and chattels of THOMAS J. HENDERSON, deceased, Plaintiff, *vs.* COLONIAL WESTERN AIRWAYS, INC., a corporation of the State of Delaware, Defendant.	Action at Law. Notice of Appeal.

To James A. Coolahan, Esq., Attorney for Plaintiff.

TAKE NOTICE that the defendant hereby appeals to the New Jersey Court of Errors and Appeals, in the last Resort in all Causes, from the whole and every part of the final judgment dated and entered February 15, 1932, in favor of the plaintiff and against the defendant, for $15,000.00 damages and costs.

Dated: February 24, 1932.

Respectfully yours,

McDERMOTT, ENRIGHT & CARPENTER,
Attorneys for Defendant.

Grounds of Appeal.

NEW JERSEY COURT OF ERRORS AND APPEALS.

MARY HENDERSON, Administratrix *ad prosequendum* of the goods and chattels of THOMAS J. HENDERSON, deceased, Plaintiff-Appellee, *vs.* COLONIAL WESTERN AIRWAYS, INC., a corporation of the State of Delaware, Defendant-Appellant.	Action at Law. On Appeal from Supreme Court. Grounds of Appeal.

Colonial Western Airways, Inc., the appellant in the above entitled cause, hereby assigns the following grounds for appeal, which are urged and relied upon for the reversal of the judgment appealed from in this cause:

(1) Because the learned Judge of the Circuit Court, to whom the said cause was referred for trial, erred in refusing, over objection, to nonsuit the plaintiff.

(2) Because the learned Judge of the Circuit Court, to whom the said cause was referred for trial, erred in refusing to direct a verdict in favor of the defendant and against the plaintiff.

(3) Because the Supreme Court entered judgment in favor of the plaintiff and against the defendant for $15,000.00 damages.

(4) Because the learned Trial Judge erred in refusing to charge the jury defendant's second request as follows:

> "There is no evidence in this case that the pilot, Lou Foote, was guilty of any act of negligence which was the proximate cause of the accident in question."

(5) Because the learned Trial Judge erred in refusing to charge the jury defendant's third request as follows:

> "There is no evidence that the airplane in question was not properly inspected and properly serviced and cared for on and prior to March 17, 1929."

(6) Because the learned Trial Judge erred in refusing to charge the jury defendant's fourth request as follows:

> "There is positive evidence in this case that the airplane in question was properly serviced and properly inspected and cared for on and prior to March 17, 1929."

(7) Because the learned Trial Judge erred in refusing to charge the jury defendant's eighth request as follows:

> "There is no evidence that the failure of the left motor and the reving down of the center motor to a point where it had no power, was in any way due to the negligence of the defendant."

(8) Because the learned Trial Judge erred in refusing to charge the jury defendant's ninth request as follows:

> "There is no evidence in this case that defendant's airplane on its last flight was flown

in a wind of too great velocity, or in an improper wind."

(9) Because the learned Trial Judge erred in refusing to charge the jury defendant's tenth request as follows:

"There is no evidence that the velocity or character of the wind at the time the airplane took off on its last flight was in any way the proximate cause of the accident."

(10) Because the learned Trial Judge erred in refusing to charge the jury defendant's twelfth request as follows:

"It is uncontradicted that the proximate efficient cause of defendant's airplane coming down was engine failure. There is no evidence that such engine failure was in any way due to any negligence on the part of the defendant."

(11) Because the learned Trial Judge erred in refusing to charge the jury defendant's fourteenth request as follows:

"The accident in question was due to causes over which the defendant had no control."

(12) Because the learned Trial Judge erred in refusing to charge the jury defendant's fifteenth request as follows:

"The accident in question was an act of God."

(13) Because the learned Trial Judge erred in refusing to charge the jury defendant's nineteenth request as follows:

"The jury must return a verdict in favor of the defendant because there is no proof

that the defendant was guilty of any negligence which was the proximate cause of the accident."

(14) Because the learned Trial Judge erred in refusing to charge the jury defendant's twenty-fourth request as follows:

"The defendant in making hopping flights with passengers in its Ford 4-AT airplane was a private carrier and not a common carrier of passengers."

(15) Because the learned Trial Judge erred in refusing to charge the jury defendant's twenty-fifth request as follows:

"There is no evidence in this case that the defendant permitted the motors of its airplane, or other parts of said airplane, to become defective, insecure or insufficient."

(16) Because the learned Trial Judge erred in refusing to charge the jury defendant's twenty-sixth request as follows:

"There is no evidence in this case that the defendant failed to make or have made through expert mechanics proper examination and inspection of the airplane."

(17) Because the learned Trial Judge erred in refusing to charge the jury defendant's twenty-seventh request as follows:

"There is no evidence in this case that the pilot was ignorant of or unfamiliar with landing fields in and about the Newark Airport at the time of his last flight on March 17, 1929."

McDermott, Enright & Carpenter,
Attorneys for Defendant-Appellant.

Testimony.

NEW JERSEY SUPREME COURT,

HUDSON COUNTY.

DINA BOELE, Administratrix *ad prosequendum* of the goods and chattels of Anton M. Boele, deceased,
Plaintiff,

v.

COLONIAL WESTERN AIRWAYS, a Corporation of Delaware,
Defendant.

MARY HENDERSON, Administratrix *ad prosequendum* of the goods and chattels of Thomas J. Henderson, deceased,
Plaintiff,

v.

COLONIAL WESTERN AIRWAYS, a Corporation of Delaware,
Defendant.

Before:

Hon. HENRY E. ACKERSON, JR., Judge, and a Jury.

Jersey City, N. J., November 23d, 1931.

Opening of the Case.

Appearances:

JAMES A. COOLAHAN, Esq., WILLIAM GEORGE, Esq., ERNEST P. BIRO, Esq., Attorneys for the Plaintiffs.

McDERMOTT, ENRIGHT & CARPENTER, Esqs., by JAMES D. CARPENTER, Esq., WILLIAM DYKE REED, Esq., of the New York Bar, Attorneys for the Defendants.

A jury was duly impanelled, they were found satisfactory and they were sworn.

The Court: I might at this time interrupt long enough to have it stated on the record these cases are being tried together in order to conserve time and expense but are not consolidated.

Mr. George: Yes.

Mr. Carpenter: Yes.

The Court: Let it so appear.

Before you open to the jury, or immediately after, as you may prefer, I am going to suggest that you agree on as much of the documentary evidence as can be agreed upon and have it marked so that we may not take up any unnecessary time on matters which can be done now.

Mr. Carpenter: If you put it on the record right now it can be used in the opening.

The Court: In these cases, I am going to suggest that you have your maps on the board marked so that they are in evidence now.

Mr. George: We offer in evidence—and it has been consented to by counsel—that map which we will call the "West Map".

The Court: That is the name of the Engineer who made it?

Mr. George: Yes.

(Received and marked in evidence Exhibit P-1.)

Mr. George: It is stipulated between counsel the map which we will refer to as the "Fairchild Map" be offered in evidence.

Mr. Carpenter: It is a photographic aerial map.

(Received and marked in evidence Exhibit P-2.)

Mr. Carpenter: Here is a Fairchild Map which was taken from an angle which shows the airport, but it is not made to scale the way the other is. We have no objection if counsel wishes to offer it.

Mr. George: It will be helpful to the jury. They can hand that around among themselves and discuss it at the proper time.

(Received and marked in evidence Exhibit P-3.)

Mr. Carpenter: Here is the license of the plane.

(Received and marked in evidence Exhibit P-4.)

Mr. George: Offer in evidence Air Commerce Regulations of the Department of Commerce, Aeronautic Branch.

Mr. Carpenter: The Court takes judicial notice of those. I don't know that they ought to go before the jury. There is a great deal of that that is not relevant or material, and they were offered before and used by the Court, but I don't think they ought to go to the jury. I offer that for your suggestion.

Mr. George: Mr. Carpenter agreed at the outset this morning these would be received in evidence.

The Court: In any event, the Court's charge will cover such matters as may be evidential to the jury. If they are in by consent, the Court will, however, by its own motion now, tell you gentlemen these so-called regulations are voluminous. It isn't claimed or going to be insisted all of these

regulations were applicable to this case—not for a moment. I assume more particularly they are put here for the guidance of the Court with reference to certain rules it is claimed should have been or which were adhered to.

Mr. George: They are offered only so far as they shall apply to the facts we shall establish in the case.

The Court: Is there any objection to them under the control of the Court?

Mr. Carpenter: No.

(Received and marked in evidence Exhibit P-5.)

Mr. Carpenter: It is stipulated and agreed between counsel the plane in question was owned by the defendant and it was operated by the defendant's servant and agent at the time of this accident.

Mr. George: For and on behalf of the defendant?

Mr. Carpenter: Yes. It is admitted each of these deceased persons entered the plane that day and paid five dollars each for the purpose of taking a ride in the plane.

It is agreed that the aeroplane on its flight about five o'clock in the afternoon crashed, and that the two deceased persons died as the result of the crash.

The administration *ad prosequendum* papers may be offered and admitted in evidence.

(Administration papers issued to Dina Boele received and marked in evidence Exhibit P-10.)

(Administration papers issued to Mary Henderson received and marked in evidence Exhibit P-11.)

The Court: Do I understand the admission to be the accident was about five o'clock in the afternoon?

Mr. Carpenter: About: I don't know the exact time.

The Court: And on March 17, 1929?

Mr. Carpenter: Yes.

(Opening to the jury by Mr. George.)

Mr. Carpenter: (Interrupting Mr. George's opening.) I object to the reference to insurance mentioned by the ballyhoo man as improper.

The Court: At this stage I must caution you there is no insurance in this case at all. There is no insurance here at all and the element of insurance is out of the case. There may have been a statement made by the ballyhoo man, but you are not to consider in this case that there is any element of insurance, because there is no insurance company involved at all. The only defendant is the owner of the aeroplane that was involved in the accident.

(Opening to the jury continued by Mr. George.)

Mr. Carpenter: (Interrupting Mr. George's opening.) I would like to move for a mistrial. That is the second time counsel has done that. He is an experienced man and knows better than that. He is trying to prejudice the jury by mentioning those facts.

The Court: I am disposed to grant the motion, the Court having once warned Mr. George, as much as I dislike to have the necessity of going through all that was gone through again, unless counsel can agree that the Court may tell the jury in the most forceful language the element of insurance is not in this case at all. I will go further

than that and say the fact that the ballyhoo man may have said that is no element in this case for your consideration. There is no insurance company being sued here. I don't understand the reason for the injection in the case of any element of insurance.

It all rests with you, Mr. Carpenter. I am going to give you the benefit of your motion, unless you think what the Court has now said is sufficient to protect your interests.

I might say now that if it is the intention to have some ballyhoo man make the assertion you now say, I will still non-suit, so you can govern him accordingly, because right or wrong, I will not have that element injected into it.

Mr. Carpenter: We will abide by your Honor's suggestion.

The Court: It has been suggested we proceed with this case, notwithstanding the Court's willingness to grant a mistrial on the ground of the statement which has been made. I don't want you to understand the Court is trying to influence you prior to a proper opening on the part of Mr. George, nor, on the other hand, are you to take from anything the Court has said that the Court feels the defendant's interests are not properly taken care of or are not being properly safeguarded. I want to say to you, however, if you allow any element of insurance in this case to sway your verdict that you will be doing a rank injustice and will be violating the oath each one of you has taken. I think that is a sufficient statement to show to you that there is no insurance involved in this case and there is no defendant here which is an insurance company.

Have I the assurance of each one of you that that is eliminated from your minds? If it is not, tell me so now.

(No response from the jury.)

The Court: I take from your acquiescence that will be eliminated from your minds.

Mr. George: I promise not to refer to it again, your Honor.

Opening continued by Mr. George.

Opening to the jury by Mr. Carpenter.

The Court: Now, gentlemen of the jury, before any evidence is taken in this case, I have had pads and pencils distributed to you, and I assume you each have that pad and pencil. They are given you so that during the course of the trial you may jot down any matters occurring in the evidence which you feel would be helpful for you to keep in mind when it comes time to deliberate upon the evidence. So, you may make free use of the pads and pencils for that purpose.

Now, these cases—because there are two being tried here together—may take a considerable number of days to try. It will be your duty to keep alert, follow every bit of this testimony, and, as has been said, you are to keep your minds open in this matter and receive very bit of the evidence so that when you do retire to the jury-room you will be in position to give this case unbiased, unprejudiced examination and consideration.

Now, another thing I wish to impress upon you, it has been mentioned in the course of opening by counsel that the important thing in these cases is not so much that an accident happened to this aeroplane and that two persons—or, two of the persons who were riding in it were killed along with a number of others—because that is conceded

—but the important thing and the ground upon which these cases are based is a charge of negligence and that negligence with respect to this defendant company was the proximate cause of the accident and the death of these people. So, you want to keep your minds focused upon those elements of the case.

Then, too, I must caution you inasmuch as these cases are likely to take some time to try, you are not to discuss this case outside of the court-room, or even in the court-room among yourselves until such time as you have heard every bit of the testimony, received the Court's charge and retire to the jury-room to deliberate upon your verdict. That is the time for you to discuss this case, and then you will be expected to discuss it most carefully.

Now, during the course of the trial there may be evidence offered—I don't know—that may be excluded or accepted by the Court over objection of counsel. You are not concerned with whether or not evidence is kept out of the case or whether the judge may be wrong in keeping evidence out of the case. It is only the evidence in this case that you are to consider here.

So, with those few observations in mind, counsel may call his first witness.

Mr. Carpenter: I think we ought to explain at this time what those two maps are to the Court and jury also.

The surveyor's map is made to a scale of two hundred feet to the inch. Two hundred feet on the ground is one inch on the map.

This aerial photograph was made by the Fairchild Aerial Surveys Company and was taken from an elevation in the air of about ten or twelve thousand feet and then enlarged and one inch on

this photograph is two hundred feet on the ground. This is my map and this is the plaintiff's map (indicating). In getting the case ready we each had a map made separate and apart from each other, two hundred feet to an inch. Mine is a photograph—enlargement of a photograph, the other is a surveyor's map. This was taken on November 7th, 1930, and this was made January 1931. This is an actual photograph enlargement of the airport and vicinity. This is a surveyor's map.

LESLIE E. WEST, called as a witness on behalf of the plaintiff, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. George:

Q. Mr. West, what is your occupation? A. Engineer and surveyor.

Q. Did you make this map, which, with the permission of defendant's counsel and the court we will refer to for convenience sake as the "West Map", and describe the other as the "Fairchild Map", just for the purpose of identification? Is that right, Mr. Carpenter?

Mr. Carpenter: Yes. All right. One is a photographic map; the other is the engineer's map.

Q. Did you make that? A. I did.

Q. Since the making of this map, the surveyor's map, did you make any measurements of the road known as route 25, as well as elevations of the highway at or near the point of South Street in Newark? A. I did.

Q. Will you please tell us what is the elevation of route 25 south of South Street above the lower land level? A. The elevation of the concrete rail of the viaduct as it crosses the railroad tracks is 53 feet above the tracks.

Q. May I ask you to step down here so you can describe these various elevations?

(Witness goes to blackboard.)

Q. You said something about 53 feet. Will you point it out to the Court and jury? Stand on this side so the jurors can see where you point. A. At that point the rail of the concrete viaduct is 53 feet above the surface of the railroad tracks (indicating).

Q. Now, at South Street can you tell us what the elevation about the lower level of land surface is? A. Approximately at that point the elevation of the rail is approximately 45—45 feet above the ground.

Q. Now, can you tell us anything about the land level at the airport? A. You mean to describe the conditions of the ground?

Q. Yes. A. The ground at the Newark Airport is very level—artificially so—and approximately the same level as Port Street, and the ground north of Port Street is lower and marshy and at the point where the dump station is there is a rise.

Q. Where is the dumping station? A. At that point there is a rise or earth mounds up there in this general manner (indicating).

Q. Now, can you tell us the character of the land surface in this area which runs southeasterly parallel with the South Street line over in this area I am pointing to? A. In this area the ground originally was marshy and is used by the City of

Newark as a dumping ground and trucks are now engaged and have been engaged in dumping refuse in this line gradually approaching the Central Railroad tracks.

Mr. Reed: May I ask whether he is referring to the present time in that answer?

The Court: I assume you are referring to the time of the accident?

The Witness: At the time of the accident the fill had been going on and it has been going on since that time and is approaching the Central Railroad tracks at the present time.

Q. In March, 1929, what was the character of the land surface on the northwesterly side of this railroad track—the Central Railroad? A. For a distance of about one thousand feet——

Q. In which direction? A. Northwesterly from the Central Railroad tracks the ground was still marshy and fill had been placed between that point and the viaduct.

Q. Now, Mr. West, going beyond the line of your map here, are you familiar with what was the character of the land surface beyond and northwesterly—beyond the end of this map? A. The ground northwesterly of the limit of this map was marshy and flat.

Q. Was it irregular in altitude or level? A. No. Generally fairly level.

Q. And for a distance of about how far northwesterly from the end of your map? A. Over two thousand feet.

Q. Now, can you tell us, then, in a direction southerly from the end of the map what was the character of the land? A. The character of the

ground was marshy ground with some open water patches in a southwesterly direction.

Q. For a distance of about how far from the end of the map? A. Over two thousand feet.

Q. Can you approximately estimate what is the distance from Port Street where I am now pointing to the end of the map? A. Forty-eight hundred feet.

Q. Forty-eight hundred feet from Port Street to the end of the map and you say about how many feet beyond? A. More than two thousand feet.

Q. Nearly seven thousand feet would you say? A. Easily.

Q. Now, what was the elevation of route 25 at the intersection of Port Street with respect to the land level of the airport? A. Within a very few feet of the same level. That's a graded route.

Q. Can you tell us whether or not you know of the existence—knew of the existence of any wires, high tension wires, that have been referred to by Mr. Carpenter in his opening to the gentlemen of the jury? A. The wires referred to are located in this position (indicating).

Q. Are the wires east or west of the Central Railroad? A. East.

Q. About how far? A. The high tension wires are about eighty-five feet east of the easterly track.

The Court: Are they high tension wires, did you say?

The Witness: They are.

Q. You know that for yourself? A. Yes, sir.

Q. When you say easterly you mean on this or right side of the map over where I am pointing? A. There are two lines of wires there. There is a line of telegraph wires close to the track and the high tension line is further east.

Q. Now, can you tell us how high these high tension wires were in March, 1929? A. About sixty feet.

Mr. George: That's all. Cross-examine.

Cross-examination by Mr. Reed:

Q. Mr. West, this is all marked "marshy" by you? These little dots mean marshy, water? A. They do.

Q. So again up here you show marsh land? That all indicates marsh land, does it not? A. Yes.

Q. In addition to the marsh land, there is a brook or stream runs through in about this direction? A. The brook runs right through here (indicating).

Q. And at this point you say there is some fill, somewhere in here? A. It would probably come up to this line.

Q. That is very often being filled in? There are fires on there also? A. Yes.

Q. So that they were burning fires where they were filling this marsh? A. Probably some fires.

Q. Then beyond the fires was the water and the stream and the marsh. What is the distance from route 25 to the Lehigh Valley tracks? A. Three thousand feet.

Q. Would an aeroplane travelling over route 25 in the vicinity of South Street to this point where the Lehigh Valley tracks are travel a distance in a straight line of three thousand feet? A. It would.

Q. And over on this part of your map there is a blank. No marsh indicated there. What is located in that section? A. There are some factories, and still further in a northwesterly direction it is closely built up with small dwellings.

Q. Is there, about this point, a factory with a high smoke stack? A. I can give you the height of this smoke stack.

Q. Give it to me. A. The height of the smoke stack of the Northern Feather Works at that point is 97½ feet.

Q. And the Heller-Merz factory, where is that? What is the height of that smoke stack? A. The height of that smoke stack is 345 feet.

Q. Where is Broad Street on this map? In what direction? A. Generally in a northwesterly direction.

Q. How far is Broad Street from the limits of this right here? Is it a mile and a half, two miles? A. About eleven thousand feet. That is practically two miles.

Q. Practically two miles. Do you know the height of the buildings on Broad Street?

Mr. Carpenter: From what point to what point?

Mr. Reed: Two miles, he said, from the outside line of the airport.

The Witness: From the general vicinity —from the center of the airport to Broad Street near the City Hall.

Q. You say two miles? A. Two miles.

Q. About what are the heights of the buildings on Broad Street, the Prudential Building and the other large buildings? A. They vary from three to four hundred feet.

Q. Of course, that is a little bit higher than the airport? A. Yes, sir.

Q. That is how much higher than the airport? A. The ground elevation of Broad Street near the City Hall is approximately thirty feet, while the elevation at the airport is less than ten, so there

would be twenty feet difference in rise in the surface of the ground.

Q. So it would be about four hundred and twenty feet with the buildings on Broad Street above the level of the airport. What is—withdraw that. What date did you make this map? A. January, 1931.

Q. You have here the position of certain runways. You don't say that is the position of the runways as they existed on the 17th of March, 1929? A. The map was drawn to show the position of the runways as they existed on March 17, 1929.

Q. You didn't see them on that day when you made the map, did you? A. There were traces of the old northwest runway on this area. On the date that map was made there were still traces of this original runway.

Q. Then when you made the map in 1931 you attempted to put what you thought was the position of the runway in 1929? A. I did.

Q. Although without having the actual runway there except what you think are traces of it? A. What were identified as traces and other information I was able to receive from people who were connected with the airport at that time.

Q. You mean after checking with some people then you put these runways in this position? A. And they are borne out by evidence I was able to find.

Q. In what direction does this runway—the northwest runway—does that go? A. It runs northeast southwest—southwest in this direction (indicating).

Q. Now, then, assuming that an aeroplane went in that general direction to the edge of the map, what would be the distance from the beginning of

the runway to the edge of the map? A. Six thousand feet.

Q. Over a mile? A. Over a mile.

Q. What is the distance, then, if an aeroplane went down that runway as you have drawn it to this point, and then went over that point at the northeasterly—is that the north? A. That is southwesterly.

Q. —the southwesterly corner of your map and then came over here to South Street? What would that distance be? What is the straight line distance? A. Eight thousand feet.

Q. About a mile and a half? A. Yes, sir.

Q. And then from that point where South Street crosses the Pennsylvania Railroad to the Lehigh Valley tracks would be what? A. To the Central tracks?

Q. Yes. A. Four thousand feet.

Q. Then assuming that an aeroplane flew along the runway as you have indicated before in this direction and then made a curve and came around here over to the Lehigh Valley tracks, that would indicate, would it not, according to your map about a distance of four miles? A. More nearly three, I think. Six, eight and four. It would be eighteen thousand feet. About three miles.

Q. Eighteen thousand feet, that would be three miles and a half? A. Fifty-two hundred feet to a mile.

Q. Five thousand two hundred and eighty feet, that would be a distance of eighteen thousand feet, between three and four miles? A. Yes, sir.

Re-direct examination by Mr. George:

Q. When you described this area, you mean by that it is all water? A. No.

Q. Could it be walked on? A. It is passable.

Q. Just one question and I am through, Mr. West. Southeast—or, southwest, rather, in this area which you have described as marsh land and beyond, you said, at least two thousand feet more, were there any buildings? A. No buildings.

Q. Were there any buildings northwest of the highway in this area which you have described? A. A few small buildings.

Q. And down southwest of the highway and in a southwesterly direction were there any buildings? A. No buildings.

Q. In this whole area which you described as at least one thousand feet or two thousand feet? A. Two thousand feet.

Q. In other words, for two thousand feet in this direction northwesterly and southwesterly there were no buildings? A. No buildings.

Re-cross-examination by Mr. Reed:

Q. That was filled in largely by dumping it in, wasn't it, Mr. West? A. Yes.

Q. When you say marsh, you don't know how much water there was there in March, 1929 of your own knowledge, do you? A. No.

Q. At the time you walked around—if you did walk around it—was in 1931? A. I have walked around there before.

Q. Since 1929 there has been a great deal of filling in all around? A. Yes, sir.

Q. As to its condition of marsh and wetness and irregularity you are not prepared to say as to March, 1929 with definiteness? A. The ground in 1929 was marshy but was passable by people who would go through there.

Q. It was all frozen in January when you went there? A. It was frozen to some extent, but the

map and examination was made of the area lying northeast of the airport and not southwest.

Q. You didn't go in the southwest portion at all? A. No.

Q. So you had no knowledge particularly as to that, as to its condition? You didn't go out here? A. I went in this section.

Q. In here by the State Highway. Not out here? A. Well, not all the way over.

Q. When you went here you say that they had been filling in a few years, but still a lot of it was still open marsh? A. Yes.

Q. And burning dumps? A. Yes, sir.

By Mr. George:

Q. Where do you live? A. Irvington.

Q. Where is your office? A. Irvington, N. J.

Q. Did you have occasion to pass through on route 25—— A. Yes, sir.

Q. —in the year 1929? A. In 1929 route 25 was being constructed.

Q. Are you familiar with the territory described by the map? A. Yes.

Q. Does that, with reasonable accuracy, show the condition as it existed at that time? A. Yes, sir.

Mr. George: That is all.

(Witness excused.)

ARTHUR INGOLD, called as a witness on behalf of the plaintiffs, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. George:

Q. Mr. Ingold, where do you live? A. Pleasant Avenue, West Caldwell.

Q. Where did you live in March, 1929? A. 25 Hill Street, Bloomfield.

Q. On March 17th, 1929, by whom were you employed? A. By the Colonial Western Airways.

Q. Where? A. Port Newark.

Q. Port Newark. Is that place commonly known as Newark Airport? A. Yes, sir.

Q. What is the name of the man who employed you? A. Mr. Ackerman.

Q. What were you employed to do? A. Sell tickets.

Q. Were you given any instructions by Mr. Ackerman as to what your duties were? A. Well, sell tickets.

Q. To whom? A. To anybody that came along.

Q. Were you instructed to wait until people came to you to ask you for—to ask to purchase tickets or were you instructed to call out that you had tickets to sell?

Mr. Carpenter: I object. In the first place, it is leading; in the second place, it is irrelevant and immaterial.

The Court: You may tell us what your instructions were with respect to the sale of the tickets.

Q. What did Mr. Ackerman say respecting the sale of tickets?

Mr. Carpenter: I object, if your Honor please, on the same ground, immaterial and irrelevant.

The Court: I assume it goes to try to prove you were engaged as a common carrier, which, I understand, you deny.

Mr. Carpenter: Not as a common carrier.

The Court: All right. Proceed.

Mr. Carpenter: We were on short flights.

The Witness: I generally——

The Court: We want to know what happened on this day.

The Witness: We shouted as a barker, like a circus; just induced them to fly. We used all kinds of methods.

Mr. Carpenter: I move to strike it out as a conclusion.

The Court: Yes; strike out the conclusion.

Q. How long before March 17, 1929 were you hired? A. Three weeks.

Q. Did you work every day? A. No, sir.

Q. When did you work prior to March 17, 1929? A. I worked at the Newark Airport only on Saturdays and Sundays.

Q. Only on Saturdays and Sundays. You said that you were employed to sell tickets. Is that right? A. Yes, sir.

Q. I understand you said Mr. Ackerman employed you for that purpose? A. He did, yes, sir.

Q. What connection did he have with the Colonial Western Airways? A. He was in charge of fares.

Q. In charge of fares. Now, where did you get the tickets you were to sell? A. Off Mr. Ackerman.

Q. What? A. Off Mr. Ackerman.

Q. What was the price of each ticket? A. Five dollars.

Q. What was the ticket for? A. A hop over New York City; a sight-seeing hop.

Q. On what? A. On a Ford trimotor.

Q. Owned by whom? A. Colonial Western Airways.

Q. The people who employed you? A. Yes, sir.

Q. How many tickets did you have in your possession on March 17, 1929? A. I couldn't say that exactly.

Q. How many did you sell? A. I couldn't say.

Q. Now, did you refuse to sell any ticket to any person who applied for a ride—who applied for one of the tickets? A. No, sir.

Q. Can you tell us approximately how many tickets you sold on that Sunday, March 17? A. I remember my cash receipts for that day were around two hundred and forty dollars.

The Court: Were you doing this every Saturday and Sunday during those three weeks before the accident?

The Witness: As far as I can recall, yes, sir.

The Court: Were the trips made regularly on that day?

The Witness: Only when the plane was loaded.

Q. Now, Mr. Ingold, prior to March 17, 1929 had you had any experience with aeroplanes? A. I have, yes, sir.

Q. Will you tell us, please, what your experience had been?

Mr. Carpenter: I object to that as immaterial. We don't care what his experi-

ence has been with aeroplanes. He wasn't flying a plane. He is not called as an expert aviator.

The Court: I don't know why he is called. We don't know that yet.

Mr. George: Withdraw the question.

Q. Do you—I take it you recall having sold tickets to the passengers who boarded the plane which subsequently crashed? A. I do.

Q. Did you sell all of the tickets to those persons? A. The biggest majority.

Q. The biggest majority. And you were paid? A. Yes, sir.

Q. Five dollars for each ticket? A. Yes, sir.

Q. What was the number, and can you describe the plane into which the persons to whom you sold tickets went? What was the number of the plane? Were there any names on it? A. There was a number, but I don't recall the number.

Q. You don't recall the number? A. No, I don't.

Q. What kind of a plane was it? A. Three motor—tri-motor Ford.

Q. Of what kind of substance was the plane? A. All metal.

Q. Commonly known as a Tri-motor Ford All Metal? Right? A. Yes, sir.

Q. Do you know who piloted that plane on its last trip? A. Lou Foote.

Q. Now, did you see the passengers to whom you sold tickets as passengers board the plane? A. Yes, sir. I put the last three in the plane.

Q. You put the last three. Were there any vacant seats left in the plane just before it started off? A. Yes. Just before it started off I stopped the plane and pushed these three passengers in, that is, they took them up.

Q. Did I understand the plane was about to start when you stopped it? A. Yes, sir.

Q. Why did you stop the plane? A. Well, it was fifteen dollars more and it made a load.

Q. And when you stopped the plane you say you put three more passengers in? A. I did.

Q. After those three passengers got into the plane were there any vacant seats? A. No, sir.

Q. Now, then, what happened, Mr. Ingold? Withdraw that for a moment. Do you know who sat in the cockpit with the pilot, if anyone? A. I don't know his name, no.

Q. Well, was he a passenger? A. He was.

Q. Did he pay a fare? A. He didn't.

Q. He didn't. You mean he was a passenger but hadn't purchased a ticket for such a hop? A. Yes, sir.

Q. Do you know why he didn't have to buy a ticket? A. Well, he was just a friend.

Q. Of whom? A. Mr. Foote.

Q. And he sat beside Mr. Foote, I take it? A. Yes, sir.

Q. Now, do you know whether he was a pilot?

Q. He wasn't.

Mr. Carpenter: I object, unless he knows of his own knowledge.

Mr. George: I asked if he knows whether he was a pilot. He says he knows he wasn't.

The Court: How do you know?

The Witness: Well, sir, talking to him before the last flight.

The Court: Talking to him himself.

The Witness: Yes, sir.

The Court: Go ahead.

Q. Now, Mr. Ingold, will you please describe to the Court and jury—withdraw that. Did you

see Foote in that plane at any other time prior to that last flight? A. Yes, sir.

Q. What was he doing in that plane on other flights, if anything? A. Piloting.

Q. Piloting for what purpose? A. Well, to gain acquaintance with the ship; to learn the terrain around the airport. It was a dual control ship.

Q. Can you tell us whether he took any passengers up on any hops prior to this last hop? A. You mean alone?

Q. Whether alone or with anyone else. A. I knew that Weatherdon was up with him; Captain Weatherdon.

Q. Well, had he ever gone up to your knowledge prior to the last hop with passengers? A. Oh, yes.

Q. Passengers which became such by reason of your having sold them tickets? A. Yes, sir.

Q. Now, describe, please, Mr. Ingold, to the Court and jury what happened when the plane started off and thereafter.

Mr. Carpenter: The last flight?

Mr. George: The last flight, yes.

The Witness: It was the occasion I always ballyhooed the ship. In other words, I always called the people's attention to the ship in its take-off and always called their attention to it as it landed. As the ship took off it was rather windy—gusty. Other ships had stopped flying.

Mr. Carpenter: I object and move that it be stricken out.

The Court: Strike out "Other ships had stopped flying". Proceed.

The Witness: And it took off rather clumsy and lazily; didn't seem to gain no altitude in its course at all.

Q. Can you tell us whether or not the action of the ship in the beginning of its flight on its last flight acted any differently than it had on any other prior occasions? A. Well, it didn't gain the altitude it had on other flights, no.

Q. That's what I am asking you. All right. Go on. A. And watching the plane until it assumed a height—after making a right hand turn —it made a height I should say between four and five hundred feet—four hundred feet—and then turned directly into the down wind towards New York and the plane suddenly disappeared out of sight. Of course, I rushed right over there and looking into the plane I discovered a few of the people, that is, felt of them and they were all dead.

Q. They were what? A. They were all dead.

Q. I show you a photograph and ask you if you can tell us whether or not that is a picture that accurately represents the condition of the plane immediately after the crash? A. It does.

Mr. George: This is offered in evidence.

Mr. Carpenter: No objection.

(Received and marked in evidence Exhibit P-6.)

Q. Mr. Ingold, I show you another photograph and ask you if this picture accurately represents the plane? A. Yes, sir.

Q. From another view immediately after the accident? A. Yes, sir. That's the hole I went into right in there.

Mr. George: This is offered in evidence.

Mr. Carpenter: I will object to this. If your Honor please, I will show it to you.

(Mr. Carpenter hands photograph to the Court.)

The Court: This photograph is admitted only so far as the plane—the condition of the plane is concerned and the railroad car.

Mr. Carpenter: May I put an objection on the record to that going in evidence?

The Court: Yes, but there have been no reasons given for the objection.

Mr. Carpenter: Because I don't think it is relevant and material and it doesn't show enough of the plane to give any information at all.

The Court: (To witness) This accurately —whatever it does show of the plane and the car—shows the exact condition existing right at the time of this accident?

The Witness: Yes, sir.

The Court: It will be admitted for whatever it does show as to the position of the car and plane.

Mr. Reed: That has been moved.

The Court: I haven't heard so. If you wish to examine before I admit it you may do so.

Examination by Mr. Carpenter:

Q. Hadn't this been moved at the time of the taking of this picture? A. Now, sir.

Q. Now, let's see——

The Court: Were you there when the photograph was taken?

The Witness: No, sir. I was there before the photographers ever got there.

The Court: Did the photographers get there while you were there?

The Witness: No, sir. I didn't exactly faint or anything, but I was just about on

the verge and they took me away from there before anybody else was around there.

Q. This first picture you identified, P-6, shows the plane in a different position than the one just offered? A. That's not the plane; that's the wing.

The Court: Looking at the one he now shows you, P-6, looking at that, does that show the same portion of the plane as is shown in the one which is now being offered in evidence? Look at it and tell us.

The Witness: No. They are both the same. This is the front view of the plane and this is the rear view of the plane. In other words, this is on the other side of the sand car.

The Court: It is taken from a different position?

The Witness: Yes, sir.

The Court: But you say the one now in your hand just being offered is an exact reproduction of exactly the condition of the plane, position of the plane and of the relativity to the railroad track and the car as it existed right immediately after the accident?

The Witness: Yes, sir.

The Court: (Addressing jury.) Of course gentlemen, in that picture there you see a crowd of people standing around. That picture is not admitted to display those people and they are no part of the picture. It is admitted merely to show the condition of the plane and its position—such of it as is shown.

(Received and marked in evidence Exhibit P-7).

Direct examination (continued) by Mr. George:

Q. You told the Court and jury, Mr. Ingold, that the plane in question on its last flight didn't act the same as it had on other flights on that day? Is that so? A. Yes, sir.

Q. Now, will you describe the plane on its other flights that day? A. Well, he had one bad landing where he was towed out of the mud.

Q. When you say "he had," who do you mean? A. Lou Foote.

Q. With what plane? A. The tri-motored Ford.

Q. The same one? A. The same one.

Q. That was involved in the last crash? A. Yes, sir.

Q. And who took—who pulled him out of the mud? A. The tractor they have at Port Newark.

Q. They have a tractor there? A. Yes, sir.

Q. And he was pulled out of the mud? A. Yes, sir.

Q. Were there any passengers in the plane on that occasion? A. Yes, sir.

Q. Do you know what was the cause of his going into the mud that day on one of those prior trips? A. Well, he just missed when he overshot the runway.

Mr. Carpenter: I object and move that it be stricken out. That is just a conclusion of the witness.

The Court: Yes; strike it out so far as the conclusion is concerned. You may tell us what he did, if he went a certain distance or landed in a certain place or in a certain manner. You may tell us that.

Q. How far from the hard surface of the airport did Foote land with those passengers on the

prior trip, in the mud? A. Oh, I should say about fifteen feet.

Q. Fifteen feet? A. Yes, sir.

Q. Over? A. To the left of the runway.

Q. And beyond the place which they usually stop at or shorter? A. Shorter.

Mr. Carpenter: I object. He said to the left.

Mr. George: Shorter.

Q. When is the first time you met Foote, the pilot? A. I judge about eleven o'clock that morning. I tried to sell him a ticket.

Q. Is that the first flight, at that time? A. Yes, sir.

The Court: You have just now told us about a flight where you say he came in with passengers and went fifteen feet off the hard surface of the place where they habitually land. What trip was that preceding the accident? Which one?

The Witness: I believe it was somewheres around the fourth trip. About half way during the day. Around the early part of the afternoon.

The Court: There were three others after that besides the fatal one?

The Witness: Yes, sir; approximately that.

Q. Would you be good enough to step down here, Mr. Ingold, and describe the last flight as nearly as you can on this surveyor's map? Stand on this side so the jury, as well as the Court, can see.

The Court: Do you understand that map? Do you?

The Witness: I do, sir; yes, sir.

The Court: Now start from the very starting point.

The Witness: (Indicating on the West map.) The ship loaded up right in here, came off in this direction, made a circle——

Q. Let me stop you there and ask you what you mean when you say it came out of there, which, I take it, is near the hangar? A. Yes, sir.

Q. Near where you sold tickets? A. Yes, sir.

Q. You say it came over here and made a circle? Was it in the air or on the ground? A. On the ground.

Q. How did it get there? A. It naturally runs along.

Q. You mean it taxies? A. Taxi.

Q. Taxied from here—slowly, I suppose—and made a turn on the runway? Right? A. Yes, sir.

Q. Which way did it face when it came to a stop? A. That way.

Q. Face northwest? Is that right? A. Yes, sir.

Q. Go on. Describe the flight? A. Then it started to take off about here.

Q. How far from the road? A. Well, I couldn't exactly see the road.

Q. Approximately. A. Perhaps one hundred feet.

Q. One hundred feet from the road. You mean when you say "take-off", you mean it left the ground one hundred feet south of the road? A. Yes.

The Court: What road?

The Witness: The road coming into the highway.

The Court: What road is it?

The Witness: It was just an entrance into the airport for the machines. Of course, the state road is out here. There is a road which comes in here, which is about one hundred feet from that road near the take off.

The Court: First, can you tell us, if you know—don't say you do if you are not sure—how many feet was it running before it left the ground after it started? How many feet did it run on the ground before making the lift?

The Witness: About five hundred feet. About four hundred feet.

The Court: Which way did it begin its flight in the air? To the left or to the right?

The Witness: It began its flight in the air to the right.

The Court: You are indicating left. I want to know which it is.

The Witness: Well, turned this way, to the right.

Q. Now, can you tell us about where the plane was on that—by pointing to the map—where the ship was when it made its first turn—attempted to make its first turn? A. Around here.

Q. Around there. May we put an "I" there, your Honor?

The Court: Yes.

(Witness indicated with "I").

Q. Then what course did it take? A. On an angle to the right.

Q. When the plane reached this point at your initial "I" where you say the plane started and

made its first turn, how high above the level of the land was the plane at that point? A. According to the surrounding buildings let us say two hundred feet.

Q. And you estimate that height with relation to the height of buildings and other objects in the vicinity? Right? A. Yes, sir.

Q. Will you proceed and show the Court and jury the course of the plane? A. He moved straight on in that direction, made his turn and never came over towards South Street at all.

Q. Are you sure of that? A. I am.

Q. Where was he with respect to South Street when he made his second turn? A. About here.

Q. Right here? A. Right here.

Q. Will you put a mark there? A. Right about here (indicating).

Q. Then which way did he go? Withdraw that a moment. About how high was he when he was making the second turn at this point, now marked "I-2"? A. I would say about four hundred and fifty feet.

Q. Now, can you tell whether between those two marks representing both turns he had ever reached an altitude higher than the point he was at when he made the second turn? A. Yes, sir.

Q. He was higher? A. Yes, sir.

Q. What was the highest point he ever reached? A. Well, I couldn't say.

Q. Approximately, as nearly as you can. A. He used to take a little longer course. He used to gain altitude.

Mr. Carpenter: I object to his remarks trying to reason it out.

The Court: Just answer the question. You have turn "1" and turn "2". You say he was higher than at turn "2" at one time.

On this particular day, in this particular plane, on this trip, what was the highest altitude between point "1' and point "2"?

The Witness: Eight hundred feet.

Q. Can you tell about where with relation to both this point "1" and point "2" he reached that highest altitude of eight hundred feet? A. On this side right here. (Indicating).

Q. Around here? A. Yes.

Q. At the Pennsylvania Railroad tracks? A. Yes, sir.

Mr. Reed: Mark it please.

The Witness: Right in there. (indicating).

Q. On this last trip? A. No.

Q. That's what we are talking about. A. These are prior trips.

Mr. Carpenter: Put your mark there.

The Court: He says it was on a prior trip, not on this trip.

Mr. Carpenter: He said before — he pointed in between the two. I want it marked.

The Court: It can't be marked. All right, proceed.

Q. Mr. Ingold, describe the course of the plane again on this last flight. Just run the pointer along. A. Right here, through here.

Q. This second mark? A. Yes, sir.

Q. It didn't come out here? A. No, sir.

Q. What are you referring to over here? A. Prior trips.

Q. Now, on this last flight—and please be good enough to keep in mind we are now inquiring as

to the last flight—between point "1" and point "2" on the last flight what is the highest altitude that plane ever accomplished? A. Four hundred and fifty—five hundred feet.

The Court: Just a minute. Now, you said on this last trip that between turn "1" and turn "2" the plane at some point there attained a higher altitude than it was at turn number "2". Is that right or is it wrong?

The Witness: It was wrong.

The Court: Well, on this last trip did it attain any higher altitude between turn "1" and turn "2"——

The Witness: No, sir.

The Court: Wait a minute—than it was in making the turn in number "2"?

The Witness: No.

The Court: It didn't. You say the highest was what?

The Witness: Possibly between four hundred and fifty—five hundred feet.

Q. Now, having reached point "2", proceed to describe the further course of the plane. A. The plane just cut right around sharp and right straight down, losing altitude every foot, as I recall—just kept losing altitude and I called Ackerman, my superior, and I called Weatherdon and we decided there was going to be a crash and the machine was going down lower and lower until it got to the lowest embankment here (indicating) and we couldn't see it. It got lost out of sight.

Q. Did you hear the crash? A. No; I didn't.

(Recess was thereupon taken until 2 P. M.)

(After Recess—2 P. M.)

Arthur Ingold, resumed the stand pursuant to adjournment.

Direct examination (continued) by Mr. George:

Q. Mr. Ingold, prior to this last flight of the plane in question did you see any of the mechanics anywhere near the plane? When I say "mechanics," I mean mechanics of the Colonial Western Airways? A. Well, the left part of the ship; the left side.

Q. The left side of the ship? A. Yes, sir.

Q. Tell the Court and jury about that, if you please. A. Well, no more than I just noticed they were around that left motor.

Q. How many were there? A. Well, there was Captain Ed. Weatherdon and the pilot.

Q. When you say "pilot," you mean Lou Foote? A. Captain Ed. Weatherdon and Foote was around it, as well as Wtorkowski, the mechanic.

Q. A little louder, please. A. Wtorkowski.

Q. Wtorkowski, the mechanic? A. Yes; the mechanic and also the man that assisted passengers into the plane.

Q. You say they were at the left motor? A. Yes, sir.

Q. What were they doing there? A. I couldn't observe very well any more than they were around that motor.

Q. How long were they standing around that left motor? A. After each flight they would walk around the plane—after each landing.

Q. Yes. A. (Continuing.) Of course, that left side seemed to be favored more than any.

Q. What indication was there that the left side was favored more than the other parts of the

plane? A. They may have had a little trouble there.

Mr. Carpenter: I object, and move that it be stricken out.

Mr. George: That is not the question. I consent it be stricken out.

The Court: No. No. Strike it out.

Q. Was there any more time spent on one part of the plane than the other? A. Yes, sir.

Mr. Carpenter: I object to that as immaterial.

The Court: Overruled. Go ahead.

Q. What part of the plane was more time spent on by those men who you described as pilots, mechanics, and assistant mechanics than other parts? A. The left side, the left motor.

The Court: Now, are you speaking of the time just prior to this last flight?

The Witness: Is that for me?

The Court: Yes.

The Witness: No. That was all during the day.

Mr. Carpenter: What was the answer?

The Court: All during the day.

Q. Before or after each flight? A. At each landing.

Q. Now, after you observed those things that you have already described, did you hear any conversation between any of those persons who were inspecting the plane concerning the plane? A. Yes, sir.

Q. What?

Mr. Carpenter: I object.
The Court: Sustained.

Q. Well, who did you hear speaking? A. Well, amongst my employers, that is, Captain Ed. Weatherdon.

Q. Did you hear Mr. Weatherdon say anything concerning the plane? A. Yes, sir.

Q. At or after those occasions when they were looking at the left motor? A. Yes, sir.

Q. What did he say?

Mr. Carpenter: I object to that. Those men are not employed to talk.

The Court: I believe that's true. It has not been shown he has any right to bind them by any admissions, Mr. George.

Q. What connection did Captain Weatherdon have with the Colonial Western Airways? A. He seemed to be manager, like. He seemed to have a lot to say. He was chief pilot at that time, I believe.

Q. Was he chief pilot? A. He was of that ship. Nobody else ever flew that ship as far as I know.

Q. Do you know in whose employ he was? A. I heard O'Ryan's name mentioned an awful lot. General Ryan or General O'Ryan.

Q. What connection did General O'Ryan have with the Colonial Airways? A. I believe he was one of the biggest men there.

Q. Did you notice whether Captain Weatherdon gave any instructions to anyone while you were in the employ of the company? A. No, sir.

Q. Never gave any instructions to anyone? A. No, sir.

Q. Well, did he say anything to Foote? A. I wasn't out there to hear those questions.

Q. On any other occasion did he ever give any instructions to Foote? A. No, sir.

Q. Or to anyone else? A. Well, to me he had, yes.

Q. What instructions did he give to you?

Mr. Carpenter: I object to that as immaterial.

The Court: With reference to this ship, you mean, at this time?

The Witness: Yes, sir.

The Court: It may or may not be material. I don't know.

Q. What instructions did he give to you?

The Court: Just answer this "yes" or "no". Did he tell you to do anything about this ship?

The Witness: No, sir.

Q. Did you hear him tell Foote to do anything about the ship? A. No, sir; I didn't.

The Court: Well, now, while counsel is waiting there—you spoke about—I think you said they favored the left motor, the left side of the ship. What did they do? What physical evidence was there that made you make that observation?

The Witness: Well——

The Court: Listen. This is what I mean: Did they go up and examine it, or did they cause anything to be done to it?

The Witness: They examined it, yes.

The Court: Did they examine all the motors or only that one, or what?

The Witness: They examined that no more than any other one in particular that time that day.

Mr. George: Cross-examine.

Cross-examination by Mr. Carpenter:

Q. Were they on the ground all the time? A. No. No, sir.

Q. When the ship was standing there on the ground before a take off and after a take off, all the time it stood on the ground, the engines were all running, weren't they? A. Not always.

Q. Sometimes they shut them down? A. Sometimes, certainly; yes, sir.

Q. Whereabouts were you stationed that day? A. It was known as the bull-pen.

Q. Have any bulls there? What do you mean by "Bull-pen"? A. Well, it is a pen where anything may congregate into.

Q. For what? A. Where anything may congregate into.

Q. Do you mean that is where they let the people come that wanted to fly? A. Yes, sir. You were not supposed to go out of that pen, that is, on to the field. They were supposed to stay right in that pen all the time. That's why we call it the "bull-pen."

Q. You also were kept in that same pen? A. Not always.

Q. You were kept to sell tickets to those people that gathered there? A. Sometimes I went on the field, though, to assist people into the plane.

Q. Just to what? A. Assist people into the plane.

Q. Didn't they have anybody else there? A. Surely, they did.

Q. How much of the time were you kept in the bull-pen and how much of the time were you on the field? A. Biggest majority of the time in the bull-pen. It was only when I wasn't sure of a

sale that I had to get in conversation with the pilot or someone else; for instance, a child without paying a fare which would be carried on a person's lap. I couldn't do that without I had authority to do it.

Q. By the way, whereabouts do you live? A. Pleasant Avenue, West Caldwell.

Q. West Caldwell? A. Yes, sir.

Q. How long have you lived there? A. Going on three years.

Q. What is your business? A. Maintenance man. Jobber.

Q. Maintenance of what? A. Well, I do all kinds of jobbing. Hang awnings, screens, storm doors, little odd jobs here and there, the main work plumbing work.

Q. You are more or less of a jack-of-all-trades? A. Miscellaneous jobber. Anything.

Q. For the Colonial you were "Bally-hoo" man? A. Yes, sir.

Q. That is like a barker at a circus? A. Yes, sir.

Q. This was the first day you ever worked for them, too, wasn't it? A. No, sir.

Q. You say "No"? A. Yes, sir.

Q. You were fired about that time, too, weren't you? A. For a reason, yes, sir.

Q. Fired that very day, weren't you? A. No, sir.

Q. When do you say you were fired? A. Why, I can't just say that.

Q. Was it the next Saturday? A. It might have been the second or third.

Q. How much were you paid a day for barking? A. I got three cents on the dollar.

Q. Three cents for every dollar's worth of tickets you sold? A. For all I sold.

Q. If you sold a five dollar ticket you got fifteen cents? A. That's it exactly.

Q. For selling $240's worth—is that what you said you sold, $240's worth that day? A. Yes, sir.

Q. You got $7.20? A. Yes, sir.

Q. And you only had one day's work a week? A. One or two. Saturday, Sunday and Holidays, yes.

Q. You didn't see anybody get up into any of those engines that day, did you? A. Yes, sir.

Q. Who? A. The mechanic.

Q. What time was that? Around one o'clock or most any time? A. Most of the day they would look at them. They would go up in the motors and look around.

Q. The whole ship? A. They wouldn't just come in and go right off.

Q. In other words, after every flight the mechanic went and made an examination of the ship? A. He didn't just look them over.

Q. Is that your testimony to the jury? After every flight the mechanic looked over every engine? A. Yes; he looked over them.

Q. Now, you said that you saw the last—you saw all the flights of this ship that day? A. I did; yes, sir.

Q. Do you remember the one when Wonsey went up with Weatherdon? A. I don't.

Q. Do you remember the first one that Foote went with Weatherdon? A. I do.

Q. Do you remember the course that he took? A. No, sir.

Q. Do you remember the course that the plane took the first time it went out that day carrying passengers? A. No, sir; I don't recollect.

Q. Well, the ship took the same course— A. Not necessarily.

Q. —on every flight that day, didn't she? A. Not necessarily, no. I wouldn't say it did. The wind changed. The wind was blowing very gusty all day. The wind was increasing.

The Court: What? What do you say? Did it take any other course that day on those other flights?

The Witness: I don't recall, sir, your Honor.

Q. You don't recall. What was the direction of the wind that day? A. Presumably a northwesterly wind, I would think.

Q. All day? A. Well, of course, I couldn't say.

Q. Are you sure it was from the northwest? A. Yes, sir.

Q. You think it was from the northwest? A. Yes, sir.

Q. Did it veer around or was it a changeable wind? Was it? A. Gusty wind, yes, sir.

Q. What? A. Very gusty day; awful gusty.

Q. What I mean is: Did the wind veer around from one point of the compass to the other point of the compass—coming from the west part of the time; east part of the time; north part of the time? A. I never noticed that. I had no particular reason to.

Q. Take the last flight of this plane. What difference did you notice between the last flight of this plane and the first one that day when she went off from the airport? Did you notice any difference in the flight? A. I did.

Q. What difference did you notice? A. Seemed to labor getting off the ground; seemed very heavy.

Q. What do you mean by—strike it out. Whereabouts did it leave the ground on the prior flights? At what point? A. The same way.

Q. Got off the ground the same place the last time as on the other time? A. Yes, sir.

Q. This was a very large ship, wasn't it? A. Yes, sir.

Q. And she didn't make quick movements, either, did she? A. No, sir.

Q. And her movements, because of her size, were very gradual movements? A. Yes, sir.

Q. On this last flight this plane after taking off made a very wide gradual turn around, didn't she? A. No, sir.

Q. You say it made a short sharp turn? A. I wouldn't say "short sharp." It made an angle turn, not a full turn.

Q. Made a what? A. An angle turn.

Q. Wouldn't you—with the language you have —describe the turn the ship made on that last flight as a wide turn? A. No. I wouldn't say it was wide.

Q. You wouldn't? A. No, sir.

Q. What is the highest altitude that you say that ship got on her last flight? A. Four hundred and fifty feet.

Q. How high was that plane above in the air when it passed over route 25 in leaving the airport? A. I should say about three hundred—two hundred and fifty feet.

Q. It couldn't get that high going off the airport, could it? A. Sir?

Q. That ship couldn't possibly, in leaving the airport down here (indicating)—couldn't possibly get to that altitude crossing this highway, could it? A. I don't just get what you mean. On the going out? I thought you were talking about the coming in from New York.

Q. No. Going out. When she went over that route. A. It was only around fifty feet there.

Q. You pointed with your pointer a while ago on your direct examination to this point by "P" in Pennsylvania where you say the plane had an altitude of eight hundred feet. A. I said that was prior trips.

Q. On this last trip what was the height of the plane when it was there? A. It wasn't over there.

Mr. George: I object to that as an unwarranted assumption of fact. He didn't testify at any time that it got over here where his finger is on the last flight.

The Court: He says now it wasn't over there.

Mr. George: I didn't hear him.

Q. Didn't that plane on her last flight come off this runway and make a very wide turn? A. No, sir.

Q. Did it make a sharp turn? A. No, sir.

Q. What kind of a turn did it make? A. About an "82", I imagine.

Q. What is an "82"? A. It is between a "45" and an "L", full "L".

Q. Between a "45" and a full "L"? A. Yes, sir.

Q. What do you mean by that? A. Well, that's the only way I can explain it.

Q. Do you know what that means? A. I do.

Q. Just describe it. A. Well it is—45 would be that way (indicating), and the plane will be in—about like this.

The Court: A straight right angle alone would be ninety degrees, wouldn't it?

The Witness: Yes, sir.

The Court: Now, taking in between, do you mean to say it was——

The Witness: (Interrupting) That way. (Indicating.)

The Court: About half of that arc, or what portion of the arc?

The Witness: Half.

The Court: That would be a "45."

The Witness: It wouldn't be quite a "45," a little better.

The Court: Better than a "45"?

The Witness: Yes, sir.

Q. Shorter than a "45" or larger? A. Little bit larger than a "45."

Q. Did that plane on the last flight go over here in this point here where the Pennsylvania Railroad tracks come to a point—Pennsylvania —down here? A. No, sir.

Q. You say "No"? A. Yes, sir.

Q. How high was the plane when it reached the point where my pointer is? A. At the turn it was about two hundred feet.

Q. About two hundred feet there? A. Yes, sir.

Q. And did it make a wide turn over that point? A. That's where it turned.

Q. Did it make a wide turn over that point? A. No; it didn't make a wide turn.

Q. Didn't make a wide turn at all on the last trip, did it? A. No, sir.

Q. Do you remember testifying before Judge Dungan in Newark about this same accident? Do you? A. I do, some of it.

Q. Did you give this testimony before Judge Dungan:

Mr. George: What page?

Mr. Carpenter: 327.

Q. (Continuing) Question: "What was the highest point he reached, in your estimation?"

Answer: "At his wide loop, somewheres in this direction, it was about 500 feet here (indicating); decreasing to about 300 or 250 here, at the viaduct (indicating)". The Court: "500 feet, indicating at the Pennsylvania Railroad tracks?" Witness: "Yes, at the loop here; where I had stated he made that wide loop." Did you so testify before Judge Dungan? A. I did, yes, sir.

Q. About this same accident? A. Yes, sir.

Q. Did the plane on this last flight make a wide loop? A. It did at the five hundred feet altitude.

Q. Where was the plane at five hundred feet? A. (Witness goes to blackboard) When I told that to Judge Dungan in Newark, 500 feet of the wide loop was there (indicating).

Q. You say here?

Mr. George: For the record, indicating "1-2" near the juncture of South Street and the Pennsylvania Railroad tracks on survey map.

Q. You say at that point the plane was five hundred feet in altitude? A. Yes, sir.

Q. Was that the end of its wide loop or the beginning of its wide loop? A. The end of it.

Q. The end of it? A. Yes, sir.

Q. From then on what direction did he go? A. Right straight down.

Q. From this point "1-2" down to the crash he went straight? A. Yes, sir.

Q. Is that right? A. Right directly this way.

Q. Directly towards the southeast? A. Yes, sir; New York.

Q. A straight line as you could draw from point "1-2" down to the point of the crash? A. Yes, sir.

Q. And that was the end of the wide loop is what you say? A. Yes, sir.

Q. He was then five hundred feet high? A. Yes, sir.

Q. Where was the beginning of his wide loop? A. Started——

Q. Where was the beginning of his wide loop? A. Right about here.

Q. You now point to a place just a little south ——

Mr. George: Due south.

Q. —that is, a little southeast of "1-2", isn't it—about an inch on the map east or southeast? A. Yes.

Q. That was the beginning of his wide loop? A. Yes, sir.

Q. Do you mean that—where was the middle of the wide loop? Give us the middle point of the wide loop. A. The middle point of the wide loop was about in here.

Q. About here. You indicate a point right in the middle of the Pennsylvania Railroad tracks just about an inch south of the—an inch southwest of "1-2", is that right?

Mr. George: Due west.

Q. Due west? A. Yes.

Q. And in the middle of the track? A. Yes, sir.

Q. Do you mean to tell this Court and jury from the point you first designated, southwest, running through the point you designate an inch south of "1-2" and then through "1-2" would be a wide loop?

Juror Number Three: Let him mark with a pencil. We can't understand with the pointer.

The Court: What he wants you to do is to start down where you say this began and follow it around with a line.

Q. Draw your line on there just where you want. A. Just about that angle. He got up somewheres near here and went right along (indicating).

The Court: Is that making a mark there?

Mr. Carpenter: Yes. You can trace it.

Q. Now, Mr. Ingold, I wish you would tell this jury what the height of that plane was when it was at this point, being the southerly line of the Pennsylvania Railroad track and your mark? How high was that? A. He probably got to three hundred and fifty feet—three hundred feet there.

Q. What was he when he was up here at the point where you marked where he made the turn, which is just south? A. Five hundred feet. Five hundred feet in the whole loop.

Q. In the whole loop five hundred feet? A. Yes.

Q. Was he six hundred feet at any time? A. No.

Q. What did you mean by testifying before Judge Dungan: "At that time, can you estimate, to the best of your judgment, as to the height of that ship"; answer: "500 to 600 feet." Page 138. Did you so testify before Judge Dungan? A. I did testify before him.

Q. And on page 140. Did you testify this way before Judge Dungan: Question: "This is the runway, the west runway which you speak of, and this is the State Highway, and this is the Pennsylvania Railroad (indicating). Now, will

you please give us your conception of the flight of this plane, as you saw it?'' Answer: (Witness indicates). The Court: ''Accompany your movements with some explanations.'' Question: ''Tell us as you go along, please.'' The Court: ''You can go down there, if you want to, as you point to just what you are referring to.'' Question: ''Begin from the runway. If there is anything you do not understand about that, just ask the question.'' Answer: ''It just took off as usual, rolled out here (indicating), came this way (indicating)——''

Mr. George: Just a minute. I don't believe counsel can with propriety make any indications while he is reading.

Q. (Continuing reading) The Court: ''Indicating in a northwesterly direction.'' Witness: ''That is it; and he made a sort of a wide loop here, a wide turn, right through this way (indicating); and then crossed over and was on down, and here is where he started to glide (indicating).'' Question: ''Indicating the highway Route 25, north of the Lehigh Valley tracks''? Answer: ''Right''. Question: ''Now, when you saw that glide, whom were you with and where? Will you indicate at the airport where you were?'' Answer: ''I was here, *at* the bull-pen (indicating).''

Mr. George: ''*in* the bull-pen''.

Q. ''—*in* the bull-pen.'' Is that the way you testified in the other trial? A. Yes, sir.

Q. Was that five hundred or six hundred feet high? A. Five hundred feet.

Q. Before it started to turn? A. Which turn are you talking about?

Q. Before it started to turn down east. A. It was five hundred feet right in the loop all the time.

Q. In the loop all the time five hundred feet? A. Yes, sir.

Q. That is the best you could judge it and you were standing down here at the bull-pen? A. Yes, sir.

Q. And the plane was then considerably away from you? A. Well, I could watch all its movements.

Q. How far away from you was the plane when it reached an altitude of five hundred feet? A. Not over three-quarters of a mile, half a mile.

Q. That is your best judgment, three-quarters of a mile away? A. Yes, sir.

Q. That plane was functioning all right as far as you know until when it was away out here over the meadow, wasn't it? A. Yes; only any more than she was laboring.

Q. What do you mean by "laboring"? A. It was hard going up. It was hard fighting with the wind. It was hard going up, climbing. She didn't get the altitude she got on her previous flight.

Q. What altitude did she get on the previous flight? A. On the flight prior to that he always got an altitude of eight hundred feet or one thousand feet.

Q. How do you know? A. By the surrounding terrain.

Q. I thought you said you don't remember in his other flights what direction he went? A. I am talking just prior to that, not all the flights. I am not indicating the early part of the afternoon.

Q. Didn't it, any time you saw it that day, make a turn away out over this Pennsylvania Railroad? A. I couldn't say it did, no.

Q. You couldn't say it didn't, either, could you? A. No, sir.

Q. That plane that afternoon on the last flight when she passed over here and went over the State Highway and when it got out here at the point where you say it made a turn, all the engines were functioning, weren't they? A. Yes, sir.

Q. All running? A. Yes, sir.

Q. Full speed? A. Yes.

Q. She left the ground the same point she did on the other flights? A. Yes, sir.

Q. Is that right? A. Yes, sir.

Q. You didn't notice that there was anything the matter with the plane on her last flight, did you, until she came down to a point about here? A. That's where we noticed it.

Q. Referring now to your "I-2"? A. Yes, sir.

Q. That is the first time you noticed that there was anything the matter with that plane? A. Yes; that's the first time.

Q. Then it was going in an easterly direction? A. Yes, sir.

Q. Up to that time you noticed her at this point "I-2", just below South Street and over the Pennsylvania Railroad track—that was the point where you say you noticed her start coming down? A. Yes; but in the loop all the way through. Through my acquaintance with a ship taking off and going up in the air I could tell that there was something wrong. I could sense it.

Q. That plane was on an even keel all the time, wasn't it? A. Yes; but he didn't have the altitude he should have had to make that turn in a down wind.

Mr. Carpenter: I move to strike out what he should have had.

The Court: Strike out what he should have had. Tell what you saw.

Q. That plane, the first you noticed anything wrong about it was when it started to come down, wasn't it? A. When he made the turn to go to New York I knew right then there was something wrong because he didn't have his altitude to make that turn in a down wind.

Q. He had five hundred or six hundred feet altitude according to you?

Mr. George: That is not so. His testimony has been consistently no more than five hundred feet.

Q. It was your estimate given before Judge Dungan? Correct? A. It was.

Q. You testified either five hundred or six hundred feet, didn't you? A. Yes, sir.

Q. Today you testified four or five hundred feet? A. Yes. I testified to that in Newark, too.

Q. Five to six hundred feet. A. Four hundred and fifty feet in Newark.

The Court: Just a minute. Now, what do I understand you to say? That he didn't have enough altitude to make a turn? Is that what you mean?

The Witness: Yes, sir.

Q. What do you mean he didn't have enough altitude to make a turn? What prompts you to say that, because you have not told us as yet, have you? A. No.

The Court: What was it made you say that?

The Witness: It is against the laws——

The Court: No. No. Not against the

laws. What physical evidence—what did you see, or what do you know that made you say now he didn't have enough altitude to make that turn at that wide loop, as you call it?

The Witness: As I said before, in the way I have been around ships and watching ships gotten around turns we have never made a down wind turn like that having the wind on our tail with five hundred feet altitude.

The Court: That is what you mean?

The Witness: Yes, sir.

Q. Have you ever flown in a ship? A. I have been in lots of ships, yes, sir.

Q. From Newark? A. I have never flown a ship but I have been in plenty of ships.

Q. Where? A. Westfield, Teterboro, Newark Airport. I have even walked wings.

Q. Just as a passenger? A. No. I have been a stunt flier.

Q. You didn't operate a plane? A. No, sir.

Q. What kind of stunts did you do? A. If anybody got killed the Sunday before I go out and show them how brave I was and show them how safe it was to fly.

Q. You are a brave fellow? A. No. I wasn't brave. I wouldn't say that.

Q. Did you testify this way before Judge Dungan:

Mr. George: What page?

Mr. Carpenter: Page 138.

Q. (Reading) Question: "Now, as it rose off, in what direction, going in what direction of the take-off, did the ship turn, right or left?" An-

swer: "It turned right, to east." Question: "And did it cross that highway?" Answer: "It did." Question: "At that time, can you estimate, to the best of your judgment, as to the height of that ship?" Answer: "500 to 600 feet." Right? A. Yes.

Q. You so testified? A. It must be if it is there.

The Court: Where was that five or six hundred feet you spoke of?

The Witness: At the loop.

The Court: At the outside loop?

The Witness: Yes, sir.

The Court: The furthest distance out?

The Witness: Yes, sir.

Q. What did you say? A. I didn't say anything.

The Court: There is one thing I would like to have cleared up. I don't know whether the jury got the same impression as I did. This flight, most of it, until you reached the outside limits of it, seemed to have been sort of in a northwesterly or north-northwesterly direction, which, to my mind from the way the ship took off, would be going to its left from the starting point. Is that right?

The Witness: That's the direction.

The Court: What I want to know and the jury wants to know is: When the ship left the ground and further on for a distance of several hundred feet, did it bear to its right in the direction in which it was going or did it bear to its left in the direction in which it was going?

The Witness: Oh, no. It bore to its left.

The Court: Then, from that, it neces-

sarily must have at some time turned around and gone to the left?

The Witness: No, sir.

Q. Was that plane, Mr. Ingold, going into the wind until it got its elevation to make a turn? A. Yes, sir.

The Court: Do you see those two books there?

The Witness: Yes, sir.

The Court: This is what I would like to call a take-off (illustrating with books). Here would be another book here. The plane—everybody aboard, ready to go——

The Witness: Yes, sir.

The Court (Continuing): —tuning up and you get the word to go. That ship has to go down here for aways, then it begins to take altitude a little bit?

The Witness: Yes, sir.

The Court: Now, what I want to know is: Did it turn this way and then come off around that way?

The Witness: That's it—no, not so much as that.

The Court: It bore to the right and then did it bear to the left a little again?

The Witness: Just a trifle, not much, and then to the right and made that loop.

Q. What you have described to Judge Dungan was that that turn—that ship made a wide loop? A. Yes. I just answered that to your Honor here.

Q. Now, before the ship started to turn to his right he went right into the wind until he got considerable altitude, didn't he? A. Yes, sir.

Q. And then after he got that considerable altitude he turned gradually to go around towards New York? A. Yes, sir.

Q. And then after he got straightened out towards New York, towards uptown New York, he was going down wind, wasn't he? A. Yes, sir.

Q. Then you noticed him start to glide down? A. Yes, sir.

Q. Is that about a fair description of that flight? A. Yes, sir; it is.

Mr. Carpenter: That's all.

Re-direct examination by Mr. George:

Q. What do you mean by "considerable altitude" used by Mr. Carpenter? A. I don't get that.

Q. You were asked whether or not the plane had made "considerable altitude" before he made the turn and your answer was "Yes." What do you mean by "considerable altitude?" A. Between four hundred and fifty feet; five hundred feet on that.

Q. Was that the same, or reasonably the same character of altitude that had been reached on other flights by that plane before making the turn? A. No, sir.

Juror Number Three: What is the altitude it should have been to make that turn?

Mr. Carpenter: If he knows.

Juror Number Three: He says five hundred feet was not enough altitude. What should be the altitude?

The Court: What do you consider the altitude?

The Witness: Eight hundred to one thousand.

The Court: Your answer now—it is no more than fair to ask—your answer is based on what?

The Witness: Proper way to handle a ship.

The Court: You must have something to base the answer to number three's question as to what should have been the altitude. On what do you base your answer it should have been eight hundred to one thousand feet?

The Witness: Well, with such a terrific wind blowing against him——

The Court: Was it based on anything you had seen before or just your guess?

The Witness: No—yes, I had seen the same thing before.

The Court: It was based on your experience from what you had seen other planes doing?

The Witness: Positively. He should have climbed until he reached eight hundred or one thousand feet if it took him to go to Philadelphia.

The Court: How long had you been observing aeroplanes taking off and making altitude from the ground such as this—turn such as this? How long before?

The Witness: Two years.

The Court: Just roughly how many take-offs do you suppose you have seen up to that time?

The Witness: You can put it in the thousands. As ballyhoo man—these trips only—some of them only last one minute; some three minutes to a trip, a dollar a trip.

By Mr. Coolahan:

Q. Have you done any flying yourself? A. I have never handled a ship, but I have been in the air flying.

Q. How many times have you been in the air? A. I couldn't count.

Q. Were you ten times? A. Oh, yes. Fifty or sixty times.

Q. Were you one hundred times? A. Fifty or sixty times, anyhow.

Q. Did you have any experience before in the air? Perform any feats or anything? A. Yes.

Q. What did you do? A. Go out and walk wings.

Q. You were a wing-walker? A. Yes, sir.

By Mr. George:

Q. While the plane was in motion? A. Yes.

Q. Have you ever seen any other plane make a turn on any of these hopping flights at the airport such as was made or intended to be made on this occasion in which the turn was made at an altitude of less than eight hundred feet to one thousand feet prior to this last flight? A. Only smaller ships.

Q. Smaller ships? A. Smaller ships.

Q. But never a ship of that kind? A. No, sir.

(Witness excused.)

George F. Lahey, Jr., called as a witness on behalf of the plaintiffs, having been first duly sworn, was examined and testified as follows:

Direct Examination by Mr. George:

Q. You are a lieutenant in the Flying Corps of the National Guard of New Jersey, are you not? A. At the present time I am lieutenant in the Reserve Corps.

Q. Flying division? A. Yes, Air Corps Reserve.

Q. You are also an attorney and counsellor at law of the State of New Jersey? A. I am.

Q. You practise in Newark principally? A. Yes.

Q. Now, Lieutenant, were you at the Newark Airport on March 17th, 1931—1929, rather? A. I don't remember—19 when?

Q. '29. A. Yes; I was.

Q. What time of the day did you arrive there? A. I don't remember that very distinctly. I should think about three o'clock.

Q. How long did you remain there? A. Well, until this accident happened. I should think that was four or a little after; around four o'clock. I don't remember the exact time very distinctly.

The Court: Did you see this accident?
The Witness: Yes, sir.

Q. Now, what was the condition of the weather that day, Lieutenant? A. Cold high wind.

Q. Cold high wind? A. Yes.

Q. Can you approximate the velocity? A. Around forty.

Q. What was its course? A. Northwest—north-northwest.

Q. North-northwest? A. Yes.

Q. What was the weather, the temperature aside from the coldness of the wind that you describe? A. Well, it was sort of a chilly day.

Q. Now, did you notice any of the take-offs that were made by the Tri-motor Ford all metal planes? A. Well, the particular one in which this accident happened. I don't remember noticing any others particularly. There were a number of take-offs by tri-motor planes that afternoon. I don't remember especially about them.

Q. But you saw them? A. Oh, yes, sir.

Q. What you mean, as I understand you, is there was nothing unusual about any others? A. No.

Q. Did you take a flight that day yourself? A. No.

Q. Did you see the last flight of the ship which was involved in the accident? A. I did.

Q. Now, where were you at the time of the take-off, Lieutenant? A. On the road which lead from the hangar out to the highway at approximately the end of the runway.

Q. That would be about here, Lieutenant? (Indicating on map). A. Yes.

Q. About here? A. Yes.

Q. That's pretty close to the juncture, isn't it, of Port Street and route 25? A. Well, some distance away. I suppose one hundred feet or more.

Q. Now, Lieutenant, would you be good enough to step down here and take this pointer and describe the course of the ship in question?

Mr. Carpenter: Describe it with language.

The Witness: When I first noticed the plane, that was approximately over my head. I was on the road which leads from this hangar. My recollection is that this runway does not come to a square end like this. It is slanted off in this direction, and the road runs along out. I was on this road. This may be intended as a runway, but there wasn't any sharp line across here. It continued on into the road. I was on the road. When I first noticed the plane it was over my head at an altitude, I should say, of seventy-five to one hundred feet, and it came over beyond this juncture here, sort of an island in here, at a point ap-

proximately just beyond that. During this time I had not been watching it particularly, but I looked up at it again and saw that it was in a sharply banked cross-wind turn. It straightened out in that and flew along at a point approximately parallel with the state highway up to a point somewhere beyond the Pennsylvania Railroad up around, approximately, South Street.

Q. May I stop you there, Lieutenant, and ask if you can tell whether the plane had ever reached South Street before—had ever reached South Street? A. Well, judging from where it was and where it ended up, I should say it did approximately reach South Street.

Q. Is that merely an estimate or specific knowledge? A. Well, from specific knowledge of terrain up here by the factory, chimneys and things that were visible up there I should say it reached approximately a point at South Street.

Q. All right, Lieutenant. Go ahead. A. The altitude along here, in my opinion, was at no time more than two hundred and fifty feet. At a point up around South Street it again banked, not as sharply as the other time.

Q. What do you mean by "banked," Lieutenant? A. Well, when it would turn the wing dipped, the right wing dipped, turned around and proceeded down in this direction. Shortly after it turned, or immediately after it turned it went nose down, that is, the nose of the plane headed down, and as it came along here I saw three distinct dips. I believe the first one was on the right, second on the left, and the third again on the right.

Q. Dips of what? A. The wing of the plane. At the bottom of the last dip or immediately

thereafter the plane disappeared, that is, from my view, behind the railroad embankment.

The Court: Just a minute. The first dip was on the right?

The Witness: Yes, sir.

The Court: Then what?

The Witness: Well, during this time, of course, it was always in a downward direction.

The Court: That is before you first noticed the dip to the right?

The Witness: That is before I first noticed the dip to the right, then it was leveled off for a moment, then dipped to the left, then the last dip was to the right, and immediately after that it disappeared from view behind the railroad embankment.

Q. What was the highest point, as you observed the course of the plane from the time it took off until it disappeared behind that embankment which obscured it from view? A. The highest altitude?

Q. The highest altitude? A. I should estimate it was not at any time above two hundred and fifty feet.

Q. Have you ever done any flying, Lieutenant? A. Yes; considerable.

(Witness returns to the witness stand.)

The Court: How many hours have you flown?

The Witness: I never kept very close track. I know very well it is over one hundred.

The Court: Are you licensed?

The Witness: No, sir; never had any license.

Q. What did you say, Lieutenant—I don't recall whether I did ask you that—when he made the first turn after the take-off, what was the altitude of the plane at the moment he made the turn? A. I shouldn't think it was over one hundred feet —seventy-five to one hundred feet.

Q. And, describe the character of the turn? A. I should say that the right wing was dipped to an angle approximating forty-five degrees.

Q. In aviator's parlance would that turn have been described as a wide or sharp turn? A. Sharp turn.

Mr. George: That's all.

Cross-examination by Mr. Carpenter:

Q. Did you notice anything about the engines, Mr. Lahey? A. No.

Q. Are you sure? A. No. I think I have a recollection that they weren't revved up as completely as is sometimes done on tri-motor jobs.

Q. You told us that you didn't notice that plane until she was over your head. A. Over my head in the air?

Q. In the air. A. That's what I mean. I mean at that time.

Q. You didn't notice the plane at all before the take-off, did you? A. Not particularly, no.

Q. So whether they were revved up before she took off or not you don't know? A. I don't mean revved up in the ground, I mean revved up in the air at the time I saw the plane.

Q. You mean your conclusion as she went over your head was that the engines were not turning up to the maximum capacity? A. They weren't.

Q. That was just your conclusion, wasn't it? A. Based on my observation.

Q. Had you ever, as a pilot, operated a Ford tri-motor plane? A. No.

Q. Have you ever ridden in one? A. Yes.

Q. Where? A. On the same trip this plane took.

Q. You mean you have been in the same plane? A. No; not the same plane.

Q. Whose plane did you ride in? A. Fellow by name of Brown.

Q. You had ridden with Brown? A. Yes.

Q. The same day? A. No.

Q. Other days? A. Yes.

Q. How many times had you taken the same sight-seeing trip with Brown? A. Only once for the purpose of taking my family for the trip.

Q. What is that? A. Only once for the purpose of taking my family for the trip.

Q. Now, were the engines running? A. Oh, yes.

Q. All of them ran properly as the plane passed over your head as near as you can tell? A. All the propellers were turning over.

Q. She made a big racket as she went over your head? A. That's what I said, I don't think she made as much racket as a tri-motor Ford sometimes does.

Q. That plane as she went over your head was going at least seventy miles an hour, wasn't it? A. Yes. It would have to be. It had to do more than that.

Q. It could be going faster than seventy miles an hour even? A. Someplace between seventy and eighty.

Q. To get that speed on her take-off her engines would have to be going maximum capacity, wouldn't they? A. No. I don't think so.

Q. Now, on a take-off into the wind— A. (Interrupting) Pardon me. I don't mean by that she had a land speed of eighty.

Q. You mean air speed? A. I mean her air speed was approximately eighty miles an hour.

Q. The maximum air speed that ship had was how much? A. About one hundred and ten.

Q. In a take-off they never get that maximum capacity in a take-off within the first thousand feet, do they? A. No.

Q. So that if she was going eighty miles an hour at that time she was going full speed? A. No. I don't say she was going at full speed.

Q. That is only a matter of opinion, isn't it? A. You are asking me for my opinion.

Q. I say that is only a matter of opinion when you are on the ground without looking at the tachometers? A. Yes. I don't know what the "tachs" showed.

Q. You say you saw that plane take a sudden turn to the right? A. I said my attention was some place else for a moment and when I next looked at it she was in a sharply banked turn to the right.

Q. When was your attention distracted? A. When?

Q. Yes. A. Why, at the time that it went over my head I just glanced at it casually and looked away.

Q. Were you with somebody? A. Yes; I was.

Q. Who were you with? A. Two other men and also some children.

Q. Then your attention was attracted to something else after looking up at the plane overhead? A. Yes, sir.

Q. You didn't look at the plane for a little time then? A. It was only a matter of seconds.

Q. And when you looked again what was the plane doing? A. It was in a sharply banked turn to the right beyond the island over the highway.

Q. How close to the island was it then, the island of the highway? A. You mean beyond it?

Q. Yes. A. Oh, not very much. Fifty to one hundred feet.

Q. That was within how many feet of where you stood or where you were on the road? A. Well, one hundred and fifty to two hundred, I imagine.

Q. Were you walking or in a car? A. Walking.

Q. And you say the right wing dropped down to an angle of forty-five? A. Approximately forty-five degrees. If anything, a little less than that.

Q. That turned the ship sharply to the right? A. Yes, sir.

Q. Then you say it went parallel with route 25? A. It was straightened down and then it proceeded approximately parallel with route 25.

Q. How close to route 25? A. Well, beyond it. As far as my observation, beyond, I should say, one hundred feet or so beyond it.

Q. In other words, what you are telling this jury is that that plane followed parallel to route 25 one hundred to one hundred fifty feet from that roadway, going straight in a northeasterly direction parallel with the highway? A. Yes; northeasterly.

Q. And within one hundred to one hundred and fifty feet? A. It is very hard, Mr. Carpenter, to look at a plane in the air when you are on this side and estimate what its perpendicular axis would be to the highway. It was beyond the highway, that is, to the north of the highway a short distance.

Q. Your best judgment here is it is one hundred

to one hundred and fifty feet? A. Somewhere around that.

Q. You say it went straight on that course until it got up to South Street? A. Yes, sir.

Q. Then it made a sharp turn to the right? A. Turned not nearly as sharp as the first turn.

Q. While it was going in that direction close to that highway in that manner, did you notice any of its motors? A. I couldn't see the motors any more.

Q. Had any of them stopped in there? A. I haven't any idea.

Q. What you say is that between the time you noticed that plane pass over your head and you glanced up at it and saw it there, then you said your attention was distracted by the people you were with, or the children you were with— A. Yes.

Q. —and you looked around again you said it was a matter of seconds? A. Yes, sir.

Q. How many seconds would you say it was? A. Just a matter of two or three seconds.

Q. It might have been five seconds? A. No; I don't believe so.

Q. Then when you looked up the plane had its right wing down in making the sharp turn? A. Yes.

Q. Do you know a lawyer in Newark by the name of Zimmer? A. I do.

Q. Frank Zimmer? A. Yes; very well.

Q. Didn't you have a talk with Frank Zimmer before that trial in Judge Dungan's court in Newark in Mr. Zimmer's office? A. Yes, sir.

Q. Didn't you say to Mr. Zimmer that you saw the start of that flight of the plane but you didn't look at it again until you saw it go down behind the railroad embankment? A. No. I didn't say that to Mr. Zimmer.

Q. Or anything like it? A. No.

Q. Nothing like it? A. Nothing like it, no. I will tell what I did say if you want.

Q. You say that when that plane turned to the right after getting up in the neighborhood of South Street the plane dipped three times? A. Well, that wasn't around South Street. That was on the path after it turned until the time it disappeared which is a matter of several hundred feet.

Q. Oh, was that while the plane was going down? A. As the plane was nosing, yes, towards the railroad tracks.

Q. It was after it had turned east and was going down wind that you say it dipped three times? A. Yes, sir.

Q. Once to the right; once to the left; and then again to the right? A. Yes.

Q. Were those such turns that you could see them from where you were away down there at Port Newark? A. They weren't turns.

Q. Or, dips, rather. A. They were dips or defalcations of the wind.

Q. You could see them from where you stood at the airport? A. Sure, easily.

Q. How many feet were you from the plane then? A. I should say that is probably half a mile.

Q. Did you see the beginning of the turn that this plane took that you said was right close to the airport? A. No; I didn't.

Q. The plane was well under—the turn was well under way at that time? A. My attention was attracted to it by an ejaculation made by somebody else.

Mr. Carpenter: That's all.

(Witness excused.)

JAMES H. SCARR, called as a witness on behalf of the plaintiffs, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. George:

Q. Doctor Scarr, what is your occupation? A. I am in charge of the office of the United States Weather Bureau in New York City.

Q. Were you in charge of the United States Weather Bureau in March, 1929? A. Yes.

Q. Have you the official records of the United States Weather Bureau respecting weather conditions in the vicinity of Newark airport as of March 17, 1929? A. I have the record of weather conditions at the weather bureau station in New York and some other points. The station in New York is, I believe, the nearest first order weather bureau station to the Newark airport. There is also a station at Sandy Hook, but that is some distance further way, I believe, than our station.

The Court: Well might I inquire in an effort to shorten time, is there any dispute as to what this weather report may show?

Mr. Carpenter: No, of course not. The only difference is we want to bring out his observations were taken from the top of the Whitehall Building in New York within the sweep of all the winds from Newark Bay and Hudson River.

The Court: That could be brought out on cross-examination.

Q. First of all, may I ask, doctor, how long you have been connected with the weather bureau? A. Since 1898. I have been in charge of the New York station since 1909.

Q. Would the station of which you are in charge have the official records as to the weather conditions which obtained in Newark on March 17, 1929? A. Yes. Not, of course, from any records made in Newark, but conditions that day were so steady and settled that they extended far beyond the area including Newark.

Q. Then it is your judgment, doctor, that the records even taken by you in New York City, which is the location of your office, would apply to Newark as well? A. Practically, yes; some of them exactly; some of them not quite exactly.

Q. Now, what are those records, official records, as of that day respecting the weather conditions? A. It was a clear day. There were no clouds that day. The sun shone all day. The wind was steady from the northwest. That means if you were looking northwest you were facing the wind. Those two elements are quite certainly the same as they were at Newark on that day. The wind from the northwest averaged on that day 31.9 miles an hour. Now, at the Newark airport the average may have been slightly less, but not materially different. The highest wind velocity at that day on the New York station was at the rate of forty-five miles an hour from the northwest and that occurred during the five minutes—beginning four minutes past four p. m.

The Court: That is at forty-five miles an hour?

The Witness: Yes, sir.

The Court: At five minutes past four?

The Witness: Four minutes past four in the afternoon. There may have been some difference in the maximum velocity occurring at Newark and it may have occurred at some other nearby period because it is some

distance from here over to Newark and the exact time might differ slightly and the exact speed might differ slightly.

The Court: I think you said it was a steady wind?

The Witness: It was a steady wind, yes.

Q. Doctor, could you give us the approximate wind velocity as of five o'clock of that day? A. I can't give it to you exactly at five o'clock. I can give you the mileage run per hour of the day and I can give you the time of the day during each hour of the maximum velocity and its force.

Q. Well, let us have that record as of five o'clock as nearly as you can give it to us. A. Between four and five p. m. there were recorded thirty-nine miles of wind run, that is, thirty-nine miles of wind passed the station at four minutes past four. The maximum velocity at that hour, already given you, is forty-five miles from the northwest. Between five and six the wind was northwest. There were thirty-four miles of run with a maximum velocity of thirty-nine miles from the northwest at four minutes past five. That is the closest to five o'clock on that particular day.

The Court: Well, now, as an expert could you give us an idea as to whether or not a maximum of forty-five miles an hour is considered a mild wind, high wind, or how would you designate it?

The Witness: It is a gale. It is a fresh gale. It is not a moderate wind, it is a strong wind.

Q. Could you tell us whether it was steady or bumpy weather as far as you are concerned? A. It was what we call steady weather. It is not par-

ticularly gusty, and gustiness is what produces ordinarily what is known as bumpy weather. In other words, it was blowing along pretty smoothly at nearly the same rate.

Mr. George: That's all.

Cross-examination by Mr. Reed:

Q. You are not a doctor, are you? A. Sir.

Q. You are not a doctor, are you? A. No.

Q. You are called "professor," if I remember right? A. You call me anything you like as long as you smile.

Q. Well, I have smiled at you before? A. Yes, sir. I am not a doctor of medicine. I have no doctor's degree from any college, if that is what you refer to.

Q. These records are taken from the top of a flag pole over the top of a building over in New York, are they not? A. No.

Q. Tell us where. A. They were taken from the top of the tower on top of a building at 17 Battery Place, New York. That is at the tip of Manhattan Island facing Battery Park and the North River.

Q. So that a northwest wind would strike your recording instrument after a mile trip across the Hudson River? A. Yes, sir.

Q. And the height of that tower is some three to four hundred feet above the river level, is it not? A. Four hundred and fifty feet, to be exact.

Q. Four hundred and fifty feet above the river level? A. Yes, sir.

Q. So this steady, strong wind had to sweep across the Jersey meadows and across the Hudson River to strike the recording instrument four

hundred and fifty feet high at Battery Park, New York City? A. Yes.

Q. And the only time that it reached forty-five miles an hour was for five minutes at four minutes after four on that day? A. Right.

Q. I take it that you have a recording instrument that records the maximum wind and the minimum wind per hour, have you? A. No. We have an instrument that records the wind in miles. A mile at a time is spaced off and recorded so that we call the maximum velocity the average for any five minute period in an hour, and the minimum velocity while not recorded beyond the record itself would show you the longest time it took to make a mile and that, I suppose, would be your minimum velocity.

Q. That's my next question. What was the minimum velocity between four and five? A. I haven't the record here. That would have to come from the original record from the instrument. It is not entered here.

Q. You have given the maximum? A. Yes, sir.

Q. And you have given us the average? A. Yes.

Q. I suppose you take the maximum and minimum and divide them in half? A. No, not by any means. The minimum is whatever it took, that is, the longest period it required to record a mile and that is made by the instrument, the original record of which I have not here, which is a record as transcribed in the terms I have given you from the sheet that comes off the register.

Q. Then you can't tell us what the minimum velocity of the wind was from four to five? A. No.

Q. What was the average velocity of the wind from four to five? A. For what?

Q. Four to five. What was the average? A. Thirty-nine miles.

Q. Didn't hear you, professor. A. Thirty-nine miles.

Q. In making that average have you taken the maximum you have not— A. (Interrupting) That was the number of miles actually running past our anomometer and it ranged from something less than thirty-nine miles, which I can't give you, to a high of forty-five miles.

Q. You don't say that there was a forty-five miles an hour wind at five o'clock, do you, or at five minutes to five? A. No.

Q. I am interested in what the wind was about five minutes to five. Can you tell me that? A. No; not exactly.

Q. Can you tell me what the wind was at ten minutes to five? A. No.

Q. Or, can you tell me what the wind was at one or two minutes after five? A. No; not exactly.

Q. Then, what was the average wind velocity from five to six? A. Thirty-four miles.

Q. Then would you say the wind lessened in degree from that period of time, four minutes after four, down to the period of time, five to six? A. It decreased at times and increased at times.

Q. How much it decreased in particular five minutes to five you can't tell us? A. No.

Q. But the average of the wind that day was 31.9? A. Right. For the whole twenty-four hours.

Q. Have you the records of Hadley Field, New Jersey? A. Sir?

The Court: Hadley Field. Have you the record?

The Witness: No. There was no record kept there by the weather bureau at that time. There is a new airway station that does keep a record of wind velocity. That has been there about a year.

Q. There was a record kept of the wind velocity at Hadley Field, was there not, on the 17th of March, 1929? A. Not to my knowledge.

Q. I am not speaking of Port Newark. I am not speaking of Newark. A. Oh, at Hadley Field.

Q. Hadley Field, I said. A. Yes; there was some sort of wind record—pardon me. In answering your other questions I referred to Newark.

Q. Perhaps you don't know the terrain. A. There was an airway station at Hadley Field, I believe, that made a wind record, but whether they made a record of it I don't know. They had a wind measuring instrument there.

Q. That was a government station at that time? A. It was, yes, sir.

Q. Making records of the wind movement for the purpose of aeroplanes? A. I told you they had an anomometer there to observe the wind velocity but I don't know whether they made a record of it or not.

Q. In any event, you haven't such a record here? A. I haven't such a record here.

Q. Have you a record of any other place other than this four hundred and fifty foot high instrument that caught the sweep of the wind across the river? Have you any other record? A. I told you we have a record from Sandy Hook.

Q. Have you got it here? A. Yes, sir.

Q. How many miles away is that? A. Well, that is twenty miles right south of the New York

station, and that, with the Newark airport, makes somewheres near a triangle, I suspect.

Q. How close is the Hadley Field station? A. Hadley field is probably twenty miles from Newark or thereabouts, maybe a little further and it is west and a little south.

Mr. Reed: That's all.

Re-direct examination by Mr. George:

Q. What were the Sandy Hook's records, Doctor, for that day? A. Sandy Hook shows a perfectly clear day, with a steady northwest wind. Its average velocity for the twenty-four hours being 25.5 miles, and its maximum velocity at the rate of thirty-six miles an hour from the northwest at 3:16 P. M.

Q. Is there any evidence in your report, Doctor, as to whether or not there was any gustiness of the wind on that day? A. Well, I have said there is, of course, some gustiness in all winds, but this was a pretty smooth running wind.

Re-cross examination by Mr. Reed:

Q. You said the highest registered at the Sandy Hook station was thirty-six miles an hour maximum? A. Thirty-six, yes.

Q. What was it about five minutes before five? A. The nearest to that is 5:20, and the next nearest is 4:36. At 4:36 it was at the rate of thirty-four miles, and at 5:20 the rate was thirty-three miles, and, of course, there was no higher velocity than thirty-four between those two periods.

Q. That is, between 4:36 and 5:20? A. Right.

Q. The highest velocity was thirty-four miles, and the later period was thirty-three miles? A. That's right.

By Mr. George:

Q. Considering the course of the wind—when I say "course" I mean respecting the points of the compass—with the maximum of forty-five miles at your station, where would the velocity be likely to be greater, Port Newark or Newark Airport or Sandy Hook—considering the course of the wind? A. Well, at the same elevations there would be practically no difference, I should think, but the Sandy Hook measurement is made at approximately one hundred feet above the ground.

Q. And the time—as I look at it—it takes the wind going towards Sandy Hook. Is that it? A. I thought I covered that earlier. There might be a slight difference in the time of the occurrence of high velocities at different stations.

By Mr. Reed:

Q. That high velocity you spoke of was around four o'clock from your Bowling Green station? A. The highest velocity, yes.

Q. Now, at the Sandy Hook station, which is one hundred feet above the ground, we have the highest velocity of thirty-three or thirty-four miles from 4:36 to 5:20? A. Yes.

By Mr. George:

Q. Is thirty-six miles velocity considered a strong wind? A. Yes.

(Witness excused.)

HENRY ROSENTHAL, called as a witness on behalf of the plaintiffs, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. George:

Q. Mr. Rosenthal, what is your occupation? A. I am an attorney.

Q. Attorney at law? A. I am.

The Court: Are you another flier?

The Witness: Embryo flier.

Q. Mr. Rosenthal, were you at the Newark Airport on March 17, 1929? A. I was.

Q. Did you go up in a plane? A. I did.

Q. What plane was it? A. A tri-motor Ford plane, left at 4:30.

Q. Did you take a ride? A. I did.

Q. Were you alone? A. I wasn't.

Q. Did you pay to get a ride? A. I did.

Q. How much? A. I think it was five dollars.

The Court: Will you just pardon me. I didn't get the drift of this. He had flown this same plane.

Mr. George: The same plane. He hasn't said the same plane, but I am about to connect it up.

Q. Do you know whether the plane you rode in was the one involved in the accident? A. That's right.

Q. How long before the accident did you take a flight? A. The one before it.

Q. How many minutes before this last flight was it that you took the hop? A. We left at 4:30 and came back approximately ten minutes of five.

Q. Do you know what time the plane went off on its last trip? A. Well, as soon as he unloaded the passengers at that time, took a new set of passengers and then took off.

Q. How much time did that consume approximately? A. Oh, I should say four or five minutes.

Q. How many passengers went up in the plane with you? A. There were sixteen.

The Court: How many passengers?

The Witness: Sixteen. I think there were approximately sixteen.

The Court: You mean besides the pilot?

The Witness: Besides the pilot and the party that was sitting with him in the front.

Q. Was there a seat in the plane for every passenger? A. There wasn't.

Q. Where did those who didn't have seats sit, if they sat? A. Why, the plane was fully occupied with the exception of one young lady who sat on her escort's lap.

Q. Where did you sit, Mr. Rosenthal? A. At the rear on the right hand side.

Q. Were you on a regular seat? A. I wasn't. I was more or less on a board that we sat on in back of the seat. On a board.

Mr. Carpenter: A bench?

The Witness: On a bench.

Q. Do you know who operated the plane on that trip? A. I found out later who the pilot was.

Q. Who was it? A. A party by the name of Foote.

Q. Lou Foote? A. That's right.

Q. You saw him again after the accident, didn't you? A. No; I didn't.

Q. Didn't you ever see him again? A. I didn't.

Q. Not since the accident. Can you describe your trip on that flight, particularly referring, of course, to the manner of your plane taking off and what happened on the course of the trip? A. Well, when we took off—rather, just before we took off the pilot had the three motors going, I should say, very fast, then he let them idle again, slow down, approximately half a minute to a minute, then started them up again and then we took off.

Q. Now, will you describe the take-off? A. I think I just did describe the take-off to you. We came up the runway up, I should say, passed the state highway route 25, I think it is, turned to the right, went a short distance in that direction and turned to the right again and headed over towards New York.

Q. Now, there wasn't anything eventful as you went over New York, was there? A. While we were going over New York?

Q. Yes. A. Not at that time.

Q. Now, on your return was there anything unusual? A. Well, it seemed unusual to me in that the ship would seem to drop a little bit and then go ahead and drop some more and then proceed further. I guess the terminology is it was bumpy.

Q. What kind of a day was it? A. It was a clear day.

Q. Respecting wind, what was the weather? A. I considered it rather windy.

Q. Was it steady or bumpy,—speaking of the wind, of course? A. Well, the only way I can answer that is by saying—well, when we took off it seemed to be steady riding and coming back it was just the reverse, it was very bumpy.

Q. Now, when you approached the airport on your return, did anything unusual occur? A.

Yes; my attention was called to the fact something was wrong with the motor of the plane.

The Court: Where was this?

The Witness: Coming back on the trip I had taken.

Q. Somebody called your attention to the fact that there was something wrong with the motor, is that what you said? A. That's right, with the left motor, to be exact.

Q. Beg pardon? A. With the left motor, to be exact.

Q. Your attention having been directed to that, what personal observation did you note or make? A. I made a remark it was "a hell of a time to be kidding about it."

The Court: What did you see?

The Witness: I saw nothing in particular at that time.

Q. You were up in the air at the time? A. I certainly was.

Q. Now, when your attention was called to this incident, did you notice anything peculiar or unusual in the course of the plane? A. Well, it was at that particular time that it was bumpy.

Q. Yes. A. That's all that I noticed that was unusual.

Q. Were you able to hear the motors functioning? A. Well, three motors were functioning at that time.

Q. Do you know whether there was any difference in speed or revolutions of either of the motors? A. That I couldn't answer.

Q. Then as you were approaching the completion of your flight or hop coming back to the air-

port did anything unusual occur? A. I can't recall.

Q. What kind of a landing did you make? A. Well, it seemed to be a fairly good landing, what I knew about it.

Q. Now, did you have to have——

Juror Number Five. Who called his attention to the fact the motor was not functioning properly?

The Witness: A gentleman sitting in the second seat in front of me. In other words, I think it was the fourth seat back on the right hand side.

Juror Number Five: Did he have any knowledge of aeroplane motors you know of?

The Witness: I can't say.

Juror Number Five: Was he a passenger?

The Witness: He was.

Q. You don't know whether he had knowledge or experience on motors or not? A. I don't.

The Court: You told us in the beginning of your testimony you noticed that it dropped a little and then went ahead and then dropped some more?

The Witness: Yes, sir.

The Court: That occurrence was before or after your attention was directed to the motor?

The Witness: Just about the same time.

The Court: How far from the landing was that, approximately?

The Witness: The pilot was descending at that time, coming into the airport.

Q. After the thrill, Mr. Rosenthal, of having some suggestion about a bad motor called to your attention while you were up in the skies, and having landed, did you immediately leave the airport or did you remain there? A. We started to leave the airport.

Q. Did you leave the airport before the same ship went off on its fatal or last trip? A. No; we didn't.

The Court: Did you see the accident?

The Witness: We saw the plane fall.

Mr. Carpenter: It didn't fall; it came down.

The Witness: I saw the plane coming down.

Q. Now, Mr. Rosenthal, will you describe the course of the plane on its last flight so far as you were able to observe? A. I didn't notice the take-off of the plane on its last flight, but I did notice it when it was parallel to the state highway just before it made a turn to the right.

Q. You mean the first or any other turn? A. The last turn.

Q. Can you describe on this map, please, about where the last turn was? (Referring to the West map.) Here is your airport here. A. Approximately over here (indicating).

Q. Indicating route 25. About how many feet —inches southwest or southeast? How many inches would you say? A. It was past the railroad track. That's about the only way I can determine that.

The Court: Louder.

The Witness: It was past the railroad track.

Mr. Carpenter: Where is the railroad track?

The Witness: The Lehigh Valley Railroad track.

The Court: Beyond it?

The Witness: Beyond it, from the airport.

Q. That is the Lehigh Valley? (Indicating) A. Yes.

Q. You say it had not gotten to South Street? A. That I couldn't say, but it was beyond the railroad track right down here at the airport.

Q. Could you tell about how far beyond the railroad track? A. I can't say that.

Q. Can you tell approximately how high the plane was when it made that turn? A. In my opinion I should say about two hundred—two hundred and fifty.

Q. As it was making the turn?

Mr. Carpenter: That was over the highway?

The Witness: About that, back over the highway.

Q. Over the highway or over the railroad? A. Parallel with the highway.

Q. This is the state highway going towards Kearny (indicating). A. That's north?

Q. Yes. A. The plane was going in a northerly direction at the time and coming up this way (indicating).

Q. What was the highest altitude you ever saw that plane attain? A. Approximately two hundred, two hundred and fifty feet.

Q. Above what? A. Above the ground, in my opinion.

The Court: I didn't quite hear that.

The Witness: About two hundred, two hundred and fifty feet above the ground.

Q. You saw the turn, did you? A. I did.

Q. What was the altitude of the plane at the time it was making the turn? A. Just about the same altitude.

Q. Then which course did it take? A. Turned to its right and came down in this direction.

Q. Then what happened? A. I noticed the plane disappear beyond the railroad tracks.

Q. Did it gain any higher altitude after it had completed the turn and started southeast? A. Not that I was aware of.

Q. What I am trying to bring out, Mr. Rosenthal is: You said when it made the turn and in fact at no other time had it gained an altitude of higher than two hundred and fifty feet? A. I couldn't say that, because I didn't see the plane again until it reached this particular point.

Q. At no time had the plane gained an altitude in excess of two hundred and fifty feet as you saw it? A. That's right.

Q. You saw it while it was making the turn? A. Yes, sir.

Q. It was turning southeast? A. Yes, sir.

Q. After it had completed the turn, which you say was at an altitude of two hundred and fifty feet, had it, from that point on until it disappeared from your view, increased its altitude or decreased altitude? A. Just after it made the turn?

Q. Yes. A. It started to decrease.

Q. Did it get up any higher than two hundred and fifty feet? A. Not in my opinion.

By the Court:

Q. While we are waiting, had you been up in aeroplanes before you made this trip this day? A. That was the first trip.

Q. Can you tell whether it was a wide turn or sharp turn? A. That's difficult for me to say. I couldn't answer that.

Q. You are not an aviator, are you? A. I am not.

Cross-examination by Mr. Carpenter:

Q. Mr. Rosenthal, you said that when this gentleman in the plane—what remark did he make to you? A. He said, "There seems to be something wrong with the left motor."

Q. You looked at the motor then, didn't you? A. I didn't pay any attention to it.

Q. Was he kidding? A. I don't know.

Q. You don't know the name of the man? A. I don't.

Q. Or where we can find him? Did you ever see him again? A. I never did. That's the first and last time.

Q. You say then the plane was gliding right in the airport, coming down? A. The plane was coming down at that time, yes.

Q. How close to the airport was it? A. I couldn't say.

Q. Well, give us an idea. A. I don't know.

Q. Was it close to the ground coming in? A. No. It was just about as the pilot had started to descend.

Q. Do you know in the operation of such planes that when they start to descend, to glide down to an airport they pull back the throttle and slow down the engines? A. The motors were slowed

up a little bit right after this gentleman had made the remark to me.

Q. You didn't discover from your observation anything the matter with the motors, did you? A. I didn't.

Q. Now, when you went off on your flight, the flight you were on—strike it out. After you took a look around and looked at the two motors and you say you were descending for the airport, then you made this remark to this friend of yours "It is a fine time to be kidding about it"? A. I don't quite get your question.

Q. I say, it was after you say you were descending and saw the motors were functioning all right you said to this man, "This is a hell of a time to be kidding about it"? A. It was just about the beginning of the descent he made the remark to me and I answered him.

Q. You remember that flight very well, don't you? A. Quite well.

Q. You had never been on one before? A. Never.

Q. Now, on your flight did you notice that the plane after leaving the airport made a big wide swing around here over the railroad tracks and over these buildings and big factories in Newark? A. In Newark?

Q. Yes. A. No.

Q. The edge of Newark? A. No; it didn't, to my knowledge.

Q. Whereabouts did the ship turn on the flight you took? A. Approximately the same distance that it turned in the flight I just described.

Q. In other words, on the flight you took the plane took about the same course it took on the last flight? A. That's right.

Q. In other words, as far as you could tell there was no difference between the course taken on the

last flight of the plane than the one before that turned out all right? A. It was approximately the same.

Q. The only thing that you can describe about that trip that you took was that when you were in the air it was a little bumpy? A. That's right.

Q. Did the plane take off—when it took off and left the ground it was an almost imperceptible lift off the ground, wasn't it? A. Well, because of the fact I had never been up in a plane before I suppose I did feel it. It wasn't imperceptible as far as I was concerned.

Q. In other words, you were paying attention and you knew when you left the ground? A. Yes, sir.

Q. It was a gradual lift off the ground? A. Yes, sir.

Q. When you came back and when you touched the ground, it was a very gentle contact, wasn't it? A. Yes, sir.

Q. You have no complaint to make of the take-off or the manner of the take-off or the landing or the manner of the landing? A. I have no complaint, except on the take-off I did notice something which seemed a little peculiar to me.

Q. What was that? A. The fact the pilot had his motors going full force and let them idle and started them going while we were on the ground before the plane moved.

Q. The fact he revved them up to full capacity and shut them down? A. Yes.

Q. That was new to you? A. It was all new to me.

Q. You have since learned the fact that is always done in the starting of a plane? A. I have not.

Q. On these big tri-motor planes you don't know they rev them up that way? A. I don't.

Q. On this flight that you took you went over the meadows, over Jersey, and over to Central Park, New York, didn't you? A. Yes, sir.

Q. You said that there was on that plane on that trip sixteen passengers? A. I said sixteen, assuming that there were six chairs on each side of the plane. I didn't count the number of chairs.

Q. Every seat was occupied? A. Every seat was occupied.

Q. And one person additional? A. That's right.

Q. That was the lady that had the pleasant ride on the lap of her escort? A. Her escort.

Q. So that there were sixteen all together in the plane? A. There were three of us sitting on a bench on the rear on the right-hand side.

Q. That's sixteen all together in the plane? A. Excluding the pilot and the other gentleman with him.

Q. That's sixteen? A. Making eighteen souls aboard. Making eighteen in all.

Q. And the plane rose perfectly all right? A. I don't know how "all right" it was, but it did rise.

Q. On that trip you went over Central Park, New York? A. Yes, sir.

Q. And you came down straight over Manhattan Island? A. Yes, sir.

Q. Over the tall buildings? A. Yes, sir.

Q. And over the Battery? A. Yes, sir.

Q. Swung around over the Upper Bay? A. Yes, sir.

Q. Over the Statute of Liberty? A. Yes, sir.

Q. And back to Newark? A. Yes, sir.

Q. About how high an elevation were you going over New York? A. I don't know.

Q. And the plane all that time rode on an even keel? A. Yes, sir.

Q. Lou Foote was piloting it? A. I imagine it was the same one.

The Court: Do you know where the tracks of the Central Railroad are there near the airport?

The Witness: I think I do.

The Court: You know where the Lehigh Valley is?

The Witness: Yes, sir.

The Court: You know where State Highway Route 25 is?

The Witness: Yes, sir.

The Court: At any of those points there on the trip you made in that vicinity and over these objects, can you say whether or not the plane at that time when you were in it was at a higher or lower altitude or at the same altitude at the same point when the fatal accident occurred?

Mr. Carpenter: The last trip?

The Court: The last trip.

The Witness: While we were going parallel with the state highway we were approximately the same height. As soon as the pilot made the turn he started to the right heading towards New York and the plane started to climb. Therefore, at that point it was higher on the trip before the fatal trip than the fatal trip.

Q. In other words, up to the point she started to come down on the last trip they were both about alike? A. Where the ill-fated plane started to drop, our plane started to rise.

Q. After he turned for New York? A. After he made the last turn, yes.

(Witness excused.)

CHARLES A. HENNESSY, called as a witness on behalf of the plaintiffs, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. Coolahan:

Q. Mr. Hennessy, where do you live? A. Where do I live? 137 Kensington Avenue, Jersey City.

Q. On the 17th day of March, 1929 were you in the vicinity of the Newark airport? A. I was.

Q. Did you at that time observe any of the planes taking off? A. I observed the plane's flight from the time shortly after it left the ground.

Q. I beg your pardon? A. I was watching the plane's flight from the time shortly after its wheels left the ground until it disappeared behind the railroad.

Q. Did you observe the plane that was involved in this crash? A. I did.

Q. And where were you at that time, Mr. Hennessy? A. I was on Port Avenue.

Q. What? A. Port.

Q. Port Street? A. Port Street, the road that runs alongside of the airport.

Q. Who were you with at that time? A. Mr. Eugene Donohue.

Q. Now, Mr. Hennessy, have you ever done any flying yourself? A. Yes, sir; I have.

Q. Where? A. I was a student in the Army Flying School at Brooks Field 23 and then for part of the course at the flying school at Kelly Field.

Q. I beg your pardon? Where? A. I finished the flying school at Brooks Field, Texas. That is the army primary flying school. From there I went to Kelly Field, which is also in San Antonio, Texas, for the advanced flying course.

Q. Previous to your going to Kelly Field, where were you? A. I went to Brooks first and then to Kelly.

Q. Previous to going to Brooks where were you? A. I went to West Point.

Q. Are you a graduate of West Point? A. I am.

Q. Do you hold any rank? A. Not now.

Q. Did you hold any rank at that time? A. I graduated with the rank of second lieutenant in the Air Service.

Q. Did you ever hold any rank in the Aviation Corps? A. Second lieutenant.

Q. Did you pilot any planes yourself? A. Yes, I did.

Q. What kind of planes? A. Mostly Jennies. That is, JN-6's, which was the army training plane at that time, and one or two rides in other kinds, like Morse DH's. When I went to Kelly Field I flew DH's most of the time.

Q. Did you make any solo flights yourself, Mr. Hennessy? A. Continuously. After four and one-half hours' instruction I made my first solo flight, and then flew practically every day.

Q. How long were you at Brooks Field? A. Brooks Field? September 15th or 18th—I forget the exact date—1923, until March, 1924. When I was graduated from Brooks Field I went to Kelly Field. I was at Kelly Field from March until late in October, 1924, but I had two months sick leave in there during the summer. I had banged up.

Q. Mr. Hennessy, how many hours of solo flying have you had? A. I can only make a guess at that.

Q. How many? A. I had—when I graduated from Brooks Field I had about forty-eight hours, official hours' flying time, instruction and solo.

Q. How many from Kelly Field? A. From Kelly Field? That's hard to say. Anywheres from two to five hours a morning. We started at 6:30 and flew to about 11:30.

Q. How many? A. Anywhere from two to five hours every morning.

Q. How long were you there? A. Kelly Field, from March until June, about June 21st; then I was in an accident and had two months sick leave.

Q. You had approximately from two to five hours each and every day while you were at Kelly Field? A. I did, yes.

Q. About forty-eight hours at Brooks Field? A. I had more than forty-eight at Brooks Field. I think I had fifty hours of solo flying at Brooks Field.

Q. Did you keep a log? A. They kept the log in the army. I haven't got the log.

The Court: Forty-eight at Brooks. How many at Kelly, about?

The Witness: I had about forty-eight hours— I would say just about forty-eight hours at Brooks Field. At Kelly Field I must have had at least that many until I had my accident.

Mr. Reed: Forty-eight at Kelly, too?

The Witness: I would say approximately. I don't know off-hand.

Mr. Reed: Have you had over one hundred or less than one hundred?

The Witness: I have had over one hundred hours in the air. I wouldn't say one hundred hours of instruction.

Q. Now, Mr. Hennessy, you say you were at Newark airport on the 17th of March, 1929? A. I was.

Q. And you observed this ship take off on its final flight? A. Yes, sir.

Q. Will you step down to the map and describe to the court and jury just what you saw and where you were standing at the time? A. I walked out Lincoln Highway until I got past the Passaic River. I turned left on Port Street which runs parallel with the Passaic River. It runs into Port Street somewhere around here, then I walked west along Port Street until I got to about right around here. The gentleman I was with, Mr. Donohue, and I were talking about flying. He had just finished asking me just how high—how far you would go before you made a turn and I told him——

Mr. Reed: I object.

Mr. Carpenter: I object.

The Court: Don't tell us that. Just what you saw.

The Witness: Well, at any rate, we were talking about flying and we were watching this aeroplane take off which was later wrecked. It took off along this runway in this direction. I was watching it from down here and it seemed to go—as it passed the hangar it seemed to be slightly higher than the hangar. It seemed to be going right down this way. To me it looked like it crossed over the triangle—a safety aisle in the road. As it did so it turned right. It went almost parallel to the state highway. It looked to me as if it was diverging slightly over it until it got to this territory. There it made a turn to the right. I wasn't watching it very closely down here, but as I remember it it made a turn in this direction. As it made its turn to the right it

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kept gradually sinking. Then I kept watching it closely. It kept sinking until the plane reached this point behind the embankment here and there were cars. I lost sight of the plane when it reached about this point. I looked over at the airport to see if there was any excitement. I didn't know whether the pilot was coming down or there was an accident. About then I decided I would run over. I started running. I ran along this road up along the state highway until I got along the point right here. I ran straight through the garbage dumps which were down there at that time and went over there.

Q. You saw the wreck? A. I saw it after the pilot had been taken away.

Q. Now, Mr. Hennessy, can you tell us, if you know, approximately how high the plane was when it made this first turn over this triangle you described? A. It made the turn—well, right around here I would say. I was looking at it laterally from down here. I would say it was about two hundred and fifty feet at the most.

Q. About two hundred and fifty feet. And it proceeded along the state highway until it got to a point as you indicated up here, then it made another turn, right turn? A. Yes.

Q. Can you tell the court and jury approximately how high the plane was when it made the second turn? A. I would say either three hundred and fifty or four hundred feet.

Q. Approximately three hundred and fifty to four hundred feet? A. Four hundred feet.

Q. Did it ever attain a higher altitude than three hundred and fifty or four hundred feet? A. No. It seemed to me to just about travel on the

same level from the time shortly after it made this turn until it made the second turn. From then on it went down. I don't think it went much higher than four hundred.

Q. Mr. Hennessy, did you observe the kind of turn he made here at this point when he made his first turn, whether it was a sharp or gradual turn? A. Well, he banked his wings over thirty degrees.

Q. You say he banked his wings thirty degrees? A. Yes.

Q. Would you consider that sharp? A. I don't know how far they are supposed to bank. I don't know how sharp a turn you are supposed to take in a fourteen passenger tri-motor. It isn't sharp for a small plane, but it may be sharp for a big one.

Q. Can you tell us, if you know, whether or not he made a sharp or gradual turn at this point below South Street? A. I think it was at least forty-five degrees. The angle of his wings was forty-five degrees. It was a ninety-degree turn.

Q. Would you say, Mr. Hennessy, whether or not that was a sharp or a gradual turn for a large plane such as this Ford tri-motor?

Mr. Carpenter: If he has ever had any experience he can describe what he saw, but as an expert I think he is disqualified.

The Court: He has disqualified himself as to the type of plane. He may give us it with the type of plane with which he is familiar.

Q. You say his wings were at about a forty-five degree angle? A. Yes, sir.

Cross-examination by Mr. Carpenter:

Q. Mr. Hennessy, how old are you? A. Thirty years old.

Q. Have you done any flying since you left Kelly Field? A. None at all, no, sir.

Q. What have you been doing? A. I am cashier for a stock exchange house in Wall Street.

Q. What is that? A. I am cashier for a stock exchange house in Wall Street.

Q. Ever since you left Kelly Field? A. No, sir.

Q. Why did you quit flying a ship? A. Well, I didn't pass my physical examination by the flight surgeon of Kelly Field. I tried to get transferred—tried to get leave—tried to get transferred to ordnance. I was transferred to the field artillery where the pay was much less and the work was harder, so I resigned.

Q. Did you graduate from West Point? A. Yes, sir.

Q. Then you got transferred to Baker Field to study flying? A. Brooks Field.

Q. —Brooks Field to study flying? A. That's right.

Q. Then after you passed your preliminary examination—that's ground work, isn't it? A. No, no. At Brooks Field you start to fly the day you go down there.

Q. Then from there you transferred to Kelly Field? A. Yes, sir.

Q. Then they put you through a physical examination and you couldn't pass it? A. I was transferred to Kelly Field. I had an accident there. I was off for sick leave for two months. I had to take an examination when I came back and the doctor wouldn't pass me.

Q. You cracked up, in other words? A. I didn't fall. I was in two accidents. I was on the aeroplane on the ground and another plane hit it.

Q. Was it because of your eye sight you were turned down? A. No. My eye sight was very good, but the doctor told me I had circulatory neurasthenia, which he said was high nervous tension.

Q. You weren't a very good judge of distance, either, when you were on the ground or in the air? A. I was a good judge of distance.

Q. In other words, they didn't license you to fly, did they? A. I didn't have to have a license then, in 1923. I don't believe so. I never heard of it.

Q. In other words, you don't have any license to fly a plane now, do you? A. No.

Q. You stood here on Port Street—or, were walking along Port Street towards route 25? A. Yes, sir.

Q. When you saw this plane take off? A. Yes, sir.

Q. Was that on her last flight? A. Yes, sir.

Q. You saw it go off into the wind, didn't you? She headed straight into the wind? A. I don't know. I thought the wind was from the northwest.

Q. It is from the northwest, and northwest is here. A. Yes; but if that is the northwest—if that map is north and south and the wind is northwest, that runway doesn't run directly into the wind.

Q. It doesn't? A. No. That isn't northwest.

Q. Did the plane go directly into the wind on the take off? A. It is hard to say. It seemed to be heading approximately into the wind.

Q. That's the way they take planes off? A. They should take off into the wind.

Q. As far as you could tell that plane took off directly into the wind that day? A. I don't know whether it took off directly into the wind that day. It was in the approximate direction the wind was coming from.

Q. Did it go directly into the wind until it got sufficient altitude to make a turn? A. I don't think it did.

Mr. George: That is objected to; they having criticized him as not being qualified as an expert. He is asking if the plane did reach sufficient altitude to make the turn.

Mr. Carpenter: Counsel is right. I will withdraw it.

Q. Did that plane go directly into the wind and then when it got a certain distance above the ground did it make a turn off to go around here towards the direction of up-town New York? A. He really made the turn while he was taking off. He was still climbing when he made the first right hand turn.

Q. How high was he above the ground when he started to make the turn? A. He was pretty low. No more than fifty feet.

Q. That's what he should do, isn't it? A. I don't think so.

Q. From the time he started to make that turn, he started to make a gradual turn to the right, didn't he? A. Not very gradual.

Q. You said a degree turn of about thirty degrees? A. Thirty degrees.

Q. It may have been thirty-five? A. It may have been thirty-five.

Q. It might have been twenty? A. Yes; and it might have been forty.

Q. It might have been anywhere from twenty to forty? A. I thought it was thirty.

Q. From where you stood you couldn't be accurate about it? A. No one could be accurate about it.

Q. You were at least a half a mile away from that plane at that time? A. No; that isn't a half a mile away, I don't think.

The Court: We will recess now until tomorrow morning at ten o'clock.

(Recess until November 24th, 1931, at 10 a. m.)

(After recess—November 24, 1931, 10 a. m.)

CHARLES A. HENNESSY, resumes the stand pursuant to adjournment.

Cross-examination (continued) by Mr. Carpenter:

Q. How far do you think the plane was away from you, Mr. Hennessy, when you were here on Port Street? A. I can't see that map very well.

Q. What is that? A. You can't see the map very well from here.

Q. Well, take a look at this photographic map, P-2. Whereabouts did you stand with reference to the Central Railroad that runs down through here? Whereabouts along here were you? A. I walked along this road.

Q. You were approximately midway of this northwest runway. Isn't the runway about ap-

proximately around this position? A. I didn't look around and fix where I was because I had no idea that anything was going to happen on that trip. I was just walking along the road and watching the planes take off.

Q. You were about midway of the airport? A. Right here (indicating).

Q. From there over to the intersection—where my finger is? A. Just about that approximate position, I would say.

Q. Put your finger again where you think you were. A. Right here (indicating).

Q. From there over to the intersection is four and a half inches—that's nine hundred feet. Then the plane went off. Was the plane straight overhead or behind you? A. I couldn't just say the plane—it must have started that way (indicating).

Q. Behind you or opposite you? A. It was in front of me, diagonally to the left, slightly to the left.

Q. Front of you to the left? A. I was walking west along Port Street and the plane took off diagonally along the runway. I first saw the plane when its wheels were just lifting off the ground. I didn't notice it bump along the ground.

Q. Did you notice whether the plane headed right straight into the wind? A. In what direction was he running?

Q. You were there. What was the direction of the wind? A. All the time I was walking out westerly it seemed to be in my face most of the time, or to the right slightly. I would say approximately northwest; not quite northwest. I think the plane headed over north head on. I couldn't say exactly whether it did.

Q. Did it head into the wind until it got altitude? A. It never did get much altitude.

Q. It got some altitude, of course? A. It got some altitude, sure, to get off the ground. I don't know whether he headed into the wind or not. He was heading approximately into the wind, then he made a turn after he was two hundred or two hundred and fifty feet off the ground, a right turn.

Q. That's the turn where you gave the angle to us? A. About a thirty degree turn. I think thirty degrees. I mean his wings were at an angle of thirty degrees with the ground.

Q. You mean by that taking the right wing as the lowest tip and the left as the uppermost tip that those wings gave an angle of thirty degrees? A. I mean the left thirty degrees above horizontal and the right wing thirty degrees below.

Q. You said yesterday it might have been a greater or less angle than that? A. Yes, of course. I can only guess at it.

Q. Did you form your estimate of thirty degrees at the time or here recently when you came to court to testify? A. No. That's my memory of it.

Q. Just your recollection of it? A. Yes. I was paying particular attention to that plane.

Q. And the plane was climbing all the time it was making that turn, wasn't it? A. Yes; a climbing turn.

Q. Did the plane continue in that large arc it was describing right around South Street? A. It wasn't exactly a large arc. He took off; he got about two hundred or two hundred and fifty feet; he made a right turn, straightened out, and he flew over in the direction of South Street. He just turned and straightened out.

Q. Could you say from where you were that that course all the way around from the Airport,

clear on around South Street, was not one continuation of the arc? A. Yes, I would. I would say it wasn't a continuation of the arc.

Q. From where you were on the road? A. Yes, sir.

Q. Did you continue to watch the plane the whole time, every second of its flight? A. Yes.

Q. Why did you do that? A. The man I was with had been talking to me about taking off. I had been telling him about the instructions I had received in the Army Flying School, so we watched the next plane taking off, and the pilot did what we were instructed not to do, so my attention was attracted to him.

Q. Did you have any conversation with this man about this flight? A. With the man I was with?

Q. Yes. A. Well, he said to me: "There you are. He didn't do it."

Q. Didn't do what? A. Didn't climb up to eight hundred or a thousand feet before the turn.

Q. You had always flown a light army plane, hadn't you? A. Jennies are pretty slow. They are slow. They are pretty heavy for their horsepower. They have a high factor of safety. They are built strongly. I have flown DeHavilands, which were the army attack planes until 1926.

Q. That's a one engine plane? A. Liberty motor in one; Hispano Suiza in the other.

Q. But one engine in each plane? A. Yes, sir.

Q. You have never flown a tri-motor plane? A. No.

Q. Or a multiple motor plane? A. Multiple motor, did you say?

Q. Yes. A. No. I have ridden in a multiple motor plane, a Martin bomber.

Q. Did you stand still watching this plane or did you keep walking along the road? A. Walking along the road.

Q. Was there traffic on the road, automobile road? A. Not very much. Of course, some cars did pass there, but most of the cars were going over Route 25.

Q. You had to watch your step when automobiles are coming along that important road. A. No. That's not used very much. Most cars along the Airport are parked.

Q. That's a narrow road? A. One of the old standard roads.

Q. About twenty feet paved surface? A. I don't know exactly how wide it is. It's a road of the old type they used to use.

Q. Where was the plane when you first noticed it when he started to come down? A. When he started to come down?

Q. Yes. A. I was looking at the plane after it made the second turn and we were watching it flying along, and talking at the same time, and we noticed it seemed to be sinking.

Q. Where was the plane when you noticed it seemed to be sinking? A. Over past Route 25.

Q. Past Route 25? A. On the other side from me.

Q. By that you mean on the other side from where you were? A. Yes.

Q. Was it up in the neighborhood of South Street? A. Maybe a little nearer.

Q. Somewhere in here? A. Right around there.

Q. Or was it beyond South Street? A. I couldn't say whether it was beyond or not. It is pretty hard to tell what spot it was over.

Q. At that point the elevated route 25 was between you and the plane, wasn't it? A. Yes, sir.

Q. And the plane was above that route 25? A. Yes; I could see it.

Q. Could you see it up against the sky? A. Against the horizon?

Q. Yes. A. I imagine I could. I saw the plane.

Q. That's where it was, wasn't it? A. You know, the horizon—sometimes a plane can be a couple of hundred feet in the air and still not see it against the horizon.

Q. It was up against the horizon over route 25? A. I don't know what connection route 25 has got. It passed route 25 the opposite side from me. I could still see it. It wasn't very high. I don't know whether it was against the sky or not. It probably was.

Q. If that plane was in your sight as you stood down here on route 25—or, down here on Port Street at approximately sea level, and route 25 is an elevated highway here and you were looking over that route 25, an elevated highway, you could see the plane in the neighborhood of South Street up in the air? It was up against the skyline, wasn't it? A. Not necessarily. I don't know. I would have to go out and look at the place again to be sure.

Q. From where you stood down here at sea level looking across elevated route 25 with that plane up in the air, you can't give us any estimate at all accurate of the distance that plane would be from the ground? A. No one can say accurately. I can approximate it. That's all I am giving. I am just giving my opinion.

Q. At that time was the plane headed towards New York in an easterly direction? A. Is that map east and west horizontally?

Q. No. Here is north here. Here is the arrow down here. There is north. At that time when you saw the plane in this position up here— A. I wouldn't say it was exactly in that position.

Q. Just a minute. At that time when you saw the plane approximately at South Street and west of route 25 tell me whether it was pointing at that time towards New York? A. Approximately it seemed to me to be going about parallel with the railroad.

Q. It was going at that time about parallel with the railroad? A. Yes.

Q. Which is going in an easterly direction, and was heading towards uptown New York? A. I don't know what part of New York it was heading for.

Q. It was going, at any rate, in an easterly direction? A. Yes; approximately parallel with the railroad.

Q. You now say at that time, according to your best judgment, it was approximately two hundred and fifty feet high? A. At what time? When it made the second turn?

Q. At the time you saw it here west of route 25 in the neighborhood of South Street? A. No. As I remember, I said it wasn't more than four hundred feet high. I said two hundred and fifty feet down at the intersection of the two roads—two hundred or two hundred and fifty.

Q. Down here? A. I said down at the intersection of route 25 and Port Street after it took off and made the first turn he was two hundred or two hundred and fifty feet high. When it made the second turn it was about four hundred feet, in my opinion.

Q. Then in that space between the interesection down here near the airport and South Street and route 25 the plane had climbed another one hundred and fifty feet in height? A. Not necessarily.

Q. It may have climbed more? A. It might not have climbed at all, because I said he made the

turn when he was two hundred or two hundred and fifty feet. I said it was a climbing turn. When he came out of that turn he might have been four hundred.

Q. Anything *might* have happened. In your best judgment that plane had been climbing all the way from the airport up here at the point you saw it at South Street and route 25? A. I think it did rise slightly, anyway.

Q. I suppose all the time when he made that thirty degree bank he was climbing? A. Yes; in the first turn he was climbing.

Q. A plane will climb right in a turn, won't it? A. Yes.

Q. Your judgment was he was climbing at the time when you saw him? A. He was starting to turn as he took off. When you take off you are climbing. As he took off he started to turn.

Mr. Carpenter: That's all.

Re-direct examination by Mr. Coolahan:

Q. Yesterday, on your direct examination, you said you said you couldn't qualify as to whether or not such a turn as you described at the altitude you described was dangerous with the type of plane that is in question in this case, namely, a tri-motor Ford.

Mr. Carpenter: I object to the question as improper.

Q. What can you say of such a turn with the type of plane you have flown?

Mr. Carpenter: I object.

The Court: Sustain the objection.

Mr. Coolahan: Withdraw the question.

(Witness excused.)

EUGENE DONOHUE, called as a witness for the plaintiffs, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. Coolahan:

Q. Mr. Donohue, are you the gentleman who accompanied Mr. Hennessy out to the airport on the 17th of March, 1929? A. Yes; I am.

Q. Did you see the ship take off on its last flight? A. Yes.

Q. Where were you at that time? A. We were on that port road.

Q. Mr. Donohue, by whom are you employed? A. The Great Atlantic and Pacific Tea Company.

Q. In what capacity? A. Engineer.

Mr. Carpenter: Employed by whom?
The Court: The A. & P.

Q. In what capacity? A. Engineer.

Q. What type of engineer are you? A. Why, practically all types of engineering.

Q. Well, had you any experience in engineering? A. Yes; I have.

Q. Where? A. Well, on construction work. I spent some time with the Public Service Corporation of New Jersey on construction work.

Q. Are you a graduate engineer? A. Right.

Q. Of what school? A. Stevens Institute.

Q. You say on the 17th of March you were walking along Port Street with Mr. Hennessy? A. That's right.

Q. You saw the ship take off? A. That's right.

Q. Will you describe to the Court and jury just what you saw? I think it would be best if you stepped down. A. (Witness describing from the survey map, P-1.) The plane took off around

here, came over to a point about here. At that point it was about three hundred feet in the air. It made a turn there, continued over to a point about here. At that point it wasn't more than four hundred feet.

The Court: Just a moment. Will you stop there just a minute?

The Witness: Yes, sir.

The Court: Now, the first point you have indicated was a turn being made, you say, about three hundred feet in the air?

The Witness: That's right; making the turn at a point three hundred feet in the air.

The Court: Right or left?

The Witness: To the right.

The Court: That point, with reference to the highway, how near to the junction of those highways was that? At the triangle?

The Witness: Yes. The best I could judge, I would say it was about two hundred feet the other side of that triangle.

Mr. Carpenter: From the center of the intersection—that's three inches from the center of that triangle.

The Witness: I wouldn't attempt to be so accurate in pointing to that spot. It was just right in there.

The Court: Now, the next point where you say the altitude was four hundred feet——

The Witness: That's right.

The Court: —was in what vicinity?

The Witness: It was in the vicinity of there (indicating).

The Court: That's between the railroad tracks and South Street?

The Witness: That's where I would estimate it to be. I was standing over here (indicating).

The Court: Yes. All right. Go ahead.

The Witness: Then the plane slowly fell in practically a straight line until you couldn't see it no more.

Q. Now, when the plane made its first turn, what sort of a turn was it, if you recall? A. I don't believe I can answer that question definitely. I can say that it wasn't an even turn. The plane didn't go away off in this direction to make its turn. It didn't swing very wide. That's all I can say to that.

Q. Was the plane, after it made the first turn, still making altitude? A. Right.

Q. It was gaining in altitude as it went along the state highway route 25? A. That's right.

Q. Until it reached the point as you have indicated somewhere in the vicinity of South Street? A. That's right.

Q. And it made another turn? A. That's right.

Q. Can you describe it to the Court and jury, Mr. Donohue, as to the type of turn it made?

The Court: Wide, sharp or medium?

The Witness: I would say it wasn't wide. Whether it was sharp or medium I couldn't really distinguish.

Q. About what angle, Mr. Donohue, if you know? A. I should say at an angle of about thirty-five degrees in the direction in which it was going.

Q. About a thirty-five degree angle? A. In the direction in which it was going.

Q. Now, as to the second turn, what sort of an angle would that be? A. I can't say to that.

Q. Was it a sharp turn?

Mr. Carpenter: Don't lead him. I object to the question as leading.

Mr. Coolahan: Withdraw it.

Mr. Carpenter: Let him tell it himself.

The Witness: I can't say whether it was a very sharp turn. I would say it wasn't wide. It didn't seem to be a wide turn.

Q. Didn't seem to be any wide turns made at all? A. That's all I can say.

Q. Mr. Donohue, what was the highest altitude that the plane ever reached during your entire observation? A. I would say not more than four hundred feet.

Q. And at what point did it reach that altitude of four hundred feet? A. I would say just about as it made this turn.

The Court: The second turn?

The Witness: The second turn.

Cross-examination by Mr. Carpenter:

Q. You take a look at this aerial map. Maybe that will be better. You are looking down on the ground in this one. How, whereabouts on this map—assuming that's the ground—whereabouts on the ground were you standing or walking? A. Is this the take-off here?

Q. This is the take-off straight over about here. A. I think we were standing right about here.

Q. Pointing to—put your finger there—seven inches from the intersection? A. Right.

Q. Now, then, you saw the plane after it took off on this runway and came out here over this meadow? A. That's right.

Q. And then turned right? A. That's right.

Q. Now, then, where did you say that the plane was when it started to make that turn, started to turn? A. To the best I could judge, it started turning about here and it made its turn like that.

Q. You point to a little white speck, do you? A. No. I point right about here. I say it was just the other side of the road. Just exactly out how far I can't say.

Q. It started about that point there, is that right? A. Where you have the ruler?

Q. Where the white speck is. A. No; I wouldn't say that. I was just the other side of the road. I would say right about there he started to turn.

Q. Right about there? A. Right.

Q. That's about an inch. Over here when you pointed to this map past the intersection you pointed to a place three inches past. A. I was roughly indicating about where the turn was. I can't indicate the exact spot.

The Court: I think, Mr. Carpenter, the question on the survey map was: He was asked where the turn was made. I think your question was where he began to make the turn.

Q. You say he began to make the turn about an inch from the intersection? A. I say he started to make the turn just the other side of the intersection.

Q. Then he made what you call a thirty degree turn—thirty-five degree? A. I should say approximately thirty to thirty-five degree turn.

Q. Now, a thirty-five degree turn starting over on this map would bring the plane how far out here over this meadow which is shown north of this intersection? How far out from that? De-

scribe it yourself here on the map. A. It seems to me it turned around this way. He then straightened out and went practically parallel to this main highway.

Q. How close to the highway? A. I can't say definitely. I would say around two hundred feet.

Q. Did he go parallel to that highway two hundred feet from it as near as you could tell all the way up to South Street? A. I believe that's about correct.

Q. But when he got here to South Street, did he go over South Street? A. I don't think so. I don't think he did.

Q. Is it your best judgment he turned about over South Street?

Mr. Coolahan: If your Honor please, he said he didn't think he turned over South Street.

The Court: This is cross-examination.

The Witness: I can't say definitely. It would seem to me it was this side.

Q. The reason you can't say definitely is because you stood down here at sea level on Port Street and it was a considerable distance from where you stood up here to South Street and you can't really honestly tell? A. That's right.

Q. Have you any idea how wide the distance is between South Street and where you stood, in a straight line? A. Why, about a mile, I guess.

Q. Now, from the point where you say the plane turned right, it then went easterly, didn't it? A. Right.

Q. Did it go on an even keel during that distance? A. I can't say definitely.

Q. You were standing there watching it? A. I would say—I was watching it, but I don't remember.

Q. Did it just seem to go straight ahead and gradually settle? A. All I remember is that it continued to drop.

Q. It wasn't a drop, it was more like a circle in its course? A. At the time he started to drop I started to run. I was ducking out of the way of the people that were in front of me. They were looking at the plane.

Q. Were there other people walking along Port Street? A. There weren't very many.

Q. Were there others? A. There were others coming out of in here some place running in the same direction we were, going straight across here.

Q. Running across the meadows? A. Running across every way.

Q. Were there automobiles running along Port Street? A. I suppose there were.

Q. You didn't have your eyes on that plane the whole time it was in that flight, did you? A. Practically the entire time. Mr. Hennessy and I were taking particular notice of it from the time we started to watch.

Q. You say, "Practically the entire time." You don't now recall whether it was "all" the time, or whether you looked at it and looked away and looked back again? A. I knew I watched it practically all the time because I was trying to get the points from Mr. Hennessy.

Q. You have never ridden in a plane, have you? A. No; I haven't.

Q. Is that the first time you had been out to Port Newark? A. No. I had been out there before.

Q. Where do you live? A. Jersey City. On the hill.

Q. From where you stood down here on Port Street looking across the elevated highway at that

plane which was up here in the neighborhood of South Street, that plane was up over the highway, wasn't it? A. Surely.

Q. Do you know that the highway up there is about twenty-eight feet above the ground? A. I guess it is about that high.

Q. Have you calculated how high—withdraw that.

Q. That plane was up against the sky then, wasn't it, from where you stood, over the highway? Looking at that plane it was up against the skyline? A. That's right.

Q. Your estimate was that plane was just about four hundred feet high. That's just a mere guess, isn't it? A. Well, it is a guess based upon a certain amount of experience in the judgment of height.

Q. Height of moving objects? A. Well, the height of moving objects and height of stationary objects. I can't see very much difference.

Q. One is changing its position every instant and the other is fixed there. A. There is no doubt about that.

Q. Have you ever ridden in a plane? A. No; I haven't.

Q. What would you say the speed of that plane was as it went parellel with route 25? A. That's pretty hard, but I would say it was around seventy miles an hour.

The Court: Are you through with the maps? If you are, you better let Mr. Donohue come back to the stand.

(Witness resumes the stand.)

Q. That's just a guess, too, isn't it, Mr. Donohue? A. Everything is more or less of a guess,

but there is a good element of truth in it when you have something to base what you are guessing on.

Q. You haven't any idea what the speed of that plane through the air was? A. Why, surely. That plane I can estimate can go over one hundred miles an hour.

Q. How do you estimate that? A. I know from experience that those planes can go over one hundred miles an hour.

Q. Have you ever ridden in them? A. No; but I have heard about them.

Q. Just what have you heard? A. What I have heard and what I have read, and what common knowledge on the subject is.

Q. How fast does it have to go in order to fly? A. I don't really know just how fast that plane has to go.

The Court: If you give him the weight of it and wind conditions, I will wager a Stevens graduate can tell you what speed you need.

Mr. Carpenter: He might be able to calculate it. I am asking about his knowledge; what he observed.

Q. You didn't notice anything about the engines? A. No; I didn't.

(Witness excused.)

RICHARD F. LANG, called as a witness on behalf of the plaintiffs, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. George:

Q. What is your occupation or business? A. Automotive business. Internal combustion engines.

Q. Will you be kind enough to speak up so these gentlemen can hear you because they are all entitled to hear what you are saying? A. Automotive business. Internal combustion engines.

Q. How long have you been engaged in that line of work? A. Since 1900.

Q. Now, will you state to the Court and jury, please, your experience respecting combustion engines and ignition and carburetors? A. Well, when the automobile first made its appearance around 1899 or 1900 nobody knew anything about it and we tried to get along as good as we could. We found out all kinds of troubles. It was new. There was no text books on it or nothing, so we had to find out by experience. As we went along we found trouble with the carburetion; we found trouble with the valves; we found trouble with the ignitions and we had to eliminate it and develop it step by step.

Q. Now, have you specialized in any particular branch of that work that you have described as being engaged in? A. Carburetion and ignition; making carburetors.

Q. Do you have anything to do with spark plugs? A. Yes.

Q. Have you made a specialty of spark plugs? A. Yes.

Q. Now, what was the history of the relation of spark plugs to combustion engines from the

beginning of those engines back from the time you started in that work, as you said, in 1900?

Mr. Carpenter: I object to that as immaterial.

The Court: I suppose he is doing this for you. He is endeavoring to qualify this witness. Is that the purpose?

Mr. George: That's all. Just for the purpose of qualification.

The Court: All right.

The Witness: Our first engines were very low speed engines. They were big and clumsy. Well, they were just about going and as we wanted more power we would increase the size or increase the motor speed. When you speeded them up you ran into carburetion trouble; you ran into ignition trouble. One relates to the other. We made different carburetors, bigger manifolds, changed the cam shaft; opened and closed the valves different.

The Court: You worked upon this type of work yourself and experimented?

The Witness: Yes, sir.

Q. Had you been connected with any large automobile manufacturers or organizations? A. I was with the English Daimler.

Q. Is that the name of the company?

Mr. Carpenter: Daimler—D-a-i-m-l-e-r.

The Witness: Daimler.

Q. Is that the well known English Daimler firm? A. Very well known.

Q. Where was the plant? A. In Coventry, right outside of London.

Q. Coventry, England? A. Yes, sir.

Q. Were you connected with the plant in England? A. I was there.

Q. What other automobile or motor companies were you connected with? A. German Mercedes.

Q. German Mercedes. Where? A. In Kahnstadt.

Q. In Germany? A. Yes.

Q. What other automobiles? A. Also in England; in London.

Q. What company? A. The Mercedes Company in London, too, England and in Long Island. Steinway.

Mr. Carpenter: Whereabouts in Long Island?

The Witness: Steinway.

Mr. Carpenter: Steinway Piano Company?

The Witness: No. Steinway, Long Island; a place called Steinway, Long Island. They have a factory over there, the American factory.

Q. Any other motor corporation? A. I was over with Rolls-Royce.

Q. Were you with Rolls-Royce? A. Yes.

Q. Where? A. In Coventry, too.

Q. In England? A. Yes. The Stearns people in Cleveland. Peerless people in Cleveland.

Q. Have you had any experience in aviation and aviation motors, Mr. Lang? A. I did.

Q. Will you please state to the Court and jury your experience with aviation and aviation motors? A. In 1910 and when the war first started we began to have ships that would fly and you could depend on them a little bit. We mostly used

pusher planes at that time. We had four cylinder motors and they wasn't fast enough.

Q. With whom did you engage in aviation work and aviation motors, if any one, at that time? A. Walter Harkness

Q. Walter whom? A. Harkness.

Q. Was he at that time a well known aviator? A. He wasn't an aviator. He was a financier. He was a millionaire.

The Court: He was a millionaire—Yale University. He is Yale University.

The Witness: He was a financier and he had a lot of planes. He brought a lot of planes over from the other side, and planes over here. He was a sportsman. He had racing cars and all. We had a little trouble with carburetion——

Q. Before you go to the trouble of that, I want to know if there were any other outstanding persons engaged in aviation with whom you were connected at that time? A. There was Hoxy and Johnson.

Q. Hoxy? A. And Johnson. Both of them.

Q. Anyone else? A. There was Glenn Curtiss.

Q. Glen Curtiss? A. Yes.

Q. He was one of the pioneers? A. He was a real man that developed that small plane, the Curtiss motor.

Q. Anyone else? A. Well, there is such a lot of them I just don't remember offhand who they were. Joe Tracey was one of them.

Q. Who? A. Joe Tracey.

Q. Joe Tracey? A. And Walter Christy was building a motor at that time, too.

Q. Now, those names you have mentioned, I take it, were men who were well known in aviation activities at that time? A. Yes, sir.

Mr. Carpenter: Walter Christy of the front drive motor?

The Witness: He built the front drive motor; then he built the aviation motor; then he had the Christy——

Mr. Carpenter: None of them ever flew, though, did they?

The Witness: No.

Mr. George: Is this cross-examination?

Mr. Carpenter: I guess I am just butting in. I know Walter Christy.

Q. Did you fly in those days? A. A little, yes.

Q. With whom? A. I was up with Hoxy and Johnson.

Q. Yes. You say a "little." Now, what connection did you have with those or any of those persons respecting aeroplanes or aviation or motors? A. At that time I was with Jack Hoxy, Edward Nicholai and myself built the H & N carburetor. It was a great improvement over any existing carburetor at that time. We made it out of aluminum, whereas the others was made out of bronze and it was light and we went to these different planes and we installed carburetors on the motors and got more power out of them.

Q. Did you ever fly a plane yourself? A. Well, I wouldn't say so.

Q. Now, what did you do or what connection did you have with the aeroplane industry at that time, back in 1909 or 1910 respecting spark plugs? A. Spark plugs? We didn't have so much trouble at the time. They came in a little later. The biggest trouble was carburetion trouble.

The Court: But at some later time you took up the development of spark plugs, did you?

The Witness: Yes, sir.

The Court: And when was that?

The Witness: Somewhere's around '14 or '15. During the war.

Q. 1914 or 1915? A. Yes. Somewhere around there.

Q. Now, did you do any test work on spark plugs as related to aeroplane motors? A. Yes.

Q. What was your experience on spark plugs—your general experience with spark plugs since 1910? A. Well, around 1910 we didn't have the compression ratios we have today and almost any plug would work. As we increased the ratios the plugs wasn't efficient and we had to build different plugs. We first had a metric plug—we first had a pipe plug, then we had a seven-eighths, then we came down to the metric plugs, making a plug that would possibly take in the entire range from low speed to high speed.

Q. Well, did you build new plugs? A. Not at that time we didn't build new plugs.

Q. Well, later? A. Later, yes.

Q. Now, did you build any plugs—spark plugs for motors engaged in high speed competition, like racing or anything like that? A. Yes, sir.

Q. Tell us about it, please, Mr. Lang. A. When we started to develop the high speed jobs?

Q. Yes.

Mr. Carpenter: I object to this man talking about "when 'we' did." I want to know what "he" did.

The Court: Your own conduct, either by direction or by actual work.

Mr. Carpenter: What you yourself did.

The Court: You yourself.

The Witness: When the motor speed started to go up around three thousand we built some racing cars and the spark plugs would fade out.

Mr. Carpenter: I move to strike it out.

The Court: He is telling us he did this.

The Witness: Then we put a smaller plug in.

The Court: You mean "you" did?

The Witness: I did and everyone else was around the plant.

The Court: You were one of the men who was experimenting? Yourself?

The Witness: Yes; and I put smaller plugs in and they were too hot, and when the motor speed got up around four or five thousand they were too hot.

Q. They were what? A. They were too hot.

Q. Won't you please speak slower and louder and more distinctly? A. Then we built—I say "we"—there was built a smaller plug, and what we did—what I did we took all the plugs apart and made different bodies; make them smaller; make them suitable to the conditions of the day and that went on until about 1925 or 1926. I met a man from Germany, he came over and he brought a German plug over with him, but that wasn't suited so I cut the plug apart and designed it different and it is being used now.

Q. Now, I ask you if you had built any plugs that were used in high speed or high power motors for racing purposes? A. Yes.

Q. What were your accomplishments in that respect? A. Well, they were good at high speed but they were no good at low speed.

Q. Well, did you build any plugs for high speed motors? A. Yes.

Q. Any particular outstanding achievement did you have in that connection? A. Yes.

Q. What? A. I built the motor and used that plug in 1926 on the 151 Fronty marine motor that won the World's championship.

Q. That was in 1926? A. Yes.

The Court: You designed the motor and the plugs?

The Witness: The motor and the plugs.

Q. Now, who built the spark plug for that World's Champion motor? A. I had designed and had built the Tiger plug at that time.

Mr. Carpenter: What?

The Witness: Tiger, T-i-g-e-r.

Q. Mr. Lang, are you familiar with present day combustion systems? A. Yes, sir.

Q. Are you still doing that same kind of work now? A. Yes, sir.

Q. Just what are you doing today? I mean, at this time? A. I have got a job now on a Hercules motor.

Q. Hercules motor? A. Yes; Hercules motor.

Q. For whom? A. I believe the job was for Dugan Brothers over in New York.

Q. Are you doing any work on spark plugs today? A. Yes, sir.

Q. Carburetors? A. Carburetors and spark plugs both.

Q. Let me ask you this question: Does the kind of work you are doing refer particularly to automobile motors or aeroplane motors? A. They are the same.

Q. Just the same. Now, have you ever written any articles on combustion, high and low

pressure, and spark plugs for magazines? A. Yes.

Q. Are you considered an authority on that subject?

Mr. Carpenter: I object.

The Court: Sustained.

Q. For what magazines or papers did you write articles on those subjects which you have described? A. Mostly for bus transportation.

Q. Bus transportation? A. Bus transportation.

Q. Now, have you done any work in your special capacity for the City of New York in your particular line? A. Last December, yes.

Q. What did you do? A. We made a test on carbon monoxide.

Q. Just what do you mean?

The Court: With reference to what particular property or value?

The Witness: Carburetion. To eliminate the carbon monoxide fumes out of the exhaust.

Q. Now, Mr. Lang, where do you live? A. Nutley, New Jersey.

Q. Where did you live in March, 1929? A. Nutley, New Jersey.

Mr. Carpenter: May I first cross-examine him as to his qualifications?

The Court: Oh, yes.

Cross-examination by Mr. Carpenter:

The Court: That is, if Mr. George is finished on that subject.

Mr. George: I am finished on his qualifications as an expert.

Q. What schools did you graduate from? A. I just went to school—as far as I could in public school—up to about 1909 or 1910.

A Juror: Can't hear you.

Q. Talk up so that jury man can hear you. A. I just went to school up to 1909 or 1910.

The Court: Common school education?

The Witness: Yes; whatever I could get.

Q. Whereabouts did you go to school? A. Up in Michigan.

Q. Michigan? A. Yes, sir.

Q. What town? A. St. Claire.

Q. What grades did you finish? A. Well, there was only one grade there when I went to school there while I was there when I was home. When I wasn't home I travelled with my father.

Q. Did you go to school longer than six months? A. Yes.

Q. How many months did you go to school all your life? A. Well, it is hard to answer because in the spring when the father went out I went with him.

Q. How many months altogether in your life have you been to school? A. About three years, four years.

Q. How many?

The Court: Three or four years.

The Witness: Three or four years, I think, in the school there in Michigan in St. Claire.

Q. That was in Michigan, was it? A. Yes, sir.

Q. Did you ever go to school in Germany? A. When we were over there, yes.

Q. Where were you born? A. I was born in Michigan, St. Claire.

Q. St. Claire, Michigan? A. Yes, sir.

Q. You said you travelled with your father? A. Yes.

Q. Did you ever go to any college? A. No.

Q. Did you ever go to any university? A. No.

Q. Did you ever take any engineering course? A. In automotive?

Q. Any engineering course.

The Court: Any.

The Witness: No.

Q. Did you ever take a course in higher mathematics? A. No.

Q. Did you ever take a course in algebra? A. No.

Q. Did you ever take a course in geometry? A. Well, I learned that with my father.

Q. You learned it with you father? A. Well, whatever goes to the business.

Q. Did you ever take a course in physics? A. No.

Q. What you have picked up yourself has been working as a mechanic, hasn't it? A. Hard work, yes, sir.

Q. Working as a mechanic? A. Yes, sir.

Q. Who are you employed by now? A. By myself.

Q. What was your last job? A. I haven't worked for anybody since 1912.

Q. What is your business? A. Automotive, internal combustion, maintenance, installing maintenance systems; teaching other people how to take care of their equipment.

Q. You have just got a shop, haven't you? A. Today? No.

Q. Haven't you got any shop? A. No, sir; not today.

Q. You did have a shop last spring, didn't you? A. I did. Well, I am going over there pretty near every other day to my laboratory over in New York.

Q. It is just a garage, isn't it? A. No, sir. It is an experimental job. It is a factory where they have carburetors to do.

Q. You say you turned a job over yesterday to somebody. Who is that? A. Dugan Brothers, the big bakery.

Q. That's a bakery? A. Yes, sir.

Q. You just did some work on their truck? A. I did some work nobody else wanted to undertake.

Q. What did you do? A. I sleeved a motor that the people said couldn't be done. I did the job.

Q. It was an old, worn out motor, wasn't it? A. No, sir. That motor hasn't run two thousand miles.

Q. What did you do? A. I put a sleeve in it, a steel sleeve.

Q. It had been damaged in an accident? A. No.

Q. Been scarred in use? A. She went through herself.

Q. Went through herself? A. Yes, sir.

Q. What do you mean by that? A. I mean that the block, the design of the block is defective and the piston let go and went through the side of the block.

Q. What make of motor was it? A. Hercules.

Q. Hercules motor? A. Yes, sir.

Q. And you did the repair job on the motor? A. I did.

Q. Where did you do it? A. I did that job out in Paterson. I did the cylinder block out in Paterson, fixed my sleeve out in Clifton in a shop and I assembled in Paterson and ground it in Paterson.

Q. What shop did you do it in in Paterson? A. Bearing Sales and Service.

Q. Bearing? A. Sales and Service.

Q. That's a garage, isn't it? A. No, sir.

Q. What is it? A. It's a shop where they build motors, where they grind blocks and have pistons, wrist pins and rings.

Q. Have you any interest in that shop as an owner?

Mr. George: I object to that as immaterial.

The Witness: None whatsoever.

Q. Were you employed to do the job? A. I went over—Mr. Dugan had a lot of trouble. I went over to see him and I told him I can fix the job and he says, "No, you can't." I says, "I can." He says, "I can't." He said the Hercules people wouldn't do it.

Q. Did he say they wouldn't do it? A. They said they wouldn't do it. They would give him a new block.

Q. You undertook to rebuild the motor? A. I rebuilt the block, not the motor.

Q. Blocks? A. One block.

Q. You did that as a machinist, didn't you, a mechanic?

Mr. George: I object to that as a conclusion.

The Court: That's certainly a conclusion.

Mr. Carpenter: I submit it is a proper conclusion I have a right to have him asked.

Q. You did that as a mechanic, as a machinist, didn't you? A. I don't know whether you call it mechanic or machinist. I did a job nobody else wanted to do.

Q. You said that you had designed a motor that won a world's championship? A. Yes, sir.

Q. What was the name of it? A. The Fronty marine.

Q. What? A. F-r-o-n-t-y.

Q. Have you any patents?

Mr. George: Objected to as immaterial.

Q. Did you ever apply for a patent?

Mr. George: Withdraw the objection.

Q. Did you ever apply for a patent? A. No.

Q. You haven't? A. No.

Q. By the way, where was this Fronty marine engine built? A. The head was built by Arthur Chevrolet.

Mr. George: Arthur Chevrolet?

The Witness: Yes.

Q. The head was built by him? A. Yes. The block is a standard model T Ford block.

Q. Yes. A. The crankshaft was built by Arthur Chevrolet.

Q. The what? A. The crankshaft, and so was the cam shaft.

Q. Crankshaft by Chevrolet and the cam shaft also? A. Yes.

Q. Yes. A. And the base was built by Mulligan and Reed.

Q. Base by whom? A. Mulligan and Reed.

Q. Who built the spark plugs? A. I used my own plugs.

Q. What was the name of the spark plugs used in the motor? A. I used Tigers. I used Tigers, Champions and A. C.s.

Q. You don't claim you invented this Champion spark plug, do you? A. Never said anything about it.

The Court: Who designed this engine you are speaking of?

The Witness: I laid out the base, and the rest of it is a standard model T Ford block.

The Court: Aside from that you designed the rest, is that what you mean?

The Witness: They had a head that was designed——

The Court: No. What we want to know is who designed this motor of which you spoke? Did you design it or did somebody else design it or did you design part of it or didn't you design any of it?

The Witness: I designed the lower part of it, the crankcase and the base.

The Court: Now, with reference to this——

Q. Did you make the drawings?

The Court: Just a minute. With reference to this Tiger spark plug which you mentioned, who designed that? A. I made the sketches for it and Mr. Moettler, who is the owner of the manufactory in Germany, finished it up.

The Court: You mean, he built it and you drew it out and he built it according to

your scale, or did you do something to it?
The Witness: Yes.

Q. Well, the Champion spark plug is a patented spark plug, isn't it? A. I don't know whether it is—whether there is any patent on it.

Q. Is the A. C. spark plug a patented plug? A. I don't know. I think it is the same. They are made by the same company.

Q. Is the Tiger spark plug a patented plug? A. It is supposed to be, yes.

Q. Who is the owner of it? A. The German Tiger Company took out the patents on it.

Q. In the United States? A. I don't know whether the United States patent is granted or not. They have made application for it.

Q. And they refused a patent on it here, is that the idea? A. I don't know.

Q. It wasn't invented by you, was it? A. Well, I don't know who made it if I didn't. I designed it and told them how to build it and what I wanted.

Q. Wasn't that spark plug patented in Germany before it was ever brought to the United States? You said this German came over here with a spark plug and you took it apart. Is that right? A. Yes.

Q. Wasn't that a patented plug when he came over here with it? A. No.

Q. How do you know? A. Because he told me.

Q. He told you that? A. Yes.

Q. Did you make any of the drawings for it? A. I didn't make the complete drawings. I gave him sketches, tore the plugs apart and built it over and we tried it out and he sent it on the other side and finished it up.

Q. You didn't finish it here? A. Yes; I finished some of them here; quite a few.

Q. I mean, the drawings hadn't been completed here, had they? A. Mr. Moettler made the drawings.

Q. You didn't make the drawings either? A. I gave him sketches.

Q. What do you mean by that? Just an idea? A. Just an idea of what should be done.

Q. You mean you just drafted it out and said, "That's the way you ought to do it"? A. That's the way, yes. Sketches and finish up the drawings according to scale.

Q. But you didn't bring the spark plugs here as your own idea? A. The plug he brought over wasn't suitable, so I changed it around so it was suitable for our motors and is suitable today.

Q. Is that sold in the United States? A. Pardon?

Q. Is that spark plug sold in the United States? A. Yes.

Q. Where? A. The Public Service use thousands of them.

Q. Tiger? A. Yes, sir.

Q. Made by whom? A. By the Tiger Spark Plug Company in Germany.

Q. How do you know? A. Well, the shipments come from there.

Q. Have you got any interest in that company? A. No; not now.

Q. Have you ever had a dollar revenue from the Public Service ever buying these spark plugs?

Mr. George: I object to that.

The Court: I hardly think that goes to his qualifications.

Q. Did you ever work for the Champion or the AC Spark Plug Company? A. No.

Q. What work did you do when you worked for Daimler? A. Just went over a mechanic in the shop.

Q. Worked as a mechanic in the shop? A. Yes.

Q. That's all? A. That's all.

Q. You didn't take any of those Daimler patents, they weren't taken out in your name? A. No.

Q. The engine they used in the Daimler, you never worked in perfecting that, did you? A. No.

Q. That was made in the United States, wasn't it? A. The Daimler?

Q. That's the silent Knight engine? A. The Knight engine was designed by Knight. When the first real commercial job was put out it was put out by the English Daimler in 1909.

Q. It was the silent Knight engine? A. Designed by Knight in the United States, yes.

Q. You didn't have anything to do with designing that, did you? A. No.

Q. Take the Peerless. You said you worked for them? A. Yes.

Q. Did you work as a mechanic in their shop? A. Mechanic and testing on the road.

Q. When you worked for the Rolls-Royce, you just worked as a mechanic in the shop, didn't you? A. Yes.

Q. All you got was so much an hour? A. Well, that didn't bother me so much. What I agreed or wanted to do was to learn the construction of the jobs.

Q. You just worked as a mechanic, that's all? A. Yes.

Q. Are any aircraft manufacturers in the world using your spark plugs or carburetors or have they ever used them? A. Not the spark plugs that I know of.

Q. Is any aeroplane that is used in the world using any carburetor that you invented? A. Not today, no.

Q. Did they ever use it? A. Some, yes, in 1910.

Q. Away back in 1910? A. Yes.

Q. Have your spark plugs been used in the Wright engine? A. I made tests on the Wright engine.

Q. Just tests. Oh. These motors you say you have worked on, are they air-cooled or water-cooled? A. They are all water-cooled.

Q. Have you ever had any experience with an air-cooled motor? A. Yes.

Q. Where? A. Franklin, and the old Knox air-cooled.

Q. Where did you work on the Franklin motor outside of a garage repairing the engine? A. Nowhere.

Q. So, the only work you have done on an air-cooled motor has been in a garage making repairs to it? A. Yes.

Q. Such as any juror might have if he had one of those cars, working on it himself, or any of us, that's all, isn't it? A. In a mechanical end, yes.

Q. Have you ever overhauled—completely overhauled an air-cooled motor? A. Not outside of the Franklin.

By the Court:

Q. What? A. Not outside of the Franklin.

Q. Are you a licensed mechanic?

Mr. George: That's objected to as immaterial.

The Court: He may answer it. I never heard of one, but there may be.

Q. You have heard of a licensed mechanic, haven't you? A. Never heard of one in my life.

Q. Have you got a government license as aeroplane mechanic? A. No.

Q. Did you ever study for one? A. No.

Q. Did you ever study for the examination required to be taken? A. Never did.

Q. Did you ever take the tests? A. Never was interested in it.

Q. Have you ever worked on aircraft motors for operators or manufacturers thereof? A. I have changed some of the——

Q. What do you mean by changing? A. I have taken the four carburetors they have used and put six, and designed an intake and exhaust manifold to get more power.

Q. Who did you do that for? A. For Gott Kaiser.

Q. Who is that? A. He had charge of the racing boats, I think it was the Century Rubber Company.

Q. Just a private job? A. Racing jobs.

Q. That's just work on a particular motor? A. On the Liberty and the Hispano Suiza.

Q. Just for a private owner in making his particular machine function better, that's all you did? A. Yes; a little more power; give more power.

Q. You didn't work with that group of engineers that developed the Liberty motor, did you? A. No.

Q. You had nothing to do with developing it? A. No.

Q. Or with developing any aeroplane motor that later went on the market as a commercial article? A. No; I would say no.

Q. All you have done is work in repairing and servicing motors such as you have described,

isn't that so? A. Repairing and servicing and getting more power out of the jobs and developing—giving better performance.

The Court: Engaged in experimentation also?

The Witness: It's all experimental work.

Q. What do you mean by "experimental work"? A. It's all experimental work to see how far you can go with a given displacement; how many horsepower you can develop with a given displacement.

Q. How do you determine the horsepower you get? A. By a dynamometer.

Mr. George: What?

The Witness: Dynamometer.

Mr. Carpenter: That's all.

Direct examination (continued) by Mr. George:

Q. Just one question. How many years of education did you have in the practical school of experience in connection with spark plugs and motors, aside from academic education in the public schools concerning astrology, astronomy or anything like that? A. Practically from the time I started in in 1900.

Q. Thirty years? A. Yes; in the factory they have classes where they teach all that stuff.

Q. How many spark plugs have you tested or examined or both in the thirty years you have been engaged in that work? Approximately, if you can tell? A. I don't know.

Q. Was it ten? A. Possibly hundreds of thousands.

Q. Now, are you acquainted with the Newark airport? A. I have been down there, yes.

Q. Had you been there prior to March, 1919? A. Oh, yes. I have been down there when they first started to build it.

Q. When they first started to build it? A. Yes.

Q. Were you there on March 17th, 1929? A. Yes.

Q. Now, of course, you learned that there was an accident there, a fatal accident, in which a plane crashed? A. Yes.

Q. You didn't see the crash, did you? A. No.

Q. When did you get to the airport on that day? A. Around seven o'clock I should say.

Q. Why did you go there? A. Well, there was a crash there. I wanted to do down and see like everybody else.

Q. And what did you see when you arrived there? A. The plane was laying over away on the other side of the ditch. There is a big dump and there is a ditch where it had been filled in, see. A little further and there is some quicksand and swamp there and the other side of that ditch was a railroad track and the plane laid up against the track and part of one wing laid in the ditch and part of it laid in the track. I went over to see what was going on.

Q. I show you a photograph P-7, Mr. Lang, and ask you if you recognize that as the condition of the plane as related to the railroad car at the time you saw the plane? A. No.

Q. What side were you standing on? A. I was standing over here. Well, here is where the plane lay. I didn't see that one. When I got there that was off.

Q. I show you a photograph P-6 and ask you if you recognize that as what you saw when you arrived there? A. No. That was over the track when I arrived.

Q. You mean it had been moved? A. It wasn't on the car any more. It was laying on the track; laying there.

Q. You came there later on? A. I came there later on.

Q. About what time? A. Around seven o'clock.

Q. Did you learn when the accident occurred? A. No. I know it happened sometime in the afternoon.

Q. Now, did you see any mechanics whom you knew to be connected with the airport?

Mr. Carpenter: I object to that as leading. I submit this witness ought to tell his own story.

Mr. George: Withdraw the question.

Q. Did you know or did you recognize any of the mechanics at the scene of the accident? A. I didn't recognize any mechanics there that I know of.

Q. Did you see any mechanics at all? A. There were people standing around. There was some mechanics there.

Q. Now, what did you do there? A. I went down and looked at the wreck. I wanted to go over it and examine it and they wouldn't let us.

Q. What else did you do, if anything? A. I stood around and I tried to get hold of some of the parts there; some of the plugs out of the motor and I couldn't get them, so while I was standing there a fellow came there that I knew, in fact, we walked part of the way in, then he went one way and I went the other and he spoke to one of the men that was working around over the plane and he brought over a carburetor.

Q. From where? A. From the wreck.

Q. Did you see him get the carburetor from the wreck? A. He came over from the wreck with it.

Q. And did you see the carburetor? A. Yes.

Q. What else happened? A. I asked him if he would get me some plugs from it.

Q. What did he say? A. He went over and got two plugs.

Q. Did you see him get the plugs? A. He went over there in front of the motor in front of the wing. I seen him standing over there and he came back with the plugs. He was doing something to the motor and took the plugs out of the motor.

The Court: Did you see him do that?

The Witness: Yes. He went over the motor. He was looking over the motor and he brought two plugs over.

Q. From the motor?

Mr. Carpenter: I object to that as leading.

The Court: He has already said he did bring them over. (To witness) Was the man who brought them over, was he the one whom you saw working on the motor where the spark plugs usually are?

The Witness: He is the same man that brought the carburetor over.

Q. What did you say he brought over to you the second time? A. Two spark plugs.

Q. Did you examine the spark plugs? A. I did.

Q. Tell the Court and jury, please——

The Court: I was going to ask whether there were any other engines there or any other machinery except this aeroplane that was down?

The Witness: I don't think so.

The Court: You were there.

The Witness: All you could see was the wreck, the back part.

The Court: This was out on the meadow, wasn't it? There were no other aeroplanes there?

The Witness: Just the one wreck.

Mr. Carpenter: It was on the railroad track, that's where it was.

The Witness: It wasn't on the meadow, it was on the track.

The Court: Well, the track runs through the meadow.

The Witness: The track runs through the meadow, yes.

The Court: No engines there or anything of that kind?

The Witness: No; it was all cleared away.

Q. You say you examined the plugs? A. I did.

Q. Tell the Court and jury what your examination disclosed.

Mr. Carpenter: I object. He is not qualified to give us an opinion as an expert.

The Court: Overruled.

Mr. Carpenter: Exception.

The Witness: The plug gap was too big.

Q. What do you mean by the "plug gap"?

The Court: The what was too big?

The Witness: The plug gap was too big.

Mr. Carpenter: I object and move that it be stricken out as a conclusion or opinion that is not justified by his qualifications.

The Court: Overruled.

Mr. Carpenter: I ask an exception.

The Court: He is clearly an expert. That's a jury question.

Q. What did you find respecting the plugs? A. I found the gap was too big and the plug, in my estimation, was not suitable for high speed on that motor. It showed——

Q. You say that the gap was too big. I don't know what you mean by that and maybe the jury doesn't know. Tell us, how big was it and why you say it was too big? What did you do in connection with your inspection or examination of the plugs? A. I looked the plugs over and I put a gauge in it.

Q. What kind of gauge? A. Spark plug gauge.

Q. Have you that gauge with you? A. Yes.

Q. Let me see it, please? (Witness passes gauge to Mr. George).

Q. What is this gauge used for? A. To give you the opening or the distance or the gap, as we call it, between the points.

Q. Between the points of what? A. Of the spark plug, or the breaker points on your magneto or distributor.

Q. Can you tell whether or not this gauge is universally used for that purpose? A. Yes.

Q. Is it a standard gauge for that purpose? A. This is a standard gauge.

Q. Is it the kind of gauge you have consistently used in connection with your expert work of inspection and testing of spark plugs? A. Yes.

Q. Now, by your examination of these spark plugs both by reason of your own observation, plus the use of the gauge, what did the spark plug show? A. The plug showed too big a gap.

Q. You have told us that before. How big was the gap? A. Thirty thousandths.

Q. Thirty one thousandths of what? A. Thirty thousandths of one inch.

The Court: Just a minute——

Q. To what extent——

The Court: Just a minute. You have already said that that was too much. What was the proper gauge?

Mr. George: I was just about to ask that.

The Witness: Fifteen thousandths is proper.

Q. Fifteen thousandths of an inch gap between the breaker points? A. Between the points of the plug.

Q. Between the points of the plug. That's a proper gap, is that right? A. Yes.

Q. And these plugs had thirty thousandths of an inch gap or twice the gap—or twice the distance of width of gap, is that right? A. Yes.

The Court: Well, what effect—what operating effect did that have? What would the difference in that gap mean?

The Witness: On high compression the resistance across the point is so great that at an excessive gap your motor will cut out.

The Court: What do you mean by "cut out"?

Q. What do you mean by "cut out"? A. It means your plugs will not function. Your spark will not jump across the gap. She will follow down across the nose of your plug to the ground or else she will jump in the safety gap.

Q. When you say the motor will "cut out", just what do you mean by "cut out"? A. She

will slow down or she will cut out entirely—go dead.

Q. Not function at all, you mean? A. She will, and she will not—she hasn't got the power. She is losing power.

The Court: In and out?

The Witness: In and out.

Q. What effect would high speed of a motor making eighteen hundred r.p.m.'s—revolutions per minute—or, rather, what effect would a thirty thousandths of an inch gap in a spark plug in a motor at a speed of eighteen hundred revolutions per minute have? A. That depends on the compression ratio.

Q. On what? A. On the compression ratio; how much pressure you got in a cylinder per square inch.

Q. I am trying to find out what effect a spark plug with a thirty thousandths of an inch gap would have on a motor which has eighteen hundred r.p.m. capacity? A. That depends on the compression ratio. The higher your compression ratio the smaller the gap has to be in order for your motor to function properly.

Q. I am speaking of an eighteen hundred capacity motor? A. Yes. Of what compression ratio? If you got a high compression ratio thirty thousandths is away too big. If you got a low compression ratio and you are running at full open throttle thirty thousandths is——

Q. Now,——

Mr. Carpenter: Let him finish. What was that?

The Witness: On a low compression motor you can give the motor a bigger gap than on a high compression motor.

Q. Do you know what kind of motors they use in aeroplanes with reference to low or high?

Mr. Carpenter: I object to that. The question is what were these particular motors.

The Court: Oh, yes.

Q. Did you see the motors or any of them on this plane which was involved in the accident? A. I seen the motors, yes.

Q. Well, were they high or low pressure motors?

Mr. Carpenter: Compression.

Q. High or low compression motors?

Mr. Carpenter: I object, unless we see how much he saw. He said he saw them. We don't know whether he saw them enough to know.

The Court: Did you get up so you could see the motors?

The Witness: I seen the motor when they were taken apart up in the Wright Aeronautical a couple of weeks ago.

The Court: The same motors?

Mr. Carpenter: How did he tell that?

The Court: That day did you observe them enough to tell what kind of motors they were?

The Witness: No. I couldn't get within seventy-five feet of them.

Mr. Carpenter: I object to the question.

The Court: Oh, yes; sustained. It has not been identified, unless the witness shows these were the same motors he later saw.

Q. Can you state whether those motors you later saw were the same motors which were involved in the crash? A. Yes.

The Court: How?

The Witness: I saw it in Paterson in the Wright Aeronautical place and that shows——

Q. Wright Aeronautical place or plant? A. In the plant, and the motors were in the plant.

Q. How do you know those were the motors that were involved in the crash? A. The engineers there were talking out there on the motors and Smith, the fellow I was with, told me they were the motors of the crash and one of the engineers came over and spoke about it.

Mr. Carpenter: I move to strike it out. We haven't been shown who Smith is or what he knows about it.

The Court: It clearly shows it was hearsay.

Mr. Carpenter: Who is this man Smith?

The Witness: Smith, a pilot.

Mr. George: May I ask permission to continue with the examination of this witness? Counsel has no right at this moment to cross-examine.

The Court: Then the Court will ask it. Who is Smith?

The Witness: Dan Smith was a pilot.

Mr. Carpenter: What was that name?

The Witness: Dan Smith was a pilot for the Standard Aircraft. I did some work for him on his motors——

The Court: Never mind. That's enough. Wait a minute. That's all hearsay. All

right. Go ahead. All we are interested in knowing is from your own observation on that day when you say you were within seventy-five feet of those motors you saw enough to know whether or not they were low compression or high compression motors. Can you tell us that? Not from what anybody told you, understand, but from your own observation and not from what you learned out at this shop.

The Witness: They were J-5's.

The Court: What?

The Witness: J-5's.

The Court: Is that from what somebody told you or from what you saw there that day?

The Witness: Looking at it I couldn't tell whether they were anything else. They were radial motors that was used on that plane. I only seen it was a radial motor taken out of the plane and that plane was a J-5.

The Court: Radial motor?

The Witness: Yes.

The Court: Is that radial motor a high compression or low compression, or don't you know, or would it depend on closer examination?

The Witness: J-5's usually run five to one compression.

Mr. Carpenter: Usually run what?

The Witness: Five to one compression.

The Court: Well, I hear you say "J-5's". How do you know or do you know that the engines in this crash were J-5's?

The Witness: I found out afterwards.

The Court: We will assume that they were J-5's because that is conceded by the other side, do you know anything about them then as to whether they were low compression or high compression?

The Witness: They were five to one. 4.9 to 1 compression ratio.

The Court: Do you know that to be so yourself or is that from what somebody else told you?

The Witness: That's the specification of the engine.

The Court: Do you know that from your own observation and on what your study and experience has been with motors?

The Witness: You can tell——

The Court: All right. I give it up.

Q. Are you acquainted with J-5 motors? A. I am fairly well acquainted with them, yes.

Q. Is that J-5 a high compression or low compression motor?

Mr. Carpenter: I object. No foundation for the question.

The Court: I don't think so. (To witness): Where did you get your knowledge, if you have any, about the compression of the J-5 motor?

The Witness: From the manufacturer's specification.

The Court: You have seen them?

The Witness: Yes, sir.

The Court: Have you examined those engines yourself?

(No answer.)

The Court: Why don't you pull this man aside and get somebody else who can tell

us whether they were high compression or low compression and bring him back and ask him the question, unless it is conceded by the other side what they were?

Mr. Carpenter: Just a minute.

Q. You say you have examined the specifications?

Mr. Carpenter: I will concede they were J-5's. We don't know ourselves whether they were low or high compression. We will concede they were J-5 motors.

Q. From your knowledge of the specifications of J-5 motors, can you tell whether they were high compression or low compression? A. Five to one is the ratio.

The Court: Is that high or low?

The Witness: That's high.

The Court: That's high compression.

Q. Now, then——

The Court: Wait a minute. With a high compression motor, one to five in the J-5, does that permit of a lower or a higher gap than fifteen thousandths?

The Witness: Fifteen thousandths? It should have fifteen thousandths.

The Court: Do I understand from that then that thirty-one thousandths of an inch would be too great gap?

The Witness: Too great a gap.

Q. For a J-5 motor? A. Yes.

Q. Now, then, with the J-5 motor in high speed what effect upon that motor would a thirty thou-

sandths gap have on the function of the motor? A. At high speed the motor will cut out.

Q. When you said "cut out" before, what did you mean by "cut out"? A. Go dead and slow down.

Q. Have any power left? A. If she still revs on she has got some power.

Q. I am not talking about revving on, I am talking about high speed. When you throw the throttle open for high speed with a thirty thousandths gap in the spark plug will those motors function? A. They will for a short time.

Q. Then what will happen? A. She will cut out.

Q. So long as you keep the throttle open for high speed she will cut out, is that what you mean? A. She will slow down, yes.

Cross-examination by Mr. Carpenter:

Q. Now, the gist of your testimony is, as I understand it, that on these particular engines, Wright J-5 engines, with a gap in the spark plug of thirty-one thousandths of an inch the motor will run all right for a short time? A. She will.

Q. What do you mean by "short time"? How long? A. With the proper plug in it——

Q. No. With this particular plug of thirty-one thousandths of an inch gap between the two electrodes of the spark plug, how long will she run all right at high speed? A. She will run five to fifteen minutes; fifteen minutes sometimes.

Q. Five, ten or fifteen minutes? Then what will happen? A. Then she will cut out. She will pre-ignite and cut out.

Q. What do you mean by "pre-ignite"? A. It means that the explosion takes place before it should take place on your spark plugs.

Q. Well, what is the effect of your pre-igniting? A. It slows your motor down.

Q. Slows it down? A. Yes, sir.

Q. What is it that slows it down? A. The explosion takes place before the piston reaches top center. That retards the up-stroke of the piston. In other words, you have got pressure against your piston before she comes to top center.

Q. You mean by that the spark plug gets red hot? A. Yes, sir.

Q. And burns out? A. She does burn. If she gets too hot she will burn.

Q. If the spark plug would get red hot, it will burn it out, wouldn't it? A. Yes.

Juror Number Five: May I ask a question?

Mr. Carpenter: Yes.

Juror Number Five: The two plugs that was given to him, are they the plugs from the motor that is supposed to have gone dead?

Mr. Carpenter: We don't know.

Q. You don't know what motor they came from, do you? A. No.

Q. They might have come from the right engine, the center engine, or the left engine? A. You couldn't tell.

Q. Do you know how many spark plugs there are on each one of those three engines? A. Eighteen.

Q. Eighteen on each engine. You saw two spark plugs altogether? A. That's all.

Q. That's all you saw that night? A. That night.

Q. Now, just tell this jury whereabouts you stood in the meadow—withdraw that. Let me ask

you this: When you got down there it was dark, wasn't it? A. Yes.

Q. The sun set that night about six o'clock, the 17th of March, didn't it? A. Somewhere around that.

Q. You got there considerably after dark? A. Yes.

Q. How did you get down there? A. Drove down with the car.

Q. You didn't drive all the way by car, did you? A. All the way down to the dumps.

Q. You drove down into the dumps? A. Not "into" the dumps. Where you get to the dumps, you leave your car here.

Q. What street did you go through going down? South Street? A. I went down South Street.

Q. You went down South Street up to the dumps. Did you go down route 25 to South Street? A. Well, South Street goes along route 25, then you make a left hand turn you go down and you come out on Wilson Avenue, I think it is, then you go back on South Street again.

Q. Is that the way you went? A. Yes.

Q. Then you drove your car out to the city dumps? A. Yes.

Q. And you left your car standing on the dump? A. She stood on the road there.

Q. Is that road down here, down here somewhere (indicating)? A. That comes under 25.

Q. Here is 25 here. Here South Street goes under it? A. Yes.

Q. You came out here and left your car there? A. A little further down where the dump is, where she straightens out.

Q. Down here? A. A little further back.

Q. Down here? A. No. That's Wilson Avenue, I think. A little back further.

Q. Right here? A. Right down there by the bend. The other way a little bit. No, you are going back to 25.

Q. Back here? A. No. You know where the turn is. A little further over.

The Court: You go down there and point it out.

Mr. Biro: May I suggest Mr. Lang use the surveyor's map where the names are on the streets?

Q. Stockton Street comes in through around there. South Street comes around there. A. There is South Street.

Q. Where did you leave your car? A. Here is the dumps. We passed right in here.

Q. About here? A. Somewhere.

Q. Then you walked across the dump over towards this (indicating)? A. Yes, sir.

Q. Did you come to a creek there, or didn't you go as far as the creek? A. There is no creek where we were.

Q. Didn't you say you stood in the dump when this fellow went across to the plane and got the carburetor? A. Yes.

Q. Did you stand on the edge of the dumps? A. Yes.

Q. That is, the nearest edge of the dumps to the plane? A. Yes; right alongside of the railroad track.

Q. Well, now, you didn't get over to the railroad track at all, did you? A. The plane laid on the railroad track and there was a small ditch about eight or ten feet here, and one part of the wing even stuck over on the dumps.

Q. You didn't go across that ditch, did you? A. No. I was this side of the ditch.

Q. By "this side of the ditch", you mean the side of the ditch towards the elevated highway? Here is the ditch. Here you stood on the west side of the ditch, didn't you? A. To the right when we came in from that Stockton Street, what you say is Stockton Street.

Q. You stood on the Stockton Street side of the ditch? A. Yes.

Q. On the edge of the dumps? A. Yes.

Q. You didn't go through the mud and that swamp that night up to your knees going over there? A. There is no swamp there.

Q. No swamp? A. No swamp, no.

Q. What was the closest you got to the plane or any part of it? A. Fifty to seventy-five feet.

Q. And you were across the ditch from it? A. Yes.

Q. On the westerly side of the ditch from the plane? A. I think so.

Q. Standing on the edge of the dump? A. Yes.

Q. Well, there weren't any arc lights over that plane that night, were there? No spot lights? A. No arc lights, no.

Q. It was awfully dark all around there, wasn't it? A. It was dark at that time, yes.

Q. Who was this man that went and took the carburetor off the engine? A. I don't know.

Q. I thought you said you knew the fellow? A. No.

Q. What happened to the carburetor? A. The other man took it with him.

Q. Who? A. The other man was standing alongside of me took the carburetor with him, a fellow named Morrocco.

Q. What is his business? A. He is a junkman, scrapping stuff.

Q. You went down with the junkman who sent some fellow over to the wreck to steal parts, is

that it? A. I didn't go down with the junkman. I went down by myself.

Q. And you stood over on the edge of the city dump with a junkman by the name of Morrocco? Who is the fellow that went over to the engines and got the parts? A. I don't know.

Q. Well, did Morrocco know him? A. Yes. He spoke to him.

Q. And Morrocco stood right beside you and this fellow went over to the plane. How did he get over to the plane? A. There is some people put boards down there, and the other ones railroad ties and papers and cardboard boxes to get over the quicksand, and he got over there.

Q. He had to get over the quicksand to go over? A. He walked on the railroad ties.

Q. Boards and paper they put down and walked on to keep from going down in the marsh? A. Yes.

Q. And this fellow that took the carburetor, he walked across that way to get to the engine? A. Yes, sir.

Q. That's the fellow that you say first brought back a carburetor and gave it to Morrocco? A. Yes.

Q. And then you asked him to go and get some parts for you? A. Yes.

Q. What did Morrocco do with the carburetor? A. He took it with him.

Q. Was that a brass carburetor? A. I don't know.

Q. What did it look like? A. It's a big carburetor. It was dark. I don't know whether it was brass or not. It might have been brass; it might have been aluminum.

Q. But you couldn't tell because it was dark? A. No. I wouldn't say. I didn't handle the car-

buretor. I don't know whether it was brass or not.

Q. You didn't handle it? A. No.

Q. Well, did you get any parts for yourself that night? A. No.

Q. How long did you have those spark plugs in your possession? A. A couple of minutes.

Q. What did you do with them then? A. I had to give them back.

Q. You had to give them back? A. Yes.

Q. Who was the man that got them for you? A. The same fellow brought the carburetor over.

Q. How was he dressed? A. White overalls.

Q. White overalls? A. Yes, sir.

The Court: Did he have any lettering on the overalls or on the garment?

The Witness: I couldn't say. I don't know.

The Court: Any name or any lettering?

The Witness: I couldn't say. I don't know.

Q. Why didn't you go over to this plane yourself and see it? A. They wouldn't let me.

Q. Who wouldn't let you? A. The cops.

Q. Were the police there? A. Yes, sir.

The Court: This man you spoke about, was he over there by the engine when you came there?

The Witness: He was standing over on the dump when I walked up, but the man that brought the carburetor over, I don't know where he came from. He came up to Morrocco and this fellow spoke to him and he went and got some carburetors.

The Court: And then he went back and got the spark plugs for you?

The Witness: Yes.

The Court: In doing that did he go through the police line and go over to the plane?

The Witness: He walked right over, yes.

The Court: Were there others around there with overalls on doing work on this plane?

The Witness: Yes; there was a lot of people around.

Q. And you say that the man that brought these—brought first the carburetor and then the two spark plugs over to you was dressed in white overalls? A. Yes.

Q. You don't know his name? A. No.

Q. Never saw him before? A. I might have; I don't know.

Q. Did he know you? A. I don't know.

Q. You stood on the dumps and watched him go through the swamp over to the railroad tracks? A. Yes.

Q. If it was dark there and dark all around there you couldn't see what he did when he went over the railroad tracks, could you? A. There was hundreds of flashlights over there and headlights.

Q. Just those big torches? A. Big torches and there was some big lights they use in the cars.

Q. You couldn't see where this man got the spark plugs or whether he took them out of the engine or how he took them out, could you? A. He went over there and you could see the outline of it; every once in awhile somebody put his light on and you could see the whole thing.

The Court: Outline of what?

The Witness: Outline of the plane.

The Court: Outline of the engines?
The Witness: Yes.

Q. Do you know how he got the spark plugs, this man, out of any engine? A. I don't know how he got them out, but he got them out.

Q. Did you see him actually take them out of the engines? A. I seen him standing over the engine working on it, doing something.

Q. Did you see whether he had any tools in his hand? A. The only thing he had was a pair of pliers that I seen.

Q. Pair of dog pliers? A. No. Big long ones.

Q. Big long dog pliers. Where did you see this? A. When he brought the carburetor over.

Q. You didn't see the pliers until he came over to where you were? A. No.

Q. You didn't see those pliers actually touch any part of the engine, did you? A. I couldn't see that, no.

Q. Why? A. You couldn't see. He was over on the other side. The engine was between me and him.

Q. You couldn't tell what he was doing. He might have picked this spark plug off the ground?

Mr. George: Objected to.
The Court: Well, did you see him pick them off the ground?
The Witness: No.

Q. You didn't see where he got them, did you? You didn't see where he got them? A. The engine was laying over there, standing kind of an angle. I seen him stoop over and work on the engine and he came over with the plugs.

The Court: Carried them over after he stopped work on the engine?

The Witness: Yes.

Q. How long did it take him to get over from the engine to where you were? A. I don't know. Time flies so quick I should say about a half a minute or a minute.

The Court: What I am interested in knowing is: Your application of these scales to this point—between the points of the plug, did you have a light at the time you made your measurement?

The Witness: Morrocco had a flashlight.

The Court: This man you were with had a flashlight?

The Witness: Yes, sir.

The Court: Did he turn that on the plug?

The Witness: Yes.

The Court: At the time you used your measuring instrument there?

The Witness: Yes, sir.

Q. Now, I want to ask you this: You don't know what became of those two spark plugs, do you? A. After I gave them to him, no.

Q. You don't know whether he took them away with him or not? A. No.

The Court: Won't you do another thing? Tell us what make of spark plug they were.

The Witness: A. C.

Q. A. C. spark plugs? A. A. C. spark plugs.

Q. The porcelain wasn't damaged, was it? A. The ends of the porcelain was cracked.

Q. The inside of the poreclain was cracked? A. One of them had one piece out.

Q. You don't know how that got off? A. No.

Q. Or when? A. It had run with that piece off because it was all brown.

Q. You testified in Newark in answer to this question:

Mr. George: Page, please.

Q. 1597—Question: "How close to the wreck did you get?" Answer: "About seventy-five feet." Is that right? A. Yes.

Q. Question: "Didn't some of the people who tried to go from where you stood over to the wreck go up to their hips in mud?" Answer: "Some of them did, yes." That's the reason you didn't go over, wasn't it? A. Yes, sir.

Q. Because it was so deep. Did this man who had the white overalls on, didn't he get a lot of mud up about his hips, too? A. No. He walked over the stuff that was laying there.

The Court: What prompted you to ask this man to bring you the two spark plugs?

The Witness: I was interested in it. I wanted to see.

Q. You weren't called to testify at the Mayor's investigation of this thing, were you? A. No.

Q. Nor at the investigation made by the Prosecutor's office in Newark? A. No.

Q. Nor the investigation made by the Department of Commerce? A. No.

Q. You didn't tell any of those people you had been down there in the dumps at night near the wreck——

Mr. George: Just a minute. That's objected to——

The Court: Wait until he finishes.

Mr. George: —on the ground it has not been shown that there has been such an investigation; secondly, this witness had known of any such investigation; thirdly, that he had ever been asked to appear before any such investigations, if there had been such investigations.

The Court: You may finish your question.

Q. —and asked strangers to go over and get spark plugs for you to look at, did you?

Mr. George: I press the objection.

The Court: Sustain the objection insofar as it refers to "people" without any intimation they had anything to do with it. I think you may very properly ask whether he told anybody.

Q. Did you tell any of the officials or any of the Police Department of the City of Newark, or the Prosecutor's office of Newark, Essex County, that you had been down there at night on the dumps when somebody went over and brought you some spark plugs and what you discovered? A. I did.

Q. How much of that engine could you see from where you stood? A. You could see over half. I think a little bit more than half of it.

Q. Which engine was it, from the center, left or right? A. This I don't know.

The Court: Just a minute. Were you observing this plane from its rear, from the tail, looking from the tail forward or were you looking at its head and back towards the tail or were you looking along the wings

sideways, when this man was, as you say, moving about the engine?

The Witness: I was looking at it from a little bit off the right hand side where the tail used to be, because there was no more tail there.

Mr. Carpenter: It had been moved when he got there.

The Court: Keep that in mind. Was it from the engine nearest or furthest from you, or was it in the middle of the plane.

Mr. George: May I make this suggestion? We have a toy plane, a tri-motor, which might be of great assistance in securing the course, etc.

The Court: I don't think it would be helpful here.

The Witness: There were two motors laying on the right hand side of where the fuselage should be in front of the plane.

The Court: This plane was cracked up there where the motors were?

The Witness: Yes. The motors laid on the ground a little bit ahead of the plane.

Q. Everything was in heap there, wasn't it, when you got down there? A. No; it wasn't in a heap.

The Court: Suffice it to say, as I understand your testimony, you weren't able to say whether it was right, left or middle motor?

The Witness: No; I couldn't say that.

Q. Do you remember being asked this question in Judge Dungan's court:

Mr. George: What page?

Q. 1599—Question: "Do you know which engine they came from?" Did you answer: "I don't know where they came from now. I can't tell because they were all in a heap." "I couldn't say which engine they came from." Question: "All the engines were in a heap?" Answer: "No; but everything was in a heap. You could just see the top of the engines sticking over. I don't know whether it was the right or left or center." By the Court: "Do I understand that you were on the track?" Witness: "No; I was in the dumps." Question: "In the dumps?" Answer: "Yes, sir; on the dumps." Did you so testify? A. Yes, sir.

Q. Then everything was in a heap over there on the railroad tracks, wasn't it? A. I really don't know what to say. I took the picture of it from where I stood and that shows it better than I can explain.

Q. Where is the picture that you took? Did you take this there that night? A. The following day.

Q. The following day? A. Yes.

Q. You went back the next day, did you? A. Yes.

Q. What time the next day did you go back there? A. It was around—somewhere around noon time.

Q. Around noon time. How long were you there? A. Well, I don't know. I should say about a half an hour or so.

Q. Half hour or so. Why did you go down the next day? A. I wanted to take a picture of it.

Q. Was that your only purpose? A. Yes.

Q. Didn't go down for any other reason? Did you go down to get any more spare parts? A. No.

Q. Did you see any spark plugs that day? A. I didn't see any more than I saw the night before.

Q. Did you go over to the plane that noon? A. No. That's the closest I came to where that picture is.

Mr. Carpenter: I would like to have the picture marked for identification.

(Received and marked for identification Exhibit D-1.)

Q. What other pictures have you got there? A. A lot of pictures of my work. I got a picture of that marine motor and the carburetor and all that stuff. Broken pistons, broken cylinders.

Q. Have you got any more pictures of this wreck that you took? A. No.

Q. You took them with your own camera? A. Yes.

Q. And did you develop it yourself? A. No.

Q. Were you—withdraw that. Didn't that man that took those two spark plugs take them back and put them in the engine? A. I don't know.

Q. You don't know? A. No.

Q. Did you testify this way on the last trial? Page 1595. Cross-examination by me. Question: "What time was it you got this plug or plugs?" Answer: "About half past seven. Seven to half past seven." Question: "How many did you get?" And did you answer: "Two?" A. Two.

Q. You were asked: "Have you got them here?" You answered: "No." Question: "Where are they?" Answer: "Back in the motor." "He took them back." Question: "Who put them back?" Answer: "The man that took them out." Did you so testify at the last trial? A. I don't know. I don't say he put them back in the motor. He took them back with him.

Q. Did you testify this way at the last trial before Judge Dungan:— A. That's what I want to say.

Q. But you did testify at that time that you saw the man who brought them to you take them back to the motor? A. He went back over.

Q. Do you now say this testimony is false: "Where are they?" Answer: "Back in the motor. He took them back." "Who put them back?" Answer: "The man that took them out." Was that true or false? A. I said he took them back with him.

The Court: No, no. Is that correct or is it wrong.

The Witness: I think there is an error in that re-writing of the testimony. I haven't seen him put them back in the motor. The man took the plugs back with him and went over towards the motor.

Q. Did the man who brought those plugs over to you take them back and put them in the motor? A. I don't know whether he put them back.

Q. Then why did you so testify before Judge Dungan? A. I said I believe it was an error in the transcript of the testimony.

Q. You think you weren't reported right? A. Yes.

Q. You didn't mean to give any such impression as that, did you? A. No. I didn't see him put them back.

Q. Why didn't you see him put them back?

Mr. George: That's objected to, "Why didn't he see him?"

The Court: I think he may tell if there is any reason why. He is the best one to tell.

The Witness: I went away afterwards.

Q. Is the reason you didn't see him put them back because it was too dark to see? Is that the reason? A. No. I wasn't interested any more. Right after he left us we went away. I went back to my car.

Q. Then there wasn't any reason for your saying in Judge Dungan's court that the man went back and he put them back in the engine? A. I dont believe I said that.

Mr. Carpenter: We will call the stenographer. He will tell us.

Q. Now, Mr. Lang, this pre-ignition that you speak about, you say that the engine would run all right for ten minutes? A. Yes. Sometimes a little longer; sometimes a little shorter time.

Q. But your best judgment is in ten minutes the spark plugs would burn out? A There is no specified time can be set.

Q. You gave as your opinion awhile ago ten minutes? A. From three to ten minutes. It may be fifteen.

Q. Give us the outside length of time those plugs would work before being burned up? A. There is no possibility of giving an outside time or inside time because no man or no instrument we have got today will indicate when that can happen or when it will happen. It just happens.

Q. You say it does happen? A. Yes.

Q. Well, then, your testimony that the gap is too small or is too great and that the plugs would pre-ignite—the engines would pre-ignite and slow down within ten minutes you gave on your direct examination, you withdraw that now, do you? A. No.

Q. What do you mean by telling us now that there is no way of telling how long they would run all right? A. She may not act twice alike.

Q. What do you mean by that? A. She may run ten minutes, then she will slow down; she may run five minutes and slow down; she may run fifteen minutes and slow down.

Q. It's a very short space of time? A. That depends a whole lot on the temperature of the air you are taking in.

Q. Might they run as long as a minute without slowing down? A. No.

Q. It is a matter of ten or fifteen minutes, is it? A. Anywheres from three to fifteen minutes, my observation has been, they will show effects.

Q. Do you mean that? What you just said? A. In what way?

Q. Do you mean what you just said here under oath? A. In which way? Under what conditions?

Q. Do you know what you said? A. Yes.

Q. What did you say?

Mr. George: I think that is improper.

The Court: I don't think we need go into that.

Q. You said after fifteen minutes they would show effects? A. It may show effects after three minutes.

Q. What effects do you refer to? A. Pre-ignition and slowing down your motor.

Q. But your judgment is that with that gap in the spark plugs the engine wouldn't operate efficiently—full power longer than from three to ten minutes; maybe fifteen? A. Yes; maybe fifteen.

Q. Is that your testimony? A. No.

Q. What is this? You say "No"? We are entitled to know your opinion. A. There is the atmospheric conditions enter into that condition now. On a damp day, on a cold day she will run longer. On a hot day she won't run long.

The Court: What I would like to know is this: If that gap of thirty-one thousandths will have a tendency in this type of motor to make it pre-ignite and consequently slow down, will it by the same token also having done that go up again? In other words, increase its speed again after having slowed down? By that I mean, does it necessarily mean the motor must go dead or will it be "spotty"; will it slow down and then go up and slow down and go up again and slow down?

The Witness: "Spotty" would be the right explanation for it.

The Court: Probably I shouldn't have used the word "spotty." Let's go back to my original question and find out whether or not with a gap such as that in a motor such as this, would the tendency be on a normal day, average temperature, for the motor to slow down within fifteen or thirty minutes and then after slowing down for a while speed up again gradually and assume its former speed?

The Witness: Yes; it will do that under certain conditions, but you——

The Court: All right.

Q. What conditions will make it do that? A. The drier your mixture in your cylinder means the more heat, the quicker she will cut out. The drier your air in your mixture the greater resistance

for the spark to jump across the gap. The wetter your mixture the lower the resistance because there dampness and dampness is an easier conductor of electricity.

The Court: Do you say it gradually will slow down until it stops, or will it go down to a degree and hang there at that degree of slowness for a while?

The Witness: She will do that. Most likely she will go down to a lower degree and hang there for a while.

Q. In other words, it will run all right and won't stop dead? A. Sometimes she will if she is bad enough.

Q. What do you mean "if she is bad enough"? A. If the pre-ignition is so bad she will stop right there and then.

Q. To get that pre-ignition you speak of you say the spark plug got to be red hot so the spark doesn't jump between the electrodes but jumps to the side of the cylinder? Is that right? A. No. That isn't pre-ignition. That's fading out.

Q. You told us a while ago the spark plug when that condition happens gets red hot? A. When she pre-ignites, yes.

Q. The whole engine gets red hot, too, doesn't it? A. No. Only the ends at the cylinder head, exhaust valves and the plug points.

Q. That all gets red hot. In pre-ignition that's what happens, that all gets red hot? A. The exhaust valves and the spark plug points will get red hot, and the porcelain too, if the porcelain is too long, and the plugs get hot, but nothing else will get red hot.

The Court: This is one for you to crack your teeth on. Taking those two plugs

that you saw and which you say were thirty-one thousandths of an inch and assuming they were in this engine that was on this ship, if that ship had made five or six flights from that airport over the City of New York, and you know where New York is with reference to this airport——

The Witness: Yes.

The Court: —would you have expected that engine to have gone dead during one of those five or six flights?

The Witness: If she was pulled open, wide open for any length of time I would expect that.

The Court: What do you mean by "pulled wide open"? Can you run one of those infernal machines without pulling it wide open?

The Witness: The regular run is when you take off you give her the gun and you are wide open until you get your flying speed.

The Court: Oh, I see. You don't continue that extra strain after you get in the air?

The Witness: No.

Q. Do you know at what revolutions per minute those engines operate, in a Ford tri-motor plane? A. 1850, and the higher compression job 2250.

Q. Do you know what was the maximum r.p.m.'s per minute of those engines in that plane? A. 1850 is the maximum.

Q. That's what she runs on in flight? A. Yes. They slow them down to thirteen or fourteen.

Q. How do you know? A. The records show it.

Q. How do you know that? A. The records show it?

Q. What records? A. The records of all the motor manufacturers. Average cruising speed. You are not running wide open.

Q. Are you speaking now of a Ford tri-motor plane with a load of fourteen people in it? A. On any motor plane.

Q. Are you speaking generally now of all planes or are you speaking of a Ford tri-motor plane? A. All planes.

Q. All planes? A. Yes, sir.

Q. Have you any particular knowledge of the Ford tri-motor plane? A. Not to say, sir—to speak about it.

Q. Or J-5 engines have you any particular knowledge? A. All I know is that their cruising speed is thirteen or fourteen hundred.

Q. All right. We will assume that for the time being. Did you ever conduct a series of tests on J-5 engines with spark plugs having different gaps and with different types and makes of spark plugs? A. I tested the Tiger plug, yes, sir.

Q. Have you tested them in operation for a series of hours with various gaps? A. With——

Q. Yes or no. A. Yes.

Q. Where? A. Down in the Philadelphia Navy Yard.

Q. When? A. 1927.

Q. Have you got the record of any of those tests here? A. No.

Q. Did you make any report of it? A. No.

Q. On what engines were those tests run? A. On J-5.

Q. For whom did you run them? A. For myself.

Q. Oh, for yourself, in the Philadelphia Navy Yard? A. Yes.

Q. By whom were you employed then? A. Myself.

Q. What were you doing down there? A. I went down there and Mr. Toomey was introduced to me, the engineer in charge there and he wanted to see how those plugs would stand. I asked him if he could get me in there and he said, "Yes."

Q. You say that was in 1925? A. 1927.

Q. I ask you this question: Didn't you testify on the last trial—1625—as follows: "I suppose you have conducted extensive tests to find out on those Wright J-5 engines."

Mr. George: What page did you say?

Q. 1625. Answer: "Not at all." Question: "Never conducted a test on such engines with these spark plugs?" Answer: "Not for that purpose, no." Did you so testify before Judge Dungan? A. I don't know what the question was there.

Q. Look at it yourself. By the Court: "What is your opinion about it?" Answer: "I should say she would run thirteen or fourteen hundred without any trouble." A. Yes.

Q. Question: "At thirty one thousandths?" Answer: "At thirty thousandths, yes she may cut out somewhere around thirteen hundred and drop down." By Mr. Carpenter: "I suppose you have conducted extensive tests to find out this on Wright J-5 engines?" Answer: "Not at all." Question: "Never conducted a test on such engines with these spark plugs?" Answer: "Not for that purpose, no."

Mr. George: May I ask counsel to continue that series of questions pertaining to that particular item?

The Court: You have a right to bring it out later.

Mr. George: I think it is unfair at this time——

Mr. Carpenter: All right. I will continue them.

Q. Question: "Did you ever conduct any tests on J-5's?" Answer: "Yes." Question: "Where?" Answer: "Philadelphia Navy Yard in 1927."

Mr. George: Not so fast. Just the same speed as the other questions you read.

Q. Question: "How long were those tests?" Answer: "One test ran thirty-seven hours at 2250 and the other ran seventy-two hours at 1850." A. Yes.

Q. By the Court: "At what speed did you assume that the plug would burn out in ten minutes with that gap?" Answer: "The ones that burned out around six thousand—" "I am talking now about this plug. You said it would burn out if it ran at top speed for ten minutes. What speed do you mean now?" Answer: "I should judge about seventeen or eighteen hundred." "You are speaking about revolutions there?" "That's correct." You testified so, did you not, before Judge Dungan?

The Court: Just a minute. Do you now say that they could be operated, those engines, with this thirty one thousandths gap in the spark plug at from one thousand to twelve hundred and fifty revs per minute without having slowed down the speed?

The Witness: Yes; she will run around that.

The Court: And what revolutions do you say you would expect to find a stopping or slowing down with this same spark plug?

The Witness: About seventeen or eighteen hundred, nineteen hundred.

Q. Did you testify to this—page 1622—Did you testify this way before Judge Dungan: "In other words you say she wouldn't run for any length of time. What length of time do you refer to?" Did you testify: "I have burned them up in three minutes?" Question: "You don't think that she would run more than three minutes at top speed without having improper combustion?" "I say I have burned some of them up in three minutes; I have run some of them ten minutes but they showed pre-ignition, but the rev curve dropped off." "Do you mean the maximum at which such an engine would run with a gap of thirty thousandths of an inch in a spark plug will be about three to five minutes?" Did you answer: "Maybe three; maybe five; maybe a little longer, but it isn't very long." "It wouldn't run down?" Answer: "I doubt it. Some of them may but she will show right away. She will drop off, your curve drop right off. That depends a whole lot on the fuel you are using." "What do you call top speed for those engines that you saw?" Answer: "One motor runs at 1850; another one runs at 2250?" Did you so testify? A. Yes; that's correct.

Q. Now, that test you made at Philadelphia, were you paid to make that test? A. Yes.

Q. What were you testing? Motors or fuels or plugs? A. I was testing the plugs.

Q. To find an efficient plug? A. Yes, sir.

Q. You sell spark plugs, don't you? A. The ones I make.

Q. Do you manufacture them now, make the individual plug? A. They are made for me by the Tiger Company in Studtgardt, Germany, a suburb of Studtgardt.

Q. Your only work on that Philadelphia Navy Yard test was to test the efficiency of the plugs? A. That's right.

Q. At what gaps did you have the electrodes spaced? A. We had all different gaps. From twenty thousandths down to twelve and we found fifteen thousandths the most efficient.

Q. You say you tested them from twenty thousandths down to twelve? A. Yes.

Q. You didn't make any tests up to forty? A. Couldn't get them.

Q. You didn't make any test up to thirty-five? A. It is out of the question to begin with.

Q. You didn't test any at forty? A. No.

Q. You didn't test any at thirty-three? A. No. You are coming very close. I really don't know how to answer you.

Q. You did or you didn't. Say yes or no. That's all. A. That may be so, but my answer to your questions—your interpretation of my answer may not be my interpretation of the question.

Q. Did you run any tests with any thirty thousandths? A. Thirty thousandths was our top limit. We didn't go any further.

Q. I thought you said twenty to twelve? A. Fifteen is the best result. Twenty you are getting a little bit off. Thirty is out of the question.

Q. Did you have anybody there working there with you? A. No. I was there myself.

Q. Just testing it yourself? A. And the fellow in charge down there.

Q. Who was he? A. I don't know. Mr. Greener or Greer.

Q. What time in 1927 was it? A. That was just about the end of the racing season. Somewhere in September or October, I think.

Q. September or October, 1927? A. I am not sure, but I think it was somewhere around the end of the racing season.

Q. Your test was on the Wright J-5 engine? A. Yes.

Re-direct examination by Mr. George:

Q. Now, Mr. Lang, when you were answering Mr. Carpenter's question you made the statement you wanted to see those plugs that were taken out of the crash because you were interested. What do you mean by "interested?" What was your interest? A. Why, when I heard how the plane came down, see, I suspected that very trouble.

Q. What very trouble? A. Spark plug trouble.

Mr. Carpenter: I move to have stricken out what he suspected.

The Court: Yes; strike out the "suspected." You may state why, not the reason, but you were asked "You stated in response to Mr. Carpenter that you were interested." Now you are asked to show us, that we may know, what that interest was. Did you go down to buy something or look at something or what?

The Witness: No. I went down there. I wanted to see the wreck.

Mr. Carpenter: That's what we called "curiosity" where I grew up.

The Witness: You may call it "curiosity." I call it "experience," "knowledge," "learning."

Q. I am trying to find out what your interest was for having gone down there and then asking to see the plugs. Why did you want to see the plugs?

The Court: Why were you so interested?

The Witness: As I said, the way the accident happened; the way it was described to me.

The Court: You wanted to examine yourself, is that the idea?

The Witness: Find out for myself.

Q. Now, had you ever seen that plane before the crash? A. Yes; I seen it before.

Q. How long before the crash? A. The Saturday before the crash. The day before.

Q. The day before the crash. In the morning or afternoon? A. I was down the airport in the afternoon.

The Court: This same day, March 17, 1929?

Mr. George: No. The day before he said.

The Witness: No. That wasn't Saturday.

Q. The day before was Saturday. You say on Saturday afternoon? A. Yes.

Q. The day before the crash? A. Yes.

Q. And you saw the plane? A. Yes.

Q. Was it in motion when you saw it? A. She was coming in and taking off.

Q. Did you see the plane take off at any time that afternoon? A. I did.

Q. Did you hear anything or see anything that attracted your attention respecting the plane or its motors?

Mr. Carpenter: Not what somebody told him.

The Court: Yes. Just what you yourself saw or heard.

Q. What did you see or hear respecting that plane? A. I seen it take off. I seen it flying around. I don't know—it is so hard to explain technical details.

Q. Explain it in your own way if there was anything unusual or anything that attracted your interest that was unusual, tell the court and jury just what it was respecting that motor or motors or the plane, or all together. A. I didn't like the sound of it.

Mr. Carpenter: I move that it be stricken out.

The Court: Strike it out.

Q. Yes. What did you hear, whether you liked it or not? A. I heard the variation in the exhaust.

Q. We don't know what that means yet.

The Court: You asked him. He is telling you.

Q. What do you mean by "the variation in the exhaust?" A. She seemed to go up and come down.

Q. What seemed to "go up and come down?" A. Speed up and slow down.

Q. While in flight or while idling or while on the ground? A. In the flight.

Q. In the flight. Did you hear that? A. Yes.

Q. Go on from there and describe in your own way what you heard. Withdraw it for the mo-

ment. What did the variation in the exhaust indicate to you?

Mr. Carpenter: I object to that as immaterial.

The Court: This is the same plane that was in the wreck?

Mr. George: Yes. That's what I am talking about.

The Court: I assume it is to show the condition.

Mr. Carpenter: What time of the day was that?

The Witness: In the afternoon.

Mr. Carpenter: What time?

The Witness: I don't know. We rode around for a while and we got down to the airport.

The Court: What is this question?

(Question repeated as follows: "What did the variation in the exhaust indicate to you?")

Mr. Carpenter: I object. There were several planes of that type there.

The Court: The only thing is: All we can do is to take this witness' identification. If it isn't so I can't help it.

Mr. Carpenter: There might happen to be a lot of them there.

The Witness: There were two of them there.

The Court: Could you distinguish those planes enough to tell us that the one you heard on the afternoon the day before the accident was the same one that was involved in this accident? Yes or no.

The Witness: I can't say either way positive.

Q. Then you won't say positively that the plane that was involved in the crash is the one you are now describing with the variation in the exhaust? A. There were two of them down there.

Q. I understand you to say there were two. I am trying to find out whether this variation in the exhaust that you heard was the plane that was involved the next day in the crash or not? Was it or not? A. I would say it was.

Q. All right.

The Court: Now, just a minute. Upon what do you base that assertion? You yourself have said there were two planes there that were similar?

The Witness: Yes.

The Court: What was there about this plane, if there was anything, that lead you to identify it as the one that was in the accident?

The Witness: The condition after the accident that I found, on the motors cutting out.

The Court: You see, that doesn't help us. The other may cut out, too. You see, here are two planes and they are, to all intents and purposes, the same type of plane. You saw one of them on the afternoon before the accident. Now, we want to know whether you could identify the one that was in the accident as being the one of those two planes that you saw the day before.

The Witness: It is really hard to say, if I may explain why. At that time I didn't take any particular notice of either one or the other, only when she went up I heard she didn't sound—what I say, she didn't sound just right to me.

Mr. Carpenter: I move that it be stricken out.

The Court: Yes; strike it out.

Q. Mr. Lang, did you see any name on the plane that was involved in the crash, or did you notice? A. Colonial, the one was——

Q. I am talking about the crash, not "one was." I am talking about the crash.

The Court: The one that broke up.

Q. Was there a name on it, and if so, what was it, if you recall? A. There was a name on it, but I can't remember whether it was "Colonial" or "Columbia".

Q. Was it C-O-L—something? A. Yes.

Q. Now, the other plane. You say there were two planes on Saturday afternoon, the day before the accident. Was there any name on the other plane?

Mr. Carpenter: I object. That is suggesting there was a name on it.

The Court: There may be. I can't deny the question asking him to identify another plane at another time and what he saw. (To witness) Was there anything on this other plane the day you saw it?

The Witness: I think there was only a number on one of them.

Q. Only a number. Now, what mark of identification was on the plane which you saw in flight and which caused exhaust variations which you say attracted your attention? Was it the one that——

Mr. Carpenter: I object to the question as leading.

Mr. George: I withdraw that part of it.

Mr. Carpenter: I object to the whole question as leading and suggestive.

Mr. George: Withdraw the question.

Q. Mr. Lang, did you notice any name or names on the two planes which you said looked alike and which were on the—at the airport on the Saturday afternoon before the accident? A. One of them had a name in writing alongside the fuselage, and the other didn't have no name, she only had numbers on the tail or on the wings.

Q. Now, what was the name of the plane which you said had the name along the fuselage? A. I think it was "Columbia"—"Columbia" or "Colonial."

Q. Columbia or Colonial. What was the mark of identification, if any, on the plane that was in the air and which emitted these varied sounds of exhaust?

Mr. Carpenter: If he remembers.

Mr. George: Yes, of course; if he remembers.

The Witness: I think there was a line through, or an arrow, along the fuselage. It had "Ford Tri-motor" up in front, that was one of them.

Q. Now, let me ask you this: You describe two planes which you saw on the ground that afternoon, the day before the accident. One of them had a name along the fuselage, either "Columbia" or "Colonial," is that right? A. Yes.

Q. And the other had no name but had a number, is that correct? A. Yes.

Q. Now, which of those planes gave out the variations in the exhaust?

Mr. Carpenter: If you remember.

The Witness: That one with the name on.

Q. The one with the name on.

The Court: Did you see that one again after that?

The Witness: I didn't see it after Saturday.

The Court: Then it wasn't the one that was in the accident, is that what you mean?

The Witness: No. I don't know whether the one in the accident—after the accident—was marked or not. I couldn't see any.

Mr. Carpenter: I move to strike out the testimony.

The Court: Yes; strike it out.

Q. Now, Mr. Lang, you testified that the man who complied with your request to get you a couple of plugs—spark plugs—from the motor had white overalls on. Is that what you said? A. Yes.

Q. Do you know how the mechanics around the airport were dressed at that time, aside from the accident? A. Some of them have coats on; some of them got overalls on.

Q. What color?

Mr. Carpenter: If he knows.

Mr. George: Just a minute. If the Court please——

The Court: Yes; don't interject.

The Witness: I have seen them in blue and white. Mostly white.

The Court: How about red?

The Witness: I haven't seen any red yet.

Q. You testified also in answer to Mr. Carpenter's question that in your examination of the spark plugs that were taken out of the wreck beside the wide gap of thirty thousandths you also found that the inside porcelain was broken and a piece out. Is that a fact? A. Yes.

Q. Now, what effect did that condition have upon the efficiency of the spark plug? A. Well, that showed pre-ignition and showed that this wasn't the right plug for that particular operation.

Q. And what effect, then, would a thirty thousandths inch gap, plus the broken or inefficient condition of the porcelain on the inside have upon the efficiency of the function of the motor at full speed? A. The thirty thousandths gap has no relation to pre-ignition. The thirty thousandths gap is too big a gap and will cause the motor to fade—the spark not to take place at the point. The cracked porcelains, and the burning away of the electrodes and the bubbles on the electrodes showed pre-ignition. You had two conditions in one.

Q. What does the pre-ignition aspect of the defective or broken porcelain have upon the efficient function of the motor? A. You aren't getting your full horsepower out of that motor for any length of time.

Q. Just one more question. In the take-off—an aeroplane take-off, is the take-off made under slow speed or full load—full power? A. Open throttle.

Q. Open throttle. That means the fullest capacity of power while the take-off is in process until the full altitude is gained? A. Until you reach flying speed, then you pull it back.

Mr George: That's all.

Re-cross examination by Mr. Carpenter:

Q. You say now it was both the spark plugs and the gap? A. I did.

Q. Both the type of the plug and the gap? A. The type of this plug was a type that I say was all right for ordinary flying or hopping, whatever you may call it, when you have to idle your motor for a length of time and then start it again and then idle it again and start up again. If you put a plug in that motor that would perform satisfactory at top speed all the time you couldn't idle that motor any length of time because the plug would foul up.

Q. The plug would foul up? A. It would. Therefore, when you idle a motor like that for any length you put in a plug that wouldn't foul up, but that plug is not the proper plug for continous high speed performance, full throttle performance.

Q. That's the burden of your testimony, is it?

Mr. George: I object to that.

Q. That's not the proper type of plug for proper performance of that engine?

The Court: We will strike out the "Burden of your testimony" and leave in the rest.

Q. That is your testimony, is it not, that's not the proper type of plug for that particular engine? A. For that particular service.

Q. For that particular service? A. Yes, sir.

Q. You mean for these hopping expeditions? A. Provided you don't run on open throttle.

Q. Provided what? A. You don't run on open throttle.

Mr. Carpenter: That's all.

(Witness excused.)

Mr. Carpenter: Will your Honor instruct the jury the testimony you strike out they may disregard?

The Court: Gentlemen, whenever the court strikes the testimony out, as is sometimes done, that means you are to disregard it because it is not competent proof. That is the reason for the court occasionally sustaining an objection or, at least, sustaining a request that testimony be stricken out, because it is not properly before you.

RICHARD ALDWORTH, called as a witness on behalf of the plaintiffs, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. George:

Q. Mr. Aldworth, what is your position? A. I am superintendent and manager of the Newark airport.

Q. In the employ of whom? A. The City of Newark.

Q. Were you superintendent in the month of March, 1929? A. Yes, sir.

Q. In your capacity as superintendent did you promulgate rules and regulations for the maintenance of the airport respecting take-offs, landings and so forth? A. I don't know just what you mean by "and so forth." Respecting take-offs and landings, yes, sir.

The Court: If there are rules, I assume your adversaries will not object to them being in evidence if they are here. Let

them see them. They must know about them.

Mr. Reed: I understand the papers he refers to is purely a regulation governing certain bodies over whom there is a mutual agreement between the city and the company in question, and that that is merely a regulation for the convenience, or, if you please, primarily for the convenience, of the parties and their fliers, and that does not have the effect of a rule or regulation or a city ordinance such as a city ordinance would have in a city.

The Court: All right.

Q. Now, Mr. Aldworth, I show you a paper dated February 23, 1929, signed by you, this being a copy of the original signed by you, and ask if you, as the superintendent in charge of the Newark airport, established that rule or regulation? A. That's provided it's a copy of the original rule which was used, yes.

Q. Look at it and see if you don't recall that that is the fact. A. Yes, sir.

Q. That was promulgated by you? A. Yes, sir.

Q. As superintendent, of course, you had authority to promulgate such a regulation? A. I had authority to promulgate it over people and operators whose contract with the city gave me that authority.

Q. In that you included the pilots of aeroplanes, did you not? A. Pilots of aeroplanes who are under contract to obey the rules.

Q. Was the defendant, Colonial Western Airways, one of the contracting parties with the City of Newark at that time?

Mr. Reed: I object. The contract speaks for itself.

The Court: Yes; sustain the objection.

Q. Do you know whether or not the Colonial Western Airways, the defendant in this case, operated a commercial service at the Newark airport? A. They did operate a commercial service.

Q. Did your regulations, these which I hold, apply to the Colonial Western Airways and its employees?

Mr. Reed: Same objection.
The Court: Sustained.

Q. Now, were there any persons who piloted planes at the Newark airport who were excluded from the operation of any regulations which you promulgated or did your regulation include all pilots operating planes at that field?

The Court: What is your answer?
The Witness: Yes.

Q. Was this rule intended to apply to all users of the airport or only to certain particular users?

Mr. Carpenter: I object to that, what it was intended for.

The Court: What did it apply to, not what it was intended for. Can you tell us?

The Witness: Yes, sir; it was intended to apply to everbody.

Mr. George: I offer this in evidence.
Mr. Reed: We object.
The Court: Sustained.

Q. Well, now, what regulations did you promulgate, Lieutenant, governing the maintenance of operation of aeroplanes at the Newark airport which were in effect on March 17, 1929?

Mr. Reed: We object.

The Court: Sustained.

Mr. George: Did your Honor sustain the objection to the offer?

The Court: I most certainly did.

Mr. George: He testified, if the Court please, these were rules promulgated by him and applied to all persons using the airport and he had authority as superintendent.

The Court: No; he didn't. He testified only insofar as by agreement the companies who may be concerned should allow him to do that thing.

Mr. George: Then, he was asked, if the Court please,—I don't know whether your Honor recalls that—that the Colonial Airways used that airport and that these regulations applied to all persons using the airport.

The Court: He has not so testified.

Q. Let me ask you again, Lieutenant——

The Court: Before you ask that—did I understand you correctly when you said—I think you said—that insofar as contracts with companies who leased the right to use this airport was concerned your right to promulgate rules were delegated to you by the company?

The Witness: Yes, sir.

Q. Did you have any authority to promulgate rules and regulations applying to all persons using the airport? A. I don't know that, sir.

Mr. Reed: Object.

Q. What? A. I don't know that.

Q. Who was in charge of the airport? A. I was.

The Court: Let's get at the nub of the thing quickly and expeditiously. With respect to your rules governing or attempting to govern the Colonial Western Airways are concerned, you would have to be governed by the contract between the city and the concern?

The Witness: Yes, sir.

The Court: So that any power that you might be given to control either the management or operation on the field would have to arise out of that contract between the city and the company?

The Witness: Yes, sir, your Honor. If they didn't want to do it, I didn't know what to do.

The Court: Your attention should be directed to this last statement that if they didn't want to do it he didn't know where he was to get the authority to do it, is that what you mean to tell us?

The Witness: Yes.

Q. Now, can you tell us whether the Colonial Western Airways and its employees, including pilots, were governed by the rules and regulations promulgated by you in the maintenance of the Newark airport?

Mr. Reed: Objected to.

The Court: Yes; sustained, because of his previous answer in which he has clearly and explicitly indicated that he would have to be governed entirely by the contracts.

In other words, Mr. George, what you ask him now to say is to give us his interpretation of a contract not before us wherein he might override any terms that might be contained therein.

Q. May I have the Court's permission under the circumstances to ask this question: Do you remember being asked by Judge Dungan—page 183—in Newark this question:——

The Court: I assume this is being asked for the purpose of showing surprise and indicating a previous statement made at another time? You understand this is not proof of what you are trying to get at?

Mr. George: Yes, that's true.

Q. Question: "Was this rule intended to apply to all users?"

Mr. Reed: What page is that?

Mr. George: 183, folio 15, by the Court addressing the witness.

Q. "Was this rule intended to apply to all users?"; and then the Court addressing defendant's counsel, "You may object to my question the same as anybody else's here"; then addressing the witness again——

Mr. Reed: You can see right away it is an incompetent question.

Mr. George: Wait a minute. Don't be too sure about that.

The Court: I suppose I must hear what he is trying to ask the witness.

Q. "Was this rule intended to apply to all users of the airport or only to certain particular users?" Answer:——

Mr. Reed: I object, if the Court please, as incompetent, irrelevant and immaterial.

The Court: Yes, because now you are—the only purpose you can have in reading this question would be to elicit another statement made at another time. Now it clearly appears whatever he may have said would be incompetent in any event. It is clearly incompetent.

Q. Are you at the airport daily? A. Well, I can't answer that. It is my post of duty. Unless it calls me elsewhere, yes, sir, I am there.

Q. Can you tell us what the usual practice is respecting routes and courses taken by pilots in take-offs from the airport?

Mr. Reed: We object to that.

The Court: Sustained.

Q. Well, you did make certain rules and regulations, didn't you, respecting the take-offs and landings and so forth——

Mr. Reed: I——

Mr. George: Wait a minute, Mr. Reed.

Q. (continuing) —by pilots of the Colonial Western Airways?

Mr. Reed: I object to it.

The Court: I shall have to sustain it under his testimony. I can't do otherwise.

Mr. George: Your Honor appreciates the surprise with which we are confronted under the circumstances?

The Court: I am going to give you every latitude I can.

Mr. George: I appreciate it and I am deeply grateful.

Q. Now, respecting the operation of planes at the airport, did you make any rules in the interests of preventing confusion or accidents or otherwise which were made by you under your authority as superintendent of the airport respecting take-offs and landings at the airport?

Mr. Reed: Same objection.

The Court: Sustained.

Q. Did you see pilots take-off at the airport?

A. Yes.

Q. Was there any uniformity of course taken by the pilots?

Mr. Reed: Objected to.

Q. That is, in their take-offs making a right turn or a left turn?

The Court: Sustain the objection as to uniformity. Might I suggest, Mr. George, uniformity of practice wouldn't indicate any negligence, of course, as you know.

Mr. George: That's true. Even a violation of that uniformity. I appreciate that, too.

The Court: What you would have to show would be some binding rule that was clearly violated.

Q. Now, did you make any rules, exclusive of any contractions by the City of Newark, concerning the regulation or operation of planes of the defendant, Colonial Western Airways?

Mr. Reed: Objected to.

The Court: I don't understand the question. Do you mean by that, did he of his own initiative make any rules?

Mr. George: Yes; as superintendent of the airport.

The Court: If that is the case, I shall have to sustain it. Might I just suggest again in order that we might have no more questions on these regulations, in view of this testimony, and even without it, if the lessee—and this company must be a lessee of the City of Newark—would have the right to maintain hangars, they would have to be governed by their contract and the fact this man may say "you can't do this; you can't do that", they might well tell him to mind his own business. If their contract shows they should be guided by such rules as he might promulgate, then I can see how it will be evidential.

Q. Let me ask this question, with the Court's permission: Did the Colonial Airways prior to the accident—you are acquainted with the accident we are referring to, of course? A. Yes, sir.

Q. —follow out the rules and regulations promulgated by you?

Mr. Reed: I object.

The Court: Sustained.

Mr. George: May we have an exception?

The Court: Yes.

Q. Did the Colonial Airways, the defendant in this case, have any other rule than the one which I hold before you to follow, except that one rule?

Mr. Reed: I object.

The Court: Do you mean promulgated by the defendant company?

Mr. George: Promulgated by this witness, the superintendent of the airport.

The Court: I shall sustain the objection.

Q. Do you know whether the Colonial Western Airways had any—had promulgated any rules and regulations directed to its pilots respecting landings and take-offs?

The Court: Yes or no.

Mr. Reed: Just yes or no.

The Witness: I am to answer yes or no?

The Court: Or you don't know?

The Witness: I don't know.

Q. You don't know whether the Colonial had any rules or promulgated any rules respecting its pilots? A. I don't know that, no, sir.

Q. What? A. No, sir; I don't know if they gave any rules to their pilots or not.

Q. Did you ever have any conversation with any of the officers of the Colonial Airways respecting regulations to be followed—rules and regulations to be followed by the Colonial Western pilots?

Mr. Reed: I respectfully object.

The Court: He may answer yes or no.

The Witness: Yes, sir; it is probable I did, yes, sir.

Q. With whom did you talk?

Mr. Reed: I object. Immaterial.

The Court: I assume he might show that they had binding instructions from some office of the company.

Mr. George: Exactly.

Q. With whom did you talk? A. As I recall the conversation——

The Court: No, not the conversation, but with whom was it.

The Witness: Yes, sir; the operations manager, probably.

Q. What is his name? A. His name at that time was Roland.

The Court: You have said "probably." Is this just a guess on your part?

The Witness: No, sir; you have many of them, possibly like your Honor would have conversations with another person high in authority.

Q. Did Mr. Roland discuss with you the rules and regulations which the Colonial Western had promulgated for its pilots?

Mr. Reed: I respectfully object.

The Court: Sustained.

Q. Did Mr. Roland say anything to you or anything to the pilots of the Colonial Western in your presence as to how they shall take off?

Mr. Reed: Same objection.

The Court: Sustained. It would not be binding on this man, this pilot.

We will recess now until two o'clock.

(Recess until 2 p. m.)

(After Recess, 2 P. M.)

Richard Aldworth resumes the stand pursuant to adjournment.

Mr. George: That's all, your Honor.

Mr. Reed: No questions.

(Witness excused.)

Lester Conover, called as a witness on behalf of the plaintiffs, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. George:

Q. Mr. Conover, where do you live? A. I live at 110 Booream Avenue, Jersey City.

Q. What is your occupation? A. Attorney at law of New Jersey.

Q. Attorney at law practicing in the County of Hudson? A. In New Jersey, yes, sir.

Q. Do you know where the Newark Airport is? A. I do.

Q. Were you there on March 17, 1929? A. I was.

Q. Were you there alone? A. I had a lady friend with me.

Q. Now, first of all, tell us what kind of day it was? A. Why it was a—to my recollection it was a clear, cold day with a steady breeze blowing.

Q. What time of the day was it you arrived at the airport? A. Just at the time—within a few seconds, I should say—about a half a minute before this plane took off.

The Court: You know it is surprising to me in this case how it is so many lawyers

had been out hovering around that airport.

Mr. George: I appreciate that, your Honor. I wasn't present there that day.

The Court: Had you been there you would have been up in the air.

Mr. George: My associates suggest it is proof they are brave. I don't think so. I think it is proof they are dumb.

Q. Now, Mr. Conover, will you be good enough to step down here to this map, take this pointer, and I ask you if you will be good enough to stand on this side so you won't block the vision of the jury, and describe to the Court and jury where the plane—I take it you know the plane we are referring to, the one involved in the accident? A. I came down this road, the highway, state road and turned left and I parked my car, put it right into the triangle, which is just opposite where this plane was. The exact distance from the—it appeared to me to be half way between this trestle that runs over this bridge and the turn in the road. I parked about half way, just directly opposite the plane as it started to go up, and there was another small plane had landed on the field and my attention was attracted to it. I just took occasion to look at the plane land and directed my attention back to this plane.

Q. In what direction was the plane involved in the crash moving? A. When I saw it it wasn't moving. It hadn't started yet.

Q. Which way was it facing? A. It was headed towards this triangle.

Q. Northwest? A. To the northwest, if that is the direction.

Q. Was it on the runway on the airport? A. I don't know whether it was on the runway or not,

except it was set—wherever he was set—to go ahead. I presume it was the runway.

Q. Now, tell us what you observed about the plane and its operation? A. At the time I saw it it was crowded. I mean it had, I should judge, a capacity load. He turned away one or two people at the door, I understand. My recollection of it is three or four people moved away from the plane as those motors started. The motor was running, then he stepped on the gas and the plane started off the runway, started up in a general northwest direction. Now, as it passed this road opposite this hangar it wasn't much above,—I shouldn't judge, it was more than thirty or forty feet above the height of the hangar at that particular point and then started over this way, turned sharp right and went down this way until it got about here.

Q. Let me interrupt you here a moment, Mr. Conover. Will you be good enough to put your pointer where the first turn was made? A. I should judge from where I was sitting it seemed to be no further than here.

Q. About one inch each of this mark "I-1"? A. Yes; I would say that. About here.

Q. About one inch each of this mark "I-1" in a circle? A. Right. It seemed to me to be just slightly over the state highway I just came over.

Q. Now, as it started—withdraw that. Did you follow the course of the plane as it made the turn and completed the turn? A. I followed the course of this plane from the time it left here until it disappeared behind this second embankment.

Q. Now, while the plane was in motion in the first part of its flight on the runway or off, on the ground or off, did you notice anything unusual about the sound of the motors? A. The sound of the motor from the time it left until it got—until

it was out of my hearing it seemed as though the motor was laboring. It didn't have a healthy sound.

Q. Do you drive automobiles? A. I have been driving for seventeen years, yes, sir.

Q. You are acquainted, of course, with the sound of automobile motors? A. Its healthy sound at least.

Q. You can distinguish the difference between healthy and unhealthy? A. Yes, sir.

Q. And did you notice anything being emitted from the plane as it was making the take-off? A. After it had started up it had reached a point about here and I noticed that a gust of smoke came out of the exhaust.

Q. What color? A. Black.

Q. Just one? A. Well, there, and then about when it got here there was another one. As it kept on you could see those intermittent shots of black smoke coming out of the exhaust.

Q. Now, can you estimate about how high the plane was as it was making the first turn? A. I should say it hadn't reached a point over two hundred feet.

Q. Now, as it was turning was it going on the level or was it still on the climb? A. It was trying to make—he was trying to make altitude over the whole time, from the time he left here until he made the second turn.

Q. Where did he make the second turn? A. He made the second turn just above this second railroad track, I should judge, about here.

Q. Somewhere between the Lehigh Valley tracks and South Street? A. Somewhere up along there.

Q. Now, can you estimate about how high the plane was when it made the second turn? A. I

should say about three hundred feet. Three hundred or three hundred and fifty feet at the most.

Q. Then it made the turn? A. Then it made a sharp turn to the right.

Q. By the way, was this first turn sharp or gradual? A. No. It was sharp. It was decidedly sharp.

Q. Could you describe with this so-called toy about what angle the plane was as it was making the turn?

Mr. George: There is no objection to using this, is there, Mr. Carpenter, just for the purpose of illustration?

Mr. Carpenter: That's not a replica of this plane. It isn't intended to be.

The Court: It could only be admitted to illustrate the testimony, then I should suggest that we get on the record about what you may agree that shows.

The Witness: The plane started up. It didn't make much altitude at all until it ran, passed the corner of the block in here. As she came up she made a sharp turn this way.

Q. Now, was the plane level as it was making the turn? A. No. She had a pitch.

Q. About what degree pitch? A. Why, I wouldn't like to say just what pitch. I don't know exactly what angle it was. It just took a sharp turn. The pilot took some time from the time he took off until he made his first turn. At first I thought he was going over into this ditch.

The Court: Did he bank?

The Witness: He banked it sharply to the right. He banked his plane sharply to

the right and went up and he proceeded in a straight course up to about this point, then he made another sharp turn to the right.

Q. Now, at any time before he reached this easterly course to the point where the accident occurred did he ever reach South Street? A. I don't believe he got up as far as South Street myself.

Q. Now, then, when he completed what you described as a sharp turn about here where I am pointing between the Lehigh Valley and South Street, his course was east, wasn't it? A. Yes; it was due east towards this road here.

Q. As he was proceeding and after he had crossed route 25, highway, what was the angle of the plane? A. Well, it was on a level keel after he made his first turn, then she seemed to waiver.

Q. Can you indicate with this object, this miniature plane? A. Yes. As she made her second turn she went like that and dropped quickly, I should judge, twenty to thirty feet.

Q. When you say, "She went like that," describe it in words. A. I would say wobbled from side to side so that the wings took a definite turn up and down.

Q. Then you saw it dropped? A. Then it dropped. From that point on she kept sliding. You could see it sliding behind this second row of tracks.

Q. Then you went over? What did you do when you noticed this course of the plane? A. When I saw it drop behind here, I had been over this road many times and I knew this to be marsh land. I ran over, because I thought probably the pilot was making a landing in the marshes and knowing that it is not a proper place to land I went

over thinking the plane might be turned over and if somebody was imbedded in there I might be able to be of some assistance, and I came over this trestle and there is a spur which leads onto this road—I didn't take that one—but ran back, took my car and drove back over this trestle up Bay Avenue to about here to this intersection and then I walked—got out of the car and went across the meadows here, over the tracks into the meadows—meadow land in here—over this way to the tracks, under the trestle and up to where the plane had hit the sand car.

Q. What did you see there, Mr. Conover? A. The nearest on this side of the line of freight cars was the sand car. On the other side there was a motor laying right in the tracks.

Mr. Carpenter: On the far side of the car?

The Witness: On the far side of the car. On the far side of this car there was a motor laying in the tracks and then the two wings were half on the sand car leaning over towards the track.

Q. Let me show you this photograph P-6 and ask you if you recognize that as the position of the plane when you arrived there, from your view? A. From that view, that's not the view I had.

Q. You had another view? A. I had the view on this side.

Q. Could you tell from where you were standing whether— A. That's the position of the—I presume that's what it looked like on the other side of the wing, but I was on this side and climbed under that freight car and went under the freight car and then around the body of the plane. In

fact, I was one of the first fifty or sixty people there.

Q. I show you P-7 and ask you if you recognize that as the physical outlay? A. This is the position of the body of the plane, but this down behind——

Q. Never mind that. A. Only as to the plane, that's the position of the body of the plane.

Q. This one end hanging over the car? A. That's right.

Mr. George: Cross-examine.

Cross-examination by Mr. Carpenter:

Q. Whereabouts is your office, Mr. Conover? A. I am connected with Hanley and Wynne, Hoboken, 84 Washington Street.

Q. Have you had any experience flying? A. I made one trip in Germany, yes, sir.

The Court: At the controls, you mean, or as a passenger?

The Witness: No; as a passenger.

Q. And you have never taken any courses in flying? A. No, sir.

Q. Who were you with this day? Were you alone? I didn't hear the first part of your testimony. A. I was with my fiance.

Q. Riding in an automobile? A. Pardon?

Q. Riding in an automobile? A. Yes; I was driving my car, yes, sir.

Q. You parked along the road there watching these planes alight and take-off? A. Yes, sir.

Q. Did you say you saw a small plane land? A. That's my recollection, that a small plane landed a considerable distance away. I had just watched it drop down and land. Immediately I turned my

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attention to this big plane that was loading up and getting ready to fly.

Q. Had the big plane started before the small one landed? A. No, no. The little plane had landed.

Q. Did it land all right? A. Yes, sir.

Q. You described the wind as a steady wind? A. Well, it was quite a gale. It was a steady wind because I opened the window on my car on the left-hand side because the wind would have come in the other side and blown in on us. I opened the window on my side and left the other one up.

Q. Was this a right hand drive car or left hand drive? A. Left hand drive.

Q. The lady was driving? A. No; I was driving.

Q. You just stopped along the road? A. Along the regular parking space where everybody parks looking right in at the plane.

Q. I understood you to say you were about midway between the state highway and the trestle that goes over the tracks here? A. Yes; approximately.

Q. And this large plane, when it took off, went straight ahead into the wind for aways, didn't it? A. Yes.

Q. From where you sat in your car watching this plane go off and gradually make the turn, from where you sat looking it was very difficult to tell what the distance was that plane was past the intersection? A. Well, that's what I am saying. I am only giving my best judgment and the reason this was impressed on my mind is the fact that it seemed to me to be so close over the highway.

Q. How long did it take that plane to go from the take-off up to the point where it made the

turn to the right? A. To where it made the turn to the right, I should judge about fifteen or eighteen seconds.

Q. Is that from the time it lifted from the ground? A. From the time the wheels started to move until it hit the first turn. I should judge about eighteen seconds.

Q. Then, are you familiar with angles? Was it a twenty-five degree bank? A. I couldn't definitely say twenty-five or fifty, but I would say this: That it was not a gradual bank. It was a very sharp turn.

Q. When you described that turn with this toy plane you didn't indicate to the jury any sharp turn, you indicated a rather, I would say, gradual bank. A. I what? I intended to show a sharp turn. If I failed to do so then I didn't picture what I intended.

Q. You say the plane then went parallel with route 25 towards South Street? A. South Street, I presume is the street that comes in up above.

Q. Right here? A. Yes.

Q. How close to the state highway 25 do you think that was? A. You mean the plane?

Q. Yes. A. To me it seemed to be just on the far side of it, maybe one hundred feet, maybe two hundred feet further than the road.

Q. All the time the plane was climbing? A. Just very gradually. It wasn't noticeable.

Q. These large planes climb very gradually as a rule, don't they? A. Yes; I would say they do, but they rise with a degree of surety. You watch a plane with a pull to the motors, and the motors are pulling it, she goes right up, but this plane seemed to labor.

Q. Well, it makes a difference whether it is a light plane with rapid climbing ability or one of

these large heavy planes, doesn't it, when it leaves the ground? A. Well, I would say excepting this: I have seen these tri-motor planes leave the ground and take a straight angle up until they reached a certain distance and then they hit an even keel.

Q. Now, let me ask you this: As you sat in your car there at Port Street and looked across route 25 at this plane, was it up in the air in the neighborhood of South Street? A. Yes, sir.

Q. That plane was quite well up in the skyline, wasn't it? A. No. I don't believe that that plane was more than three hundred to three hundred and fifty feet from the ground.

Q. Would you say that was the highest point it had reached, from what you saw? A. Yes, sir. I would.

Q. Of course, you can't say, can you, with any degree of accuracy, how close your estimate was to the fact? A. No; except that my knowledge of the average building looking up and putting a couple of apartment houses one on top of the other and calculating how close it might be. That's the only definite way I have of concluding.

Q. You estimated the height of buildings. How high is the Trust Company of New Jersey Building around here? A. That's about 125 feet.

Q. How many stories are there in that building? A. Why, I should judge there is about eighteen or nineteen stories. I am wrong about my calculation. In correcting myself I would say it is about 175 feet high.

Q. Now, looking at that plane when you were down here on Port Street, you could see it over the deck of route 25, could you? A. Over route 25?

Q. Yes. A. Yes.

Q. You saw it over the top? A. Yes.

Q. You didn't have any chimneys in the neighborhood by which to gauge the height of it? A. No.

Q. There wasn't anything over there except the plane itself? A. Yes, sir.

Q. And back of the plane was the sky? A. That's right.

Mr. Carpenter: That's all.

(Witness excused.)

Henry M. Shaw, called as a witness for the plaintiff, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. George:

Q. Mr. Shaw, where do you live? A. East Orange.

Q. Beg pardon? A. East Orange.

Q. What is your business? A. Manufacturer.

Q. Were you at the Newark Airport on March 17, 1929? A. I was.

Q. What time did you arrive there? A. Five minutes after eleven in the morning.

Q. Now, did you have a ride in an aeroplane of any kind? A. Never before.

Q. On that day did you? A. I did on that day.

Q. A plane of what company? A. Colonial Airways.

Q. Do you know who the pilot was? A. I didn't at that time.

Q. Do you know now or have you since learned? A. I have since learned.

Q. Who was it? A. Foote.

Q. Lou Foote? A. Yes; that's what I was told.

Q. Beg pardon? A. I don't know it to be a fact.

Q. But you have since learned that the pilot on that plane was Lou Foote, is that it? A. Yes. I have been told that. I don't know.

Mr. Reed: I move to strike the answer "It was Lou Foote."

The Court: I think I shall have to strike it out until he is identified.

Q. Do you know whether the plane in which you rode was the plane which later was involved in an accident? A. I would say it was, although I wasn't there at the time of the accident.

Q. Now, did you pay for the ride? A. I did.

Q. How much? A. Five dollars.

Q. Did you receive a ticket? A. I did.

Q. And you paid for the ride before you entered the plane? A. I did.

Q. And a ticket was handed to you upon payment of five dollars, then you handed the ticket up to somebody else? A. I did.

Q. Now, before the plane started on the ride which you had that day— It was pretty close to noon, wasn't it? A. I entered the plane at five minutes after eleven. The plane started twenty-five minutes later.

Q. What part of the plane were you seated in after you got in? A. I was in the left, just a little behind the center.

Q. And where with relation to the pilot? A. The pilots were directly in front of me.

Q. Now, did you notice anything unusual as the plane was waiting before the take-off? A. My curiosity was aroused first.

Q. By what? A. Two mechanicians, one in overalls, both of them down on the ground at my left, observing the left motor.

Q. What were they doing, if anything, beside observing the motor? A. One passed into the cab, came into the cab and communicated with one of the men in the front of the plane.

Q. You refer to the cockpit, I suppose? A. The cockpit, yes, sir.

Q. Where the pilot and assistant pilot are seated? A. Yes, sir; they were standing at the time.

Q. Did you overhear any conversation? A. No. I was too far back.

Q. What was the other one doing who remained outside? A. Just watching the propeller in its movements.

Q. On which motor? A. Left.

Q. Did you notice how many motors there were on the plane? A. Three.

Q. Did you see any instruments of any kind? A. I did. In front of me on the left.

Q. Was anybody looking at the instruments while one of the men was making the observations of the left motor? A. That I couldn't say.

Q. Did you notice either of the pilots or the mechanicians who came into the plane make observations of the instrument? A. I noticed they were taking observations in the cockpit, but not with the instruments on the left strut under the wing. They were in a direct line of my view as I sat in my chair.

Q. Did this same man go around to any of the other motors while you were seated there? A. I wasn't interested in any other motor except that one. It was out of synchronism with the others.

Q. Beg pardon? A. It was out of synchronism with the others.

Q. Do you know that? A. I know it.

The Court: Which motor was that?

The Witness: The one on the left which is the nearest to my side.

Q. The motor on the left was out of synchronization with the other two motors? A. With the other two.

Q. Do you know what a tachometer is? A. I do.

Q. What is it? A. It is supposed to record the revolutions per minute—the speed of the propeller on the shaft.

Q. Did you notice the tachometer on this plane? A. I did; because that aroused my curiosity first.

Q. What did the tachometer indicate? A. Indicated a variation from ten, twelve, fourteen and sixteen, only once to sixteen.

Q. Only once went up to sixteen hundred, that is, revolutions per minute? A. Yes, sir; revolutions per minute.

Q. Did you notice the other two motors as to what they reved to? A. The one on my right I noticed eighteen and one time twenty, but I stepped back to my seat again and watched the other. My curiosity was aroused more for the speed being used to go up than anything else.

Q. Now, did you notice— In order that we who are not engineers or technicians may understand more clearly what a tachometer is, may I ask if that is similar to what we call an ameter on an automobile showing the discharge and charge? A. I rather not answer that question. It is going into the techniques.

Q. Was that your first ride in a plane? A. Yes; and my last.

The Court: While Mr. George is examining the record, I would like to find out further—while you were around the airport did you see any other tri-motor Ford planes there?

The Witness: I didn't. I saw this one which was tuning up and made a bee-line for it.

The Court: Did you observe any lettering or names on this one on which you did take a ride?

The Witness: I know that there was "Colonial." Those words impressed themselves on me.

The Court: That was written where or painted where?

The Witness: I really don't know whether it was on the top of the wing or under the wing at the present time.

Mr. George: Cross-examine.

Cross-examination by Mr. Carpenter:

Q. What do you manufacture, Mr. Shaw? A. Why, bakelite parts for all industries, chemical, electrical, mechanical; parts for electrical instruments; aeroplane parts.

Q. Do you manufacture tachometers? A. Manufacture what?

Q. Tachometers? A. No. We don't assemble any instruments at all, just make bakelite.

Q. What time did you get down to the airport that day? A. I arrived there in my car just eleven o'clock. It was just five minutes after eleven when I stepped into the plane.

Q. Did you have somebody with you, or were you alone? A. Friends were with me.

Q. Did they go up in the plane, too? A. They did.

Q. How many of you in the party? A. Three.

Q. Your own family? A. Yes.

Q. I understand you got in the plane 11:05. That was the first flight the plane made that day? A. Yes; I was so told at the time.

Q. You sat on the left side of the plane? A. I did.

Q. About midway back? A. Yes.

Q. You noticed, I suppose, the tachometer which was on the wing strut outside of the window to your left? A. Yes, sir.

Q. In plain view of you? A. Yes.

Q. You sat for twenty minutes until the plane took off? A. Easily.

Q. Twenty-five minutes to be exact? A. Yes.

Q. When this needle varied, the needle of the tachometer, was it while it was on the ground before you started at all? A. Yes, sir.

Q. And then the engine was merely idling, wasn't it? A. No, I can't say it was idling——

Q. Well, now— A. —not in the sense of idling. I drive automobiles.

Q. When they moved out to the end of the runway and when they stood on the ground they reved that motor up to full speed and then slowed it down again, didn't they? A. They did.

Q. Is that what you mean by the revolutions varying up as high as twelve, sixteen or eighteen? A. When it was on the ground?

Q. That is, the time when she was on the ground that she ran up as high as eighteen hundred, is that correct? Just answer yes or no. A. While on the ground?

Q. Yes. A. I would say the instrument did reach eighteen hundred at one time.

The Court: On this left motor?
The Witness: On this left motor.

Q. That is while she was being reved up? A. While they were tuning it. It took them twenty minutes to tune it, to get the motor to come up to that point, then they took off.

Q. They were waiting for a load there, weren't they? A. No, sir; they weren't.

Q. Did you know that that plane had flown over from Staten Island that morning? A. I knew nothing about it at the time I got in it.

Q. Did you assume this was the first time the ship had left the ground that morning?

Mr. George: I object to that as immaterial.

The Court: He has already indicated that.

The Witness: The plane, when I entered, left the ground at 11:30.

Q. Did you assume that was the first time that plane had left the ground that day? A. It really wasn't in my mind whether it was first, last or anything. I had no means of finding out, either.

Q. At any rate, while you sat there in the plane, did you notice what the revolutions of the right engine were? A. Once I stepped over, yes.

Q. What was it then? A. Eighteen.

Q. That was while the ship was in flight, wasn't it? A. No. No, sir, that was—comparison was made to find out whether the right-hand engine was operating in unison with the left because I feel very sure the left motor was not in synchronism with the other. You could tell it. Anyone could tell it.

Q. Don't you know they are seldom in synchronism on the ground? A. I realize that. There is a difference in the hum. It had the effect of starting a cold motor on a cold morning.

Q. Did you assume that was a cold motor when you got in the plane? A. I did at first, actually did, because the morning was cold.

Q. The engines, were they all running when you got in the plane? A. They were.

Q. The engines were idling? A. They stopped once. To my knowledge all three stopped at once.

Q. Then how did they start them? A. Started them one after the other again. Not the three at the same time.

Q. Of course, they didn't. How did they start? A. I couldn't tell you which one started first.

Q. How was it started? How did they start them? What did they do? A. I don't know.

Q. What? A. I don't know why I should be asked that question. They started. I am not going into the technique of the instrument board.

Q. Mr. Shaw, you were there and this jury and I were not. We want to know from you if you were observant—we want to know what they did to start the motor? A. I wasn't in position to see what they did. That's my answer.

Q. Let me ask you this: Before that ship took off you were not afraid of those motors? A. Not a particle. Absolutely.

Q. And from the time that ship with the motors reved up, and she left the ground until she came back, just tell the jury whether those motors functioned properly as far as you could tell? A. We turned and went as far as the lower part of Central Park, banked, turned, came over the river and came down, and as we started to go across the river, coming into the Jersey section, the left motor began to fail again and picked up. That I am positive of.

Q. Now,— A. Now, wait until I get through. We came along and we made a perfect landing practically without a bump. I pulled out my watch, got out of the car. They asked if I enjoyed my trip. I said, "Immensely."

Juror No. 5: What flight was this? Is this the flight previous to the fatal flight?

Mr. Carpenter: No. Half past eleven. The fatal one was five o'clock.

Juror No. 5: Same plane? Same day?

Mr. Carpenter: Yes.

The Court: That is not in evidence. That is what I have been trying to get. It seems to me this is all irrelevant.

Mr. George: I understand Mr. Carpenter just admitted it was the same plane.

Mr. Carpenter: Same plane, sure.

The Court: You got ahead of me. I was going to ask if it was the same plane.

Mr. Carpenter: He said so. I don't doubt it.

Q. Did you see the right motor at all? A. Did I see the right motor?

Q. Yes. A. No. I saw the instrument on the right hand side as I stepped from my seat and went over and looked and came back and went back to my seat.

Q. Isn't this a fact—the only time you saw the tachometer go up to 1800 was immediately before the take-off? A. Yes, sir; absolutely.

Q. Before that the motor was away down idling, down around the lower hundreds? A. Yes, sir.

The Court: Just a minute. Before you put the next question, might I just interrupt you long enough to get this clear in my mind, because my type of mind is such I want to have a thing cleared up as you go along.

Are you in position to admit that this plane that was in the accident was the only tri-motor Ford plane that carried passengers from the defendant's station on that day?

Mr. Carpenter: No. It is not true. There was another one. There were two there that day. Ours was one and Mr. Brown, who is sitting back here, had another one.

The Court: All right.

Q. You, Mr. Shaw, noticed that the needle of that tachometer read eighteen while you were leaving the ground, while you made the ascent, until you got up to the level at which the plane flew on her trip over New York, is that so? A. My thought at this time is that I was perfectly satisfied that it was working all right to take off. In other words, my mind was at ease as to any question about that motor.

Q. So, whatever you have said about it here, the fact is as you observed it while you sat in the plane on the ground you were perfectly satisfied with the performance of all the motors? A. I was—I was up in the air.

Q. You wouldn't have gone if you weren't? A. I told the pilot I was. I enjoyed every minute. It was worth five dollars.

The Court: Was that good looking young man they say is Mr. Brown—will you just stand up, Mr. Brown—was that the pilot that drove the plane in which you rode that day or not?

The Witness: No; I don't think so.

Q. While you were in the air, from the take-off until you got back, you were perfectly satisfied with the performance of the motors? A. I told the pilot I was.

Q. Whether you told him a lie or not, you were satisfied, weren't you? A. I was.

Q. While the plane was in the air the engines functioned all right, didn't they? A. With one exception and it was only because I was curious to watch that tachometer reading.

Q. You don't know but what the pilot might have pulled the throttle back in order to slow this ship up? A. He might have done that.

Q. To come down to land? A. He could have done that.

Q. As far as you know that is what he may have done? A. I don't know. Something was done.

Q. You simply know the motor slowed up? A. Yes, sir.

The Court: Were you where you could observe his actions, especially with reference to his arms and his hands, the pilot?

The Witness: The pilot? Why, I could see them talking to each other, moving.

The Court: No. I mean particularly at the time when you say this motor slowed down?

The Witness: No; I saw no movement on his part.

Q. Up to that time, from the time you took off until the motor slowed down in flight when you were over the bay, the tachometer read eighteen hundred all the way through, didn't it? A. No; it didn't.

Q. I ask you if you remember giving this testimony— A. I remember my last testimony, but I have a distinct——

Q. This might refresh your recollection. "Q. You were curious to see what revolutions the engines were running?"—page 202—"and you found she was running at a revolution of eighteen hundred a minute? A. While she was in the air.

Q. All the time? A. Yes." You gave that testimony in Newark, didn't you? A. I must have if it is there. I want to qualify that. There was once—I haven't discussed this matter with anyone since that day—there was once when I am very certain that there was a drop in the reading.

Q. That is when you say he may have done this to make the ship land? A. To come back over the river.

Q. Question by Judge Dungan: "You are speaking now of the left motor?" "Left motor." "You could not see the right motor?" "No; I was not in a position to see the right motor." And by myself: "You couldn't see the revolutions of the center motor, either, could you?" "No." "These variations in the speed of the motor that you told about was while the ship was on the ground, before she took off?" "Yes, sir." "During that twenty-five minutes you were in the ship and waiting for it to start off, you noticed the needle vary from zero to eighteen?" "Yes, sir." "When the needle got up to eighteen, while the ship was on the ground, was immediately before the take-off, wasn't it?" "Yes, sir." "That is when they pushed the motors up?" "Everything was all right at the beginning of the taxiing from the ground, on the start of the flight." A. Yes, sir.

Re-direct examination by Mr. George:

Q. Just one question, Mr. Shaw. On your return from Staten Island on that first trip, which you now say is your last trip, what did you see happen to the left motor? A. You mean from the previous question?

Q. Never mind the question. We are concerned only with that trip, that first and last trip of yours.

As you were on the way back, completing the excursion or hop which you took, you said that there was some change in the action of the left motor? A. In the propeller and the speed which has been referred to and called to my attention in the remarks made at the previous suit?

Q. Never mind that. I am asking you what is the fact? What happened to that left motor and propeller? A. The speed?

Q. Did it speed up or slow down? A. I would say the speed slowed down.

Q. Was it little or much slowing down? A. It was just for a slight banking effect. I would say the distance, as I recall it now and thought it out many times since, it would be the distance practically crossing the Hudson River.

Q. And it slowed up for that period or distance? A. There was a slowing period at that time.

Q. And while that left motor was going so much slower than it had, were the other two motors functioning? A. I couldn't say. They seemed apparently all right. It was very bumpy as we struck the river. We had several bumps that morning. It is hard to tell what was going on, to be perfectly frank with you.

Mr. George: That is all.

(Witness excused.)

JOSEPH A. RUBACKY, called as a witness on behalf of the plaintiffs, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. Coolahan:

Q. What is your business? A. Physician and lawyer.

Q. Physician and lawyer? A. Yes.

Q. Where is your office? A. 192 Jefferson, Passaic, New Jersey.

Q. Do you hold any position in the City of Passaic? A. I have been health commissioner for four years.

Q. You have been health commissioner for four years? A. Yes, sir.

The Court: What is the purpose, to show death in this accident, or anything of that kind?

Mr. Coolahan: No. He was a witness to it.

Q. Do you recall the 17th of March, 1929? A. I do, sir.

The Court: I think things ought to be investigated. Were you down at the airport that day?

The Witness: Yes, sir.

The Court: This is the fourth lawyer, fourth or fifth.

Mr. Reed: He is a doctor.

The Court: Doctor and lawyer, which is the same thing.

Q. Doctor, did you see this plane take off on its last flight? A. I saw it before and during the course of the fight.

Q. You saw it before it took off and after, during the course of its flight? A. Yes, sir.

Q. Now, doctor, will you tell us what you saw particularly about the plane before the flight? A. I was trying to gain admittance into the plane by purchasing a ticket and had to approach a sort of a rail guard. Just prior to entering the field where the plane was stationed at that time with its motors working I had called the attention of my wife to the fact that the left motor was sputtering and subsequently watched the movement of that plane going down towards the end of the field and then swing back up the runway.

Q. You didn't purchase any ticket, did you, doctor, to board the plane? A. No, sir.

The Court: Why not?

The Witness: I was deprived of that fate by two young men who came before me.

Q. Did they purchase tickets? A. Yes, sir.

Q. Did they get into the plane? A. They got into the plane. They were the last two to get into the plane.

The Court: Was this trip the fatal trip?

The Witness: Yes, sir.

The Court: And when you say you noticed the motors sputtering, was it the left motor? Was it?

The Witness: The left motor.

The Court: Was that as she came in from another flight or while it was tuning up to go on this particular flight?

The Witness: I saw it from the opposite side of the field as it came down and then saw it gain as I approached the place where it was stationed prior to going off on its next trip.

Q. You saw the plane, you say, take off? A. Yes, sir.

Q. What sort of a take-off was it, doctor, if you can state? A. I recall very vividly the trip down the field. I don't know the technical terms of aviation, but the aeroplane went down towards the end of the field with a three-point contact with the ground. As it got to the end of the field it swung around to come towards the position that—position in which I was standing, and as it soared over my head it was then at approximately about one hundred feet, I should say, with a distinct quiver, or rickety movement I term it and then subsequently tried to lift itself in the second strata or level of air and then made the right turn after it passed the highway to the left.

Q. Would you step down to the map here, please? Would you take the pointer and would you indicate to the court and jury just the course this plane took while you were there? A. The both are the same, are they?

Q. The both are the same. There is one with "runway" marked off and this has not. A. I may have my points wrong. As I remember it I stood somewhere in here, right about in there and the aeroplane was in that position parallel with the northeast runway and after it was filled it came down this——

Q. Went down the northwest runway? A. —runway and then shot over the place where I was standing.

Q. Now, what course did the plane take? A. The plane went up about in here, I should say.

Q. What did it do when it reached that point? A. Turned up towards this direction.

The Court: That was the first turn?

The Witness: Yes, sir.

The Court: What was his altitude, if you can give us an idea?

The Witness: I should say roughly at that point where the first turn is about one hundred and fifty feet.

Q. Then you say he proceeded along the state highway towards South Street? A. I don't know whether he followed that highway. I know he went past it, beyond it, and then followed it in here over the railroad tracks.

Q. Then what happened when he got beyond the railroad tracks? A. Then he made the second turn to go towards the direction of New York City.

Q. Made a second turn towards the direction of New York City. And did he cross the state highway when he made his second turn? A. And then he came over this way.

Q. Came over that way? A. Yes.

Q. And when he made the second turn, doctor, approximately what was his altitude? A. I should say double the altitude of what it was when be made the first turn.

Q. What would you say his altitude was when he made his first turn? A. Approximately one hundred and fifty feet.

Q. Then would you say his altitude when he made the second turn was about three hundred feet? A. Well, from where I stood it looked that way.

Q. It looked about three hundred feet? A. Yes.

Q. What happened after he got across the state highway? A. It was shortly after he made that turn he started to drop.

Q. When he started to drop, what was the action of the plane if you recall? A. You mean as far as the direction?

Q. Yes. A. He was going east.

Q. Was it a gradual drop, doctor, or did he quiver as you describe?

Mr. Carpenter: Let him describe it himself.

The Witness: The plane—one part seemed to drop down all of a sudden and then gain its normal level but it was a continued drop, one sudden drop, then sort of a level and then another drop.

Q. Then it got out of your sight, I suppose? A. Yes.

Q. Did you go over and see the plane after the wreck? A. Yes, I went over.

Cross-examination by Mr. Carpenter:

Q. Did you go to render medical attention? A. Well, I went over there to do what I could for them.

Q. Are you a medical doctor or a dentist? A. Yes, sir.

Q. A medical doctor? A. Yes, sir.

Q. What do you do, practice law or practice medicine? A. I practice law.

Q. You don't practice medicine? A. No, sir.

Q. You are admitted as a doctor? A. Oh, yes, fifteen years.

Q. How many years have you been admitted as a lawyer? A. Two years.

Q. You prefer the law to medicine? A. I do, sir.

Q. By the way, you can write a prescription, can't you? A. Yes, sir.

Q. Now, Lawyer Rubacky, will you tell me what experience you had before with aeroplanes? A. You mean travelling in aeroplanes?

Q. Yes. A. I have had no experience. That was the first occasion I would want to go in an aeroplane.

Q. Did you go to purchase your ticket after the plane got on the ground or before it got on the ground from her previous flight? A. Oh, no. I went over there after it had come down from its previous flight.

Q. How long had it been standing on the ground before you went to buy your ticket? A. Roughly I should say somewhere between ten and fifteen minutes.

Q. By the way, did I understand you to say you saw the plane come in on her last flight before? A. Yes; I think it was this plane.

Q. Is that the time, when she was coming in, when you say you noticed the motor sputtering? A. I noticed the motor sputtering as I stood in that little yard, if you can call that such.

Q. We call that a bull pen. A. Bull pen.

Q. That's what they call it. A. That's where I noticed the sputtering movement. As it came down I again say I noticed the left motor. I didn't hear it sputter, but I noticed that the clear circle that you get with the average aeroplane motor was interrupted as it came down, but, of course, I at that time attributed it to the fact probably the——

Q. Like the operator of the plane had shut off his gas. You are speaking of the movement of the propeller, aren't you? A. When I first saw it come down from its previous flight.

Q. You are speaking of the movement of the propeller, that you could see the propeller occasionally? A. That's it.

Q. That's all you noticed about it? A. When it first came down, sir.

Q. Then you went and tried to get your tickets but somebody else beat you to it and you didn't get it? A. That's it exactly.

Q. Then how long did the plane stay on the ground after she got in from her previous flight? A. I say about ten or fifteen minutes. I don't know exactly.

Q. Do you know Mr. Rosenthal? A. Mr. who?

Q. Rosenthal, the lawyer, who was on the plane on that next to the last flight? A. No, sir.

Q. Did you see him there? A. No, sir.

Q. You stood to the left of the runway as the plane took off? A. As the plane came up to that.

Q. (Indicating) Down there is where you stood? A. No, sir.

Q. Tell us just where you stood? A. I stood right in here.

Q. Oh, the other side. All right. At that point the plane was one hundred feet in the air, was it? (Indicating.) A. I should say approximately.

Q. And it had come from the easterly end of the northwest runway and by the time it got up to where you stood just under the letter "R" on the northwest runway it was one hundred feet in the air? A. Yes.

Q. And it went past, on beyond the intersection of the highway? A. Yes, sir.

Q. Gaining altitude all the time? A. It wasn't gaining. It seemed to go up on the first strata and then went up and stayed in the second strata. I am trying to give you the picture as I know it of an aeroplane ride.

Q. We are talking about air now. A. He was at one level, then he attempted to go up. As he attempted to go up, the pitch of the plane—the two wings faltered. It is very vivid in my mind and still remains so.

Q. That's on the way over your head? A. Directly above me, yes, sir.

Q. Then he went out over this intersection still going into the wind? A. He had the wind with him as he was going towards that highway.

Q. What do you mean? A. The wind was back of him, pushing his—he wasn't going against the wind.

Q. How do you know he wasn't? A. I know he wasn't because I know the wind was blowing towards me on the right side.

Q. Then you mean this plane attempted to take off with the wind on his tail? A. I don't know what you term it, on its tail or on its nose. I know the wind apparently was coming from my right side.

Q. The wind was blowing this way? Right? A. Yes.

Q. From southeast to northwest? A. Yes.

Q. And the plane was going in the same direction? A. Yes, sir.

Q. And when the plane got up here to a point where my pointer is— A. No. I don't think he went that far.

Q. How far do you say it was? A. I say he went about here.

Q. All right. About an inch or an inch and a half from the intersection? A. Yes, sir.

Q. Then he started to make the turn? A. Made his first right turn.

Q. Now you saw the plane make that turn? A. Yes, sir.

Q. Was that a gradual swing around like that? A. I wouldn't say it was gradual in comparison with the second turn. I would say the second turn is gradual. I would call the first turn rather sharp.

Q. The turn up here at South Street was a gradaul turn, was it? A. Yes, sir.

Q. A slow turn? A. You mean slow with respect to speed?

Q. Well, did it take it quite awhile to get around there? A. It took more time than it did to go around the first turn.

Q. That turn around over by South Street, was that the highest altitude the plane reached while it was in your view? A. I should say so, at or near that point.

Q. You stood at that time on this runway? A. I wasn't on the runway. I was off it.

Q. Off the runway. You say you were in about the same place at you were at when the plane went over your head? A. Yes, sir.

Q. How long did it take from the time you were there until the time you say the plane started to go down? A. I couldn't say, sir.

Q. What is your best idea? A. About a minute or two.

Q. About a minute or two. Talking with your wife and children while the plane was going between the intersection and South Street? A. No; my wife wasn't with me at that time. I was standing with my two children.

Q. Pointing at objects in the neighborhood? A. No; we were watching the flight of the plane.

Q. Did you keep your eyes on the plane all the time? A. I did, sir.

Q. Was the plane climbing between the time it passed over your head to the time it reached South Street? A. I should say so.

Q. And you say it was after the plane turned to go east, turned when it was about at South Street and route 25 that you noticed it start to gradually go down? A. Yes.

Q. And it went down on an even keel, didn't it, right and left wings about level, the whole plane about level, settling down? A. I wouldn't say that he went down with an even keel. As far as the body of the plane, what I call the chassis of the plane, I would say that would be about an even keel.

Q. It started to go down with the nose a little bit lower than the tail, didn't it? A. Considerably so on its first drop.

Q. Were the wings about horizontal?

The Court: He means tip to tip.

A. From this end to that end?

Q. Yes. A. Well, I couldn't tell you that excepting that I noticed that the plane started to drop, that's all.

Q. It didn't start to drop, it went down straight, didn't it? You didn't see it drop horizontally or perpendicularly? A. No.

Q. You didn't see that at any time? A. No, sir.

Q. Another thing. When you stood there on the runway or near the runway and saw the plane at South Street this elevated highway route 25 was in between you and the plane, wasn't it? Or, was the plane up above the level of the deck of that elevated highway? A. The plane was above it.

Q. And back of the plane was the sky? A. I think so.

Mr. Carpenter: That's all.

Re-direct examination by Mr. George:

Q. Did you have any occasion to study the weather vane? A. Beg pardon?

Q. Did you have occasion to study weather vanes or wind directions on that day? A. No, sir; I didn't.

Q. Are you certain about the actual direction of the wind? A. No; excepting that I—as I was I felt the breeze hit the right side of my face and I assume that the air—the travel of the air was in that direction.

Q. You are not certain about the actual wind direction? A. Oh, I couldn't be, sir.

Q. You don't know whether the plane was going into the wind on the take-off or not, do you? A. No. Excepting at that one point as I say I noticed the wind hit the side of my face and it was on the right side.

Mr. George: All right, thank you, Doctor-Counsellor. That's all.

(Witness excused.)

GEORGE KRIEGER, called as a a witness on behalf of the plaintiffs, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. Coolahan:

Q. Do you remember the 17th day of March, 1929? A. Yes, sir.

Q. Were you in the vicinity of the Newark airport on that day? A. Yes, sir.

Q. And who did you go out to the airport with? A. Mr. Henderson and Boele.

Q. You went with Mr. Henderson and Mr. Boele. Those were the two young men who were killed in this crash? A. Yes, sir.

Q. Were you there when they boarded the plane? A. Yes, sir.

Q. Did you see them get on the plane? A. Yes, sir.

Q. You didn't get on the plane? A. No, sir.

Q. Why not? A. I was afraid to go. I didn't want to go on.

Mr. Carpenter: I object to "why not."

The Court: Sustain the objection as to why he didn't go.

Q. Mr. Krieger, did you see the plane on the ground that day? A. Yes, sir.

Q. Did you see and hear the motors running? A. Yes, sir.

Q. Did you notice anything particular or peculiar about the motors? A. Not while she was on the ground I didn't, no.

Q. Did you see the plane in the air? A. Yes, sir.

Q. Did you notice anything particular or peculiar about the sound of the motors? A. Yes, sir. When she flew over my head.

The Court: Was that on the last trip?

The Witness: I don't know what trip it was.

Q. Was that on the trip of the crash? A. Yes, sir, the last trip, yes, sir.

Q. What did you see or hear? A. Sir?

Q. What did you see or hear? A. Why, it sounded like one of the motors was missing or sputtering. I don't know which one.

Q. You don't know which one? A. Yes, sir.

Q. Mr. Krieger, you say you saw the plane take-off? A. Yes, sir.

Q. Would you step down to the board, please? Will you describe to the Court and jury which way the plane went? A. Where is the pig-booth?

Mr. Coolahan: Withdraw it. Cross-examine.

Cross-examination by Mr. Reed:

Q. How long did you notice this plane while it was on the ground? A. How long she was on the ground you mean?

Q. Yes. How long did you notice it while it was on the ground before the take-off? A. About fifteen minutes; ten or fifteen minutes, I guess.

Q. During that fifteen minutes were the propellers idling? A. Yes, sir.

Q. During that fifteen minutes you noticed nothing unusual about the plane? A. No, sir.

Q. And your companions were with you? A. Yes, sir.

Q. It wasn't until after the plane had gotten up in the air that you say that you noticed something? A. Yes, sir.

Q. Where was it, would you say, that you noticed it? Whereabouts on this map? Was it over here? Do you understand P-2? This is route 25; this is the railroad track; this is South Street in here. A. I was standing by the booth, the pig-booth.

Q. I am asking you whereabouts up in the air was it you say you noticed anything about the plane, if anything? A. When it flew over my head it was sputtering. Over route 25—over route 25.

Q. I am asking you was it here that you heard this sputtering? A. No. Right as he flew over my head from the airport.

Q. After it was up in the air? A. Yes, sir.

Q. That's the only thing you noticed about it? A. Yes, sir. She made a turn here. She made a very sharp turn here. She started to go down like steps of stairs.

Q. Did you hear the last witness say the second turn was a gradual turn?

Mr. George: I object to that.
The Court: Sustained.
The Witness: I don't hear well.

Q. You say you don't hear well. Is there something the matter with your hearing? A. Not so much. I couldn't hear away back there.

Q. Is there something the matter with your hearing? A. No, sir, not much.

Q. Go back, will you please? Did you hear any sputtering when it was right here? A. No, sir; it was too far away. I couldn't hear anything from there, only when she flew over my head.

Q. You were at the bull-pen, weren't you? A. I was by the ticket office, because he flew right over my head.

Q. You were at the beginning of the runway, were you not? A. I was by the ticket booth where they sold the tickets.

Q. Was that near the beginning of the runway? A. Yes, sir.

Q. You were at the beginning of the runway, weren't you? A. What?

Q. Are you hard of hearing? Did you hear my question? A. Yes, sir.

Q. Are you hard of hearing? A. No, sir.

Q. Were you at the beginning or near the beginning of the runway? A. Yes, sir.

Q. Assuming this is the beginning of the runway, where were you standing? A. I don't understand the question very well. I can't explain.

Q. You were at the beginning of the runway? A. I was standing near the runway by the ticket booth where they sell the tickets.

Q. That's where the plane started off? A. Well, it was about two hundred feet away from the ticket booth.

Q. How many feet? A. About two hundred feet from the ticket booth.

Q. It started at a point two hundred feet from the ticket booth? A. That's where she was standing idling.

Q. Is that where it started? A. Yes, sir.

Q. And then as it went away, as it started, it went away from where you were? A. Yes, sir. It went away with the wind, then it turned around and started against the wind up in the air.

Q. How long a run did it make as it taxied off on the ground? A. A couple of hundred feet.

Q. Then that brought it four hundred feet, didn't it, from where you were standing? The two hundred feet away, from where he started, then two hundred feet on the ground? A. Coming back again, you mean, or going up in the air?

Q. Will you please answer my question? Did it taxi along the ground another two hundred feet from the point where you were standing? A. Yes, sir.

Q. Then it kept on going away from you, didn't it? A. No; then she turned around and came towards me against the wind and went up in the air.

Q. When she went down the runway she was going away from where you were standing? A. When she started off?

Q. Yes. A. Yes, sir.

Q. And she went along the ground away from you for two hundred feet? A. Yes, sir.

Q. Then it kept on in that same direction she was going for some five or six hundred feet? A.

No; she came back towards me again, towards Newark. That's the time she went into the air.

Q. You were at the beginning of the runway, you say? A. By the ticket booth, I say.

Q. Do you say, then, that the aeroplane at any time ever came over the ticket booth after it made its start? A. After it made its start it came over my head near the ticket booth.

Q. Near the ticket booth? A. Yes, sir.

Q. It came all the way back to the ticket booth? A. Yes, sir.

Q. The ticket booth was away down on the runway; away down here? A. I don't understand the question.

Q. Do you understand the picture? A. Where is the ticket booth? Show me the ticket booth.

Q. Where was it? I am asking you. A. Well, I don't understand the question. I can't understand it.

Q. At any rate, you saw the aeroplane taxi away from you down the runway, then off in that direction, and come back towards the ticket booth, did it? A. Yes, sir; it taxied away from where I was standing, then came back towards Newark where I was standing.

Q. It taxied along away from you, then up in the air? A. No; it didn't go up in the air. It came back on the ground; when it came towards me it went in the air.

Q. How high was it when it was over the ticket booth? A. About one hundred and fifty feet.

Q. It got up in the air in a two hundred foot run? Only took two hundred feet to get off the ground? A. That's what I judge.

Q. This heavy plane loaded with people took two hundred feet to get off the ground? A. That's what I judge it.

Q. As it passed the ticket booth it was about a hundred and fifty feet high? A. Yes, sir.

Q. How many feet had it gone altogether, then, from the time it started until it was a hundred and fifty feet from the ticket booth? A. Altogether?

Q. Yes. A. Oh, about three hundred feet.

Q. It had gone three hundred feet altogether and in that three hundred feet it had risen a hundred and fifty feet? A. Well, when she was over the booth she was about a hundred and fifty feet high.

Q. She had gone altogether three hundred feet? A. Altogether, yes, sir.

Q. It got up in the air a hundred and fifty feet in altogether a run of three hundred feet? A. Didn't hear.

Q. In altogether three hundred feet it had gotten up in the air a hundred and fifty feet? A. What do you mean?

The Court: Just what he says. You tried to tell us that three or four times. Come on.

The Witness: He was about a hundred and fifty feet over my head when he was by the booth and he kept going and he made the turn.

Q. Was he climbing? A. A little bit he was climbing.

Q. He was still climbing when he had gone a hundred and fifty feet in a three hundred foot run? A. He was still climbing, yes, sir.

(Witness excused.)

NATHAN C. BROWN, called as a witness on behalf of the plaintiffs, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. George:

Q. Mr. Brown, where do you live? A. Keyport, New Jersey.

Q. What is your occupation? A. Pilot.

Q. Pilot of what? A. Aeroplane.

Q. Do you operate a plane now? A. Occasionally, yes, sir.

Q. Are you acquainted with tri-motor planes? A. Yes, sir.

Q. When is the first time you ever operated one? A. Pardon?

Q. When is the first time you ever operated a tri-motor plane? A. In about 1927, I believe it was.

Q. What make of plane was it? A. Ford tri-motor.

Q. All metal? A. Yes, sir.

Q. Have you any personal knowledge of the construction of Ford tri-motor planes? A. Yes, sir; I have.

Q. Do you know anything about the construction of the first tri-motor plane that was made by the Ford Company? A. Yes, sir.

Q. Did you have any connection with the making of that first plane? A. I was working for the Ford Motor Company——

Q. A little louder. A. I was working for the Ford Motor and it was the policy of the company to send all of the pilots through the factory to gain experience and knowledge of the construction of the plane before they went on the line of flying.

Q. Did you experience that process of education and learning in connection with the manu-

facture of tri-motor planes in the Ford plant? A. Yes, sir.

Q. In other words, worked from the bottom up, is that it? A. Yes, sir.

Q. Now, will you tell the court and jury what flying experience you have had? Tell us all about it. A. I have been flying since the war.

Q. Were you in the war? A. Yes, sir.

Q. In the air service? A. Yes, sir.

Q. What experience did you have in the war—flying experience? A. I was not overseas. I was in this country during the war, at the close of the war.

Q. How many hours of flying have you done? A. Between five and six thousand hours.

Q. Now, five or six thousand hours may mean much or little to the average layman. Will you tell us what it means in actual flying service, whether it is considered a very great deal of flying or just a little amount of flying? A. That could be considered to be extensive experience. I would say ordinarily it would require at least eight or ten years flying to get that much time in the air.

Q. Would you have to have considerable flying to have five or six thousand hours? A. Yes, sir.

Q. And how much flying time have you had with tri-motor planes? A. Well, between two thousand and twenty-five hundred.

Q. When was the first tri-motor plane, commercial plane, put upon the market? A. I don't remember the exact date now.

Q. Well, approximately. A. The Fokker—you mean in this country?

Q. Yes. A. The Fokker began making tri-motors in this country, I think, around about in 1925 or 1926.

Q. Did you fly Fokker planes? A. No. Ford tri-motor. The first Ford tri-motor, I think.

Q. Beg pardon? A. I flew Fords first. I have flown Fokkers since then.

Q. Now, Mr. Brown, did you own a tri-motor plane, tri-motor Ford plane? A. At the time of this accident I did, yes.

Q. What was the manufacturer's number of yours? A. Number eleven.

Q. What was the manufacturer's number of the plane involved in this fatal crash? A. I understand it was number 44. I couldn't be certain about that.

Mr. Carpenter: 41.

The Witness: 41, yes. That's it.

Q. Does that represent the seniority of manufacture, I mean? A. Yes, sir; that's the serial number.

Q. Priority rather than seniority? A. That's the serial number.

Q. Yours was the eleventh that was made? A. Eleventh, yes, sir.

Q. Did this type of aeroplane put out by the Ford Company constitute the first commercial tri-motor plane they used in this country? A. No. By the Ford Motor Company?

Q. I am speaking of the Ford Motor Company. A. No. They made a series of J-4 motors.

Q. Was that the tri-motor plane? A. Yes; that was a tri-motor. As I recall it, they only made probably five or six of those and then went into this series of J-5's.

Q. How much time was there between the J-4 and J-5 series? A. Well, no lapse of time until they went through one series right to the other.

Q. What I am trying to find out, Mr. Brown, is whether or not your number eleven and this number forty-one tri-motor plane were the first that

were purchased—substantially the first that were produced by the Ford Company for commercial purposes? A. Yes.

Q. Were you flying your plane at the Newark airport on March 17, 1929? A. Yes, sir.

Q. Prior to that time also? A. Yes, sir.

Q. And since that time? A. Yes, sir.

The Court: Do you mean your own plane?

The Witness: Yes, sir.

The Court: Not the Colonial Airways?

The Witness: No; my own plane.

Q. How, as far as manufacture is concerned, Mr. Brown, did the plane involved in the crash compare with your plane? A. They were practically identical. My plane probably a little bit heavier than theirs.

Q. Beg pardon? A. My plane was probably a little bit heavier than the Colonial plane.

Q. Why was yours heavier? A. Because for one thing because of the electric starters that I had on my plane and they didn't have them.

Q. That was extra equipment? A. That was extra equipment, yes, sir; and there were several other things. I don't recall just what they are now.

Q. Was there very much difference in the weight? A. Not very much; probably two or three hundred pounds.

Q. Well, considering the size and character of these particular planes, is it a very insignificant difference in weight? Is it? A. It would be equal to about two passengers.

Q. Equal to two passengers at the most. Do you remember what kind of a day March 17, 1929 was? A. Yes, sir.

Q. Will you tell us, please? A. Well, it was quite windy, a gusty wind. From the northwest, I believe, it was.

Q. And had you seen the plane which was involved in the crash that day? A. Yes, sir.

Q. By the way, I meant to ask you if it isn't a fact that both the plane that crashed and your plane are of the one model insofar as factory production is concerned—identically the same? A. Yes, sir; the same thing exactly; same motors.

Q. The only difference being you put a little extra equipment amounting to no more than two hundred pounds or so? A. That's right.

Q. So far as the power of the three motors is concerned and all the general mechanisms of the plane, they were identically the same? A. Identical.

Q. Now, you learned about the accident, didn't you? A. Yes, sir.

Q. Where were you at the time you first heard about it? A. I was—immediately after landing. I was in the air at the time of the accident.

Q. Beg pardon. Oh, you were in the air. A. When I landed someone told me the Colonial plane had gone down over the marshes.

Q. What did you do then? A. There was a load of passengers there wanted to go up. I put them in the plane and went up.

Q. How many passengers did you take in your plane? A. I was hauling about from ten to eleven; sometimes twelve on that day.

Q. How many did you have in your plane after you learned about the accident? A. I don't recall.

Q. Did you take any passengers up after the accident? A. This one trip was all.

Q. How many passengers did you have on that trip? A. I don't remember.

Q. After the accident, did you, by reason of somebody's suggestion or otherwise make a flight with fourteen passengers in your plane including yourself—rather, exclusive of yourself—fourteen passengers besides yourself in your plane and go over the same territory in the same course that was taken by the plane that had crashed?

Mr. Reed: I object to the question as immaterial, irrelevant and incompetent.

The Court: What's the reason? May I hear the full question? Mr. Reed says it is immaterial.

(Question repeated by stenographer.)

The Court: It is immaterial. Sustain the objection.

Q. After the accident did you go up in your plane? A. That was the next day. The second day after, I think.

Q. Beg pardon?

The Court: The second day after the accident.

Q. What were the weather conditions on that second day after the accident? A. Almost exactly the same.

Q. And did you take any passengers up in your plane? A. Yes, sir; I did.

Q. How many?

Mr. Carpenter: I object to that as immaterial.

The Court: Sustained.

Q. What course did you take? A. As near as I could tell, approximately the course that the plane in question took. I followed the route as

indicated by Lieutenant Aldworth and Lieutenant Copsey.

Q. Who was in the plane with you?

Mr. Carpenter: I object to that. This is afterwards.

The Court: If you object now I will sustain it.

Mr. Carpenter: I object.

The Court: Sustained. Why, Mr. George, by the widest stretch of imagination the human brain is capable of it couldn't possibly be competent.

Mr. George: Excepting this, in this repect, your Honor: We hope to show by this witness whom we qualified as an expert using the same kind of plane——

The Court: Never mind. You needn't tell me. Sustain the objection. I think the Court could almost take judicial notice of the fact no two flights of an aeroplane could ever be the same.

Q. Have you ever done any stunt flying? A. Yes, sir.

Q. Mr. Brown, if a plane is properly built, kept in proper condition, frequently inspected and carefully flown, can you say with reasonable certainty that it will not crash?

Mr. Carpenter: I object to that question. It is problematical, and it disregards the fact that accidents happen. Incompetent, irrelevant and immaterial.

The Court: Furthermore, there is no proof of any inspection here, except the ground inspection one of the witnesses said he saw some of the mechanics fussing around the engine.

Mr. George: Counsel has bound the defendant to the extent that in his opening to the jury he stated, and it is binding in the same effect and with the force of evidence. "We will show that the defendant company made proper inspections."

Mr. Carpenter: That's anticipating what I am going to prove when I get to it.

The Court: I have heard some of the most ridiculous stories told in the course of opening to the jury that I don't listen to them.

Mr. George: I withdraw that and will try this one and I am very confident of success.

Q. Assuming, Mr. Brown, that this is the first type of tri-motor Ford commercial plane, and assuming that this ship had fifteen persons in it, that the license called for fourteen passengers; that the wind had blown from the northwest between thirty-four and thirty-nine miles per hour; that the pilot took off of the northwest runway of the airport with which you are familiar and proceeded to a point about two or three hundred feet beyond route 25 on the survey map here and then turned sharply to the right and at that time had gained an altitude of between one hundred and fifty and three hundred and fifty feet; and then proceeded along route 25 to a point at or near South Street where its altitude was approximately the same or a little higher but not over five or six hundred feet at the most and it made another turn, sharp turn to the right and travelled approximately due east and after this second turn to the right the ship steadily lost altitude and had the wind on its tail, would you

say that this ship was flown in a reasonably careful and skillful manner?

Mr. Carpenter: I object to the question on the ground it is incompetent, irrelevant and immaterial; it doesn't state what the weight was. It refers to the license, but doesn't state what the weight in the plane was. It incorrectly states the evidence because the evidence of those witnesses is the plane turned gradually, at least one or two has said sharp turns.

The Court: He is entitled to take the best. I shall sustain the objection, however.

Mr. George: Your Honor has sustained it?

The Court: There hasn't been any weight shown here. I think there are more things vital in this case than that. I think it is proper to show whether at an altitude a certain distance away, a certain point away, it was proper to make a turn in this case.

Mr. George: I didn't get that.

The Court: What we want to know is whether, operating as this pilot operated, whether or not in making the turns that were made at the elevations they were made that was proper practise.

Q. Mr. Brown, have you carried as many as fourteen passengers in your plane? A. Yes, sir.

Q. How many times? A. Oh, a number of times.

Q. A number of times on hops around the Newark airport? A. Yes, sir.

Q. Now, taking into consideration the weather conditions as they existed on the afternoon of March 17, 1929, the plane—with fourteen pas-

sengers in this tri-motor plane that was involved in the crash and with which you say you are familiar—fourteen passengers and pilot, making a total of fifteen passengers—going into the northwest wind and travelling to a point about three hundred feet or four hundred feet (indicating on survey map)——

Mr. Carpenter: You are pointing to six hundred.

Q. No. I am not. Wait a minute. (Continuing question)—about three or four hundred feet from route twenty-five and having an altitude of not more than one hundred and fifty feet, would you say that to make a turn of that kind with that kind of plane, with that kind of load, with that kind of wind as existed at that time was reasonably——

Mr. Carpenter: I object. The question does not state the engines had been functioning properly.

The Court: Assuming that would be so?

The Witness: In either case.

The Court: In either case what is your answer?

The Witness: It is decidedly bad practice. If the motor was failing then it would be still worse.

Mr. Carpenter: I move to have that stricken out. There is no evidence to support it.

The Court: Yes. You say under those conditions as indicated to you it would be bad practice?

The Witness: Pardon?

The Court: Under the conditions that were first indicated to you and the state-

ment made by Mr. Carpenter it would be bad practice?

The Witness: Yes, sir; it would be very bad practice.

Mr. Carpenter: I move to strike out the latter part.

The Court: Yes, strike out the latter part.

Q. Was it your answer that it would be bad practice based upon the full and efficient functioning of all three motors? A. I would say in any case.

Q. I am not speaking about whether it is bad practice generally. I am asking if your answer is that way when all three motors are functioning fully and efficiently? Would it be bad practice? A. Yes, sir.

Q. Now, what effect, then, would the making of a turn at that altitude at that point under those conditions with that load, with one motor not fully and efficiently functioning have?

Mr. Carpenter: I object. There is no evidence one of the motors wasn't fully functioning properly.

Mr. George: There is evidence it was sputtering.

The Court: I think the question should be assuming that the motor, from the time of leaving the runway and in this period the left motor was heard to be sputtering.

Q. Assuming the same weather conditions, the same travel as I have described in the previous question where the plane, with fifteen passengers, had reached the point as we have stated a little while ago, three or four hundred feet beyond route

twenty-five with one motor, the left motor, sputtering on the take-off and in which sputtering also causing an emission of black smoke——

The Court: From the exhaust.

Q. —from the exhaust——

The Court: Intermittently——

Q. —intermittently, and an indication of laboring, whether or not that would have any further effect upon the operation of the plane as to making a turn at this point I have described?

Mr. Carpenter: I object to that question again.

The Court: You see, Mr. Carpenter, you stand with your back to me and I can't hear your objection. I can't get the point of it.

Mr. Carpenter: I beg your pardon. I object to it as irrelevant, incompetent and immaterial. It doesn't state the facts and incorrectly states others. There is no evidence that the motor was laboring at all. The witness said the plane acted as if it was laboring, not that the motor did. The testimony of non-expert witnesses that they saw some black smoke coming out of the exhaust without giving the quantity or description of it, just saying the motor was sputtering, they are not competent to give a description which will aid the court, and it might be very damaging to the defendant.

The Court: I don't know how otherwise you could describe those physical evidences you have named other than to give them the name you would ordinarily give them.

Mr. Carpenter: I object to the question on that ground.

The Court: Are there any other facts that you think are omitted from this hypothetical question other than those you stated?

Mr. Carpenter: That's all I can think of.

The Court: (To witness) You may answer.

Mr. Carpenter: Exception.

The Witness: State the question again?

(Question repeated by stenographer).

Q. Including also the element of elevation at that point of approximately one hundred and fifty feet or two hundred feet at the most? A. I should say that would have very much to do with what the pilot was to do from there on.

Mr. Carpenter: What?

The Witness: He should continue straight on; continue straight on and not attempt to turn at that altitude.

Q. Why? A. It would be almost suicide to attempt to turn in a strong wind with one motor partly out of commission at that altitude.

Q. Then, with the question I have given you, with all of those facts, do I understand you to say it is almost suicide to make a turn under those conditions? A. I would hate very much to try it.

Q. Beg pardon? A. I would hate very much to try it.

Q. Now, with the same conditions, weather conditions, same plane, same load, then pursuing a northeasterly course, reaching a point approximately where I indicate on this map "I-2", little circle, which you can see is South Street, and being a flier you have good eye-sight, reaching an

altitude of not more than six hundred feet with a motor that had sputtered as has been described and had on one, two or three times in this course from "I-1" to "I-2" emitted large clouds, or clouds of black smoke intermittently, and having gained no greater altitude from "I-1" of one hundred and fifty feet or two hundred feet than four hundred and fifty to six hundred feet, making a sharp turn at that point due east, would you say that that was the reasonably proper thing to do under those circumstances and conditions? A. No, sir.

Mr. Carpenter: I object. That's a question for the court and jury; that isn't a question for an expert witness. That's the ultimate question to be decided here.

The Court: Of course, we have to have it from experts.

Mr. Carpenter: On the contrary, they can say whether that is proper flying or good flying, but they can't say that is negligence.

The Court: Of course not.

Mr. Carpenter: Yes.

The Court: Is that proper piloting?

Mr. Carpenter: I don't mean to object to that question.

The Court: Assuming those things to be true, whether they are true or not; assuming them to be true, is that proper piloting?

The Witness: No, sir; it would not.

The Court: What was wrong?

The Witness: A sharp turn in a wind like that in any direction would be improper at that altitude.

Q. Improper why? A. Dangerous.

Q. What effect is the likeliness of such an operation? Dangerous you said? A. Yes, sir.

Q. With what possibilities? A. Sudden loss of altitude, loss of control, which might result in a tail spin—crash.

Q. Now, with the making of the turn, having gotten up to this point of the second turn we have already discussed and having completed the turn which has been described as a sharp turn up here, then going due east with the wind on the tail, same plane, same wind, same load, what additional effect, if any, in consideration of all of those things which we have already described to you, does the wind on the tail have upon the plane or the operation of the plane? A. It increases your ground speed but shouldn't affect your control in the air.

Q. It shouldn't what? A. It shouldn't affect the control of the plane in the air.

The Court: Now, I have taken it for granted—I have not referred back—it is admitted, I understand that there were fourteen people and the pilot—I guess he would be called a man, too—in this plane at the time, fifteen people in all. Is that right, Mr. Carpenter?

Mr. Carpenter: That's right.

The Court: I think there has been testimony to that effect.

Mr. Carpenter: We admit that. No question about it.

Q. With your plane on that same day did you carry as many as fourteen passengers in your plane? A. Not that same day, no, sir.

Q. Why not?

Mr. Carpenter: I object to that.

The Court: Sustained.

Q. By reason of your familiarity with that particular plane—I take it, you were familiar with the Colonial plane, were you not? A. I had been in it a time or two. I made one or two flights in it.

Q. It is identical with yours, isn't it? A. Yes, sir.

Q. Considering the character of the wind, the direction of the wind and the carrying capacity of the plane, would you consider it safe to carry fourteen passengers besides the pilot in the plane on that kind of a day?

Mr. Carpenter: I object unless the weight is given.

The Court: On "a" plane; not this plane?

Mr. George: In this plane; the plane which was involved in the crash.

Mr. Carpenter: I object unless the weight is given. The weight isn't given. Fourteen people weighing three hundred pounds apiece is more of a load than fourteen people weighing one hundred and fifty pounds.

The Court: I am inclined to think that's true. You may run many many pounds into a variation of weights of fifteen people, Mr. George.

Q. Can you tell us what the weight, load or capacity is under the license for this plane?

Mr. Carpenter: That's shown by the license. It isn't his idea.

The Court: I think there is such a license in evidence.

Q. I show you P-4, Exhibit P-4, referring to the description of the aeroplane. I take it this is the license, is it not?

The Court: The card there?

Q. Yes. A. Yes, sir.

Q. And this is the license for the plane NC7683. Right? A. Yes, sir.

Q. That was the plane that crashed, wasn't it? A. Yes, sir.

Q. Now, what is the meaning of "useful load" as set forth in this license? A. Useful load, as I understand it, is the full load you are permitted to carry.

Q. What is the "gross weight"? That includes both the weight empty and the useful load? A. Yes, sir.

Q. And speaking of "useful load", this generally means passengers, doesn't it? A. Yes, sir.

Q. Now, the useful load being 3961 pounds, considering this plane——

The Court: Wait a minute. What is it? The useful load is what?

Mr. George: 3961 pounds.

Q. That's the limit of capacity authorized under this license to be carried in that particular plane. Is that so, Mr. Brown? A. As I understand it, yes, sir.

Q. Considering the plane as you know it, no change in weather conditions, would you say that it was reasonably safe to take up the full capacity even authorized by the license on that kind of a day as existed on March 17, 1929? A. You mean the full 3961 pounds?

Q. The full capacity authorized by the license, 3961 pounds.

Mr. Carpenter: I object. There is no proof we did that.

The Court: Yes; sustained for that very reason. It is another way of getting at the same thing. In other words, he might have had much less poundage in there than indicated thereby. Now, is there anything in that license that limits the number of people or is it just the poundage?

Mr. George: May I call your attention according to this license citing the capacity exclusive of crew as twelve. Is that correct?

The Witness: Yes, sir.

Q. And how many authorized as the crew? A. Two.

The Court: Twelve, you say?

Mr. George: Twelve.

The Court: Well, now, let me ask you this: Does it make any difference with reference to the number of people in the plane so long as the weight does not exceed the licensed permitted weight? Does the number of people have anything to do with it, or is it the weight, the gross weight?

The Witness: No; it is the weight.

The Court: Gross weight, yes, sure. You might have a ship full of babies?

The Witness: You might.

The Court: And the number wouldn't make any difference.

Q. This license is issued by the United States Department of Commerce, is it not? A. Yes, sir.

Q. Are you acquainted with the rules and regulations of the Department of Commerce, Bureau of Aeronautics? A. Yes, sir.

Q. Respecting the operation of passenger, commercial planes? A. Yes, sir.

Q. Is it a violation of those rules to carry more passengers than is authorized by the license?

Mr. Carpenter: I object. Immaterial.

The Court: Sustain the objection.

Q. Mr. Brown, do you know Lou Foote? A. I had seen him around the field a time or two. I don't know him personally.

Q. Did you see him after the crash? A. Yes, sir.

Q. Where? A. At the hospital.

Q. What hospital? A. I don't remember the name of it.

Q. Where? A. It was in Newark.

Q. That was the St. James Hospital? A. Pardon?

Q. St. James? A. I wouldn't know the name of it.

Q. How long after the crash? A. Oh, within two or three hours. I would say a couple of hours afterwards.

Q. What was he doing? A. He was on a bed and the doctors and nurses were around him working on him.

Q. Talk to him? A. Weatherdon and I talked to him.

Q. Who is Weatherdon? A. Captain Weatherdon was at that time chief pilot of the Colonial Airways.

Q. Chief pilot of the Colonial Airways. Did Weatherdon speak to him in your presence? A. Yes, sir.

Q. What conversation was there between Weatherdon and Foote?

Mr. Carpenter: I object to that. Here is a man in the hospital. They hadn't more than got him there and they started to talk to him. I object to the conversation.

The Court: Of course, that goes to the weight of the testimony, but not to its admissibility. There is another reason, however, which might be properly urged. This man is not a party defendant to this suit and any statements made by him wouldn't be evidential.

Mr. George: It is admitted he was the agent of the defendant, your Honor.

The Court: I don't care if he was the president of the company. That's the old well recognized Saffner *v.* Gallon, 96 New Jersey Law, or thereabouts; the old trolley car conductor case.

Q. Did you ever see Foote operate a plane at the Newark airport prior to the date of the accident? A. No.

Q. How long had you been operating at that airport prior to the crash? A. Since October, I believe. It would be about five or six months.

Q. Are you acquainted with the distance and the course of the hops that were being sold by the Colonial Airways in March, 1929? A. They were about the same hops I gave; New York City and back.

Q. Now, was it required in order to make a reasonably safe flier who carried passengers for hire for hops of that kind to know the terrain of that area covered by the hops? A. It was.

The Court: Well for the pilot to know?

Mr. George: Of course, for the pilot to know.

The Court: Was it necessary for him in order to fly safely to know the terrain?

The Witness: He should know it, yes. I don't know whether it was required by anyone. He should know it, of course.

Q. For safe operating? A. Certainly for his own safety.

Q. What kind of flying results in the greater strain upon the plane, short hops or long flights? A. I would say frequent landings; short hops, which would include frequent landings would be a little more severe on the plane.

Q. And when is a plane more likely to have a forced landing, on the take off or on the landing? A. On the take off.

Q. Why? Please explain it to us. A. Because your motors must work at full speed and your motors are more or less cold when you take off. After you get in the air and your motors function for a while they become warmed up and ordinarily function better than immediately after the take off. There are probably more motor failures immediately after the take off than at any other time of flight.

Q. The fact is the take off is the most dangerous part of any kind of flying? A. I would say it is the critical time of any flight.

Q. After you get completely up in the air you can breathe a little easier generally? A. Yes, sir.

Mr. George: May I ask your Honor to please take a recess shortly in order that we may prepare some more questions?

The Court: All right. We will recess now until tomorrow morning at ten o'clock. All witnesses who have been subpoenaed in this case, unless excused by counsel will return tomorrow for a continuation of this case without any further subpoena—tomorrow morning at ten o'clock, and the jury will please not discuss this case with anybody at all in the meantime.

(Recess until 10 a. m. November 25, 1931.)

(After recess 10 a. m. November 25, 1931.)

NATHAN C. BROWN resumes the stand pursuant to adjournment.

Direct examination (continued) by Mr. George:

Q. Mr. Brown, what is the meaning of a laboring plane while in the air?

Mr. Carpenter: I object. That is a characterization or definition of the testimony of some other witness.

Mr. George: He is qualified as an expert.

The Court: I think that's generally known. We all understand what laboring means.

Mr. George: Withdraw the question.

Q. Mr. Brown, what effect does the stopping, total stopping of one motor of the plane in question have upon its flying?

Mr. Carpenter: There is no evidence one motor stopped.

Mr. George: Counsel opened to the jury that one motor went dead.

Mr. Carpenter: I object. There is no evidence to support it.

Mr. George: I will withdraw the question and reframe it.

Q. When a plane of the type involved in this crash is in flight, whether in the process of taking off, after having left the ground, or in actual flight, what effect does the stopping of one motor of such a plane have upon that plane? A. Unloaded?

Mr. Carpenter: Again I object on the ground there is no evidence to justify any such testimony at this time.

The Court: No; I don't think there is.

Mr. George: There is evidence in the case so far as counsel's opening is concerned, which, of course, is in the manner of evidence.

The Court: We have the fact the motor was sputtering. We might assume that it had slowed down; we also have the dipping of the plane, but we have no evidence as yet what caused it to crash.

Q. Do you know what causes the sputtering of a motor? A. That could be caused by a number of things. Water in the gasoline or ignition troubles. Most any number of things could cause a motor to sputter.

Q. Now, when the motor sputters, motor of an aeroplane same kind of motor on this particular plane, what effect does sputtering have upon the efficiency of the motor? A. Why, it would slow up your speed. It would hinder the plane from climbing, that is, it would make you climb slower.

Q. Now, is that true, Mr. Brown, of an unloaded plane? A. Not to the same extent, of course.

Q. I beg your pardon? A. Not to the same extent.

Q. Do I understand by what you say if the plane were loaded the difficulty in climbing is greater? A. Yes, sir.

Q. With a sputtering motor. Because of the greater load with a sputtering motor? A. Yes, sir.

Q. What is the effect of a sharp turn or bank of a plane at an altitude of one hundred and fifty feet, a plane of this kind? A. Well, regardless of the altitude your plane would react the same during the turn, but ordinarily in turning down wind a plane will lose altitude.

The Court: Will what?

The Witness: It will lose altitude if you make a sharp turn.

Q. Is it good piloting to make a sharp turn at a one hundred and fifty foot altitude in a sharp wind? A. Absolutely not.

Q. Considering the character of the wind condition as it existed on March 17, 1929 at about 5 p. m. what would you say would be the proper and safe altitude to reach before making a sharp turn? A. Not less than one thousand feet.

Q. Not less than one thousand feet.

Mr. George: Cross-examine.

Cross-examination by Mr. Carpenter:

Q. The only danger, I gather, from your testimony, that is occasioned by a sharp turn at low altitude is that the plane might touch the ground in making the turn and thereby crash? A. Yes, sir.

Q. That's the only danger, isn't it? A. Well, a loss of control, of course, would precede the loss of altitude. If you weren't out of control, naturally, you wouldn't lose the altitude.

Q. In other words, if you lose control of the plane when it is close to the ground you are going to hit the ground? A. Very likely.

Q. In all probability. Whereas, if you are up in the air one thousand feet you can recover control before you get to the ground? A. Yes, sir.

Q. That's the point of it, isn't it? A. Yes, sir.

Q. And when you said it was bad flying practice to make a sharp right turn at an altitude of one hundred and fifty to two hundred feet it was because of the danger of touching the ground in making such a sharp turn? A. Because of losing your altitude.

Q. Because of the danger of touching the ground in making the turn? A. Yes, sir; because of losing altitude you naturally would touch the ground. If you didn't touch the ground there would be no danger in it.

The Court: Do you mean right at the turn or some time after you made it?

The Witness: Immediately after the turn. It wouldn't be instantaneously, of course.

Q. The danger would be that your plane would touch the ground and thereby crash before you got above the ground again? A. There is danger of it, yes, sir.

Q. Now, a sharp turn—strike it out. As far as the function of the engines of the plane is concerned the plane will turn and fly at one hundred and fifty feet if the engines function properly just as well as at one thousand feet so long as

the engines function properly, won't it? A. Well, that depends a lot upon the wind. I based my answers upon the assumption we are turning down a strong wind.

Q. Well, again, the danger of turning down wind in a strong wind at one hundred and fifty feet simply increases the chances of the plane hitting the ground before you could straighten out? A. Yes, sir.

Q. You say you had a plane that was very similar to this Colonial plane? A. Yes, sir.

Q. Yours was plane number eleven, manufacturer's number? A. Yes, sir.

Q. And the Colonial was manufacturer's number forty-one? A. Yes, sir.

Q. What was the date that your plane was delivered by the Ford factory? A. I couldn't recall offhand the exact date. It was about October of 1928, I believe.

Q. This plane forty-one was delivered—assuming this plane of the Colonial was delivered to them September 22, 1928, your plane was delivered to you before that, wasn't it? A. Yes; my plane was delivered in 1927, then.

Q. Yours would be delivered in 1927? A. Yes.

Q. The difference between your plane and the Colonial plane was not only that you had self starters on yours, but you also had much larger gas tanks? A. Yes, sir. I had one more gas tank in mine than they had in theirs.

Q. How many gallons of gas did they hold? A. A hundred and ten.

Q. Aside from that fact the planes were substantially identical? A. Yes, sir.

Q. How many passenger seats did you have in your plane? A. Well, the seats in mine—part of the seats were aranged in sort of a bench-like seat. They weren't divided.

Q. You had benches instead of individual seats? A. Part of them were benches. I think there were four chairs and the rest of it was benches.

Q. What is the most number of adults you ever caried in your plane at one time? A. I have had in it as many as twenty.

Q. And did the plane fly with them? A. Part of them were children, small children.

Q. What is the largest number of adults, I asked you, that you had flying in your plane at any one time? A. I think fourteen is the most.

Q. Then you were in the pilot's seat, too? A. Yes, sir.

Q. Then in addition to that your starters and additional equipment weighing as much as two people? A. Thereabouts, I would say.

Q. And with that load did your plane raise from the ground and fly properly? A. Yes, sir.

Q. On this day, the 17th of March, 1929, were you flying your plane from Port Newark? A. Yes, sir.

Q. Carrying passengers? A. Yes, sir.

Q. Carrying capacity loads of passengers? A. You mean twelve passengers?

Q. Well, as many as you can sell every trip? A. Not every trip, no, sir.

Q. I mean, you took as many passengers as you could, that's what I mean. A. Up to twelve.

Q. And you flew with them? A. Yes, sir.

Q. Were you flying all day long on that 17th of March with that plane? A. We usually started around about ten or eleven o'clock in the morning and two or three trips before noon. And usually on Sunday afternoon we were busy practically until the night.

Q. Practically until night. In other words, you took about the same trip the Colonial took, over

to New York and back? A. Approximately the same, yes, sir.

Q. And you did that from about eleven o'clock in the morning until dark, just as fast as you could bring one load back, fill up and start off again? A. Yes, sir.

Q. I wish you would tell us whether on this occasion after you heard that the Ford plane had crashed you took a load of passengers up in your plane again? A. I didn't hear that it had crashed. They said it had landed. I hadn't any idea it resulted in a crash.

Q. You took off after that with another load? A. Yes, sir.

Q. Was it a full load of passengers? A. I don't recall how many. Approximately a load. Probably eight or ten.

Q. Did you say on your direct examination that on this flight you took after you heard the Colonial plane had landed you flew over the wreck of this Colonial plane? A. I don't remember whether I said that or not. I did, however.

Q. Just tell the jury whether when you took off on this last flight you took with passengers whether you went off the northwest runway? A. Yes, sir; the same runway.

Q. Just what course did you take when you went off? A. I don't remember exactly.

Q. How did you fly your course? A. Well, I took off on the same runway, proceeded probably a mile, maybe a mile and a half. I don't remember which way I turned now.

Mr. George: May I inquire here now whether this is a flight taken by Mr. Brown after the crash?

The Court: Yes.

Mr. Carpenter: When he heard the Colonial was down and he said he took off with a load of passengers.

The Witness: I don't remember my exact course now. I started looking for the plane. They pointed at the general direction in which the plane went down. I started looking over in that direction and finally spotted it and flew over there, made one circle around it and went on to New York and came back and landed.

Q. You made your regular flight with passengers after locating the Colonial plane? A. Yes, sir. I continued to New York and then back to the field.

Q. Had you and Colonial all day long been flying about the same course? A. That I don't know. We usually landed—when one was in the air the other was on the ground.

Q. I mean as far as the course—the length of the flight? A. The length of the flights were approximately the same, but I don't know what course they took.

Q. Your direction and your flight was the same? A. As far as the length is concerned. I never watched their plane after it left the ground. I don't know which way they went.

Re-direct examination by Mr. George:

Q. When you did take off on this flight after the crash and you had learned the Colonial plane had gone down, how many passengers did you have in your plane? A. I don't recall, to be exact. I remember it was approximately a full load.

Q. Were they babies or children or adults? A. No. Just the average passengers.

Q. Average passengers? A. Average passengers who had purchased tickets and wanted to ride.

Q. Can you tell how many persons there were in that plane when you took off? A. I couldn't say exactly.

Q. Approximately? A. Probably eight or ten.

Q. Altogether? A. As many as eight, anyway. Probably no more than ten.

Q. Now, when you took off you went northwest, didn't you, on the northwest runway? A. The same runway we had been using all day.

Q. How far did you go before making the turn?

Mr. Carpenter: He said that.

Mr. George: I didn't hear it. May I ask again?

The Witness: Pardon?

Q. How far straight ahead did you go before making your first turn? A. Probably a mile and a half, maybe two miles.

Q. What was your altitude when you made the first turn? A. Well, I don't think I made any turns under one thousand feet on that particular day.

Q. Which way did you turn? A. I don't recall which way.

The Court: He says he don't recall.

Q. With the wind in the direction in which it was blowing at that time and a mile or a mile and a half from the airport after your take-off, would a turn to the right or a turn to the left make any difference?

Mr. Carpenter: I object. This is not direct examination.

The Court: Of course, we went into the manner in which he made the turn.

Mr. Carpenter: All right. I will withdraw it.

The Witness: As I understand the field rules it would make no difference if you should turn to the left if you were within one mile of the field, but beyond a mile of the field you could turn in either direction. That's as I understand the rules.

Mr. Carpenter: I object to the rule.

The Court: Strike it out. That wasn't the question. You were asked, as I understand it, whether it made any difference——

Mr. Carpenter: I move to strike out the reference to the rule.

The Court: —with reference to your operation?

The Witness: With reference to the safety of the flight?

The Court: Yes.

The Witness: It would make no difference, no. At one thousand feet you could turn either to the right or left.

The Court: All right. You excite my curiosity. You say at one thousand feet it would make no difference. Would it make any difference at a less altitude whether a turn was made to the right or left in that wind?

The Witness: It makes no difference which way you turn, no sir, a turn to the left or the right.

Q. When you said it makes no difference which way you turn after you would have gotten a mile, let me ask you if it would have made any difference within a mile to make the turn to the right or to the left considering the wind as it existed

that day? A. In considering the safety of the manoeuver?

Q. Yes. A. It would make no difference.

Q. At that altitude of one thousand feet, of course? A. Yes, sir.

Q. It would have made a difference, would it not, if the altitude were considerably lower?

Mr. Carpenter: I object to that question.

Mr. George: Withdraw the question. It has been answered before.

Q. Why did you make the flight after you had learned the Colonial had gone down?

Mr. Carpenter: I object.

The Court: Sustained. What difference does that make?

Q. On this last flight that you made were all of your motors functioning? A. Yes, sir.

Q. All the while you were in flight?

Mr. Carpenter: I object to that. This is some other plane. How it flew, I object to. I think it is just an unnecessary taking up of time.

The Court: Sustained.

Re-cross-examination by Mr. Carpenter:

Q. When you flew over this Colonial plane that was on the ground, how close to it did you fly? A. Oh, probably down to five or six hundred feet.

Q. When you went off towards Newark after leaving the airport did you go as far as Broad Street, those high buildings? A. I don't recall the exact course I took.

Q. You didn't go right over the center of Newark in your take-off, did you? A. Broad Street, you say? No; I didn't go that far.

Q. You turned before you got to the center of Newark? A. I always turned before I got that far.

Q. You flew over the outskirts of Newark? A. Yes, sir.

Q. As far as the ability of the plane to turn when it is in the air to the right or left, it makes no difference, it will fly with equal facility either to the right or left, won't it? A. Yes, sir; the plane will fly the same in either direction.

Q. If it will turn to the right at five hundred feet, it will with the same facility turn to the left at that same height? A. Yes, sir.

(Witness excused.)

DINA BOELE, called as a witness on behalf of the plaintiff Boele, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. George:

The Court: Now, Mrs. Boele, please speak out loud.

The Witness: All right, your Honor.

Q. Mrs. Boele, you are the administratrix *ad prosequendum* of the estate of your late husband? A. Yes, sir.

Q. Where do you live now? A. 47—19th Street, West New York.

Q. West New York.

Mr. Carpenter: What's that address?

The Witness: 47—19th Street.

Q. How old are you? A. Thirty.

Q. Were you married to Mr. Boele? A. Yes, sir; I was.

Q. When were you married to him? A. I was married in 1924, the 3d of May.

Q. 3d of May, 1924? A. 1924, yes.

Q. How old was your husband at the time of his death? A. 37.

Q. What was his birthday? A. Well, he dealt in mortgages and stocks.

The Court: No. Not his business. What was his birthday?

The Witness: Oh, his birthday. Pardon me. The 6th of July.

Q. 6th of July? A. Yes, sir.

Q. Had he reached 37 years of age before his death? A. Yes.

Q. So he was going on 38? A. Right.

Q. Were you living with your husband prior to his death? A. Yes.

Q. Up to the time of his death? A. I was.

Q. Were any children born of your marriage? A. No.

Mr. Carpenter: Did she say "No"?

The Court: "No." How old are you?

The Witness: 30.

The Court: You were 28 at the time of the accident?

The Witness: Yes, sir.

Q. What is your birthday? A. The 10th of January.

Q. You were 30 last January? A. 30, I was, yes.

Q. What was your husband's business in his lifetime before his death? A. Well, he dealt in mortgages.

Q. In mortgages. Yes. A. And stocks and bonds, selling and buying them.

Q. Yes. Is that all? A. Yes, sir.

Q. How much money did he give to you weekly in the latter part of his lifetime? A. Well, I got as much as from $60 to $100 a week.

Q. Was that irregularly or regularly every week? A. Well, sometimes I got $65. Never below $60 I got.

Q. Never below $60? A. No.

Q. For how long a period prior to your husband's death had you been receiving from him weekly not less than $60, $65 as well as $100 a week? A. Right.

Q. For how long before his death? A. Well, about a couple of years.

Q. What was the condition of your health in the early afternoon of March 17, 1929? A. I was sick in bed.

Q. I am not asking about you, I am asking about your husband's condition of health? A. Very good.

Q. You say "Very good?" A. Yes.

Q. What was his weight? A. His weight was, I think about—from 180, or something like that. Around 175 or 180.

Q. 175 or 180? A. Yes.

Q. I show you a photograph and ask you if this is a likeness of your husband at the time of his death, or rather, immediately before his death? A. Yes.

Mr. George: This is offered in evidence.

Mr. Carpenter: I object to it as incompetent, irrelevant and immaterial.

The Court: It will be received.

(Received and marked in evidence Exhibit P-8.)

The Court: That is just the way he looked just before his death, is it?

The Witness: Yes, sir.

Q. Immediately after your marriage, what line of business was your husband engaged in? A. After we were married?

Q. Yes. A. We had a rooming house.

Q. How long had he maintained a rooming house? A. Well, we had that for over four years, and in the meantime he done business in mortgages with Mr. Hennessy.

Mr. George: Cross-examine.

Cross-examination by Mr. Carpenter:

Q. You have an apartment now, have you not, Mrs. Boele? A. No; I have a two family house.

Q. You have a what? A. Two family house.

Q. Two family house? A. Yes, sir.

Q. At 47 19th Street? A. That's right.

Q. Do you occupy one part of the house? A. Yes, sir.

Q. Is that upstairs or downstairs? A. Downstairs.

Q. Downstairs. How many rooms do you have? A. I have five.

Q. Do you work now to support yourself? A. Yes; but I am not working, no, sir.

Q. You are not working? A. No.

Q. You have a boarder, do you not, living with you? A. No, my sister.

Q. Didn't you have a boarder? A. No, sir.

Q. A man about 30 years old? A. No, sir.

Mr. George: That's objected to.

The Witness: Yes; what difference does it make?

Mr. Carpenter: I am just checking the source of income.

Q. Your husband at the time just before his death was in some trouble, wasn't he? A. No, sir.

Mr. George: Just a minute. That's objected to.

The Court: Yes. Unless it bears on income, what difference does it make?

Q. He had another business, did he not, your husband? A. No, sir.

Q. Are you sure? A. Positively.

Q. You say he dealt in mortgages? A. Yes, sir.

Q. In what way did he deal in mortgages? A. Well, I couldn't tell you. I don't know. I was —I don't know.

Q. In what way did he deal in stocks? A. I couldn't tell you. I never asked him, anyway.

The Court: Was he a salesman? That's what he wants to get out.

Q. He wasn't employed by anybody, was he? A. What's that?

Q. He wasn't in anybody's employ? A. No, sir.

Q. He worked for himself? A. Yes, sir.

Q. Did he have an office? A. No.

Q. Did he have any working hours or any employment? A. None at all.

Q. How much money did he have in the bank at the time of his death?

Mr. George: That's objected to as immaterial.

The Court: Oh no. I think it is material. Overrule the objection. Go ahead.

The Witness: Well, he had—I don't know exactly now. I couldn't exactly tell you at that time. I know he had quite some.

The Court: Where did he get this $60 to $100 a week that he gave you, you say, with considerable regularity? Where did he get that from?

The Witness: Well, buying and selling stocks and bonds.

The Court: You mean by that he was buying and selling them for himself?

The Witness: Yes, sir.

The Court: On the stock exchange?

The Witness: Yes.

Q. How do you know that? A. Well, I know that.

Q. How do you know it? A. Well, I don't know, but I know that. I don't know how I know it, but I ought to know something about my husband's affairs.

Q. I know it. That's what we are trying to find out, Mrs. Boele. A. But I don't know everything.

Q. Wives never do. Do you know what brokerage house he dealt with? A. I think—you mean about the stocks?

Q. Yes. A. No; I don't.

Q. Do you know where the broker's office was located? A. No; I don't.

Q. You don't know that. Did your husband at the time of his death own any stocks or bonds? A. Yes; he did.

Q. What stocks? Do you know? A. White Motor.

Q. How much White Motor did he have? A. Several, I think.

Q. How many shares of White Motors did he have? A. Two or three, I think. I don't know exactly.

Q. Two or three shares. What other stock did he have? A. Electric and Power Company.

Q. What kind of power? There are lots of them. A. Yes; but I don't know exactly which one.

Q. How many shares of that did he have? A. He had several of them, too.

Q. How many? A. About the same, I think.

Q. Two or three shares? A. Something like that.

Q. Do you know any other stock he had? A. Yes; I think he had some telephone.

Q. How many shares of that did he have? A. I couldn't exactly tell you.

Q. You say he made his living at the buying and selling of stocks and mortgages? A. Yes.

Mr. George: And bonds, she said.

The Witness: And bonds.

Q. Did he own any mortgages at the time of his death? A. Yes.

Q. In his own name? A. Yes, sir.

Q. On what property? A. On 39th Street, Union City.

Q. Do you know the number? A. No. Maybe Mr. Coolahan can tell you that. I don't know.

Q. Do you know who was the maker of the mortgage? A. No, I don't.

Q. How much of an estate did your husband leave at the time of his death? A. I don't know exactly. I used quite some of it myself.

Q. You inherited all he left, did you? A. Yes; I did.

Q. How much of an estate did he leave? A. About $30,000 altogether.

Q. Did you get all that money? A. Yes, sir.

Q. And before he died you had none in your own name, did you? A. No, sir.

Q. Did he leave a will? A. No, sir.

Q. You were appointed as administratrix by the Surrogate downstairs? A. Yes, sir.

Q. By the way, you haven't married since, have you? A. No, sir.

Re-direct examination by Mr. George:

Q. Just a minute. I would like to ask a question or two. What banks did your husband do business with? A. Steneck Trust Company.

Q. Steneck Trust Company, Hoboken. Any others you know of? A. Yes. I think he dealt with some Journal Square bank. I don't know which one.

(Witness excused.)

JAMES A. COOLAHAN, called as a witness on behalf of the plaintiff Boele, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. George:

Q. Mr. Coolahan, you are an attorney and counsellor at law of the State of New Jersey? A. I am.

The Court: You weren't out there, were you?

The Witness: No, but I conducted all his business.

Q. What? A. I say I was very familiar with Mr. Boele's business.

Q. Was that the answer you made to his Honor? A. His Honor asked me if I had been out there at the time of the crash.

Q. What was your answer? A. I told him I conducted his business. By that I mean I was very familiar with Boele's and Henderson's business.

Q. You had nothing to do with taking Mr. Boele to the Newark airport, I hope. A. Fortunately not.

Q. What business was Mr. Boele in in his lifetime? A. At the time he was married he had a rooming house with his wife, the corner of Second and Bloomfield Streets in Hoboken.

Q. By the way, Mr. Coolahan, how long have you known Mr. Boele? A. About ten or twelve years.

Q. Go on, please. A. And after that I passed title for a house that he purchased for $16,000, I believe, at 47—19th Street, West New York. That's the house Mrs. Boele now resides in. At the time of his death I sold no less than one hundred shares of Electric Power and Light for him; I sold a number of shares of White Motor and I don't believe any Telephone stock, but at that time he had seven of those Steneck's Gold Bonds mortgages.

Q. Valued at what at that time? A. I should say around ten or twelve thousand dollars, and he had a mortgage on a piece of property on the Boulevard east in the sum of $3,200 that's owned by a man by the name of Ianancone.

Q. Yes. Go on. What banks did he do business with? A. He did business with the Steneck Trust Company of Hoboken, and that bank where Colonel Vickers' office is in in Jersey City.

Q. Journal Square National Bank? A. Journal Square National Bank, and there is a bank book in my files, I think we still have some money in there, some New York bank. There is still a few dollars in there we have never taken it out, the Phoenix Bank.

Q. The Phoenix Bank in New York? A. Yes.

Q. Now, Mr. Coolahan, did you handle all Mr. Boele's business? A. Practically all of it.

Q. Are you able to tell the court and jury what his average income was in the last year of his lifetime?

Mr. Carpenter: I object to that. The lawyer for the man can't tell us what his income was. He may give us an idea.

The Court: They can give you a good line, most lawyers, but base this on your own knowledge.

The Witness: I should say about $15,000.

Mr. Carpenter: I move that it be stricken out. "About." That's just a conclusion of the witness.

Mr. George: Withdraw the question.

Q. Are you able to say from personal knowledge, you having testified to having handled all of Mr. Boele's financial transactions and business transactions, what was the actual minimum of his income for the year preceding his death?

Mr. Carpenter: I object to that question on the ground in the first place it is not the best evidence; it is necessarily based on hearsay; and no books of records are produced.

The Court: You didn't object to the widow's testimony. The man is dead, un-

fortunately, and he can't come back and tell us how much he made. If this man handled his affairs, I can't for the world conceive how he couldn't tell us how much on an average he made. You may examine him. I am going to allow it.

Cross-examination by Mr. Carpenter:

Q. Have you got your client's books and records? A. I only have one bank book in my files which will show a deposit of about $3,500 in the first three months of 1929 in the Chatham and Phoenix National Bank and all of the other money, as I say, has been in Steneck's, and Steneck's has gone busted.

Q. Did you have any books of account? A. Well, I had all the books when I filed the State inheritance tax and when I assisted him at times in making out his income tax.

Q. What was the amount of his gross estate? A. I should say $30,000.

Q. What was the amount of his net estate after his debts were deducted? A. Well, there wasn't more than $1,000 or $1,500 paid inheritance tax and funeral expenses and so forth.

Q. About $1,500? A. I should say no more than that. Probably a little more.

Q. Did you make out his income tax returns? A. No. I was there when they were made out in the Hoboken City Hall by a member of the Revenue Department. I can't recall his name. He is a very short man who used to have charge of the Hoboken office.

Q. Have you any of Mr. Boele's work papers that were used in the preparation of his income tax return? A. No. I haven't got them. He kept them himself.

Q. Did he ever ask you to prepare his income tax return? A. No.

Q. Did you ever prepare any of his income tax returns? A. No.

Q. Did you prepare his income tax that was filed necessarily by his widow on his estate after his death for the year 1929? A. No.

Q. Was any income tax return filed? A. By his widow?

Q. Regarding his income for the year 1929? A. Oh, I don't think so because he died three months after the year had started.

Q. Was there any income tax return by the widow after his death for the year 1929? A. No; not by the widow.

Q. And he never had come into your office with any of his income tax returns for the year 1928? A. No.

Q. Or 1927? A. No. I recall the occasion when he made it out. They sent for him and he naturally got in touch with me and I went down to the City Hall in Hoboken with him and met a representative of the Internal Revenue there and he made out the income tax out as they usually do.

Q. But you were never employed to do that? A. No.

Q. What kind of work did you do for him? A. Why, when he bought some property I know I would pass title; when he loaned out money on mortgages I drew up the mortgage and the bond.

Q. What was the amount of the purchase—what did he pay for the property in which his wife lives? A. I think he paid $16,000 for it.

Q. He gave back a mortgage of how much? A. $6,000 to Mr. Henderson.

Q. $10,000. How was that paid? A. In cash.

Q. Drawn out of the bank? A. I imagine so.

Q. Borrowed from the bank? A. Oh, I don't think so. At the time of his death he had one note in the sum of $5,000 I think it was with the First National Bank in Hoboken, but he had a little more than that on deposit and they paid the difference back.

Q. So that there was a little surplus for Mrs. Boele? A. Yes; not much. Maybe two hundred dollars or so.

Q. Did he have any other bank loans? A. No; that was the only bank loan at the time of his death.

Q. What was the total cash in bank he had at the time of his death? A. I don't think the cash was so much. It was mostly all mortgages. I think Power and Light there were one hundred and some shares of that and some White motor as I recall. I recall that very distinctly because I sold them just before the crash.

Q. You lucky man. They are not worth much today? A. There is a letter there from the Steneck Trust Company in the files showing the exact number of Electric Power and Light signed by Mr. McTighe to deliver those shares to his messenger.

Q. Have you got a copy of the petition for administration which showed what the estate was? A. I think so, if I look through the files.

Q. Take a look at them, because they will help. A. Both estates were approximately the same.

Q. And a copy of your return to the State will be satisfactory.

The Court: The petition wouldn't show anything.

The Witness: Yes; here's a copy.

The Court: This was put in as a nominal sum?

The Witness: $28,068.44.

Q. This return shows that the real estate had an equity of $7,000. A. I didn't look at it, Mr. Carpenter. I haven't seen it since 1929.

Q. Look over my shoulder and we will read it together. Equity in 47 19th Street, West New York, equity $7,000? A. Yes; I made an estimate of the market value, $13,000. Although he paid in the vicinity of $16,000 for it, that's probably the assessed valuation.

Q. The assessed valuation was $6,500? A. The assessed valuation was $6,500.

Q. And the estimated market value $17,000, giving an equity of $7,000. Then the cash on hand and in deposit American Exchange $511.25; Hudson Trust Company, Hoboken $686; Steneck Trust Company, Hoboken, $2,500; Journal Square Bank $234; Second Bank and Trust Company, Hoboken $615; 100 shares White Motor $4,850; 50 shares Electric Power and Light $3,150; Steneck five per cent. mortgage bonds $13,000; second mortgage on property 552 Boulevard East, Weehawken $3,200; deductions were a total of $2,100? A. Yes. There is an explanation of that $5,000 note also there.

Q. (Reading) "There is on deposit in the Second Bank and Trust Company, Hoboken $5,613. However, there stands against this a note for $5,000. The bank account was pledged as collateral." So, the equity in that was $613. A. I told you something—a few hundred dollars.

Q. That equity you have set up over here on schedule "D", have you not? A. Yes, sir.

James A. Coolahan, for Plaintiffs—Re-direct—Re-cross.

Re-direct examination by Mr. George:

Q. Your total value of the estate as set forth in the inventory is how much? A. $28,068.44.

Q. Was that the actual value of the estate or nominal? A. That's the low value of the estate.

Q. Is this the bank book you referred to in which a deposit of $3,500 were made within three months? A. That's the bank book of the American Exchange, Irving Trust which shows a deposit October 3rd, $1,500; October 15, 1928, $1,000; October 29, 1928, $1,000; total deposit $3,500; then there is a withdrawal of $3,000.

Q. Then this $3,500 was deposited in less than a month? A. In one month, yes.

Re-cross-examination by Mr. Carpenter:

Q. That might have been from the sale of stock? A. Probably so.

The Court: What was his business? We haven't had that very clearly brought out.

The Witness: He was a speculator. He and Henderson had been together for many years.

By Mr. George:

Q. You mean the other deceased? A. The other man who was killed in this.

Q. They were partners, were they? A. Yes, sir.

By Mr. Carpenter:

Q. Partners in speculation? A. Yes.

By Mr. George:

Q. With respect to your testimony concerning the deceased's purchase and sale of stocks and bonds, I show you a letter from the Steneck Trust Company and ask you if this letter was received by you as Mr. Boele's attorney respecting order for 150 shares of Electric Light and Power Company stock? A. Yes. He did all his purchasing of stocks through the Steneck Trust Company. There are numerous letters in there for shares of stock and so forth. There is the letter and there is the original order.

Q. (Reading) "Please buy for my account 100 shares of Electric Light and Power Company at 59. This order good until cancelled." A. The stock was received March 8th.

Q. That was before his death? A. Then there is another communication at the time the market was on the rise, "buy at 60 or better."

By Mr. Carpenter:

Q. What did you sell it for? A. I sold at the highest price it ever reached. I can't recall just now what it was.

Q. It is probably shown on the order, is it? A. That's the cash value. Here is another order to buy 50 shares of Electric Power and Light.

Q. That was a good sell, wasn't it? A. It was very good. There is an order of the stock.

Q. When you say that the figures on that inheritance tax return are probably low you are referring only to the real estate, aren't you? A. Particularly to the real estate.

Q. All other securities that may be there, those values are actual? A. At the time of death.

Q. Checked as of the day before the death, by the State Department, with market quotations? A. Yes.

Q. So you get a little leeway if you put in real estate as low as you think it will get by? A. Yes.

Q. But the listed securities and cash and bonds they go in as actual market value? A. At the day of death, although they may have been sold higher.

Q. Or lower? A. No; they were sold higher.

Q. If they were sold lower you still got to put them in as of day of death; if they were selling at a higher price as of day of death? A. It makes no difference.

(Witness excused.)

CLARENCE CHAMBERLIN, called as a witness on behalf of the plaintiffs, having been first duly sworn was examined and testified as follows:

Direct examination by Mr. George:

Q. Where do you live? A. 148 East 48th Street, New York.

Q. You are an aviator, aren't you? A. Yes, sir.

Q. How long have you been flying? Since when? A. Thirteen years.

Q. Did you fly during the World's war? A. Yes, sir.

Q. In the army? A. Yes, sir.

Q. How many hours of flight have you had? A. I don't have an accurate record, but it is probably between 6,500 and 7,000.

Q. In aviation parlance is that record a little, moderate, medium or a great amount of flying, considering the history of aviation? A. Yes; it's rather—its above the average.

Q. Now, Colonel, you are the first person to make a non-stop flight between New York and Germany, are you not? A. Yes, sir.

Q. Are you familiar with the Newark Airport? A. Yes, sir.

Q. As a matter of fact, I understand you are the first person to land a plane at that airport, are you not? A. Well, it wasn't an airport when I first landed on it. Just to attract attention to the possibilities, that's all.

Q. But you flew the first plane to land in that place which is now Newark Airport? A. First to land in that area, yes.

Q. Of course, you are familiar with the airport, are you not? A. Yes.

Q. And were you familiar with its condition and as it existed in March, 1929? A. Yes, sir.

Q. Now, are you familiar with the Ford trimotor plane which was involved in the crash on March 17, 1929? A. Yes, sir.

Q. What kind of plane was it and what kind of motors did it have? A. It was a three motor all metal commercial plane built by the Ford Company, type 4-AT.

Q. 4-AT? A. With three Wright Whirlwind J-5 engines.

Q. Have you had occasion to make any flights in planes of that type? A. Yes.

Q. Are you familiar with the operation of that type of plane? A. Fairly familiar.

Q. Are you familiar with the gasoline system of that ship? A. Yes.

Q. How many gas tanks were there on that ship? A. Three. Two main tanks and one reserve.

Q. What is the character of gasoline feed? Is it pump, compression or gravity? A. Gravity feed.

Q. Now, Colonel, in your experience you have flown all kinds of planes, haven't you? A. Most all.

Q. You have done stunt flying? A. Yes.

Q. In addition to the stunt of crossing from here to Germany? A. Yes, sir.

Q. Won't you tell us—I ask you, of course, not to be too modest—what your general experience has been with the operation of aeroplanes, or would you rather not answer the question in that way? A. I can answer it briefly.

Q. I wish you would. A. I learned to fly in the army and after the war was engaged in remodelling surplus war planes, modelling them for commercial use at Teterboro, and doing commercial flying ever since the war and have, since 1928, been manufacturing—designing and manufacturing new types of commercial planes.

Q. Are you acquainted with aeroplane motors? A. Quite well, yes.

Q. Spark plugs? A. Yes, sir.

Q. Ignition systems? A. Yes.

Q. Carburetors? A. Yes.

Q. And you are familiar with the mechanics of the combustion system of the motors used in aeroplanes? A. Yes, sir.

Q. Now, Colonel, in your experience as a flier what would you say as to the requisite of a pilot's familiarity with the terrain over which he flies in such flights known as hops or Sunday short hops? I am trying to find out, Colonel—if that is too vague—whether in your opinion as an expert flier it is necessary—reasonably necessary for a pilot to be familiar with the terrain in which he is called upon to make landings. A. The more familiar a pilot is with the territory over which he is flying the easier it will be for him to get down in an emergency to a safe landing.

Q. So that the probability or possibility of safety or possibility of accident depends to a certain extent upon a pilot's familiarity with the terrain in which he makes a landing?

Mr. Reed: I object to the question as problematical, dealing purely in possibilities.

The Court: Yes; I think so. Sustained.

Q. Knowing the Newark airport as you do and as it existed in March, 1929, as well as the surrounding terrain of the vicinity, is it your opinion as an expert—withdraw that. Is it your opinion that an experienced pilot could reasonably acquaint himself with that terrain and surrounding country?

Mr. Reed: Object to the question.

Q. Wait a minute. —on the day of the arrival of any pilot?

The Court: It is sustained.

Q. Now, is the Newark airport a small airport or is it considerable in size? A. At that time it was considered a small airport.

Q. I am not speaking of today. At that time you say it was considered small? A. Yes.

Q. What is the reasonable and proper thing for a pilot to do in order to familiarize himself with the terrain of an airport in which he is making or is about to make hops, as well as landings, of course?

Mr. Reed: I object to that question, if the Court please.

The Court: Why?

Mr. Reed: Purely problematical. It doesn't give any facts as to hours of observations.

The Court: That depends on the individual, doesn't it, Colonel? It depends on the individual; it depends on the terrain and it depends on a number of conditions?

The Witness: Yes, sir.

The Court: I think we will have to sustain the objection. A bright man might gather it all in in a glance.

Q. Which is the more difficult to manage and fly, a tri-motor or a single motor ship?

Mr. Reed: I object on the ground it doesn't appear that the Colonel yet has shown experience in flying tri-motor ships at the time of this.

The Court: He said he had flown them. Overrule the objection.

Q. What is the answer? A. In the event of trouble a tri-motor is harder to handle than a single motor.

Q. Will you please tell the court and jury why it is more difficult to handle a tri-motor plane than a single motor plane in case of emergency? A. Well, it is heavier and not as maneuverable.

Q. Not as maneuverable? A. No.

Q. And it is heavier. What do you mean by "maneuverable", Colonel? A. Not as easy to control.

Q. What is the difference in operation of a tri-motor plane and a single motor plane respecting the turning of it? A. Not much difference provided all of the motors are working properly.

Q. Well, suppose one motor isn't working, what is the difference in the operation of a tri-motor plane and a single motor plane on a turn? A. On a single motor plane when the engine quits the balance and the control is practically the same whether the power is on or off. In a tri-motor plane if one of the outboard engines quits it disturbs the balance and control of the plane.

Q. Colonel, I am going to ask you to try to help us by describing with this miniature plane just what you mean. Will you be good enough to put this plane through the motions, banking it and so forth and describe what you mean and refer or point to the motor you refer to? A. (Illustrating) If the plane is flying long and this center motor should stop, assuming that there are no side motors——

Q. You are speaking now of a single motor plane? A. I am speaking now of a single motor plane. (Continuing) —this engine should stop, this force of the propeller being in the center has very little effect on the plane, the direction it will go. It has no turning effect, whereas, in a tri-motor plane, if, for instance, this motor should stop——

Q. Meaning the outside motors? A. One of the outside motors should stop, the tendency is for the plane to turn in that direction. This outboard motor will pull the plane around in this direction.

Q. Is that because of a double character driving force with a vacuum created thereunder to the one side? A. Yes, sir. In a tri-motor plane which the propeller is pulling forward at three separate points, if you stop this force on this side, on the left side, for instance, the left side will tend to slow down and the right side go ahead. It will tend to turn the plane towards the motor which is stopped.

Q. In the opposite direction to which the turn was about to be made? A. In this instance the stopping of the left motor would tend to turn the plane in the opposite direction to which the pilot intended to go.

Q. So, if this plane was making a turn to the right as I am describing it and this left out motor stops it will have a tendency to bring it back around this way to the left again, is that it? A. Yes. That has to be corrected by the use of the rudder.

Q. It requires then an emergency application or readjustment of the rudder? A. Yes.

Mr. Reed: I object to that as leading and suggestive.

Mr. George: Withdraw the question.

Q. What is required to be done in such an emergency, assuming that the left out motor stops while in the process of making a right turn? A. You correct for that action by the use of the rudder. The application of more right rudder to compensate for the loss of power.

Q. Is that a simple process or a difficult one in such a situation? Withdraw that question. If in a case of that kind an out motor stops, particularly the left out motor on a turn right, does that create an emergency which calls upon the pilot for an emergency application of the controls? A. Yes.

Q. Now, Colonel, you said there are three tanks, gasoline tanks—the motors being fed by gravity, is that right? A. Yes, sir.

Q. Three separate tanks for each motor, is that so? A. No.

Q. Are the tanks separate from each other? A. The tanks are separate from each motor, but any tank will feed the three engines.

Q. They all feed from a common system of tanks, is that what you mean to say?

Mr. Reed: That isn't what he said.

Mr. George: I will withdraw that.

Q. Now, will you just explain a little more clearly just what is the tank and gasoline system? I mean, so far as feeding to the motors is concerned. You said there were three tanks? A. Yes, sir. There are three tanks in the wing.

Q. In the wings? A. Yes, sir.

Q. Would that miniature help you, Colonel? A. Yes, sir. (Indicating with miniature aeroplane.) There are two main tanks, one in the wing on each side and one reserve tank, what you might call, in the center and each tank feeds to a —well, common header they call it.

Q. Common header? A. Yes. From that point the gas system is the same for any time so you can turn any one of those three tanks or all of them together into the gas lines to the motor.

Q. Because all three of them feed into the common header? A. Yes, sir.

Q. The header then distributes to all three? A. All three engines.

Q. Now, with reference to the gas feed in that particular kind of plane, where in the cockpit are the gas cocks in a tri-motor plane? A. They are above and behind the pilot. Above his head.

Q. Above and behind the pilot?

Mr. Reed: Indicating just above the right ear.

The Witness: No. It is a little higher up.

Q. Now, in the act of flying a tri-motor of that kind, especially in an emergency, is it simple or difficult for a pilot to reach that gas jet or cock while he is maneuvering the ship?

Mr. Reed: We object to that on the ground it doesn't appear there is any necessity for reaching the gas jet.

The Court: It goes to the expertness of the witness. Overrule the objection. Go ahead.

Q. Do you remember the question, Colonel? A. Yes. It is awkward to reach those gas cocks while you are flying the plane.

Q. You have raised your hand, Colonel, and Mr. Reed may have assumed that that is about as high as the gas cock is. Will you try to describe as nearly as possible by your own reaching about where the gas cocks would be, assuming you are sitting in the cockpit of the plane?

Mr. Reed: Wouldn't it be more applicable to know they were on this particular plane?

Mr. George: Speaking of that particular plane.

Mr. Reed: If he knows.

Mr. George: If you know, of course. He has testified as to his familiarity with the plane.

Q. Will you describe by reaching about how far you would have to reach for those gas cocks?

Mr. Reed: I would like to ask a few questions on that, if I may.

The Court: Does it make two boots difference?

Mr. Reed: I don't think it makes much difference. I won't press it.

The Court: Go ahead.

The Witness: The three gas cocks for the three tanks are, I would say, about this position. It is a little difficult to reach them without turning around to see which one you are turning.

Q. Now, in an emergency is it easy or difficult for the pilot to reach the gas jet or cock while he is maneuvering the ship?

Mr. Reed: I make an objection. There is no such emergency shown to have existed which required reaching in this particular case.

The Court: No. Isn't that purely speculative, anyhow? Why go into all that?

Mr. George: Except that there has been testimony in this case——

The Court: I assume you are going to show this pilot couldn't reach the jets?

Mr. George: Exactly.

The Court: If you are, all right. If it isn't connected up I will strike it out.

The Witness: If the pilot is in difficulty with his plane in an emergency he may not be able to devote the time to turn around and turn on another tank.

Mr. Reed: I move that it be stricken out, if the Court please. It is pure conclusion, speculation; no foundation for that.

The Court: He might have difficulty. You say it is a difficult operation?

The Witness: It is a difficult operation to handle the plane in an emergency and turn on gas tanks at the same time.

Q. You were acquainted, of course, in 1929 with the northwest runway shown on both these maps, were you not? A. Yes, sir.

Q. You made take-offs from that runway, have you, prior to that time? A. Yes, sir.

Q. And since that time? A. Yes, sir.

Q. Which, in your expert opinion, is the proper way to make a turn upon the take-off, to the right or left on that runway?

Mr. Reed: I object to that question, if the Court please.

The Court: Overruled. Go ahead.

The Witness: It is customary to turn to the left.

The Court: No.

Mr. Reed: I move that it be stricken out.

Mr. George: I consent to it.

The Court: You are asked, Colonel, in view of good piloting, proper piloting, on a right or left turn on that particular runway if there is any distinction.

Q. Let me withdraw that question for a moment and ask you, Colonel, another one. On the map which you see from where you sit is the northwest runway. Is the land in the adjacent territory to the left of the runway open or built up? A. It is open.

Q. And to the right? A. It is built up.

Q. Now, in the exercise of good piloting, taking off on the northwest runway and into a northwest wind, which would be the proper method of turning, to the left or right?

Mr. Reed: I object to that question, if the Court please. It depends, of course, on which way you are going and where you are going.

The Court: Does it make any difference where you go?

The Witness: It doesn't make any difference.

The Court: It doesn't? Then you may answer.

The Witness: The proper way to turn on any take-off is to the left unless there are some physical reasons for the character of the land why you shouldn't do it. That has been recognized by pilots in the past, and beginning the first of December this year the Department of Commerce has made it a law.

Mr. Reed: I object and move that it be stricken out, all that testimony, it has been recognized and since the first of December.

The Court: Yes; strike it out.

Q. Go on from there. Describe why good piloting would dictate that he should turn to the left.

The Court: Under conditions there at that time and place.

The Witness: Most transport planes have two cockpits in the front, the same as this plane. The pilot sits on the left, so when the pilot makes a turn, being seated on the left hand side, he can see better if he turns to the left. That's one reason, and the other is to make a uniform practice so everyone will turn to the left to avoid collisions.

Mr. Reed: I move that it be stricken out.

The Court: He has been asked and he has answered that is his reason. I can't strike it out. It might not be a good reason.

Mr. Reed: I move to strike it out on the theory under the evidence that no other plane was in the air at the time, therefore the reason about collisions has no part in this case.

The Court: The Court will instruct the jury he is merely giving his reason, although that might not be applicable to this situation.

Mr. Reed: Yes.

Q. Go on, Colonel? A. Furthermore it is a regulation of the airport——

Mr. Reed: I move to strike it out.

The Court: We can't receive that.

Mr. Reed: I ask your Honor to instruct the jury to disregard it.

The Court: Yes; the jury will disregard it.

Q. Concerning the dictates of good piloting at that particular airport, I understood you to say one additional reason for better piloting or good piloting to turn to the left was to avoid collisions with other planes. Is that what you said? A. Yes.

Q. Just what do you mean by that? A. If two planes should take off together if they both turn in the same direction there is less chance of collision than if they turned in opposite directions.

The Court: Well, Colonel, to sum it all up, if you get away it doesn't make any difference, does it? In other words, if the pilot can see all right out of the right hand side and there are no other planes in the air it would make no difference whether he went to the right or left, would it?

The Witness: No; except that the pilot in these planes can't see to the rear. As an instance——

The Court: Well, just a moment. Rear or either side?

The Witness: It is difficult to see straight back of you on the runway that you have just left.

The Court: What difference does it make whether you turn right or left about seeing back?

The Witness: You may turn in front of someone. A man may come in for a landing and see you take off and decide to go on around. His plane might be faster. He might overtake you.

The Court: That's all interesting, but it has nothing to do with this case. None of those conditions that you mention occurred on this date.

Q. In March, 1929, and Sundays in March, 1929, can you tell the Court and jury whether that was a barren airport or whether it was quite busy so far as hops or take-offs were concerned?

Mr. Reed: Object to conditions generally.

The Court: Sustained.

Q. Were you at the airport on the 17th of March, 1929? A. No.

Q. Do you know how many hangars there were there at that time approximately? A. At least one. I am not certain.

Q. Do you know how many planes were used or standing at or on the airport at that time.

Mr. Reed: I object. If he wasn't there how could he possibly know?

The Court: Yes.

Q. Outside of the fact, Colonel, that in a trip to New York a right hand turn may be nearer and the trip to New York made shorter, can you tell us whether there is any other possible advantage to a pilot in taking off on the northwest runway in turning to the right other than the fact it would be nearer to New York on that hop? A. No.

Q. These planes have dual control, haven't they? A. Yes.

Q. I take it that dual control is rarely used, is that so?

Mr. Reed: I object.

The Court: Sustained.

Mr. George: Withdraw it.

Q. By dual control, you mean, don't you, Colonel, that a pilot could operate the plane from the right side? A. The plane can be flown from either side.

Q. And if the plane were flown by the pilot sitting at the right control, then the visibility, I take it, would be better on the right, on his right? A. For turning towards the right?

Q. For turning towards the right? A. Yes.

Q. And where the control—the pilot is at the left control then his visibility is better and left turns are preferable, as you have described, on the take-off? A. Yes.

Q. Because of the better visibility? A. Yes.

Q. Now, Colonel, fifteen persons in this particular tri-motor plane took off on the northwest runway of the Newark airport on March 17, 1929, between four and five o'clock p. m. in the face of an average wind velocity at that hour of thirty-four to thirty-nine miles per hour, and assuming that

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after the take-off it proceeded in a northwest direction to a point just over the viaduct about where my pencil is pointing to a certain mark "I-1," and assuming that the plane was approximately at that time one hundred and fifty to two hundred feet high and at that point made a turn to the right in this direction, north to northeast, and almost parallel with route 25 as you see it on this survey map and continued in that direction to a point on this map at or near South Street as shown on this map about midway or a little beyond midway between the Lehigh Valley railroad and South Street and then made another turn to the right due east and turned at this second point, or, rather, the second turn having been made at an altitude of between four and five or even six hundred feet with the wind then on its tail. Would you say that that turn and that course and that procedure that I have described under those conditions I have also described, that that ship was flown in a reasonably careful and skillful manner? A. No.

Q. Colonel, if a plane is kept in proper condition, that particular kind of plane, the one that was involved in the crash, frequently inspected and carefully flown, can you say with reasonable certainty that it will not crash?

Mr. Reed: I object to that question, if the Court please.

Mr. Carpenter: Same objection to the question.

The Court: I don't think that's proper. Sustain the objection. In other words, that's going too far into the realm of metaphysics.

Mr. George: May I hear that?

The Court: I say it is going too far into the realm of metaphysics. Stars fall and all that sort of thing.

Q. Colonel, if this particular plane, or plane of that type, was kept in proper condition and carefully flown can you say with reasonable certainty it wouldn't fall?

Mr. Reed: Same question; same objection.

The Court: Same ruling.

Q. Colonel, the Colonial plane which was involved in the crash taking off on March 17, 1929, cold day, clear thirty-four to thirty-nine mile wind velocity northwest, taking off from this northwest runway and reaching the point I before indicated where this mark "I-1" is, making a turn, sharp turn at an altitude of one hundred and fifty feet, is that good piloting?

Mr. Reed: I object. He has already answered the question.

The Court: I think this is a little narrowed down. He is only referring now, Mr. Reed, to the first turn. The other was as to the whole operation. I suppose he is entitled to develop it step by step.

Mr. Reed: It also occurs to me we have no testimony the wind velocity was from thirty-four to thirty-nine at the Newark airport at the time of the accident. The testimony given by Professor Scarr on that, I understood him to say, was thirty to thirty-nine between four and five, merely an average for an hour; that he couldn't say what the speed was at about five o'clock. He also said it was from thirty to thirty-four from

five to six, then he gave us an estimate of the wind as recorded at Sandy Hook, which was another point of recording and there he said the wind was from thirty-four to thirty. Therefore, I submit a question based on an assumption it is thirty-nine is improper on the evidence.

The Court: There might be something in that had not Doctor Scarr also testified that the variations at the Newark airport, according to his experience and observation would not vary much from those figures he gave us. So, I suppose this is properly based on the assumption that the wind would be in some measure between those two, the maximum and minimum.

Mr. Reed: He said it was a steady wind, but he wouldn't say what that wind was at the time of the accident which is around five o'clock.

The Court: Assuming it was a steady wind between those averages.

Q. Between thirty-four and thirty-nine miles an hour.

Mr. Reed: I think he said around thirty-three over at Sandy Hook, or, at thirty-three or thirty-nine.

Q. Would that be good piloting?

The Court: This is speaking of the first turn he previously called your attention to.

The Witness: No.

Q. At one hundred and fifty feet altitude? A. No.

Q. It wouldn't be good piloting? A. No.

Q. Would your answer be the same even if the plane were empty, I mean of passengers, other than the pilot? Would it be good piloting? A. It is the same regardless of the load or the wind.

Q. Now, does the load make any difference in the answer? I mean, does it increase the danger or diminish it? A. It just makes the "no" more emphatic.

Q. Makes the "no" more emphatic. Well, respecting the matter of danger, if it isn't good piloting do you mean by that it is dangerous piloting?

Mr. Reed: I object to the question.

The Court: Yes; sustain the objection.

Mr. George: Withdraw the question.

Q. What is the difference, then, in the making of a turn such as I have described and under the conditions I have described at an altitude of one hundred and fifty feet between a full load and an empty load? You have already testified it is bad piloting to make a turn as I have described it empty. Now, what difference would the added load or any added load have on your answer? A. The greater load you have in the plane the more difficult it is to handle.

Q. With what result?

Mr. Reed: I object to that question.

Mr. George: I think that 's a proper objection. I withdraw it.

Q. Just what do you mean by it being "more difficult to handle"?

Mr. Reed: I object to that.

The Court: Yes. Why don't you ask him the question you want to know?

Q. Was it safe or dangerous to make it.

The Court: No. Not quite as bald as that.

Mr. Reed: I object.

The Court: Would it make any difference in the piloting of the ship as to whether you had a load on or were running light in making a turn at that altitude under those conditions?

The Witness: Well, with a light load——

The Court: In other words, would it be easier if you had the ship light rather than loaded, or wouldn't it be?

The Witness: It is easier when the plane is light because you have a much greater reserve.

The Court: Right there. Why?

The Witness: Because you have a much greater reserve horsepower. When the plane is fully loaded it might require the full amount of horsepower in order to get around this turn and climb. When it is loaded lightly you might fly on one-half the horsepower. Then if you lose any of your power you would still get away with it with a light load, but if you lost any of your power with a full load you would be in very serious trouble.

Mr. Reed: I move to strike out the last part.

The Court: Strike out "You would be in serious trouble."

Q. What do you understand as an expert to be the effect of a sputtering motor? A. Well, loss of power; loss of revolutions.

Q. What effect does the sputtering motor have in taking off upon the risability of the plane or the maintenance of its altitude once it is in the air? A. Well, any loss of power will decrease either the speed or the rate of climb.

The Court: And consequently have an effect upon the gaining of altitude?

The Witness: It decreases your reserve horsepower for climbing, or speed which is necessary to fly.

Q. Well, is it easier or more difficult to climb with a sputtering motor? A. Oh, it is more difficult. The more horsepower you have the more liberties you can take.

Q. Now, on the take-off on the northwest runway one motor begins to sputter just as it is making the take-off. What would be the reasonable, proper course, with the wind as we have described it, with the terrain as you know it to be, for the pilot respecting the turn?

Mr. Reed: I object to the form of that question on the ground it does not state the facts in the case.

The Court: Yes; sustain the objection.

Mr. George: The witnesses testified your Honor, just as the plane was making the take-off as it got over his head right at this point (indicating) at the intersection that he heard the motor sputtering.

The Court: Suppose you reframe the question. There are other elements that are material.

Q. Colonel, this particular plane which was involved in the crash on March 17, 1929, cold, clear

day, wind northwest, steady, velocity averaging between thirty-three and thirty-nine miles per hour, the plane, that particular plane is taking off on that northwest runway, and rises to a point of about one hundred and no higher than one hundred and fifty feet as this mark "I-1", what would be the reasonable and proper course for the pilot to take on that particular plane with the motor—one motor sputtering?

Mr. Reed: I object to the question, if the Court please, as he is now dealing with the individual judgment of the operating pilot.

Mr. George: He is qualified as an expert.

The Court: No, but this is far different. Would it be good piloting practice with a sputtering motor on the left wing giving an exhaust of black smoke intermittently to make—whatever you want to go on and say.

Mr. George: —to make a right turn.

The Witness: That isn't good practice.

Q. Why not?

Mr. Reed: I object to the "why not."

The Court: I think we are entitled to know, having stated that it isn't.

Q. Under those circumstances.

The Court: What prompts you to say it wouldn't be? What in those elements are present that would make it not proper practice?

The Witness: It is not good practice in any event, but it is worse in the event you don't have full power.

Q. Well, why is it not good practice and why would it be worse if you don't—as in the case I

have described with a sputtering motor and emitting intermittently black clouds of smoke? Why would it have been less proper to make a turn to the right?

Mr. Reed: I object to the triple question. There are three questions in one there.

The Court: Yes; I will sustain the objection to the form of the question, not the purpose of it. Don't take two bites of the cherry. He may answer one part of that question, then ask another.

Q. You testified it wasn't good practice. You mean by that not good piloting? A. Yes.

The Court: That's what he said, not good piloting.

Q. Not good piloting to have made a turn to the right under any circumstances under the conditions I have described?

Mr. Reed: I object to counsel leading and suggesting something new in this case.

Q. Is that so?

Mr. Reed: Just a minute.

The Court: If it is just leading I will overrule the objection.

Mr. Reed: I object to it as incompetent, irrelevant and immaterial.

The Court: Not hearing any other reason in the objection pressed to the question, I overrule the objection.

Mr. Reed: May I press a further objection? He has not got the facts as stated by the witnesses.

The Court: I will hear your statement of the facts omitted.

Mr. Reed: He has not stated the condition of the plane, what was the matter with it.

The Court: I think he has stated it had a sputtering motor.

Mr. Reed: That's all.

The Court: If that has any bearing he is entitled to tell us. If it hasn't we want to know. (To witness) Has this sputtering motor any significance to you as an expert that would prompt you to say it had some bearing on the flight of the machine under the conditions that existed there?

The Witness: Yes.

The Court: Assuming what has been suggested, the left motor on the take-off in getting to its altitude of one hundred and fifty feet, had shown some disposition to sputter, and I think that someone said laboring, that there was smoke emitted from the exhaust, does that have any mechanical significance with reference to the efficiency of the plane?

The Witness: Yes. If there is any——

The Court: I mean, it can be narrowed down to one definite proposition?

The Witness: If there is any question at all as to whether all of the motors are working perfectly the pilot should be extra careful in heading into the wind until sufficient altitude has been gained.

The Court: Strike it out and the jury disregard it. What I am getting at, Colonel, is whether or not that condition of the sputtering motor and the slowing down

of the motion—laboring and the motion of smoke, whether that has any particular significance with reference to the efficiency of the machine? Yes or no, or I don't know.

The Witness: The answer is yes. It lowers the efficiency.

The Court: Wait a minute.

The Witness: Its ability to climb or fly——

The Court: What is it about the sputtering and so on that causes you to say it lowers its efficiency? What does it do? What happens when that exists?

The Witness: If the motor is sputtering or emitting black smoke at intervals it shows it is not functioning properly, that it is not developing its full horsepower. It may be missing fire on some cylinders.

The Court: All right. Now, with that explanation you say that's what you would expect to find. With that condition, then, can you answer this previous question? Assuming that condition did exist between the starting point and this first turn Mr. George has mentioned in his question, at that point a turn at one hundred and fifty feet to the right in that manner, assuming the wind was from the northwest rather strong and steady, blowing from, say, thirty-three miles an hour, under those conditions, I think the question was, would that be proper piloting to make that turn to the right under those conditions and within that distance?

The Witness: The answer is no.

The Court: Well, now, all right. What element in there is it prompts you to say

that? What was wrong with it that you say it was not proper piloting?

The Witness: In the first place no turn should be made at an altitude of one hundred and fifty feet.

The Court: Or say two hundred. Would the answer still be the same?

The Witness: The answer is still the same up to five hundred.

The Court: Is there any additional element there in your opinion has a bearing on your answer that it is not proper piloting other than the fact he did make the turn? Is there any additional element?

The Witness: It is bad in any case.

Mr. Reed: I move to strike out the last part.

The Court: Yes. You have already told us, and I assume it is leaving out anything else other than the altitude you want to make the turn, but, now, is there anything else wrong with piloting in that manner under those conditions, in other words, that wouldn't be considered good, ordinary piloting practice?

Q. Do you understand the question?

The Court: You see, the mere fact the turn was made had something to do with it. Under those conditions did anything else occur to you from the question as to influence your answer?

The Witness: Perhaps my answer is not right as I see it. It is wrong to turn at one hundred and fifty feet even though everything is perfect.

Mr. Reed: I move that it be stricken out.

The Court: Strike it out. You see, Colonel, the trouble is you haven't been asked that now.

The Witness: I see. It is not good——

Mr. Reed: I move to strike it out again.

The Court: Wait a minute until there is a question. All right, go ahead. Don't let's bother any further.

Q. Now, Colonel, Newark Airport, March, 1929, clear day, about between four and five in the afternoon or thereabouts, northwest wind blowing at a velocity between thirty-three and thirty-nine miles per hour from the northwest, the Ford plane involved in the crash. From your expert opinion was it reasonably safe to fly that plane that afternoon under those conditions with fifteen adult passengers, including, of course, the pilot?

Mr. Reed: I object to the question, if the Court please, as not based upon all the facts in the case.

The Court: Sustained. It seems to me he briefly condensed it. Are there any you think should be included?

Mr. Reed: Yes. It doesn't appear what the weight of the plane was. We know it had been flying for some several hours. Of course, there was a consumption of gasoline. The weight loaded isn't the question. That plane might have been well under its capacity for safe flying. I also make the point it doesn't appear that the Colonel, with all due respect to his reputation, is qualified to answer that question as to the flight of a tri-motor Ford. It doesn't appappear that he has ever flown one.

The Court: He was accepted without objection as being a qualified expert as a flier.

Mr. Reed: I raise the point he wasn't qualified as an expert on tri-motor Fords.

The Court: He said that he was. Let's have it out. There is no use arguing and taking a lot of time, or time to go back again. Colonel, let's find out your experience about tri-motor planes. How many tri-motor planes have you flown?

Mr. Reed: Prior to the 17th of March, 1929?

The Court: Yes; or any other time.

The Witness: Only three or four.

The Court: And when was that?

The Witness: 1928 to 1930.

The Court: All right, I thought he had.

Mr. Reed: You have flown three times actually, haven't you, Colonel?

The Witness: Three or four.

Mr. Reed: Three or four times?

The Witness: Yes.

By Mr. Reed:

Q. Then, those times you were with a co-pilot? A. Yes.

Q. You were with a co-pilot.

The Court: But you operated the controls?

The Witness: Yes.

The Court: And you observed those planes in flight?

The Witness: Yes, sir.

The Court: And worked upon those planes, I mean, in the factories?

The Witness: No. I have been through the factory where they are built.

The Court: He seems qualified. Go ahead.

Q. What is your operating time in a tri-motor plane, in a Ford tri-motor? A. In a Ford tri-motor?

Q. In a Ford plane? A. Not more than two hours.

Q. You said the last time an hour and a half or two? A. That's a pretty good memory.

The Court: You have driven tri-motor planes of smaller weight capacity?

The Witness: Similar to this, Fokker, yes.

The Court: How many hours in those?

The Witness: Perhaps about ten.

Q. Are you a licensed reserve pilot, licensed by the Department of Commerce?

Mr. George: Objected to.

The Court: Let it go in. What difference does it make?

The Witness: Yes; now I am. After you brought the subject up at another time.

Q. Was there some period of years that you weren't?

Mr. George: That's objected to.

The Court: Sustain the objection. Ross *vs.* Pennsylvania Railroad. (To Mr. Reed.) You are going to supply the weight of these planes, I assume.

Mr. Reed: That's in evidence in the license.

The Court: You know about the general weight of this plane?

The Witness: Yes.

The Court: Assuming that these passengers were average weight. Anything else, Mr. Reed?

Mr. Reed: Yes; you have got to assume that the plane flew for a certain number of hours on its gasoline and what the gasoline weight was, and that would be a substantial saving in weight.

The Court: Assuming the gas tanks had enough in them only to go up to the point indicated.

Mr. Reed: We don't claim that; we claim it had plenty of gas.

The Court: I am going to claim it.

Mr. Reed: We claim it had plenty of gas.

The Court: But that it had made several flights during the late morning and some in the afternoon over the City of New York, making frequent landings and take-offs with passengers. Assuming all those things in the question what is your answer?

By Mr. George:

Q. I think the question was, was it reasonably good piloting?

The Court: Would it be good piloting?

Mr. Reed: I object to the question and pray an exception.

The Court: I shall hear you. Here in New Jersey an objection without a reason is no good.

Mr. Reed: On the theory he has not had sufficient experience in flying tri-motor Fords to qualify him to give an answer; and the further reason it doesn't appear

what the weight of the plane was, gross total weight.

The Court: He says he had seen the plane.

Mr. Reed: Not "the" plane. He didn't mean "the" plane.

The Court: They are all almost the same.

Mr. Reed: Substantially.

The Court: All right, get us the weight.

Q. The plane more particularly referred to and described in the license marked P-4 in evidence—

The Court: Does that give the weight?

Mr. George: Gives the dead weight.

Mr. Reed: That gives the weight it may carry.

Mr. George: It gives the dead weight.

Mr. Reed: Of course. The live weight is changeable.

Mr. George: We have put in what is in the evidence, fourteen adult persons besides the adult pilot, or fifteen adult persons of reasonable average weight.

Mr. Reed: We will average them at one hundred and fifty pounds a person, but that doesn't give us the weight of the gasoline that was used in consumption.

The Court: I have assumed it is practically empty.

Mr. Reed: There was plenty of gas in there.

The Court: What do you say was in there? What do you want in the question? I will put it any way you want.

Mr. Reed: Your Honor, we claim there was about seven hundred and fifty or eight hundred pounds less than the allowable load.

The Court: What do you claim he had in any case?

Mr. Reed: I will get that.

Mr. George: Less than the allowable or total weight?

Mr. Reed: Seven hundred and fifty or eight hundred pounds less.

The Court: If we had what the weight is——

Mr. George: That's in evidence. You have the gross weight of 10,130 pounds.

Mr. Carpenter: We claim the weight of the full plane was 9,402 pounds. We are going to show this by experts. The weight of the oil was 101 pounds; the weight of the plane empty 6,169 pounds; the weight of the passengers in the plane was 1,183 pounds—no, 2,233 pounds, or a gross load in the plane at that time of 9,445 pounds as a maximum and as a minimum 9,402 pounds. That's what we shall prove on our case.

The Court: Now, if there is no objection you may add that to this question.

Mr. George: I have no objection.

The Court: Because we want to get in anything that has any bearing. If anybody else thinks of anything else we will allow that in.

By Mr. George:

Q. Now, with that weight, including the nineteen hundred some odd pounds, gasoline and so forth, everything that has been described in addition by Mr. Carpenter, considering the condition of the day, course of the wind, velocity of the wind, character of the airport, and kind of plane

involved, was it reasonably safe to fly that afternoon with that load? A. No.

The Court: Now, is that with reference to the manner in which turns were made and the altitude at which they were made, or is that just not safe to fly?

The Witness: Not safe to fly with that load on that day.

Q. Exclusive of the character of turn? A. Yes; it could be done. It was done, but it wasn't conservative.

Q. Was it good piloting to take up the plane on that day under those conditions with that load?

Mr. Reed: I move to strike out the answer of the witness "It wasn't safe to fly, it wasn't conservative."

The Court: Strike out "not conservative."

Q. You are familiar with the regulations of the Department of Commerce, are you not? A. Yes, sir.

Q. Respecting the operating of planes? A. Yes, sir.

Q. Commercial planes? A. Yes, sir.

Q. Are you acquainted with so much of the regulations of the Department of Commerce, Division of Aeronautics as to the limitation of number of passengers to be carried on planes of the type involved in the crash? A. Yes.

Q. What was the regulation?

Mr. Reed: I object.

The Court: Sustained.

Q. Do you know how many are limited to be carried in that particular kind of plane?

Mr. Reed: Same question; same objection.

The Court: Same ruling.

Mr. George: That's all.

Cross-examination by Mr. Reed:

Q. Colonel, you never flew in this plane in question? A. I don't think so.

Q. Did you ever fly in a tri-motor Ford at the Newark airport? A. No.

Q. Was the Newark airport after you got out a couple of thousand feet from the beginning of the runway swampy and irregular both straight ahead, to the left and to the right? A. After leaving the end of the runway?

Q. Yes. A. Yes.

Q. It was irregular and swampy in front of you, to the left of you and to the right of you? A. Yes, sir.

Q. So that there were dangers of an emergency landing, I suppose, after leaving the runway? A. Yes, sir.

Q. What are the dangers of an emergency landing? A. If it is necessary to come down on anything but a relatively hard and smooth surface, as an airport, there is danger of the plane, what you call, nosing over. If it lands in soft ground or if there are ditches there is danger of wrecking the plane.

Q. Turning over would wreck the plane and injure the people, of course? A. No doubt.

Q. You can nose over also, can you not? A. Yes, sir.

Q. If it is irregular and swampy? A. Yes, sir.

Q. You can somersault. That's the layman's expression. So, swampy and irregular ground there on all sides presented a dangerous situation for an emergency landing? A. Yes, sir.

Q. You told us it is not good piloting to turn at one hundred and fifty feet from the ground. Right? A. Yes.

Q. And the reason for that is that there is a possibility that in turning you lose a little altitude and cause your plane to get so low to the ground that one of the wings might strike the ground. Isn't that the substance and the real idea? That it may come down and have a crash on the ground because it is so low? A. Not exactly.

Q. Well, a turn at two hundred feet is better than a turn at one hundred and fifty feet? A. Yes.

Q. A turn at three hundred feet is still better than a turn at two hundred feet? A. Certainly.

Q. Isn't the reason, as stated by the other expert, the further away you get from the ground the better you are in making the turn? A. Yes.

Q. If you are up to five thousand feet it would be far better to make a turn up there than one hundred and fifty feet from the ground? A. Yes.

Q. Now, then, assuming, Colonel, that a turn was made at one hundred and fifty feet, but that thereafter the plane straightened out and flew away quite some distance, the pilot would have nothing further to do with the operation of the plane in making that turn at that low altitude after you got off and got on an even keel again while flying away, would he? A. Yes, it would make a difference.

Q. Mechanically, after you readjust yourself and have gotten on an even keel and gotten away with the sharp turn without touching the ground

and everything functioning all right, then the fact that the pilot did make that sharp turn so close to the ground played no part further in the transaction, did it? A. No. That's not the case.

Q. What difference, if any, would it have? Suppose a pilot made a turn and flew a mile away or two miles away, engines functioning perfectly—follow my questions, now—what difference would it make, after all, except that you say he went around the corner too sharp? A. If he——

Mr. Coolahan: May I object to the question? There has been testimony here that the engines did not function properly.

The Court: I know, but he is assuming the other level, which he has a right to. It is cross-examination.

The Witness: If the pilot should make a turn at one hundred and fifty feet and get away with the turn?

Q. Yes, if you want to use that expression, sort of a slang expression, "get away with it." His plane didn't lose altitude and then he got off on a level keel and he went flying away. Now, it has passed behind him then, hasn't it? A. After he has made the turn and is flying straight again?

Q. All the engines functioning perfectly. Remember my question. A. Yes. He has gotten himself into a very bad situation until after he reaches sufficient altitude to make another turn back into the wind for a landing in case of an emergency.

Q. Isn't he entirely clear of his short turn? Isn't he entirely clear, assuming that there is no crash at all; that he doesn't touch the ground and when he goes off that he climbs to a higher altitude?

Mr. George: Objected to unless the direction as well as the velocity of the wind is included in those circumstances. There are certain circumstances which are not included in the question.

The Court: I have observed a moment ago this is cross-examination. He has a right to take the elements he sees fit. You may bring out those elements in your redirect examination.

The Witness: I understand this refers to the particular take-off.

Q. It doesn't refer to anything except what I am asking you. I am not referring to anything at all but the facts I gave you. A. I have to know a few more facts to give an intelligent answer.

Q. Well, what are they? A. If the plane took off against the wind.

Q. No, the plane took off into the wind. A. Well, into the wind, and then at one hundred and fifty feet made a turn and after completing the turn he was going with the wind?

Q. No. A. At least, he wasn't going against it.

Q. He wasn't going against it, no. And he got off and climbed and got up. Wasn't that turn past history so far as that flight was concerned, all the engines functioning perfectly at that time?

Mr. George: I object to the form of the question as to the turn being past history.

The Court: Leave out the past history. It was a past event, then, was it not?

Q. It was, wasn't it?

The Court: Having no bearing on the after operation of the plane?

Q. Yes, that's the question. A. No; the danger is not——

Q. I didn't ask you about the danger. We have got out of that. Isn't it a past event? A. Not as far as the pilot is concerned until he reached sufficient altitude to make another turn.

Q. I am not saying a word about another turn. I am asking you as a matter of fact, truthfully speaking, after he has completed his turn and straightened out and is climbing up to a higher altitude, isn't the fact he made the turn at one hundred and fifty feet from the ground a past event? A. I don't think so, because the danger is not in the turn, it is in the position he is left in after he has made the turn.

Q. Isn't it just the same as a man that is boarding a moving trolley car, if you please? The trolley car is moving and he boards it. It wasn't good practice to do it that way and he gets on the trolley and he takes his seat. Isn't the manner in which he got on that car a past event?

Mr. George: I object.

The Court: Sustain the objection. Would you just permit me to ask a question at this time?

Mr. Reed: With pleasure.

The Court: It seems to me it may be a necessary question and everybody is leaving it alone.

Assuming that there were two fairly sharp right hand turns made, and you have been told where they were made by counsel for the plaintiffs, that may not be true, but assume those places were true, assuming that the last turn was down beyond the Pennsylvania Railroad tracks in the vicinity of South Street, and you know where

that is, and at that point the altitude attained wasn't over six hundred feet, the pilot having made his other turns nearer the take off and two or three hundred feet beyond highway route 25 at an altitude of one hundred and fifty to two hundred feet, both right hands turns, both spoken of by witnesses as rather sharp turns. Now, with that situation in mind, having in mind the velocity of the wind as indicated, say, about—put it down to thirty-three miles an hour—and after completing the second turn at an altitude of six hundred feet the plane didn't gain any higher altitude but from there on continually declined until the crash, which crash occurred just beyond the Central railroad track at the point indicated on the survey map, having in mind that distance, which I am not able to give you accurately, from the time the second turn was made until the plane went down—I think you have all the elements that you need—now, did either one of those turns under the conditions in which they were made in your opinion have any bearing upon the flight of the plane subsequent to its completion of the last turn until the time of the crash? You have said, as I understand your testimony, in your opinion it was improper piloting to have made those two turns just spoken of at the altitudes spoken of. Now, with that past, the last turn, straightened out, going due east, when the plane was noticed to continually go down with a bump or two in that course, what the witnesses have called a dip or bumping of the plane, had those two turns

which you say were made improperly, had those anything to do, or the improper making of those turns anything to do in your opinion with the subsequent course of that plane from the time it made the second turn until the crash?

The Witness: The making of those two turns left the plane travelling with the wind at too low an altitude to get around into the wind again in order to make a landing.

The Court: All right, now.

Mr. Reed: I move to strike it out as not responsive in answer to your Honor's question.

The Court: Yes; strike it out. First, give me a yes or no answer if you can. If you don't know say so as to whether those two turns, without repeating the question again, but with all the facts stated therein, had anything to do with the crash of the plane afterwards in your opinion? Was that thing a producing cause of the accident or did it enter into the crash in any way? If it had been made at a higher altitude, as you indicated possibly should have done, would, in your opinion, there have been any different results under those conditions?

(No answer.)

The Court: Never mind. I will withdraw the question.

Q. I will ask that question. I want you to answer that question. If it had been at a higher altitude would there have been any difference if this man had to make an emergency landing? A. Yes.

Q. He would have had to make an emergency landing if his engines stopped, wouldn't he? A. If the engines stopped, certainly.

The Court: And if they did stop, what bearing—that's what we are getting at—what bearing did the turns have upon the safety of the operation of the plane from there on, from the time the engines stopped?

The Witness: I think I perhaps don't understand.

Q. Put it this way, Colonel. If the engines had continued to function he would have gone right on, wouldn't he? A. Yes, certainly.

Q. If they stopped he would have had to make his landing? A. Yes.

Q. Well, say this: It would have been all right in this case if the engines had not stopped? A. If the engines had not stopped?

Q. Yes. A. The flight would have been——

Q. —continued? A. —continued.

Q. Then the turns had nothing to do with it? It was the engines stopping that cause him to make his landing, wasn't it? A. The turn——

Q. Now——

Mr. George: Let him answer.

The Witness: Yes.

Q. If the engines hadn't stopped he would have continued his flight? A. Yes.

Q. Then the turns had nothing to do with it, the fact this man, when his engines stopped, made an emergency landing? A. The turn didn't cause the crash.

Q. That's what I am asking you. The turns didn't cause that crash? Just answer that yes or no. A. That——

Mr. George: Let him answer.

The Court: Let him answer.

The Witness: The turn merely left the pilot in an awkward position from which he couldn't recover.

Q. By that you mean the pilot was only up five or six hundred feet and he might have been up seven or eight hundred or something like that? That's the only difference, but he would have had to make his emergency landing when they stopped? A. If he had been at a higher altitude he might have gotten back to the airport.

Q. But that's purely speculative? A. That's purely speculative.

Q. That's purely speculative.

Mr. George: I ask that Mr. Reed permit the witness to answer the question.

Q. The turns didn't cause the engines to stop so far as you know, did they? A. No.

Q. And they wouldn't, would they? A. No.

The Court: While they are looking, I would like to ask if this second turn had been made at the altitude you indicated would have been a proper altitude, from eight hundred to one thousand feet high, would that have, in your opinion, enabled that pilot to have made a more distant landing than he did make? Or, in a different place than he did make it?

The Witness: Certainly. He would have landed in a different place. The higher you are the further you can glide. He would have had his choice of gliding further on or making an additional turn so as to land against the wind and much more slowly.

Q. But it would have been an emergency landing just the same, wouldn't it, if his engines stopped? A. If they had all stopped?

Q. Well, if two of them stopped? A. If two of them stopped, yes.

Q. Colonel, these tri-motor Fords have a factor of safety, don't they, over that 10,130 pounds?

Mr. George: That's objected to—withdraw the objection.

The Witness: Yes.

Q. You would say, wouldn't you, they have a considerable factor of safety, that means an ability to carry a load more than the 10,130 pounds? A. That isn't the way that term is usually used.

Mr. Reed: Strike out, "That's the way it is usually used".

Mr. George: No. I think the witness ought to answer and then the Court rule on the answer.

The Court: Yes; let him answer. Are you finished?

The Witness: No. I was going to tell you what the factor of safety is.

The Court: No, no, then. Strike it out. Don't try to think of what other conditions there might be, but listen just exactly to the question and give an answer because they are entitled to have an answer to the question as stated unless it is an improper question.

Q. The factor of safety means the factor of carrying more than 10,130 pounds. Right? On tri-motor planes? A. If you wish to use it in that way I will try to answer it.

Q. Yes. You are referring about some stress factor of safety. I am not referring to that at all. A. Yes, sir.

Q. You have had some experience carrying 15,000 pounds, haven't you? A. Not personally.

Q. Now, it has a considerable factor of safety for carrying purposes, carrying loads, does it not? A. Yes.

Q. You have had some experience carrying 15,000 pounds, haven't you? A. Not personally.

Q. In a tri-motor plane? A. No. I know of a similar plane carrying a full load of about 15,000 pounds.

Q. That would be a factor of safety of nearly 4870 pounds, wouldn't it, above the allowable gross weight? A. It is very difficult to answer that sort of a question because on one day the factor of safety might be quite large in another condition it might be less.

Q. Now, is this true: The number of passengers in this plane had from a practical standpoint nothing whatever to do with the occurrence of the accident?

The Court: Mere numbers.

The Witness: Mere numbers didn't. It was the weight.

Q. You spoke about the wind. Now the reason for fearing wind is because of the danger on the take-off rather than in the air, is it not? A. I don't get that question. On the take-off and landing? Whenever the plane is on the ground or near the ground?

Q. Yes. By near the ground you mean within fifty feet of the ground or one hundred feet of the ground? A. No. A plane travelling with the wind near the ground——

Q. Against the wind, please.

Mr. George: Let him answer, please.

Q. We are dealing with against the wind, not with the wind. A. Plane travelling against the wind?

Q. Yes. On the take-off that danger is in relation to the taxiing and immediate take-off, isn't it? A. Taxiing until it gains a little altitude?

Q. Well, fifty or one hundred feet. A. It wasn't on the turn?

Q. The plane is on the runway, if you please. When the plane is taking off on the improved part of the runway, the only danger from the wind is the possibility as it taxied along, in just starting off, it may overturn? Isn't that the only danger from the wind of any substantial consequence in the flight, not referring to coming down again later? A. A gusty wind——

Q. We are not dealing with a gusty wind, we are dealing with a steady wind. A. With a steady wind your main difficulty is taxiing on the ground, and immediately you leave the ground.

Q. Assuming there is a wind from thirty-three to thirty-nine miles, and assuming that nothing happened on the take off; the plane didn't overturn and it wasn't thrown out of position by any wind of that velocity and it goes up into the air two hundred feet—three hundred feet, then isn't it perfectly safe when it's once well up in the air, all engines functioning properly, to go along in a wind of thirty-three to thirty-nine miles an hour?

Mr. George: I object. This witness and this testimony was limited to the actual facts, or to those facts to which there has been testimony, which included, of course,

the suggestion of counsel that all of the motors were functioning properly.

The Court: May I observe this is cross-examination and that they have a right to assume their theory of the case, which is that the motors were functioning properly? Overrule the objection.

Mr. George: I object. The question is based on an unwarranted assumption of fact.

The Witness: Flying straight into the wind?

Q. Yes. A. Yes.

Q. Once you are up any wind within this thirty-three to thirty-nine miles an hour doesn't make any material difference? A. No.

Q. Well, then, the wind wasn't the cause of the crash, was it?

Mr. George: That's objected to.

The Witness: It wasn't the primary cause.

The Court: Overrule the objection.

Mr. George: What's the answer.

The Witness: It wasn't the primary cause.

Q. It played no part except insofar as the location of the plane was concerned by virtue of the wind. That's so, isn't it? A. It played a part in the handling of the plane.

Q. So, it wasn't the cause of the crash at all, was it? A. It wasn't.

Q. Out loud, please. A. It wasn't the main cause. It had something to do with it.

Q. The only thing it had to do with it, it had something to do with where the plane happened to

be by virtue of its flying in the wind, isn't that it, assuming that the plane fell because two motors ceased functioning? A. The wind was one of several circumstances.

Q. I didn't ask you that, will you please answer my question? A. I will see if I can.

Q. You told us that it was dangerous—bad practice to take off in the wind and that certain winds were dangerous and you have told us the only time that makes any difference at all is when it's on the take-off or close to the ground on the take-off? A. Yes, sir.

Q. You told us once you are flying up in the air with your engines functioning properly the wind makes no material difference in the movement or the operation of the plane? A. Yes.

Q. What say? A. Yes.

Q. That's true, isn't it? A. Yes, sir.

Q. Then, if once you are up in the air and you are flying with your engines functioning and it then so happens that two of your motors stop and it is necessary to make an emergency landing, the wind plays no part in that circumstance, does it, of the necessity for an emergency landing? A. Only if the plane is low.

Q. What? A. Yes, it does. It plays a part in the emergency landing.

Mr. George: Plays a part in what?

The Witness: In the emergency landing.

Q. The only part it plays is it makes a difference by the wind where you are going to land? A. No.

Q. It makes a difference where you are going to land, doesn't it? A. That's not the only thing.

Mr. George: That's not the what?

The Witness: The only difference.

Q. The only other difference if you fly against the wind is your speed is less than if you went with the wind. Isn't that the only difference? A. No. It effects the rate of climb of an aeroplane.

Q. You aren't climbing when your two motors fail and you have to make your emergency landing, you said, didn't you? A. Yes.

The Court: The question is a broad question and his answer to that probably, in view of his light, is correct. You didn't qualify it—engines carrying.

Colonel, while they are conferring, speaking of a wind of the velocity that was indicated, in making the second turn that was made here, which took the plane off the ground at an altitude of not over six hundred feet, did the velocity of the wind under those circumstances have some bearing on the subsequent conduct of the plane?

The Witness: Yes.

The Court: What?

The Witness: In still air a plane may be able to fly well on two engines. It may be able to fly a great distance on only one engine, but it has to land. On windy days sometimes a plane will climb very fast and other times it will not climb at all, because a light wind causes vertical air currents. If you are in an air current that is raising the plane will climb very easily or it will fly on very little power. But, if you are in an air where the air currents are descending due to the high velocity even with full power at times the plane can't climb. That's what makes between the amount of load you should carry in a high wind.

The Court: That degree of wind on its tail under those conditions, you said, would have a bearing on the subsequent conduct of the plane?

The Witness: On the ability of the plane to maintain its altitude with part of its power gone.

Q. You have said it couldn't maintain altitude with two motors gone, haven't you? It had to make an emergency landing? A. That's very unlikely.

Q. Colonel, did you say when you were examined before. Question: "You do not say, then, that you cannot fly safely at 30 to 39 miles an hour, once you get off your take-off and get into the air, and your engines are functioning normally?" Answer: "No". Did you say that? A. You can fly safely.

Q. Shall I read it to you again? A. Yes, sir.

Q. Question: "You do not say, then, that you cannot fly safely at 30 to 39 miles an hour, once you get off your take-off and get into the air, and your engines are functioning normally?" Answer: "No". A. No.

Q. You don't say that, do you? A. No.

Q. What you do say is you can fly safely at thirty to thirty-nine miles an hour once you get off your take-off and your engines are functioning normally? A. It can be done if you take the proper precautions.

Q. You can fly normally in that way? A. Yes.

Q. What do you say that a Ford can take—in what velocity of wind with a full load, take-off and fly, engines functioning normally?

Mr. George: With it or against it?

The Court: They always take-off in the wind.

The Witness: Always on the take-off, yes.

Mr. Reed: I won't ask an aviator that question.

Mr. George: Well, I am not an aviator.

Mr. Reed: He is, I take it.

The Court: Go ahead.

Q. Do you remember the question? We will have it read to you? A. I would say with that type of Ford with a full load——

Q. No. 750 to 800 pounds under a full load, engines functioning properly. A. I would say a pilot should begin to use his judgment on the amount of load he can carry——

Q. Sure. A —at winds above, say, twenty-five miles an hour. It depends on so many things as a matter of judgment on the pilot.

Q. Then you are not prepared to say whether or not this pilot on this particular day took off—engines functioning properly—with a wind of thirty-three or thirty-four or thirty-five miles an hour or maybe thirty-nine—we don't know exactly —you won't attempt to discredit his particular judgment you say he has to exercise on that day, will you? A. Yes.

Q. You will? Did you give this answer to this question before:

Mr. George: Page, please.

Q. 466. Question: "But assuming that the plane was controlled before you take off, and that it got off the ground, what is the maximum wind that you can climb in"? A. Can climb in?

Q. Yes. Suppose I ask you that question before I ask you what you said before? What do you say.

Mr. George: Just a minute. Counsel asked if he made a certain statement in answer to a certain question, and he reads the question.

The Court: I think you have to segregate what you have asked him.

Q. I will ask this question: Withdraw the other. Assuming that the plane was controlled before you take off and that it got off the ground, what is the maximum wind that you can climb in? A. I can't state a maximum.

Q. Well, could you get off at fifty miles an hour? Fifty mile an hour wind, I mean. A. It depends entirely on the circumstances. There are times when you can take off and you could climb in a fifty mile an hour wind or even much higher. There are other times when in a strong wind you can't climb and no one can tell that. So, we have found by experience to—not to fly fully loaded in strong winds.

Q. In the first place, you don't know what the circumstances were at the particular moment this plane took off, do you? You don't know? A. The exact circumstances?

Q. No; you don't know them, do you? A. No.

Q. You don't really know what the wind was at that particular minute that the plane took off, do you? Because you have only been given the general average of an hour on that day, so you don't know the particular wind, do you? A. Not exactly.

Q. You do know it was a steady, plain, straight wind from the northwest? Right? A. That's the testimony.

Q. You also are told it wasn't fully loaded in weight? A. Yes, sir.

Q. Nevertheless, you say there are other circumstances, but then, if there are other circumstances you can't judge what the individual judgment of the pilot would be without knowing the other circumstances, can you? A. From what I know I can give you my judgment.

Q. But if there are some other circumstances that are not before us you can't give your judgment without a majority of the circumstances, can you? A. I could not tell you the exact——

Q. Because you don't know all the circumstances? A. No, and neither can anyone else.

Q. Did I ask you this question before, Colonel Chamberlin, and did you give this answer: Question: "But assuming that the plane was controlled before you take off, and that it got off the ground, what is the maximum wind that you can climb in?" Answer: "Once you are off the ground, it does not make a great deal of difference. If the wind was blowing 100 miles an hour and it was still smooth, you might go backwards, but you would be able to climb. I don't think that has anything much to do with it, once you are in the air. You probably would never get in the air, but if you did, the plane should be able to climb, regardless of the strength of the wind, unless it was very gusty and bumpy, so that it would blow the plane around." Did you give that answer? A. Yes.

Q. You have been told, haven't you, it wasn't gusty but it was a straight, direct wind and that the wind was not one hundred miles an hour but was only somewheres between thirty-three and thirty-nine? Do you want to tell this court that the plane could go up and once in the air off that dangerous taxiing runway it could climb, make

altitude if everything functioned properly? Isn't that so? A. It should be able to climb if everything was functioning properly.

Q. Both up and down wind? A. Yes.

Q. These tri-motor Fords will climb even with the wind on their tail, won't they, if the engines are functioning all right—properly? Any plane will? A. It doesn't make any difference in the rate of climb whether a plane is going against the wind or with it.

Q. Now, you have just said a moment ago—I can only give my own opinion, because it is, after all, the judgment of the pilot under all the circumstances that existed. I want to ask you this question:

Mr. George: Page, please.
Mr. Reed: 473.

Q. Do experts differ as to the wind velocity in which to fly?

Mr. George: Objected to.
The Court: Overrule the objection.
The Witness: Yes.

Q. There is a difference of opinion on that, isn't that true, of many experts? A. Yes.

Q. Is that why you said it would be only the individual judgment of the pilot under all the circumstances? A. You mean the amount of load that he should carry and whether or not he should fly?

Q. Isn't it, then, the individual judgment of those individual experts or fliers as to the ability of their plane as to the direction of the wind, and so forth? A. Largely, yes.

Q. Of course, a man there on the ground on the airport in his seat in the plane knows more about

it than the man two or three years later who is given a hypothetical question with only part of the circumstances stated, does he not? A. Yes; except that I was flying about a mile away.

Q. But you weren't flying with a tri-motor Ford, were you, except for that hour and a half or two hours you told us about? A. I was flying in the same district. Rather, my airport is about two miles from the——

Q. You weren't flying on that day with a tri-motor Ford? A. No. With my own plane.

Q. You only got a single motor plane? A. Yes, sir.

Q. A small plane? A. About half the passenger capacity of the Ford.

Q. You were flying with it, you say? A. Yes, sir.

Q. All day long? A. Not all day. During the afternoon.

Q. Take anybody up with you? A. Yes.

Q. Passengers? A. Passengers.

Q. Taking them up for hire? A. Yes, sir.

Q. At the Jersey airport? A. Jersey City airport.

Q. Taking them up all day long until dusk? A. There wasn't that much business.

Q. Well, as it came? A. Yes.

Q. It was Sunday, you know.

Mr. Reed: That's all.

(Recess until two p. m.)

(After Recess, Two P. M.)

Clarence Chamberlin resumes the stand pursuant to adjournment.

Re-direct examination by Mr. George:

Q. Colonel, I would like to ask one question, if I may. The plane in question having taken off as has been described and made the turn in the manner described, that is, into the wind, or west wind, made the first turn at "I-1" and again up in the direction we have described and then having turned to the right and upon the second turn having made the sharp second turn at an altitude not more than six hundred feet, the turn, upon completion, being due east, with the wind on the tail, was it reasonably possible for the plane then with its then altitude and with the wind on the tail to have cleared the crash into the gondola?

Mr. Reed: I object, if the Court please, on the ground he has not sufficient facts stated, the circumstances and facts that then confronted the pilot.

Q. I think that is so to this extent. One motor, the left motor, having failed either at or after the completion of the second turn.

Mr. Reed: May I further object upon the ground that there is no testimony as to whether one or more than one motor failed?

The Court: I think that is so.

Q. May I amend the question to eliminate the failure of the motor, but the motor at the time of the take-off or shortly thereafter was sputter-

ing and emitting intermittently black clouds of smoke.

Mr. Reed: I object to that.

The Court: Mr. George, It seems to me that is not the question that is so important. It is as to whether or not at that altitude and with the wind coming on the tail of the machine whether or not in his opinion the altitude at which the turn was made and the manner in which the turn was made, whether that had anything to do, in his opinion, with the landing of the plane in the place where it did land.

Mr. George: Your Honor is correct about that. May I be permitted to employ that as my question propounded to him? I ask the stenographer to read that as my question.

The Court: I think he has answered that already.

Mr. Reed: He answered that question before lunch.

The Court: I think he did. He may do it again.

(Court's last question repeated by stenographer.)

Q. Will you answer that question? A. Turning at that altitude in that direction caused the plane to strike where it did, if that's what you mean.

Q. Just one more question. Same plane; same weather conditions, thirty-four to thirty-nine mile wind velocity, northwest, with the motor sputtering when it reached the point on the map marked "I-1". What, in your opinion, would have been considered good piloting for the pilot to have done at that point respecting the matter of proceeding

straight ahead, turn to the right or turn to the left?

Mr. Reed: Object to the question. I object to the form of the question first and also it is just a repetition of what we had on the direct.

The Court: What is the new element you wish to bring out?

Mr. George: Just this, if the Court please: We want to show, and it has been substantially shown by another witness——

The Court: I get your point. Yes; all right.

Q. Do you understand the question? A. Yes. The pilot should have continued straight ahead.

The Court: He has answered that.

Q. Why, Colonel? A. In order to gain as much altitude as quickly as possible.

Q. For what purpose? A. So that in the event of a forced landing the pilot would have more room in which to maneuver for a landing.

Mr. George: That's all.

Re-cross-examination by Mr. Reed:

Q. Now, the effect of that answer, Colonel, is this, is it? Assuming that the turns are over and after the turns are over there is a motor failure and an emergency landing is necessary, you stay straight ahead is the rule? A. No.

Q. You have just said, have you not, the pilot getting in trouble goes straight ahead when he gets in trouble. That's true, isn't it? A. If he is already headed into the wind.

Q. You don't know where he was when he got in trouble, do you, from that question? A. Just from the testimony.

Q. No, no. From the question you don't know where he was, do you? A. The question stated that he was having trouble with one motor on the take-off and at this point he was having trouble with one motor. I said that he should have continued straight ahead.

Q. Now, assuming he didn't have trouble on the take-off? A. He should have continued ahead just the same.

Q. Then assume he came down to a time when he wanted to make a turn in the direction in which he was in; assuming it wasn't until he completes his turn that he gets in trouble or his motors fail, the rule is, is it not, when your motors fail and you are in trouble the best bet is to go ahead? A. Yes, except——

Q. That's the answer. Just a minute. A. Well, the answers is no, if I can't qualify it.

Q. In any event, an emergency landing is dangerous at any time in rough terrain, isn't it? A. Unless there is a good terrain ahead of the plane.

Q. Now, assuming that you happened to be at a point—you went straight ahead, you would go over a lot of buildings, and assuming that you saw on your right a field or fields, which way would you turn? Towards the fields or would you go straight ahead into the buildings? A. If there was a very large field, a large good field, you might try to go into it.

Q. You would choose the field rather than go straight ahead into the buildings, wouldn't you? A. It depends entirely on the circumstances.

Q. Of course it does. And the circumstances or what happened to that pilot at that moment you

don't know, do you? Right now you don't know, I mean, from the question? A. The question assumed that the pilot was having difficulty; that there was some difficulty with one engine on the take-off and he asked me which way the plane should go.

Q. Now, you don't know what difficulty the pilot had to cause an emergency landing in this case, do you? You haven't been told that, have you? A. Yes, sir; I think so.

Q. You do? A. The motor was sputtering.

Q. Is that all you know? A. On this take-off.

Q. What? A. On this take-off that we were talking about.

Q. That's all you know? A. The pilot had taken off, had reached one hundred and fifty feet altitude, one motor was sputtering. What should he do? I said he should go ahead, straight ahead.

Q. If in trouble you go straight ahead, is that it?

The Court: No. He hasn't said that.

Mr. Reed: I am asking him.

The Court: I am saying it isn't a proper question.

Mr. Reed: I apologize.

The Court: You are assuming he says one thing when he is saying another. He is telling you under the conditions named that's what he would do. He doesn't say in all situations.

Q. Assuming the motor wasn't sputtering he could go either way, couldn't he, after he got up in the air?

Mr. George: I don't—wait a minute, Colonel—I don't think it is proper, "after

he got up in the air." Counsel has not said how far up it is.

The Court: It is cross-examination. I assume he refers to what has been already testified to.

Q. I will ask you this question: You have told us after he got off that runway the terrain was irregular and swampy straight ahead? A. Yes, sir.

Q. To the left and to the right? A. Yes, sir.

Q. Then, Colonel, I will ask you this question: An emergency landing due to some trouble of some kind that required an immediate emergency landing would be dangerous, would it not? A. Yes.

Q. And whether you turned to the right or turned to the left it would be dangerous? A. Yes.

Q. An emergency landing? A. Yes, sir.

Q. And an emergency landing would be dangerous even if you went straight ahead? A. Yes.

Q. So that kind of trouble that required an emergency landing, even going straight ahead would be dangerous to persons in that plane? A. Yes.

Q. So that, then, in any event submitting the pilot to an emergency choice, either right, left or straight ahead, under such conditions there would be a likelihood or possibility of a serious consequence to land in an emergency landing under those conditions with a rough terrain? A. Repeat it again.

Q. Sure. Do you want it read again? A. Yes, sir.

Q. (Reading) "So that, in any event, submitting your pilot to the emergency choice, either right, left or straight ahead, under such conditions, there would be great likelihood of a very

serious consequence, to land in an emergency landing under those conditions''—of the terrain? A. Yes.

Q. After all, then, it becomes the choice of the pilot at the moment as to what to do, doesn't it? A. Practically no choice when you are at such a low altitude and the rule is to land straight ahead regardless of what is there if you are under five hundred feet.

Q. Then, would you be surprised to know that in this case when there was trouble in the motors, the pilot did go straight ahead to make an emergency landing?

Mr. George: Objected to as based on an unwarranted assumption of fact and improper cross-examination.

The Court: It is not very proper to ask him if it would surprise him to know, because I don't know that that is so.

Q. Then, Colonel, assuming when the trouble came a pilot did then proceed straight ahead, you endorse that procedure, don't you? A. Yes; there was practically nothing else to do at that time.

Q. But go straight ahead.

Mr. Reed: That's all.

By Mr. George:

Q. Just one more question, Colonel. Before recess Mr. Reed asked you as to whether experts differ respecting taking off in winds of certain or other velocities. May I ask you whether experts differ as to the advisability as to good piloting to make a turn, a sharp turn, of a plane of the type in question at an altitude of one hundred and fifty feet?

Mr. Reed: I object to that. That's direct examination.

The Court: We will have it again. Let's have it out in view of what has been brought out later.

Q. Do experts differ on that? A. No.

Mr. George: That's all.

By Mr. Reed:

Q. By the way, have you talked with anyone since you left the stand before recess? I mean, my brother here (indicating Mr. George).

Mr. George: Yes; I will say he talked with me and I talked with him.

Q. About the testimony in the case?

Mr. George: Yes; about the testimony in the case. I will concede, too, I asked him what he knew.

Mr. Reed: I am asking the witness.

Mr. George: I am conceding it into the record. I talked with him about the case. How else am I going to find out what an expert knows?

Mr. Reed: Don't get angry.

Mr. George: I am not angry; I am composed.

Mr. Reed: Don't get nervous about it.

Mr. George: I am not even nervous. I am as calm as a cucumber.

Mr. Reed: That's all, Colonel.

By the Court:

Q. Just a minute. Colonel, with the wind at the velocity it was on this day, having made the two

turns which you have already heard about at the altitude, the furthest one up not exceeding six hundred feet, if thereafter the plane continues to go down, but in the process of going down the plane makes one or two drops, then continues on in that manner, has that any particular significance, the fact that the plane didn't keep at a straight even glide down? It made a bumpy descent, in other words. A. It would indicate one of two things. Either that the air was bumpy and rough——

Q. Yes— A. —or else the plane had lost so much flying speed that it was just staggering along. When it has plenty of reserve speed it goes in quite a positive straight line.

Q. Now, you have said sputtering of a motor indicated a loss of function—a loss of power. If that condition did exist in one of these motors—I think it was said it was the left motor—on this tri-motor plane, and if the plane during its ascent reached only an altitude of six hundred feet at the second turn and then a rather sharp turn and proceeded easterly, from which point at the second turn it immediately started in to go down and then made these two or three bumps and crashed where the accident was—or crashed just over the Central Railroad tracks, would you say that—assuming that flight under those conditions and the wind and everything existing at that particular time—that there was anything there inconsistent with proper piloting so far as the pilot of this particular plane is concerned on that day? A. Yes.

Q. What? This may be a rehearsal, but I am trying to get the whole course from start to finish. A. Well, one of the first rules that you learn in flying is to take off against the wind and then go straight ahead or approximately straight ahead

until you have reached a minimum of five hundred feet—this varies a little bit with the plane, a light maneuverable plane a little less might be satisfactory, or in a heavier plane more. The reason for not turning under five hundred feet is——

Mr. Reed: I submit that is not responsive to your Honor's question.

The Court: On the contrary, it is quite responsive. Go ahead. I have asked him the reason.

The Witness: The reason for not turning under five hundred feet is that it is dangerous to go with the wind close to the ground, so that in the event of motor failure you don't have sufficient room to complete the turn and head back into the wind again before you hit the ground.

Q. All right. Now, it is proper piloting in the case of motor trouble or any trouble that would impede the normal progress of the plane to head it into the wind again? That's what I have been trying to find out, whether that is proper practice and to do otherwise wouldn't be? Do you get me? A. Yes. If the plane had six hundred feet altitude when the motor quit after making the second turn it should be possible to complete that turn and get back into the wind, unless due to the loss of power and the sudden turn with the loss of so much speed in the turn than after he had straightened out he had very little control. So, from when he slowed the speed and had very little control left, about all he could do was to sit and ride.

Q. All right. Stop there.

By Mr. George:

Q. Now, just one question. Does a turn have any effect in retarding the speed of a plane? A. Yes.

Q. And does retardation of speed vary with the arc of the turn? In other words, if it is a wide turn is it retarded less than if it make a sharp turn? A. Yes. The shorter the turn the more the plane is retarded.

Mr. George: That's all.

By Mr. Reed:

Q. Going back to the question asked you by his Honor. Assuming that he had an altitude of five hundred feet and his engines fail, your answer to that is go straight ahead, is it not? A. In the——

Q. Or, do you want more facts? A. I think I should have or allow me to qualify.

Q. Of course, you should. Then you couldn't answer his Honor's question without knowing more facts as to whether he should have turned around or whether he should have gone ahead, except from the general rule, when in trouble go ahead? A. Except from my knowledge. On the take-off——

Mr. George: Just a minute. Are there any questions before the court now? I know of at least two. I think the witness is entitled to have one question put at a time.

Q. I will repeat the question, Mr. George. The court asked you what would occur if he attempted to turn around. Now, assuming engine failure in the attempt to turn around right, about a one hun-

dred and eighty degree turn, I understood you to say something about he would lose altitude; he might crash in making a one hundred and eighty degree turn around at five hundred or six hundred feet. He might crash? A. He might crash during the turn.

Q. During the turn.

The Court: The point of the whole question—evidently you didn't get the court's question at all.

Q. In other words, a turn about with engine failure may cause a tail spin or a crash, is that right, with your engines failing, you might go into a tail spin?

Mr. George: I wish counsel would make up his mind as to what he wants the witness to answer.

The Court: He can answer it. If he can't answer it he will tell us. Do you get the purport of the question?

The Witness: It is whether or not a plane is apt to fall into a tail spin trying to make a turn back into the wind?

The Court: Yes.

Q. That's possible, isn't it? A. No—well, it's the lesser of two evils.

Q. It is one of the evils which may happen? A. It is—your lost——

Q. Won't you answer my question? Is it one of the possible evils that may happen? A. Not with a competent pilot.

Mr. George: Not with a what?

The Witness: Competent pilot.

Q. Do you know what motors are out? A. Left.

Q. What about the others? Do you know anything about the others or any information about the others? A. I understand it is questionable how many of the other motors were out.

Q. Now, I am asking you assuming that two motors are out, say the left and center, and the pilot undertook instead of going straight ahead in that emergency with a tail wind behind him of from thirty-three to thirty-nine miles an hour, wouldn't there be a likelihood of a crash in attempting to make a turn about in such a manner, with the left and center motor out? A. Not if the turn had been properly made.

Q. Well, that doesn't mean anything, Colonel.

Mr. George: Wait a minute. It may not mean anything to Mr. Reed. It means the whole world to me, and I hope the jury, too.

The Court: The hope is father of the thought.

Q. If it was properly made he wouldn't crash, is that it, but if he did crash it was improperly made, is that it? A. Yes; and that would be a good criterion.

Q. Isn't it a fact that there have been thousands of accidents by young students that have been attempting turns when their motors went out, against the wind, when they had the wind on their tail, crashing in the turn? A. I wouldn't say thousands. There have been many.

Q. Many. It is a frequent occurrence, isn't it? A. Yes.

Q. Yes and good pilots, too, hundreds of them have lost their lives when they attempt to turn about when their motors fail by attempting to get back in the wind? A. A great many.

Q. It is a well known fact a great many accidents to our pilots occur in just such a way? A. Yes; that's the reason you should land straight ahead.

Q. That's the reason for the rule, when in trouble, go straight, isn't it? A. On the take-off.

Q. Also when you are in trouble with your engines when within five or six or seven hundred feet of the ground? A. No.

Q. At low altitudes that's the rule, isn't it? When in trouble go straight ahead? A. No.

Q. Are you sure about that? Isn't that the rule? A. That rule applies on the take-off.

Q. I am not talking about the take-off. At low altitudes, take-off, or any other time, at low altitudes the engine fails, go straight ahead, isn't that the rule? A. It depends on whether it is straight ahead. It depends on the wind. No. That is not an iron-clad rule.

Q. I didn't ask you that. The word "iron-clad" wasn't in my question, was it? That's the general rule, isn't it? A. No.

Q. Well, it's the rule of many pilots, isn't it?

Mr. George: Objected to.

Q. Many aviators?

Mr. George: Objected to.
The Court: Overruled. Go ahead.
The Witness: No.

Q. What? Isn't it the rule among many experienced aviators when in trouble at low altitudes go straight ahead? A. No, sir; no, unless you want me to qualify it.

Q. Now, Colonel, on your direct examination this morning, if I understood you correctly, you

said that if the left motor went out the pilot would be in an emergency. Did you? A. Yes.

Q. You told us that he tries to neutralize the effect of that by his rudder, did you? A. Yes.

Q. That would be an emergency maneuver, would it? A. Yes.

Q. And if he attempted to neutralize it by his rudder against—right rudder against the left motor being out and neutralizing it, would make it go straight ahead, wouldn't it? A. Yes.

Q. So that, then, if his left motor went out he should neutralize it, make it go straight ahead by using the right rudder? A. Yes.

Q. Now, assuming, Colonel, if you please, that in addition to the left motor going out, the center motor went out, he would be in a still greater emergency, wouldn't he? A. Only as regards the length of time before he hit.

Q. Yes. A. Not in the control—so much in the control.

Mr. George: What?

The Witness: Control of the plane.

Q. Not so much in control. Not so much control then by which he would be able to make a right angle turn, a one hundred and eighty degree turn? A. It didn't affect the control as much as an outboard motor stopping.

Q. Why, you would get the torque from the single motor out on the right, wouldn't you? A. Yes.

Q. Because the left and center motors quit, wouldn't you? A. Yes.

Q. And you wouldn't have as good control then to make a turn under those conditions, would you, as if only one had quit? A. Not quite as good, no.

Q. Now, then, of course, Colonel, if you please, assuming that he was in this position here, some-

wheres around in here where you see these buildings, assuming he was flying in this direction, straight ahead, this represents these dumps in here, some filed in here. Now, to turn right would be to turn against his motors? A. Yes, sir.

Q. If his left motor quit and the center motor quit to turn right he would have to turn against the motor? A. Yes.

Q. The right motor. His torque, as I call it, it means the turning force of the one motor that is going would carry him off over these buildings, wouldn't it? A. Not that much.

Q. How much? A. It would tend to turn him in that direction. (Indicating.)

Q. Towards the direction of the buildings in Newark, is that right? A. Yes, sir.

Q. Dependent on where he might be. He will turn in the direction of the buildings, wouldn't he? A. Yes.

Q. There would be an emergency created on that pilot at that time? A. Yes, sir.

Q. Now, then a proper turning to get back if the wind was on his tail at this point—the proper turn to get back into the wind would be a one hundred and eighty degree, a maximum amount of circle from there, wouldn't it, from the buildings? A. He could have turned in either direction.

Q. To turn in the right hand direction would be turning against his motors, wouldn't it? A. That's quite possible.

Q. To attempt to turn against his motors he would lose more power than turning with his motor, wouldn't he? A. No. He wouldn't lose more power. The plane does not respond as quickly.

Q. It would go down quicker if he attempted to turn against his motor than to turn with it, wouldn't it? A. Perhaps slightly. Not much.

Q. His right motor is away out under the right wing, well out in the air, isn't it? And it would have a tendency to force him around that way, towards the right, and to overcome that he has got to use its power? You said even if one motor went dead there is an emergency created right away and that is an emergency movement, in turning the rudder? A. Yes.

Q. And if he were here, instead of turning this way to the left, turn this way to the right and he saw fields there, wasn't the fair judgment of an ordinary normal average pilot seeing green fields over here to go straight ahead toward those fields? A. No.

Q. At an altitude of five or six hundred feet? A. No. That's the reason you get six hundred, so you can turn in any direction.

Q. Five hundred feet. A. Five hundred feet.

Q. Would you say he should turn towards the buildings? A. If necessary. It would be preferable to turning the other way.

Q. You would rather have him over buildings, would you, than over dumps or green fields? A. Landing on buildings against the wind is safer than landing in the open dumps with the wind.

Q. But before he could land against the wind he would have to make a one hundred and eighty degree turn, wouldn't he? A. Yes. If he had five or six hundred feet he should do it.

Q. With only one motor going and make a turn against his motor, do you mean that? With only one motor going and making a turn against his one motor? Do you mean that? A. If the plane was properly flown you can cut all engines and turn in either direction.

Q. Didn't you tell me this morning, Colonel, you couldn't fly it on one motor? Didn't you tell me that in answer to a question directly from me? You

couldn't fly the plane on one motor—you would have to make an emergency landing? A. Yes; sooner or later. What we call, you stretch the glide.

Q. You stretch the glide?

Mr. George: Stretch the glide?

The Witness: It flies very well on three engines under good conditions. It can fly on two. That means, permanently stay up. On one engine it will lose altitude gradually and be able to fly quite a long distance.

Q. If you stretch the glide you go a longer distance when you go straight ahead, don't you? A. Yes, sir.

Q. So that you stretch your glide, then, not by making a one hundred and eighty degree turn, but by going straight ahead? A. Yes.

Q. But in any event, straight ahead, right or left, with the terrain there in that location, an emergency landing meant danger to the pilot and to his people, didn't it? A. Yes, sir; the only difference was the extent of the danger.

The Court: Haven't we covered enough of this? He was merely put back for two or three questions and you have taken now thirty minutes, thirty-two minutes on matters we have been over.

Q. The only danger is whether one of a thousand things might have happened in that emergency landing, whether he went in a pile of rock, whether he went on uneven ground; whether he turned over; a thousand things could have happened in such an emergency landing in rough, uneven terrain, isn't that so? A. Yes.

Mr. Reed: That's all.

JOHN F. HENRY, called as a witness on behalf of the plaintiffs, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. George:

Q. Mr. Henry, where do you live? A. 65 John Street, Red Bank, New Jersey.

Q. You are not a lawyer, are you, who was out in the vicinity of the Newark airport on March 17, 1929, are you? A. No, sir.

Q. You are not a lawyer? A. No, sir.

Q. What is your occupation? A. Claims manager for the Traveller's Insurance Company.

Q. Your office is located in Jersey City, or, rather, the branch of which you are the manager? A. Yes, sir.

Q. Now, were you in the vicinity of the Newark airport on the 17th of March, 1929? A. Yes, sir.

Q. Inasmuch as you have been called as a witness so long after the expert has testified, I would like to ask when is the first time you ever talked to me or Mr. Coolahan or to anyone connected with this or any other case arising out of the crash which occurred on that day? A. About 9:30 Monday morning.

Q. All right. Where? A. In my office.

Q. At the Trust Company building? A. Yes, sir.

Q. Now, were you on the airport or near the airport on that afternoon? A. I was on the elevated high speed highway leading from the airport toward the Lincoln Highway.

Q. Now, will you be good enough to step down here, Mr. Henry, and directing your attention to the survey map P-1, take this pointer, stand on this side, if you please, point out where your auto-

mobile was proceeding. In which direction? A. I was travelling northward on this State highway route 25.

Q. Did you see the aeroplane which was involved in the crash? A. Yes, sir.

Q. Did you see the crash? A. Well, I saw something unusual.

The Court: Just a minute. Do you need him at the board any more?

Mr. George: Yes. I want to show something on there.

The Court: Keep your voice up, then, Mr. Henry.

Q. Did you see the plane crash? A. I saw the plane hit the railroad car over here on these Jersey Central tracks.

Q. Where you are now pointing? A. These are the tracks?

Q. Yes. And with relation to where you were on the highway with relation to South Street, can you tell us approximately where the plane crashed? Just drop your pointer on the spot approximately the place. A. I would say about here.

Q. Right about here. Indicating a mark around at the circle of the "96", is that right? A. I would say right down here.

Q. Where the "x" is? A. Yes, sir; that's to the best of my recollection.

Q. All right. Now, where with relation to your automobile was the plane when you first saw it? You say you were on the highway going north. Q. Right? A. Yes, sir.

Q. In your automobile— Were you in your automobile? A. Yes, sir.

Q. Driving? A. Yes.

Q. Anyone else in the car with you? A. Yes.

Q. Who? A. My sister-in-law; my son and daughter and my wife.

Q. How old is your son? A. Twelve.

Q. Now, with relation to where your car was, where was the plane? Give us where your car was at the time you first saw the plane and where was the plane at that time when you first saw it? A. Well, this, in my opinion, indicates the position of vehicle pathways of the highway, this cross section here.

Q. That's right down into South Street? A. I believe it is.

Q. Through the center, is that right? A. There is a ramp, some sort of ramp.

Mr. Reed: Is that the viaduct?

Q. Yes. That's the South Street ramp—viaduct.

Q. Then through automobiles go to the right and left of the ramp, is that right? A. Yes.

Q. Now, with respect to South Street where was your automobile when you first saw the plane? A. I would say I was going about one hundred yards from this division here, northward.

Q. Can you tell whether you were half way or quarter way between the both ends of the ramp there as shown on the map? A. Well, say about one-third of the way.

Q. Indicate on there, if you please. Just make a line there, where the "X" is. When you were at that point, Mr. Henry, marked "X" on the map—when you were at this point marked "X," where was the plane when you first saw it? Put a mark there, too, with your pencil. (Witness indicates.)

Q. May I have that ruler, if you please?

Mr. George: Now, Mr. Reed, two and three-quarter inches.

Mr. Reed: What is two and three-quarter inches?

Mr. George: The plane was two and three-quarter inches from where his automobile was, or 550 feet.

Mr. Reed: To the east of the viaduct?

Q. To the east of the viaduct? A. Yes, sir.

Mr. Reed: 550 feet.

Q. 550 feet when you first saw it. Now, was there anything unusual that attracted your attention to the plane? A. Why, my boy was the one who first called my attention to it.

Q. And he having called your attention to the plane, what did you of your own senses observe or notice? A. I had stopped my car and leaned out of the right side window—the boy was sitting on my right, see—and I just leaned over him. Both of us was looking out of the window of the car at the same time. I then opened the door. This plane was continuing. It wasn't travelling very fast.

Q. What is the altitude at the time you first saw it 550 feet east of the viaduct? How high was it from the ground below? A. Perhaps the distance between the viaduct and the ground again. Say, twice the height from the ground as the viaduct would be from the ground.

Q. Well, can you tell approximately how far the ground was from the viaduct? A. About 75 feet.

Q. Then you estimate that that plane was—when it was 550 feet east of the viaduct—it was about 150 feet above the lower landing? A. It would seem that way to me, yes, sir.

Q. And moving slowly? A. For a tri-motor plane it seemed to be going slow, yes, sir.

Q. You have seen other tri-motor planes in the air and you have heard of them, have you? A. Yes, sir.

Q. Heard them in flight, of course? A. Yes, sir.

Q. Now, was there anything else unusual concerning this plane that attracted your particular notice? A. Well, the indication of trouble was sputtering of the engines. Whether it was one or more engines, I couldn't tell.

Q. What do you mean by sputtering? A. The lack of synchronic firing.

Q. How was that distinguished from tri-motor planes which you had previously heard in flight? A. You generally would hear the steady purr of the motors in a plane that had a good healthy sound, I would say, but this had an indication of trouble by the intermittent firing—the noises you could hear from the exhaust.

Q. You are in the insurance business, aren't you? A. Yes, sir.

Q. Rather, you represent an insurance company? A. Yes, sir.

Q. Your job as claim agent is to fight down lawyers, is that it? To keep them down? Right? A. No. Our policy is to pay just claims and pay them promptly.

Q. But your idea as to what is a just claim very frequently differs with that which the lawyer thinks is a just claim? Right? A. Well, Mr. George, it depends on the facts determined from investigation.

The Court: What company do you work for?

The Witness: The Travellers'.

The Court: Oh, yes.

Cross-examination by Mr. Carpenter:

Q. I suppose it somewhat depends on the lawyer, too, doesn't it? A. Yes, sir.

Mr. George: I think counsel ought to permit me to interpolate Mr. Henry and I get along well.

Mr. Reed: He always paid yours.

Mr. George: Because I was always just.

Q. Mr. Henry, of course you don't pretend to say what the noise came from that you heard when this plane was 150 feet high 550 feet east of the viaduct? A. Well, it indicated an improper noise from the engines of the plane in that immediate vicinity. That was the only plane there at that time.

Q. It might indicate also that the pilot of that plane was doing his best to revive a failed motor, might it not? A. Yes, sir.

Q. The plane was on an even keel, gliding, wasn't it? A. Apparently due east.

Q. Gliding due east in a straight glide on an even keel? A. It seemed that way.

Q. Yes. You were looking right at it? A. Yes, sir.

Q. And as you have explained if it was 550 feet—if the distance then, according to this map is 15½ inches and it is 200 feet to the inch that would be about 3,100 feet from the viaduct to the railroad track? A. It is about a half mile, I would say, yes, sir.

Q. And from the point of that 3,100 feet distance, 550 feet, you saw, then, this plane gliding along at an even keel a distance of some 2,550 feet? A. Yes.

Q. Until it finally landed where it landed? A. Yes, sir.

Q. In that glide did it gradually go down, gradually on a gentle glide, the height decreasing as it proceeded on its 2,550 feet? A. It did towards the end. It seemed to go down towards the end. It seemed to hold its even height for quite a distance and then it suddenly went down. That's the picture that I got.

Q. So that your picture is then that this plane glided along straight ahead on an even keel for 2,500 feet until it suddenly went down right at the point where it crashed? A. That's the picture I got, yes, sir.

GEORGE F. SALTER, called as a witness on behalf of the plaintiffs, having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. George:

Q. Mr. Salter, what is your occupation? A. Life insurance actuary.

Q. Life insurance actuary? A. Yes.

Q. For what company? A. The Prudential Insurance Company.

Q. How long have you been an actuary for the Prudential Company? A. I am classed as an expert in connection with the actuarial department. I have been there since—for about 26 years.

Q. How many? A. 26.

Q. 26 years. The Prudential, of course, is a life insurance company? A. The exact title is the Prudential Insurance Company.

Q. I understand. And your work is principally directed to the actuarial computations of mortality? A. Yes.

Q. Now, on the table—on the mortality table—what mortality table do you use in your computations—actuarial work? A. Various tables are used in the office. The Carlyle table is used in court proceedings.

Q. The Carlyle tables are recognized as authority in courts of law? A. In the State of New Jersey.

Q. Does any table you use or follow vary from the Carlyle table? A. The table upon which our premium rates are based is called the American table. I recently compared the expectation of life by the Carlyle and the American table. They are very, very similar. They scarcely differ at all.

Q. What is the expectancy of a man 37 years of age on July 6, 1929, and in excellent health? A. 37, did you say?

Q. He was 37 years of age on July 6th, 1928. A. Yes. 29.6. Yes.

Q. 29.6? A. Yes.

Q. Years? A. Years.

Mr. Carpenter: Ask the expectancy as of March 17th.

Q. Yes, as of March 17th? A. As of March 17th, 1929?

Q. Yes. Is that the expectancy you gave us, Mr. Salter? A. Yes.

Q. 29 years and six-tenths of a year? A. Yes.

Q. Expectancy as of March 17, 1929? A. Yes; exactly.

Mr. George: That's all.

Cross-examination by Mr. Carpenter:

Q. That's no guarantee anybody is going to live that long? A. No. It is purely an average

table, but it is considered as a guide in law proceedings.

Re-direct examination by Mr. George:

Q. Nor is there a guarantee that if he hadn't died on March 17, 1929, he wouldn't have lived for more than 29.6 of a year, isn't that so? A. That's so. As a matter of fact, he would live more according to recent experience. This is an old table. Recent experience gives longer.

Q. Recent experiences upon which you have actuary records indicate that, even in the computation of tables, and modern conditions that the expectancy would be even greater than 29.6? A. It would be considerably greater.

Q. Considerably greater? A. Yes.

Q. How much greater?

Mr. Reed: We object.

The Court: Expectancy seems to be going up on life?

The Witness: Very much. I have a census of the recent tables.

Q. You mean, as time goes on, with the advance of medical science and physiological knowledge, people are growing older, living longer? A. Sanitary conditions may be better, and so forth.

Q. So you say there is no guarantee even that a person who was 37 years of age on July 6, 1929 wouldn't have lived 39 years? A. No; there is no guarantee.

Mr. George: May I have your Honor's permission to put Mrs. Henderson on only for the purpose of establishing age, and then recalling her for a while so we can put Mr. Salter back?

The Court: All right.

MARY HENDERSON, called as a witness on behalf of the plaintiffs having been first duly sworn, was examined and testified as follows:

Direct examination by Mr. George:

Q. Mrs. Henderson, you are the administratrix *ad prosequendum* of the estate of your late son, Thomas J. Henderson? A. Yes.

Q. How old was your son at the time of his death? A. 27 years of age.

Q. Beg pardon? A. 27 years of age.

Q. And when had he been 27 years of age? A. Well, he was 27 late in December. The 30th of December.

Q. The 30th of December, 1928, he was 27 years of age? A. Yes.

Q. When did he die? A. He died on March 17, 1929.

Q. 1929? A. 1929.

Q. Immediately prior to his death, what was the condition of his health? A. Well, he was fine, strong and husky young man.

Q. I show you a picture and ask you if that is a likeness of your son as of March 17, immediately before his death? A. That's him, yes.

Mr. George: I offer it in evidence.

Mr. Carpenter: No objection.

(Received and marked in evidence Exhibit P-9.)

The Court: That's exactly as he looked at that time?

The Witness: Yes.

Q. Was he married or single? A. He was single.

Q. Will you step down a moment, now, Mrs. Henderson, please.

Mr. Carpenter: I want to ask a question, not on the age alone. Are you through with her?

Mr. George: No.

GEORGE F. SALTER, recalled.

Direct examination by Mr. George:

Q. Now, Mr. Salter, will you give us the expectancy of a young man who was 27 years of age the 30th of December, 1928 as of March 17, 1929? A. 36.4 years.

Q. 36.4? A. Yes.

Q. Does that same experience of actuary computations apply in this case as in the one that you just testified to? A. Exactly the same.

Q. That is, that the more modern and more recent actuaries find a greater expectancy? A. Yes; the same thing applies.

Mr. George: That's all.

MARY HENDERSON, recalled.

Q. Mrs. Henderson, did your son live with you up to the time of his death? A. Yes.

Q. I understood you said he was unmarried? A. Unmarried, yes.

Q. What kind of business was he in before his death? A. Well, he used to sell stocks and mortgages—stocks and bonds like.

Q. Stocks and bonds and mortgages? A. Yes.

Q. He was a partner of Boele's? A. Boele's.

Q. Mr. Boele, the other young man who was killed in the same flight. Isn't that so? A. Yes, sir.

Q. How long had they been partners? A. What's that, sir?

Q. How long had they been partners? A. Well, I think about two or three years. Maybe that might not be just right. Around two years or around three.

Q. I didn't quite get that? A. Two or three years.

Q. And during those two or three years were they both, so far as you know, engaged in that kind of business? A. Yes.

Q. Are you familiar with the details of their business as to what stocks were purchased or sold or bonds that were purchased or sold or mortgages? A. I will tell you the truth—I wasn't interested such a lot, you know. I don't know much about it.

Q. Now, have you a husband living? A. No. My husband's killed five years ago.

Q. You have not been married, have you? A. No.

Q. Have you any other children? A. Yes.

Q. What are their names and ages?

Mr. Carpenter: I submit, your Honor, this lady is the only next of kin, the mother; he was a single man, and left no father.

Mr. George: I agree that is so.

Q. Did your son contribute to your support? A. Yes; he used to.

Q. How much per week? A. Well, he would give me about $50 a week.

Q. Was that every week? A. Well, sometimes, you know—mostly nearly every week.

Q. What average did he contribute? What weekly average did he give you? What was the average per week? A. Well, mostly from $40 to $50. If he didn't have $50 he had $40.

Q. Did you ever receive any more than $50? A. Yes, sometimes if I had anything around the house to be done he always contributed to it and looked after it.

Q. Yes. What was about the average weekly contribution to you? A. I would say about $50.

Q. For how long a period did he make an average weekly contribution of $50 to your support? A. Well, almost since father died.

Q. And that was about five years ago? A. Yes.

Q. For a period of three years before the accident? A. Well, about that time, I guess.

The Court: Madam, how old are you?
The Witness: I am 58.
Mr. Carpenter: How old is that?
The Court: 58.
Mr. George: Cross-examine.

Cross-examination by Mr. Carpenter:

Q. Mrs. Henderson, your son was a longshoreman? A. No. He used to check down around the docks.

Q. He did work as a longshoreman on the Hoboken Docks, didn't he? A. Of course, I don't know. When they go out, you know, I don't know. I understand it was checking.

Q. Your son was a longshoreman and made $6.80 a day, didn't he, on the Hoboken docks before his death?

Mr. George: Just a minute. Fix the time.

Q. In the winter of 1928 and prior to the time of this accident? A. I don't know. He took care of his home, I know that.

Q. What is that? A. He took care of me, I know that.

Q. But don't you know he worked as a longshoreman on the docks in Hoboken? A. I know he was a checker down there.

Q. He was a checker? A. Yes.

Q. Who did he work for? A. I don't know. There were all different docks down there. Of course, I couldn't say. I haven't got much of an idea as to what docks they were.

Q. But you know he worked on the docks in Hoboken? A. I knew he worked on the docks, yes, and his father worked there, too.

Q. His father worked on the docks as a checker? What company did he work for? A. For all them companies down there.

Q. By a checker you mean he checked the merchandise as it came out of the ship on the dock or off the dock onto the ship? A. Yes.

Q. That was his real work, wasn't it? A. I don't know. Of course I was never down there. I don't know anything about it.

Q. What is that? A. I don't know, of course, I was never down there. I couldn't tell you just what he did.

Q. He was a great friend of this young Mr. Boele, wasn't he? A. Yes, sir.

Q. And they worked together on the docks, didn't they? A. They worked together, yes.

Q. They worked together on the docks, is that right? A. I suppose they must have worked together. I don't know, you know. I was never down there to know what they done.

Q. And your son didn't have any office where he was in the stocks and mortgage business? A. No.

Q. And he wasn't connected with any broker's office, was he? A. That I don't know, to tell you the truth.

Q. And he didn't have any office, did he, of any kind? A. No; I don't know.

Q. Isn't it true that part of the time when your son was out of a job he was supported by the family, that is, his brothers and sisters who lived at home with you? A. His oldest brother is married long years.

Q. What is that? A. His oldest brother is married long years. Of course, his father is dead a great number of years and he had to take care of the family.

Q. And isn't it true when your son was out of work he lived there at home and was supported by the rest of the family?

Mr. George: I object to that unless the time is fixed.

The Witness: He always made his own way in the world since he was able.

Q. I mean, after he was over 21 years of age?

Mr. George: I object to that as being remote, if the Court please.

The Court: Within the last four or five or six years?

The Witness: What is that, judge?

The Court: Within the last four or five or six years?

The Witness: The last four or five years he took care of me in the home.

Q. You have three adult children living at home with you, do you not? A. Yes, sir.

Q. Or, are there more than that? A. There is three girls and one boy home, four.

Q. And they are all working, aren't they? A. Well, one girl with me, she has to stay home because I have been sick for the last two or three years myself.

Q. And isn't it true that those brothers and sisters of the son that died, when that son was out of work helped to support him? A. He always had enough to support himself.

Q. Now, he never had steady work every day in the week when working as a checker on the docks, did he? A. I don't know that was steady or not, you know.

Q. He probably worked two or three days per week as a checker down on the docks, didn't he? A. Well, I couldn't tell you how many. I wasn't down there with him.

Q. You know when your son went to work, don't you? A. Yes.

Q. And he didn't work on the docks over three days a week, did he? A. He worked more than that.

Q. What is that? A. He worked more than that.

Q. How many days a week did he work? A. If the work was in. You see, those docks are unsteady. You know how it is.

Q. I know the dock work isn't steady. A. If the work was there he would work.

Q. When the work was there he worked. When there was no work he didn't work? A. He couldn't work, of course.

Q. And he worked on the docks as a longshoreman or checker right up until the time of this accident, didn't he? A. Yes—no, he didn't.

Q. Well, when did he quit? A. He has been working around in—what I just told you—buying and selling a little stocks. He had the telephone stocks, a few of them he bought and sold, like.

Q. You mean he was speculating in the stock market also, is that what you mean? A. Yes; he speculated sometimes, I suppose.

Q. He what? A. I guess so, I don't know.

Mr. Carpenter: That's all.

JAMES A. COOLAHAN, recalled.

Direct examination by Mr. George:

Q. Did you know the deceased Thomas Henderson in his lifetime? A. Yes. I went to school with him. Know him all my life.

Q. Did you have any business or professional relations with him? A. Yes.

Q. In the latter part of his lifetime? A. Yes.

Q. Do you know the amount of the estate he left? A. I have the figures here if I may refer to them.

Q. All right, tell us, please. A. The amount of the estate was $25,457.12.

The Court: How much?

The Witness: $25,457.12. However, this does not take in fourteen shares of American T. & T. which Mrs. Henderson now has and a few shares of Union Pacific. The number I don't know.

Q. Now, Mr. Coolahan, do you know what his occupation was in the latter part of his lifetime? A. Yes; he was a partner of Boele's.

James A. Coolahan, for Plaintiffs—Recalled—Cross.

Q. With Mr. Boele? A. Yes.

Q. The decedent in the other case? A. Yes.

Q. Do you know that of your own knowledge? A. I sure do.

Q. Was he a longshoreman? A. At one time he had been a checker down in the Hoboken piers.

Q. How long ago? A. I should say four or five years ago.

The Court: He graduated?

The Witness: Well, they made pretty good money.

Mr. George: Cross-examine.

Cross-examination by Mr. Carpenter:

Q. Mr. Coolahan, was there any brokerage account for this fellow? A. The American T. & T. I am sure his sister Marion bought. The others he traded through Steneck's. McTighe is the man who did—took care of all the buying and selling of the stocks. Joseph McTighe, who I believe is Treasurer of the Steneck Trust Company and he is now there working for the State.

Q. I see here on the list of assets on deposit he had $303 in the Steneck Trust; he had in the Commonwealth Trust Co., Union City, $9,351.91 and a mortgage on 47—19th Street, West New York, $6,000. A. Yes; that's Mr. Boele's house.

Q. Is it the same house Mrs. Boele lives in? A. Yes.

Q. He also owned number 710 Park Avenue, Weehawken? A. Yes.

Q. You have an estimated value of $23,000, equity $5,000 and there was a mortgage on the property then of $18,000? A. Held by the Commercial Trust Company of New Jersey.

Q. Was that an apartment? A. Yes; a big tenement house.

Q. His debts and deductions from the figures amount to $20,457, and deductions for these administration expenses were $3,300. Right? A. That's right.

Q. Now, you said Mr. Henderson worked as a checker or longshoreman on the docks at Hoboken? A. He did.

Q. When did he quit that? A. To the best of my knowledge I should say about three or four years ago.

Q. Well, that would be about a year before his death, or perhaps two years? A. No; when I say two or three years I mean before his death.

Q. I see. Upon quitting work on the docks he went into the market and speculated with the money he accumulated or saved on the docks? A. I suppose so.

Q. Were those assets you have mentioned sold out at the top of the market as the others were? A. No. They still have the 14 shares of A. T. & T. That is, they had it until recently and there was some shares of Union Pacific. About that I don't know.

Q. Those stocks weren't in his name, were they? A. Those were transferred after his death to his sister's name, his sister Marion.

Q. How could they be if they are in his name? A. They were transferred after death.

Q. In other words, they had been bought and the certificates had not been exchanged for new, is that what you mean? A. I am not familiar with the transaction as to what happened.

Q. How do you account for the fact they weren't told to the State as part of his assets? A. At

the time I made this I had no idea he possessed these 14 shares of A. T. & T., nor did I have any idea he possessed the Union Pacific.

Q. All this property went to his mother? A. Yes.

Q. Just as what Mr. Boele left went to his wife? A. Yes.

Q. And you figure now that the gross amount went to his mother, Mr. Henderson's mother was how much? A. Was $25,457—less. There is less than $3,300, and there was $1,000 counsel fee there has not been paid.

Q. That's your own? A. Yes.

Q. You aren't going to blame us for that? A. No.

Q. So, the net estate she got on her son's death was about $21,000? A. Approximately that, yes. All his assets, I should say and those 14 shares of A. T. & T.

Q. If you had 14 shares of A. T. & T. at that date were they worth $300 a share? A. $296, to be specific.

Q. Another $4,300. About $25,000 is what she got? A. Yes; both assets were approximately the same.

ARTHUR INGOLD, recalled for the plaintiff.

Direct examination by Mr. George:

Q. Did you see, Mr. Ingold, all of the passengers to whom you sold tickets for the defendant corporation enter the plane which went on its last journey?

Mr. Carpenter: I object. Incompetent, irrelevant and immaterial.

The Court: We don't know what it is going to be yet.

Q. Were those tickets sold to children or adults? A. Adults.

Q. What kind of persons entered the plane, children or adults? A. Adults.

Q. Can you tell approximately what was the average weight of each person who entered the plane, exclusive of the pilot?

Mr. Carpenter: I object. He is of not particular skill or ability, this man here. He can't tell what I weigh.

The Court: The Court rules it is not a matter of expert knowledge. He may give us a layman's knowledge.

The Witness: 150 pounds.

Q. 150 pounds average or so of the persons as passengers who entered the plane? A. Yes, sir.

Q. How many passengers entered the plane? A. Paid passengers?

Q. Yes. A. 13.

Mr. Carpenter: Parsons was not a paid passenger.

Q. Without the pilot? A. No.

Q. There were 15 people in the plane? A. Yes.

Q. What do you estimate to be the average weight of both Foote and Parsons?

Mr. Carpenter: He said they were all 150 pounds.

Q. All the passengers?

The Court: Would that represent the 15 people in the plane, everybody in the plane, taking all of the 15 people in the plane?

The Witness: Yes, sir.

Mr. Carpenter: No questions. That agrees with our estimate exactly.

The Court: It must have been material then.

Mr. George: Plaintiff rests.

Mr. Carpenter: I make the following motion, your Honor:

I respectfully at this time move for a non-suit in favor of the defendant and against the plaintiffs for the following reasons:

First, the accident resulting in the death of the plaintiffs' intestate was due to causes over which the defendant had no control.

Second, the accident resulting in the death of the plaintiffs' intestate was due to causes which the defendant could not have foreseen in the exercise of reasonable care and diligence.

Third, each of the intestates assumed the risk of traveling by air at the time and place, including the risks incidental to and rising out of air currents, wind, air pockets, weather, unavoidable accidents, and risks of traveling in air navigation, including a forced landing.

Fourth, the accident complained of was an unavoidable accident.

Fifth, as a matter law the accident complained of was an act of God.

Sixth, the plaintiffs have not proved that the defendant was guilty of any acts of neg-

ligence complained of which were the proximate cause of the accident.

Seventh, the plaintiffs have produced no evidence that any act of negligence complained of was a proximate cause of the plane coming down.

It now appears this plane flew properly and efficiently all of the day of this accident prior to the last flight; that the pilot in question flew it without any person being injured or the plane being injured a number of times the day in question before the last flight. On the last flight the ship took off normally, although after getting in the air it was said the left engine was noticed to sputter; that it took the same course that it took on former successful flights with a load of less than it had taken on the preceding flight. It went into a wind of less velocity than on prior flights, because the testimony shows an hour earlier the wind was stronger.

The testimony is that—even assuming the full force of the plaintiffs' testimony without any contradiction—the pilot after his first turn continued to climb and was climbing after the second turn when suddenly it started to come down and gradually settled. It has been explained by Colonel Chamberlin that he assumed it came down because the engines stopped, that if the engines had continued functioning the plane would have risen.

Now, there is no evidence introduced by the plaintiffs to show why that plane came down. The inference is it came down because the engines failed. There is no evi-

dence as to why the engine failed given or offered by the plaintiffs.

We submit that from the testimony as it now stands nothing was done by this plane or by its owners or by the pilot which was the proximate cause of this plane coming down.

Next it appears from the plaintiffs' own case this ship was powered with three Wright whirlwind engines similar to those used by Lindbergh, Chamberlin and Byrd in trans-atlantic flights, and that it was an efficient engine; that the plane was one of the latest manufactured; that it was an efficient plane, and we submit that there is no evidence at all either in the plane or in the engine or in the pilot of any negligence whatsoever because from the testimony of Brown and Chamberlin there was not anything proved to have been done by the pilot which was improper which was the proximate cause of the accident, because they both concede that the plane can make these turns, described as short, sharp turns, and they were not the cause of the plane coming down provided the plane did not touch the ground. Now, she did not touch the ground on either of those turns. On the contrary, after properly making the second turn—and it was after that when she was at her greatest altitude—suddenly the plane came down, and the evidence is given by Mr. Hennessy that it sounded to him like engine trouble as the plane was sinking to the place where she touched.

Now, it is a self-evident fact that in aeronautics—different from driving a car on the road—in cars being driven on the

road if the engine stops all you got to do is pull to the side of the road and either put on the brakes or if you have no brakes you can roll along until you come to a stop—when an aeroplane is in the air and the engines stop the only thing you can do is come down. You got to come down in the only available place there is.

Now, in the absence of proof that this plane had to come down because of negligence; in the absence of proof of any negligence causing the engines to stop; in the face of testimony had the engines continued to function the plane would have flown despite every condition of that day, it seems to me there is no evidence or proof showing that the negligence of the defendant was the proximate cause of this accident.

The Court: I think it is for the jury to decide those questions. Therefore, I will deny the motion.

Mr. Carpenter: Allow me an exception.

The Court: Yes.

Frank P. Zimmer, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. Where do you live? A. 152 Norman Road, Newark.

Q. What is your business or profession? A. Lawyer. Attorney-at-law.

Q. With whom are you associated? A. Congleton, Stallman and Hoover, Newark.

Q. Congleton, Stallman and Hoover? A. That is right.

Q. Mr. Stallman was special counsel for the City of Newark in the face of questions arising out of this aeroplane crash, was he not? A. That is right.

Q. Did you have occasion to have a talk with George Lahey, Jr.? A. I did.

Q. Last spring about that particular crash? A. I did.

Q. Where did that take place? A. In our office.

Q. In your office. Did Mr. Lahey say to you at that time that he saw—— —

Mr. George: Objected to as leading.

The Court: It is for the purpose of contradicting a witness. Therefore, he has to put the same language to him.

Q. Did Mr. Lahey say to you at that time that he was at the Newark Airport on the afternoon of the seventeenth of March, 1929, that he saw this particular plane that crashed take off from the runway but he did not look again and did not see it until it came down and crashed? A. He did.

Mr. Carpenter: Cross-examine.

Cross-examination by Mr. George:

Q. What Mr. Carpenter described to you was the exact language Mr. Lahey used to you, is that right? A. Well, I would not go so far as to say after this length of time that that is the exact language.

Q. You answered Mr. Carpenter "yes" to the question "did George Lahey say this and that and thus and so to you?" A. But he said the same thing to me having used different words.

Q. Now, what words did Mr. Lahey use then? A. In order to answer that I would have to state just how the conversation came about.

Q. I am not concerned about how the conversation came about and you were not told by Mr. Carpenter as part of his question how the conversation came about, but you readily answered "yes" to his question. Now, will you please— A. Mr. Lahey told me that he was at the——

Q. What did Mr. Lahey say to you in the first person, quoting his language? A. Well, after this length of time I am very much afraid I could not quote his exact language and I would not attempt to do it.

Q. Well, you were willing to say "yes" to a question that was put to you by Mr. Carpenter which purported to be a statement made to you by Mr. Lahey, isn't that so, even at this late day? A. I answered a question of Mr. Carpenter under my impression that what he asked me was what George Lahey said to me. I did not——

Q. Then, what you mean, Mr. Zimmer, is that you did not pay any attention to what Mr. Carpenter said to you, that you sensed what he wanted you to say, isn't that so? A. Oh, no.

Mr. Carpenter: Oh, now——

Mr. George: Wait a minute. Don't get excited.

Q. But you did not pay any attention to what the exact language of Mr. Carpenter's question was as embracing George Lahey's statement, did you? A. Mr. Carpenter's question to me——

Q. Will you answer the question? A. Oh, yes I did pay attention to it.

Q. Then your answer was "yes" to that which Mr. Carpenter quoted as Lahey's statement to you? A. If Mr. Carpenter is correct, yes.

Q. If he is wrong then you are wrong? A. No.

Q. Was he correct? A. I don't know.

Q. Then why did you say "yes"? A. Because Mr. Carpenter asked me if George Lahey made a statement to me. I said "yes".

Q. Now, Mr. Zimmer, Mr. Carpenter didn't say that to you a few minutes ago, did he? Didn't he say to you "Did George Lahey say to you in your office thus and so" and you said, "yes", didn't you? A. Yes.

Q. Then you paid attention? A. Of course I did. I can almost repeat his question verbatim for you if you want it.

Q. Will you repeat rather what George Lahey said to you verbatim? A. Verbatim?

Q. Yes. A. I am very much afraid after this length of time that I cannot say.

Q. After what length of time? A. Since I talked to George Lahey.

Q. When was that? A. Last spring.

Q. What part of the spring? A. About May, I believe. Some time in May.

Q. Mr. Biro gives me a very interesting suggestion. I am compelled to ask the questions. You proceeded to tell us you could repeat Mr. Carpenter's question to you verbatim. Now, will you proceed to do so. A. I said almost verbatim.

Q. Go ahead. A. Mr. Carpenter's question to me, I believe, was——

Q. Quote Mr. Carpenter. A. I am trying to.

Q. Yes, please. A. "Did Mr. Lahey say to you that he was at the Newark Airport on the seventeenth of March, 1929 and saw this plane take off and did not pay any further attention to it."

Q. And your answer was "yes"? A. It was.

Q. You left out a very serious part mentioned in Mr. Carpenter's question, didn't you? Didn't Mr. Carpenter say "and that he did not see the

plane again until after the crash?'' Didn't he say that in his question just less than five minutes ago?

Mr. Carpenter: I object to this quibbling.
Mr. George: This is cross-examination.
The Court: This is cross-examination.

Q. Isn't that true? A. Yes, I think he did.

Q. Then you did not quote Mr. Carpenter verbatim, did you? A. I said almost verbatim.

Q. Do you regard that as even almost verbatim, leaving out the most serious consequences? A. I don't think that is the most serious consequence.

Q. Didn't you regard that as of sufficient importance to be able to remember as part of his question to you? A. Didn't I regard it as of sufficient importance to remember?

Q. Yes, what Mr. Carpenter said five minutes ago or less? A. Yes.

Q. But you forgot it for the moment, didn't you? A. I forgot it for the moment, yes.

Q. And your memory which is so ''cryptic''——

Q. No, answer my question. A. I am trying to.

Q. Go ahead. A. My memory is so cryptic I refused thus far to state verbatim what George Lahey said to me on that day. I still refuse to do it. I can give the substance of my conversation with him so far as it was necessary or proper for me to do so—to pursue the subject that I discussed with him, but I do not believe that anybody after the length of time that has elapsed since I talked to George Lahey can quote verbatim what he said and you know it as well as I do.

Q. Mr. Zimmer, you and I are in hearty and absolute accord on that very last statement. That is the very reason when Mr. Carpenter asked you did George Lahey say thus and so to you and you readily answered, ''Yes'', I was trying to find

out just how certain your recollection was. All right. I put that explanation to you and I give it to you. There is no question before the court. A. I said if Mr. Carpenter was correct, I was.

Q. Now, Mr. Zimmer, you were associated with counsel for one of the defendants in the trial in Newark, weren't you? A. Yes, sir.

Q. And Mr. Lahey was a witness for the plaintiffs in those cases? A. Yes, sir.

Mr. George: That is all.

Redirect examination by Mr. Carpenter:

Q. What was the conversation you had with Mr. Lahey in your office? A. Mr. Lahey came into our office. We had just been retained by the city.

Q. The City of Newark? A. The City of Newark.

The Court: Make it short. I don't know that it is important.

The Witness: I remarked to him it was interesting that the cases had been set down. He said he knew something about them. Inasmuch as we were just beginning to prepare the case, I took him by the arm and lead him into my office and asked him what he knew and he told me then substantially that he was at the Newark Airport and was about to leave and that he saw the plane take off and did not pay any further attention to it, or some words to that effect.

Mr. Carpenter: That is all.

Re-cross-examination by Mr. George:

Q. That is all he said? A. Yes.

Q. Now, again you forgot about the most important part of the subject matter under investi-

gation, the crash. You forgot that again, didn't you? A. Now that you remind me of it, Mr. Lahey did say——

Q. Oh. A. —I believe, that the next thing he knew or saw, the plane took off, he did not pay any further attention to it and the next thing there was the crash.

Mr. Carpenter: I would like to read now the deposition of Egbert P. Lott that was taken in the regular way under the statute.

The Court: All right.

Mr. Carpenter: I will not read the preliminaries, we will just read the questions and Mr. Reed will read the answers. Mr. George will read the cross-examination questions and Mr. Reed will answer them.

"Egbert P. Lott, being called as a witness on behalf of the defendant, and being first duly sworn according to law by the special commissioner to testify the truth, the whole truth and nothing but the truth, testified as follows:

Direct examination by Mr. Reed:

Q. What is your name, and by whom are you employed? A. Egbert P. Lott; employed by the National Air Transport, Inc., Chicago.

Q. In what capacity are you employed by the National Air Transport, Inc., at Chicago? A. Manager of operations.

Q. Were you such manager of operations in the months of September, October and November, 1928? A. Yes.

Q. Did you, in those months of the year 1928, have in the employ of the National Air Transport,

Inc., a pilot by the name of Lou Foote? A. Yes.

Q. Please state the time when his employment began and the time when his employment ended? A. September 24, 1928 to November 10, 1928.

Mr. Biro: May I ask what those records are that you have?

A. Pilot's personnel card.

Mr. Biro: Made out by whom?

A. N. A. T.

Mr. Biro: Under whose direction?

A. Our auditing department.

Mr. Biro: Did you see that card being made out?

A. No, sir; it is part of our records.

By Mr. Reed:

Q. In giving these dates have you used something to refresh your recollection as to the accuracy of the date when the service began and when it ended? A. Yes.

Q. What did you use to refresh your recollection? A. Pilot's personnel card.

Q. Can you give the dates or period of time that the pilot, Lou Foote, worked for the National Air Transport, Inc., without actually using the card, approximately? A. Yes.

Mr. Reed: Is there any objection to his using the card, or is it preferred that he testify without the card?

Mr. Biro: Well, except this, that I would like to ask one preliminary question.

Mr. Reed: If you object we will proceed without it.

Mr. Biro: I do object.
Mr. Reed: All right.

Q. Then, Mr. Lott, give us approximately the time when, pilot Lou Foote entered the employ of the National Air Transport, Inc., without using any paper to refresh your recollection. A. Approximately September 24, 1928.

Q. And, approximately, how long did he remain in the employ of your company? A. Approximately seven weeks.

Q. Approximately, when did he leave the service? A. Approximately November 10, 1928.

Q. What was he employed for, what purpose? A. As a reserve pilot.

Q. And did he perform the services of a reserve pilot during the period that he was in the employ of the National Air Transport, Inc.? A. Yes.

Q. What were his duties as a reserve pilot in your employ? A. Test flying, and regular schedule flying over our route with mail and passengers.

Q. By your answer do you mean that on occasions he flew an airplane carrying United States mail? A. Yes.

Mr. Biro: I object to this question as to what he means.

Mr. Reed: I withdraw it."

Mr. George: I take it then that your question "By your answer do you mean that on occasions he flew an airplane carrying United States mail," is withdrawn and the jury asked to disregard it?

Mr. Carpenter: Yes.

The Court: The jury will disregard it.

"Q. Will you please state whether or not, during the period of his service, to your knowledge,

he carried passengers in a plane operated by him, at times? A. Yes.

Q. Will you please state whether or not at times he also tested planes? A. Yes.

Q. And did he generally perform those duties of a test pilot, mail pilot and passenger carrying pilot? A. Yes.

Q. Will you please state from your own knowledge what types of airplanes, what makes of airplanes, he flew while in the employ of the National Air Transport, Inc. A. Travelairs and Fords.

Q. Will you please state whether or not during the period of his service he had occasion at any time to fly a tri-motored Ford airplane? A. Yes.

Q. You mean he did? A. Yes.

Q. Mr. Lott, are you able to state approximately how many hours of test or other flying Mr. Foote had?

Mr. Biro: I object to that question, unless he can testify from his own knowledge.

By Mr. Reed:

Q. Are you able to state, of your own knowledge as to the number, approximately, of hours of actual flying Mr. Foote had while in your service? A. Approximately fifty-five in our service.

Q. First are you able to testify? A. I am.

Q. Approximately how many hours?

Mr. Biro: That is objected to on the ground that he doesn't specify flying as to what particular type of plane.

Mr. Reed: I didn't ask him that because I assume that he couldn't tell that.

Mr. Biro: You have asked him the different types.

Mr. Reed: I know, but I am asking him my own question; I am only asking approximately.

Q. You say you are able to state. All right, approximately how many hours flying time was credited to him while in your service?

Mr. Biro: All makes of planes?

Mr. Reed: Of all makes of planes.

A. Approximately fifty-five hours.

Q. I will ask the question suggested by counsel. Are you able to differentiate how much of each kind of plane of these types of planes, he flew in hours? A. No.

Q. Will you please state whether or not a flying time of fifty-five hours, in the period of time he was with your concern, is an average amount of flying of your pilots? I mean, is that the average which they fly in such a short period of time? A. Slightly below the average.

Q. Some do more, is that it? A. Yes, sir.

Q. Some do less? A. Yes.

Q. When he flew a mail plane he carried mail from Chicago, to what point or destination? A. I don't remember.

Q. Does your company, the National Air Transport, Inc., carry the official United States mail for the government to various points or destinations? A. Yes.

Q. Are they to certain definite points, or are they to many? A. They are to many.

Mr. Reed: That is all.

Cross-examination by Mr. Biro:

Q. How many planes, Mr. Lott, were under your direct personal supervision during the period be-

tween September and November, 1928? A. Over twenty-five.

Q. You paid no particular attention to any one of those twenty-five, did you, during that period? A. Yes.

Q. To whom, if any one, did you pay any particular attention and in what regard? A. I don't recall.

Q. There was nothing particular or unusual about Lou Foote that required any particular attention to be paid upon your part, as manager? A. No.

Q. How do you arrive at the approximate hours of flying of Lou Foote, by your own personal knowledge, or what was told to you by the time keepers? A. N. A. T.'s records.

Q. Then, as far as your personal knowledge is concerned, you have none? That is true, isn't it, you have no personal knowledge of his flying? A. Only that I saw him fly while he was with us, I know what our records say, and I believe them to be correct.

Q. How often did you see him fly a tri-motored plane with passengers? A. I can't answer the exact number.

Q. Did you ever see him fly a tri-motored plane with passengers? A. Yes.

Q. If so, how many passengers did it contain at the time you saw him fly? A. I don't remember.

Q. What was the capacity of the particular tri-motored Ford that you saw him fly, as to passengers? A. Eight.

Q. Did you ever see him fly a tri-motored plane with fourteen passengers in it? A. No.

Q. What is the capacity of a tri-motored Ford? A. They vary.

Q. What is the largest one that Lou Foote flew, according to your personal knowledge? A. Eight passengers.

Q. Does that include the pilot or exclude the pilot? A. Excluding the pilot and crew.

Q. Can you give us an approximate idea of how those fifty-five hours which you have estimated were made up with regard to the three types of planes you have mentioned, or was it only two types, the Travelair and Ford? By Ford, you mean tri-motored? A. Tri-motored Ford.

Q. Can you give us an approximate idea as to how the time was divided between those two kinds of planes? A. No, sir.

Q. When Foote flew the mail, what kind of plane did he use? A. Tri-motored.

Q. No passengers, only mail? A. Some passengers.

Q. With the mail? A. Yes, sir.

Q. How many passengers would go with him? A. Not more than two.

Q. And if he took passengers, of course he took less mail, didn't he? A. Yes, sir.

Q. And there were single motor planes? A. Yes, sir.

Q. In your estimation, did he fly more mail planes than passenger planes? A. Yes, sir. I would like to ask here what you mean when you say more mail planes, you mean more hours?

Q. That is what I mean, yes. Approximately what would be the proportion? A. I don't remember. I can't help you out, I am sorry. I don't know.

Q. Now, Mr. Lott, all of the answers you have given to these questions are all based upon a general idea and not upon any specific memory of

yours with regard to Lou Foote particularly? A. Just repeat that.

(The question was read.)

A. They are based with regard to Lou Foote particularly.

Q. According to the company's records, but not your own personal observation, are they? A. According to my personal observation. All of this is from my personal observation, except as to the fifty-five hours, approximately.

Q. What made you observe Lou Foote out of the twenty-five pilots under your command? A. That is one of my duties.

Q. To observe him particularly? A. To observe all of the pilots.

Q. Then you have not observed Lou Foote any more than any of the other twenty-five, have you? A. No.

Q. Then again I ask, what you are telling us now about Foote is a general idea which you have gleaned from watching all of the men? A. What I tell you is my memory of having watched Lou Foote.

Q. Was there anything in connection with Lou Foote during the time he was under your direction, which called your attention particularly to his activities? A. No.

Q. Are you in sole command or charge of this field of operations in Chicago of your company? A. I am in charge of all of the National Air Transport's operations.

Q. Is there anyone associated with you or assisting you in your duties? A. At Chicago?

Q. Yes. A. There is a station manager at Chicago.

Q. Isn't it a fact that that station manager, being in possession of the card which you have, could also tell these things, in a general way, that you are telling us today?

Mr. Reed: Objected to as incompetent, immaterial and irrelevant, on the ground we are only examining this gentleman at this time."

The Court: That is sustained for another reason also.

"By Mr. Biro:

Q. Did you ever fly with Foote? A. No.

Q. And your only observation of his flying was from the ground, of course? A. Yes.

Mr. Biro: That is all.

The Witness: Excuse me, just a minute. I want to correct that. Let me think just a minute. I would like to say that I believe I have flown with Foote.

By Mr. Reed:

Q. Are you a flyer yourself? A. Yes.

By Mr. Biro:

Q. There is nothing particular which would call your attention to the fact that you have flown with Foote? A. No.

Q. I mean, nothing particular about that particular trip? A. No.

Q. You have flown with other pilots of yours? A. Yes.

Q. Can you give me the reason why he left your employ?

Mr. Reed: That is objected to as incompetent, irrelevant and immaterial, and on the ground that it is hearsay. I also object on the ground that it is calling for the mental operation of a third person."

The Court: That is enough. Sustain the objection.

"By Mr. Biro:

Q. Are you in charge of hiring and firing, so to speak, of pilots? A. Yes.

Q. Did you hire Foote? A. Yes, sir.

Q. Did you dismiss Foote? A. Yes.

Q. What was the reason?

Mr. Reed: Objected to as incompetent, irrelevant and immaterial."

The Court: There is no answer, I believe.

"Mr. Biro: I think it is highly material.

Mr. Reed: No; it is not binding on the defendant.

By Mr. Biro:

Q. During the period of this flying was Foote involved in any accidents? A. No. Excuse me, I should say, with N. A. T. During his flying with the N. A. T.?

Q. Yes, with the National Air Transport, Inc.? A. No.

Q. Had you known Foote before his employment with your company? A. Only through his application.

Q. Can you tell how many flying hours, or hours of flying Foote had from his record, when you employed him? A. No.

Re-direct examination by Mr. Reed:

Q. Are you able to state, Mr. Lott, from your recollection of his application card, as to how many hours, approximately, Foote had in flying time, according to his application, on entering your employment? A. He said he had had about 1,250 hours.

Q. Did you ever investigate that? A. No, sir.

Mr. Reed: That is all.

Mr. Biro: That is all."

Juror Number Five: What did he say about being discharged because he was incompetent?

Mr. Carpenter: The question was asked, objected to and not answered.

The Court: The witness has not answered, so we have not any answer.

Juror Number Five: I understood him to say he was discharged for being incompetent.

Mr. Reed: No. There is nothing like that here.

Mr. Carpenter: He was asked if he was. There was no answer to it.

The Court: Now, gentlemen, I hope you all have a happy holiday. Return here

Monday morning at ten o'clock. Do not talk with anybody about this case in the interim.

(Recess until October 30, 1931.)

After Recess.

October 30, 1931.

(Trial resumed pursuant to adjournment.)

(Appearances: the same.)

(The administration *ad prosequendum* papers received in evidence by consent.

Administration *ad prosequendum* papers of Anton M. Boele marked P-10.

Administration *ad prosequendum* papers of Thomas J. Henderson marked P-11.)

Lloyd Rollins, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. Whereabouts do you live? A. 425 Cherry Street, Elizabeth.

Q. Where did you say you lived, Mr. Rollins? A. 425 Cherry Street, Elizabeth.

Q. What is your business? A. Pilot.

Mr. George: What is your business?

The Witness: Aviation pilot.

Q. How many years have you been flying, Mr. Rollins? A. About six years.

Q. In whose employ are you? A. I am in the employ of Mr. A. C. Kluge now.

Q. You are his personal aviator? A. Yes, sir.

Q. What type of ships have you flown? A. I have flown almost all types, some of them only a few hours, but I have flown almost all types.

Q. Have you ever flown a Ford Tri-motored plane? A. Yes, sir.

Q. What did you say? A. Yes, sir.

Q. How many hours have you had flying that type of ship? A. Eighteen.

Q. Eighteen hours flying a Ford tri-motor, that is, take-off and landing too? A. Most of that was flying in the air. I had a few take-offs and landings.

Q. Whereabouts were you on March 17, 1929? A. Flying passengers from Newark Airport.

Q. What type of ship were you flying that day? A. J-5 Engine Cabin Travelaire Monoplane.

Q. That is, Wright Whirlwind J-5 Engine? A. Yes, sir.

Q. How many passengers did your ship carry? A. Five. Pardon me. That was five and a pilot, that was six all told.

Q. Six all told? A. Yes, sir.

Q By whom were you employed at that time? A. By the Newark Air Service.

Q. That was not in any way connected with the Colonial, was it? A. No. It was a competitor.

Q. Were you in a scheduled line of flight or were you just taking hopping flights? A. Doing hopping mostly and charter business.

Q. By charter you mean somebody would employ you to take the plane from here to Washington on a special trip? A. Yes, sir.

Q. Where did you go on your hopping expedition that day? A. We had three trips we specialized in. One was over Newark. One was over New York. One was over uptown New York.

Q. All different prices, I suppose, for each one of those different hops? A. Yes, sir.

Q. What were the weather conditions that day? A. The weather conditions were—the wind was about, I should imagine, about around thirty miles an hour. It was quite an unlimited ceiling, unlimited visibility.

Q. In other words, you could see without any difficulty over clouds or water? A. Yes, sir.

Q. What do you mean by unlimited ceiling? A. The ceiling is the height of the clouds. There were no clouds in the sky, so I considered the ceiling unlimited.

Q. Was the wind a steady wind or a gusty wind? A. Steady.

Q. Now, did you notice the Colonial tri-motor Ford plane we had at Port Newark? A. Yes, sir.

Q. By the way, did you know the pilot, Lou Foote before that day? A. No, sir.

Q. Did you see the last take-off of this plane about five o'clock in the afternoon or a little before? A. Yes, sir.

Q. Whereabouts were you at that time, at the time the ship took off? A. I was sitting—standing beside the fence that is around the so-called "bull pen" there and talking to two Englishmen.

Mr. George: Two Englishmen?
The Witness: Yes, sir.

Q. Can you describe on this aerial map about where that "bull pen" was? Come down here, I want to ask you some questions.

The Court: Keep you voice up while you are down there, too.

The Witness: This "bull pen" is right here. This is the Metropolitan hangar. In front of that is the so-called "bull pen" with the fence around three sides of it.

Q. You mean the Metropolitan hangar is this one which is just south of the northwest runway and the hangar in that position which is at the most northeasterly hangar, is that right? A. They had one hangar there at that time.

Q. You say you saw this Ford tri-motor take off? A. Yes, sir.

Q. In which direction did it take off? A. It took off from this point down here in a northwest direction.

Q. You point down here to a point just southeast of the most northerly hangar? A. That hangar was not there at that time. The runway at that time started just about here in this position down to about there.

Q. In other words, away down at the southeasterly corner of the airport. About how long? A. I don't know exactly. I heard it was about two thousand feet.

Mr. George: I ask that it be stricken out.

Q. Your estimate was two thousand feet? A. Yes, sir.

Q. By the way, did you see the plane come in from its prior flight? A. Yes, sir.

Q. Did you notice anything at all that you can tell us about the way it taxied in coming in from the prior flight? A. No, it was perfectly normal.

Q. It was perfectly normal. Now, on this last flight did you notice whether the ship carried a

load of passengers or not? A. I don't know how many. I know there were passengers in it.

Q. Just tell the jury in your own words—describe if you can by reference to this map which has a scale of two hundred feet to an inch—just describe to this jury the course of that plane in your own words. Describe it by word. A. The plane loaded its passengers here about this point.

Q. By the "bull pen"? A. Well, it was really not right at the "bull pen." It was out a little way from it. That would be the southeast side of the "bull pen." Taxied around here down to this runway.

Q. That is the easterly end of the runway—southeasterly? A. Yes, southeasterly. Took off normally at this point and it passed over our heads where we were standing. I imagine it was about seventy-five feet—fifty to seventy-five feet—passed over this road and veered very slightly to this direction to the left because the wind was at about that angle and it went beyond this map out north a little ways. I remember I had in mind while it was turning the place, the Waterman Pen factory up in about this position, I imagine, and it turned normally at about five to six hundred feet altitude in a wide turn and came back.

Q. Wide turn in which direction? A. To the right, and came back across about here.

Q. You are pointing now about South Street? A. Yes, pretty close to South Street. Of course, you can't judge exactly, but it was near South Street somewhere, and from a point in here somewhere—you could not say very well because there was nothing to line it up with—it started to lose altitude very gradually.

The Court: Before she got to State Highway Route number 25——

The Witness: Yes, sir.

The Court: —It began to lose altitude?

The Witness: Yes, before she got to that State Highway it started to lose altitude. It was a very gradual loss, flying perfectly normal and straight except for the fact it was losing altitude. Then, this is the high embankment——

Q. Pointing now to the Lehigh Valley Railroad? A. Yes, sir,—this is the high embankment and he went down behind the embankment in a position right in here somewhere.

Q. Pointing now to the center of the dump? A. About that, yes, probably more toward the central part. It would be over here. This dump was not nearly as large as that at that time. I imagine it came about just midway and this was mud and this was grass and soft ground. There was grass much more firm than this.

Q. In other words, he went to the right of the Central Railroad track. It was grass, that is the grass (indicating)? A. Yes.

Q. Whereas to the west or left of the Central Railroad between that and South Street was what kind of terrain? A. It was just mud.

Q. What was the character of the dumps at that time? A. The dumps here?

Q. Yes. A. It was very rough and burning and full of deep ruts where trucks would come in and dump a load of rubbish. Very rough and burning. The aeroplane then crashed in a position about in here, just about in here, and as soon as I saw it behind the embankment I knew there was something wrong. These two Englishmen had been telling me about their war experiences. We are troubled with people coming out to the Airport

telling us how they flew during the war. We take everything with a dose of salts.

Q. You mean a grain of salt. A. A grain of salt. These Englishmen were pointing to the Ford as it took off. They said they flew bi-motors like that during the war.

Mr. George: I ask that it be stricken out.

Q. You and these two gentlemen were talking about this particular plane that was flying? A. Yes. That's why my attention was called to it.

Q. I wish you would tell the Court whether when the ship went off whether you noticed anything at all about the way it was functioning? A. There was nothing I could see about it and it was normal.

Q. Somebody just said here in Court that they saw some puffs of smoke out of the left engine—exhaust of the left engine or it was sputtering. Did you notice anything like that? A. No, sir.

Q. By the way, before we take that subject up any longer, how far away from the airport out toward the City of Newark, did that plane go in approximately a straight line or a straight line? A. I should judge well over a mile.

Q. That is your judgment from where you stood? A. Yes.

Q. It has been described, the plane as soon as it passed over this road intersection, route 25, it made a sudden turn to the right and went parallel to route 25 within two or three hundred feet. Did you see anything like that? A. No, sir.

Q. Did the plane do that? A. No, sir.

The Court: You say she only made one turn?

The Witness: Yes, sir.

The Court: That was a gradual turn to the right?

The Witness: Yes, sir. It was a 180 degree turn.

Q. A 180 degree turn. About what was the altitude of the ship at the time it made that big turn to the right? A. I should judge between five and six hundred feet.

Q. That is as near as you can tell from where you stood? A. Yes, sir.

Q. By the way, how many hours have you had flying a ship in the air? A. About twenty-two hundred.

Q. That is up to this date? A. Yes, sir.

Q. How many hours had you had this 17th of March, 1929? A. I don't know exactly, but I think around nine hundred or one thousand hours.

Q. That is hours in the air? A. Yes, sir, as a pilot.

Q. What is that? A. As a pilot.

Q. As a pilot? A. Yes, sir.

Q. What was the altitude of that ship, if you can tell us, at the time it started to lose altitude? A. About five or six hundred feet.

Q. In other words, in making that big sweep around, did you notice whether it had lost any altitude or whether it gained it slowly or rapidly? A. It might have gained a little bit, a very little. It was almost a level turn.

Q. It was almost a level turn? A. Yes.

Q. Can you give us in degrees about what the bank was? A. That would be hard to say. You might call it a gentle turn. I could not give you any degrees.

Q. Could you from where you were tell anything about whether the engines were all functioning or not as the ship came down? A. No, sir.

Q. You could not tell? A. No, you could not see the propellers at that distance, neither could you hear them.

Q. Too far away to either see the propellers or hear the engines? A. Yes, sir.

Q. Did you notice anything unusual about the sound of either the propellers or of any of the engine or the appearance of any of the engines as the ship took off? A. No, sir.

Q. Or as it climbed? A. No, sir.

Q. Can you tell us about the altitude of that ship as it passed over route 25 on its way down, coming down over the—as it came down in this easterly direction? About how high was it over route 25? A. I should judge one hundred to one hundred and fifty feet, maybe two hundred feet, but I don't believe at that height. I should say one hundred to one hundred and fifty feet.

Q. Did you notice whether or not the plane as it passed over—as it went down toward the Central Railroad over the dumps, did it make any dips down to the right and left and then right and left again? A. Very slightly, probably due to the bumps in the air, but it was not enough to be noticeable.

Q. You described it before as what? A. As being a normal glide.

Q. In your flying over uptown New York that day what would you say as to whether you had been taking off in about the same direction? A. Yes, I flew passengers both before the accident and afterwards.

Q. Did you fly with passengers after this accident? A. Yes, sir.

Q. Did you go over the plane that was down? A. No, sir. I purposely missed that so my passengers would not see it.

Q. As you took off that day, tell us whether in your going to uptown New York whether you had gone over approximately the same route? A. Yes, part of the time.

Q. When you went to Newark did you go the same direction? A. No. I would climb straight ahead then and climb the ship just as rapidly as possible and then just skirt the City of Newark, turn to the left.

Q. You would circle the City of Newark? A. No, sir. The Newark rides were made as short as possible so we could get back and get another load out, so we just skirted the edge of it and came back to the airport.

Mr. Carpenter: I think that is all.

Cross-examination by Mr. George:

Q. I take it you have not discussed this case——

Mr. Carpenter: By the way, there is one other thing I want to ask.

By Mr. Carpenter:

Q. From the point where you saw this ship start to lose altitude, how far west would you say that was of route 25? A. How far?

The Court: West of that route.

Q. Where the ship started to lose altitude, how far west of route 25 was that? A. Oh, it was beyond the extremity of that picture.

Q. It was beyond the extremity of that picture? A. Yes, sir. It was just shortly after the completion of the turn.

The Court: Well, how far in distance would you say in feet or miles the plane

went between the time you first noticed it lose altitude until it landed?

The Witness: Until it landed?

The Court: Yes.

The Witness: Pretty close to a mile, I should say.

Q. Would you, from your experience as an aviator or pilot, say that the turn that that pilot made going out and turning the way he did was a normal, proper turn for pilot? A. I think——

Mr. George: Just a minute. Objected to on the ground this witness has not been qualified as to his knowledge of the weight of the plane, the load of passengers, which, of course, he knows, and the witnesses have testified, would make a difference. Without knowing the capacity of that particular plane he is not qualified to testify whether the altitude would be a proper one.

The Court: Overrule the objection. This is a pilot duly qualified who saw the plane itself with the load. All right, go ahead.

The Witness: Certainly. That was a normal turn. That would be a normal turn under almost any load conditions, if you could get off the ground.

Cross-examination by Mr. George:

Q. Now, suppose that same plane, Mr. Rollins, had made a sharp turn on the take-off at a distance of probably three or four hundred feet beyond this intersection of the State Highway at an altitude of one hundred to one hundred and fifty feet, would that be proper piloting? A. Yes, sir.

Q. One hundred and fifty feet? A. Yes, sir.

Q. One hundred feet? A. Yes, sir.

Q. With a tri-motor plane carrying a load of fifteen human beings at an average weight of one hundred and fifty pounds? A. Yes, sir.

Q. In a gale of approximately from thirty-four to thirty-nine miles, a sharp turn to the right at one hundred feet altitude? A. Yes, sir.

Q. You say that would be proper? A. Yes, sir.

Q. You take up passengers, do you? A. Yes, sir.

Q. And they pay to go up with you? A. Not now.

Q. I see. I take it, Mr. Rollins, you have not discussed this case with anybody before coming to court, have you? A. Surely.

Q. When was the first time? A. It has been a common topic of discussion at the airport among pilots and people down there.

Q. I mean as to the connection with this case, as to anyone connected with this case, either counsel or the defendant corporation or its agent, when is the first time? A. I talked to Mr. Carpenter and Mr. Reed in Mr. Carpenter's office about two weeks ago.

Q. That was the first time? A. Yes, sir.

Q. And you went over every bit of the facts? A. Yes, sir.

Q. And all of the various aspects of this flight and the turn were pointed out to you or discussed? .A They were discussed. I pointed them out to them.

Q. Now, you saw this plane which was involved in the crash all of that day, didn't you? A. I did not take any particular notice before, except——

Q. Then there was not anything unusual at all in its conduct for that whole day as far as you could tell or notice? A. No, sir.

Q. And you had seen it take one hop after another? A. Yes.

Q. You had seen nearly all of the hops it took? A. When I was on the ground. Of course, there were many taken while I was in the air.

Q. What was the longest period of time you were away from the airport? A. Between fifteen and twenty minutes.

Q. Now, nothing unusual had occurred prior to this crash respecting this plane that was involved in the crash? A. No, sir.

Q. Did not have a forced landing at any time prior to this fatal crash, did it? A. No, sir, not to my knowledge.

Q. It did not have a forced landing into the mud and have to be towed out? A. No, sir. As it was taxiing down the runway one wheel stuck in a mud hole, and it had to be towed out.

Q. Was that while passengers were carried? A. I don't know.

Q. You saw the plane, didn't you? A. Yes, sir.

Q. Was that the occasion it had to be towed out by a tractor? A. Yes. I don't know whether there were passengers in it, because it was three-quarters of the runway. From that point you can't see whether there were passengers in it.

Q. You don't know, do you, this same plane earlier in the day had landed down here off the runway, in fact, out of the airport into the mud, and had to be towed back? You don't know that, do you? A. No, sir.

Q. Had that been discussed by the pilots around the airport that day? A. Not to my knowledge.

Q. How many hops did you take after this accident? A. I don't know exactly. I should say four or five.

Q. From the time of the accident about how much time, considering the time of flight and the taking off and landing and waiting between flights had been consumed after the accident for those four or five flights? A. I remember my last trip was after dark, so I imagine it was about an hour and a half or two hours.

Q. It was quite dark, wasn't it? A. Yes.

Q. No daylight saving time then, was there? A. No, sir.

Q. And you took passengers up, did you, on your last flight too? A. Yes, sir.

Q. By the way, you told the Court and jury that you purposely steered clear of this crash so your passengers would not see the plane. Why? A. I did not want to intimidate them.

Q. "Intimidate them", what do you mean by that? A. I did not want to make them frightened or panicky.

Q. Now, you remember the velocity of the wind that day, don't you? A. Roughly, yes, I had no instruments to check it.

Q. Did you note down the wind velocity? A. No, sir, but I can remember about what it was.

Q. Because of the accident or just because you are reminded to the extent you did recall mentally those things? A. Any day that has a peculiar nature it is the general practice that we must remember the conditions of that day.

Q. You are referring now, of course, to wind only, aren't you? A. No, the general weather conditions.

Q. Yes. Can you remember any other occasion when there was a forty-five mile wind? A. Yes.

Q. When was that? A. It was one summer day, I think, in the same year, 1929.

Q. Do you remember the month? A. July, I believe.

Q. You are not sure, are you? A. No.

Q. But you do remember that on the 17th of March, two years ago, that the wind velocity was about thirty miles an hour? A. Yes, sir.

Q. You did not make a pencil note of that fact, did you? A. No, sir.

Q. What was the maximum wind to your knowledge on the 17th of March, 1929? A. Well, I couldn't say exactly because not having instruments to check it on——

Q. Well, approximately? A. I should—not over thirty-five miles an hour.

Q. Sure about that? A. I can't be positive, no, sir.

Q. You would not say it might have been forty-five miles, would you? A. No, sir, I would not.

Q. You mean you would not say it might not have been forty-five or you say it was not forty-five? A. I say I do not believe it was forty-five miles an hour.

Q. It would not surprise you if it had been? A. Yes, it would surprise me greatly.

Q. It would be more or less of a shock to your own judgment or knowledge of estimates of wind, wouldn't it? A. Yes, sir.

Q. Now, what kind of plane were you operating on that day? A. Travelaire cabin monoplane.

Q. Dual control? A. Yes, sir.

Q. You were operating from the left control, weren't you? A. Yes, sir.

Q. You are familiar with the regulations of the airport, aren't you? A. Yes, sir.

Q. Established by Mr. Aldworth? A. Yes, sir.

Q. He was superintendent of the airport, wasn't he? A. Yes, sir.

Mr. Carpenter: I object to that. Your Honor ruled it out.

Mr. George: There is no question before the Court now.

Mr. Carpenter: I gave you notice.

The Court: I have not heard anything anyhow.

Q. Your answer to the last question was "yes", wasn't it? A. Yes, sir.

Q. And you observed those regulations, didn't you? A. Yes, sir.

Q. As all pilots operating from that airport were obliged to do?

Mr. Carpenter: I object to the question.

The Court: Sustained.

Q. And you recognized those regulations to provide, didn't you, and you observed those regulations to the effect that all turns should be to the left? A. No, sir.

Mr. Carpenter: I object.

The Court: Sustain the objection, the reason being that there is conclusive proof on the plaintiff's own case this company is governed by this particular contract brought out by they themselves, therefore you cannot vary this situation at this time through rules and regulations that would not govern them.

Q. Wasn't it a practice then, in March, 1929, that after the take-off all aircrafts were obliged to proceed straight ahead to a distance of at least one thousand feet beyond the end of the runway? A. Yes, sir.

Q. That is the fact, isn't it?

Mr. Carpenter: I was going to object to that. That is the same question put in a different way.

The Court: The difficulty is, Mr. Carpenter, I cannot rule upon an objection that is not before me. I cannot guess what is in your mind.

Q. The glide or beginning of a glide for a landing is——

The Court: What his practice may have been does not govern the question of negligence.

Q. —requires that a minimum altitude of six hundred feet be had, isn't that so? A. I don't know.

Mr. Carpenter: I object to the question again.

The Court: Wait a minute. He says he don't know.

Q. Now, you have, of course, better visibility from the left in operating a plane, on the left side, isn't that so? A. Slightly, yes, sir.

Q. And consequently on the take-off your turns are made to the left, aren't they? A. Not necessarily.

Q. Well, do you make any turns to the left? A. Some, yes, sir.

Q. Didn't you make those turns because that was the standing rule for all turns? A. No, sir. It was not a standing rule.

Q. Did you know that there was such a rule? A. There was no rule to that effect. May I explain that?

Q. No. You will have some other things to explain yet. How many planes did your competitor maintain at that airport at that time? A. There were more than one competitor. I think about five or six.

Q. And your job was short hops for that day? A. Yes, sir.

Q. Now, was there a co-pilot in your plane? A. No, sir.

Q. You were handling the thing alone? A. Yes, sir.

Q. It was a monoplane? A. Yes, sir.

Q. What passenger capacity? A. Five passengers and one pilot, or four passengers and two pilots.

Q. You would consider, wouldn't you, as an expert pilot that a thirty mile an hour wind is a pretty strong wind, isn't it? A. No, sir.

Q. It is not? A. No, sir.

Q. Would you consider a thirty-five mile wind a strong wind? A. No, sir.

Q. Forty mile a very strong wind? A. Not a very strong wind. We consider a forty mile wind as a strong wind.

Mr. Carpenter: What was that answer?

The Witness: We consider a forty mile wind a strong wind, but not very strong.

Q. You said, having observed this take-off, it was a perfectly normal take-off, right? A. Yes, sir.

Q. So that by the time the plane got beyond the end of the map, or as you said about a mile, he had flying speed, didn't he? A. He had flying speed the minute his wheels left the ground.

Q. I mean his sustaining speed in the air. A. He had his sustaining speed the minute his wheels left the ground.

Q. He had at that time? A. He has to.

Q. The throttles are thrown wide open for the take-off always, aren't they? A. Yes, sir.

Q. So they get the maximum speed, right? A. Yes, sir.

Q. Now, of course, when he got into the air at five or six hundred feet, as you say, and about a mile off, five or six hundred feet is a pretty good altitude, isn't it? A. I don't know what you mean by "pretty good."

Q. Well, it is a reasonably safe altitude? A. Yes, sir.

Q. For normal maneuvering in the event of an emergency right? A. Yes, sir.

Q. Now, having gotten off, even up here, here, as you said, when he made the turn to the right, or was following the turn to the right when he started to lose altitude, the loss of altitude did not occur until he was a way up here (indicating on map). A. I don't get it.

Q. As you said it started to lose altitude when he got over this way, near South Street? A. After he completed his turn.

Q. Yes, and he completed the turn and then headed due east, right? A. East? That would be a little bit southeast, wouldn't it?

Q. Or, the southeast, but, in this direction I am indicating, right? A. Yes, sir.

Q. And he then had five or six hundred feet? A. At the completion of his turn.

Q. Now, considering the capacity for stretching a glide, couldn't he then have made the turn just a little bit more and glide with the aid of whatever power he had left in his plane to glide back to the airport? A. I don't know the condition in the cockpit, so I could not answer as to that.

Q. What do you mean by that? A. I don't know whether he had one motor dead or two motors dead, or all three dead.

Q. Suppose he had one motor dead he could have done it, couldn't he? A. Yes.

Q. Suppose he had two motors dead, could he have done it? A. I don't believe so.

Q. What is the limit of stretching of the glide he could have made with two motors dead under those circumstances or wind conditions that you know of? How far back to the airport could he have gotten? A. I don't know which motors were dead.

Q. Let us assume the two outside motors.

Mr. Carpenter: I object to that assumption. There is nothing to base that on, Judge.

Mr. George: Here is a man who has flown that particular kind of plane.

The Court: It is cross-examination of an expert. I believe we are entitled to know the extent of his knowledge of such subject.

Q. How near to the airport could he have gotten on the utmost stretching of the glide assuming the one motor remained? A. If his two outside motors were dead he could then have turned in either direction a slight bit, which probably would have been bad flying, but even bad flying is done sometimes in an emergency to try to correct, and he might have run a bit closer to the airport.

Q. How close to the airport, that is what my question is.

Mr. Carpenter: Let him answer. I don't think he has answered.

The Witness: I can't say.

Q. About? A. About on the Lehigh Valley Railroad tracks.

Q. The Lehigh Valley is this one (indicating on map)? A. Yes, sir.

Q. Up here? A. Yes, sir.

Q. That is no glide at all, is it, from where you say he completed the turn here when he started to lose altitude? A. Well, he might have got back closer to the airport than that, but it is all guesswork.

Q. Is that all your testimony consists of now, guesswork, or is it based on your expert knowledge? A. Upon my knowledge.

Q. Then, if it is your expert knowledge—I am asking you not to guess—tell us on the basis of your expert knowledge what is the farthest—or the nearest point to the airport he could have reached under the circumstances with two motors dead. A. That is impossible to say.

Q. With the ship five or six hundred feet in the air, the wind as it was blowing, in the direction it was blowing, what is the ratio of glide with no motors working? A. That ratio of glide would be directly hinged on the wind.

Q. I am talking about the wind as you knew it that day. A. It would take some mathematics to figure it out and I cannot figure it in my head at this time.

Q. Well, approximately what would be the ratio of glide? A. I should say roughly six to one.

Q. Isn't it a fact it would be eight to one? A. I don't know.

Q. You don't know? A. No, sir.

Q. By the way, you have had a total of about 2,200 hours in the air, is that a fact? A. Yes, sir.

Q. That is considered quite a lot of flying, isn't it, in aviation circles? A. Why, yes. It is not

considered such an awful lot. Lots of fellows on regular schedule runs have four and five thousand hours.

Q. That, of course, is considered a great deal, four or five thousand? A. Yes, sir.

Q. I suppose that is about as much as the average outstanding pilot can claim credit for, isn't that so? A. I believe so.

Q. As a matter of fact, Lindbergh, even with all the flying he has done in the last two or three years has not very much more than seven thousand? A. I don't believe he has that much. I am not sure.

Q. Do you consider between six and seven thousand a tremendous lot of flying? A. Yes.

Q. Now, you told us a moment ago something about six to one ratio. Some of us may know what that means but others may not. Will you please explain just what you mean by a six to one ratio for a glide with no wind or no motors? A. That means that for every one foot of altitude the ship can glide six feet in a forward direction.

Q. So the ship at six hundred feet of altitude with no wind and no motors operating could go three thousand feet? A. Thirty-six hundred.

Q. Thirty-six hundred, rather? A. Yes.

Q. At least thirty-six hundred? A. At least that.

Q. Suppose the wind were on the tail, then that would increase the ratio? A. Oh, but just a minute. I said with that wind that ratio would be six to one.

Q. I asked you the question twice, no wind and no motors. A. Yes, but you asked the question differently each time.

Q. I ask it now. What is the ratio then with no wind and no motors? A. I should judge about

five to one. I am not sure exactly, but I think it is about five to one.

Q. You would not dispute my statement it is eight to one, would you?

Mr. Carpenter: I would. I object.

Q. I am asking you whether you would? A. I could not absolutely dispute it, but I think you had been reading something that was a little bit wrong.

Q. Suppose I told you I was not reading anything, which, of course, means I could not have done wrong reading, would you dispute the statement that I now make the glide was—the glide is seven to one ratio?

Mr. Carpenter: I object.

The Court: Sustained. The witness is not called upon to dispute with you.

Q. Do you know anything about the Ford specifications respecting the Ford tri-motor plane? A. Not a great deal, no sir.

Q. Have you ever read them at all? A. Yes, I believe I have.

Q. Would it surprise you to know, then, if you did read those specifications, the Ford Company specifications set down an eight to one ratio on that particular kind of plane? A. Those are probably engineering figures, not actual flying test figures.

Q. Would you dispute the correctness of their statement? A. I dispute the engineering figures until I have flown the ship.

Q. In other words, they are out of step with you? A. No, sir.

Q. They are all wrong with you? A. The engineers say such and such a thing will be true, but

one hundred per cent efficiency does not always happen.

Q. I am speaking of one hundred per cent efficient, normal conditions throughout, speaking of the wind being dead, there being no wind at all, and the motor being dead entirely, having reached an altitude of a certain height, what would be the length of glide? That is what I am trying to find out from you.

Juror Number Five: On taking off you say they have a full throttle. What altitude do they reach before they come to normal?

The Witness: That depends a lot on the pilot himself. Usually in my flying I retard the throttle the minute my wheels leave the ground or within maybe twenty-five feet from the take-off. If I want to climb and maintain altitude, an altitude of any height, I leave my throttles wide open until I get one thousand feet.

Juror Number Five: How long a time does it take to reach that? Five minutes?

The Witness: No, it does not take five minutes. No. It takes the number of minutes depending on the aeroplane. Every aeroplane is different.

Q. Will you be good enough, Mr. Rollins, to step down here and describe on the survey map here the course of the plane involved in the crash? A. (Indicating.) He taxied from about this position down to the end of the runway and took off in this position, veered over slightly to the left, up probably around in here somewhere and went beyond the extremities of this map, made a

right turn, normal, one hundred and eighty degrees and came back. His motor—rather, started losing altitude, I imagine——

Q. Never mind what you imagine. Just what you saw.

The Court: What your recollection permits you to say.

The Witness: I saw the aeroplane when it started to lose altitude at some point up in here, then he came down to less altitude gradually, flying normally, coasted in, and crashed about here.

Q. Now, will you keep your pointer on the map and retrace that course, keeping the pointer on the map? A. You cannot keep it on the map.

Q. I mean as far as possible. What I am trying to find out is whether or not, as you have just kept your pointer on the map, that was the course of the plane about along here. A. Looking from here you can't tell whether that plane was up here or down here, but it was somewhere in that vicinity.

Q. Now, put your pointer on the map at approximately where he began to lose altitude. In other words where he was six hundred feet at the lowest point? A. You can't on this map.

Q. Well, can you approximate it? A. It is difficult to approximate it here because I don't know what is over here exactly.

Q. By the appearance. I am speaking of distances. There is just atmosphere up there. Do you understand my question? A. Yes, I do. This is a very rough estimate, because not knowing the terrain over here I have not anything to judge by.

Q. Aren't you acquainted with that? A. Certainly. I am not acquainted with the scale of the map.

Q. The scale of the map is two hundred feet to the inch. A. I imagine it was about here. I don't know. As I say, it is very difficult to say because I cannot orientate it with anything on the ground. Somewhere about here.

Mr. Carpenter: How many inches off the edge of the map?

Mr. George: Seven and one-half.

Q. Now, suppose, then, when he started to lose altitude with the wind on his tail as it was under those circumstances—wasn't it? A. Yes, sir.

Q. —and it then suddenly veered to the left and headed into the wind again, wouldn't he then have been able to better sustain altitude nosing into the wind? A. No, sir.

Q. Why not? A. Because an aeroplane comes down regardless of—comes down at the same rate of speed without motors regardless of the direction of the wind whether it is on his tail or his nose. It makes the coverage over the ground different. If he is heading into the wind he can go a shorter distance.

Q. Do you mean to tell the Court and jury a plane that is five or six hundred feet in the air heading into the air can maintain or increase its altitude better than it could if the wind were on its tail? A. No, sir.

Q. Even a thirty-mile an hour wind? A. No, sir. There is absolutely no difference. An aeroplane is a free-floating object in the air with a means of propulsion.

Q. Then so far as maintaining altitude is concerned the wind has nothing to do with it, has it? A. Absolutely not.

Q. Then, why is it necessary, if it is necessary —you may dispute that—why is it necessary to take off into the wind? A. So that you reduce your ground speed. The aeroplane is going—. We will assume the wind is thirty miles an hour and the aeroplane taking off into that head wind, and it takes off, we will say, at fifty miles an hour. We will only have to be traveling over the ground at twenty miles an hour, but it is still traveling into that wind at fifty miles an hour. If it took off down wind it would have to travel over the ground eighty miles an hour in order to attain the same air speed.

The Court: Therefore the wind does have something to do with it?

The Witness: Until the ship leaves the ground. After the wheels leave the ground it has absolutely nothing to do with it, that is as far as climb. As far as speed over the ground it does. The ground speed is the combining of the air speed of the ship and the wind speed.

The Court: Just a minute. Now, supposing you were at an altitude of one thousand feet and you have a forty-five mile wind and you turn head into the wind, then you turn around and go tail from the wind, you go at the same speed without touching your throttle through the air?

The Witness: You go at the same speed in relation to the air. May I cite an example? If you have your motor dead that is capable of going two miles an hour, and you are bucking stream that is also flow-

ing two miles an hour you are standing still, still you patent log will register two miles an hour. If you turn and go down stream your patent log will register still two miles an hour whereas your actual speed, from the bottom of the log, the stream will be four miles an hour. It makes no difference the direction or the speed of that stream what your speed is from the air, but it does make a difference from the bottom.

Q. So that your answer would be the same, wouldn't it, if the wind were blowing southeast instead of northwest as it was on that day? It would still be good piloting inasmuch as the plane had left the ground and had gained an altitude of this point marked "I-1" had one hundred feet, wind going on the tail—and if he had gotten up to one hundred feet it would still be good piloting with fifteen persons aboard to make a sharp turn at one hundred or one hundred and fifty feet? A. May I say this?

Q. Answer my question. A. I will answer if I can explain it.

Q. Answer the question yes or no whether it would be good piloting for a man going with a thirty mile an hour wind and had gained an altitude of only one hundred or one hundred and fifty feet with fifteen passengers including the pilot making a right sharp turn at one hundred to one hundred and fifty feet altitude? Would that be good piloting? A. I can only answer it by explaining it.

Q. I think that question can be answered yes or no.

The Court: Of course, unfortunately, I am not here as a referee. He says he can't. I am not going to force him.

Q. You explain it in your own way. A. If that man makes a perfectly normal turn without sliding or skidding and maintains his flying speed, it is perfectly good flying if his wing when he is in that turn is three inches off the ground so it will clear anything. It is all superstition a down wind turn is dangerous because in the days before instruments a good many pilots were injured in down wind turns because they mistook their drift they slid and corrected their drift rather than their flying and consequently lost their flying speed and spun in.

Q. You said once a plane is off the ground—three inches off the round—it does not make any difference whether it is into the wind or down wind? A. That is why it is good policy to make a turn at any altitude if the flight is done gradually.

Q. So without regard which way the wind was going—assuming it was going due west rather than due east— A. It does not make any difference.

Q. Just a minute, please—if it were going due east and gained an altitude of one hundred feet, fifteen passengers including pilot, this tri-motor all metal plane turning sharp to the right would be good piloting, would it? A. Certainly. But, this plane did not turn——

Q. That's all right. You have answered the question. Now, of course, your company had a bally-hoo man on that occasion, didn't they? A. Yes, sir. We had two, I think.

Q. And you were standing at or near your plane waiting for customers? A. Yes, sir.

Q. What? A. Yes, sir.

Q. How long before the fatal flight of this plane was it you had completed your last flight? A. Not over fifteen or twenty minutes.

Q. And when the plane in question took off were there any passengers in your plane waiting to go up? A. These two Englishmen were standing beside the plane waiting to get in too.

Q. They were already passengers, weren't they? A. They had their tickets, but were not in the ship.

Q. I understood you to say—using your very language—when Mr. Carpenter directed your attention to the beginning of the losing of altitude—that these Englishmen were talking to you about flying and that is why your attention was called to it. Is that a fact? A. Yes, sir.

Q. So it was not until the Englishmen called your attention to the fact that this plane began to lose altitude that you had noticed it? A. The Englishmen called my attention to it—to the plane as it took off, as it was down at the end of the runway ready to take off. I had watched it before that because they said that they had bi-motors like that——

Q. Never mind what they said to you. Now, did you follow the course of this plane from the time it took off, in fact, from the time it started to taxi northwest and then turn around and go northeast until it faded out of sight beyond the embankment of the Lehigh Valley? A. Yes, sir.

Q. You followed the course all the way? A. Yes, sir.

Mr. Carpenter: You are not a lawyer, are you?

The Witness: No, sir.

Mr. George: That is all.

Re-direct examination by Mr. Carpenter:

Q. There is one question Mr. Reed says I omitted. I am not sure I did. I want to ask it anyhow. As the plane reached an altitude from seventy-five to one hundred feet on its take-off on this last flight did you hear any sputtering of the motors? A. No, sir.

The Court: He said that. Mr. Reed was not in here all the time.

Re-cross-examination by Mr. George:

Q. Then, even a turn under the circumstances and considering the wind in its direction, a turn at fifty feet would be safe, wouldn't it? A. As I said, if the turn is made gradually, a turn at three inches off the ground would be perfectly safe and proper.

Q. What? A sharp turn? A. Any turn.

The Court: I think the jury would want to know what you mean by "if the turn is made gradually." I think they are all wondering what you mean.

The Witness: An aeroplane can skid or slide the same as an automobile. It is hard to realize that this thing can skid, but, if too much rudder is applied on the turn the aeroplane will skid and it actually goes up against the bank. Consequently in a bank the whole side of the fuselage is against the air stream. The speed is less. If that speed is less then the aeroplane will lose some of its control and probably lose altitude. If that turn is made gradually so that the bubble—what we call the bubble—which would be a pendulum—that would probably

explain it easier—if that pendulum hangs down straight in an aeroplane that turn is being made gradually if the flying speed is kept up. That turn is gradual, because an aeroplane is a free-floating object with a means of propulsion. It has absolutely no bearing on the case what direction the wind is blowing or what speed unless it is very rough.

The Court: Or which way you make a turn.

The Witness: Or which way you make a turn.

The Court: Well, now, what do you call an incorrect turn in degrees, considering the velocity of the wind there was that day?

The Witness: The degree of bank has to coincide with the circumference of the turn. It is like water in the bottom of a pail. You can swing water around in a pail and it will stay flat in the bottom of the pail if you swing it at a certain speed since centrifugal force holds everything in correct position to the bottom of the pail. There is a very difficult formula to work that out. There is centrifugal force that is matched up with the inertia of the plane and the going straight ahead and the circumference of the turn by force are equalizing that turn being made properly and correctly and the pendulum will turn down to the bottom of the aeroplane level and will show the aeroplane is flying level if there is a forty degree bank.

Q. It is because of the centrifugal force that the pilot, while driving the plane is sitting upright,

although the plane may be on a bank? A. He is sitting upright in relation to the plane, but not in relation to the horizon.

Q. It is like a man driving an automobile around a banked turn, isn't it? A. Yes, sir.

Q. If he is going at the proper speed he will be sitting upright although the car is on a bank? A. If the turn is being made properly the passenger, having his eyes closed, cannot tell there is a turn being made. They have absolutely no sensation of a turn.

Q. You said that a turn any distance from the ground if properly made is not dangerous? A. No, sir.

Q. You mean so long as the plane does not touch any part of the ground? A. So long as it does not touch any part of the ground or anything sticking up from the ground.

Q. If it touches anything on the ground, of course, there is a crash? A. Of course, if it touched the wing tip that will tip the wing tip up.

Q. If it is properly turned it does not make any difference? A. No, sir. That is contrary to the belief of a lot of the old-timers who still have a lot of superstitions.

Q. You say that is the modern thought? A. Yes. It is the truth. It has been proved in a test made down at College Park.

Q. You say you flew the test there? A. No, sir. I say it has been proved. I talked with the pilot that did.

The Court: Have you studied engineering?

The Witness: No, sir. I have studied all aeronautics. I have been studying it ever since I have been engaged in the business.

Mr. Carpenter: You have been lecturing on the subject, too, haven't you?

The Witness: Yes, sir.

Juror Number Eight: If that plane was three feet off the ground you say it was safe to make a turn?

The Witness: If it would clear any object.

Juror Number Eight: That is it. You said three feet off the ground. Assuming a big plane like that, I imagine the wing would hit the ground. Three feet is not very high.

The Witness: The plane clears three feet off the ground. All the plane clears.

Juror Number Eight: I mean, a big plane three feet off the ground, the outside of the wing would hit the ground.

The Witness: You see what I mean, the wing itself would be three feet off the ground.

Juror Number Eight: You say, if when it left the ground it was three feet off the ground it was proper to make a turn at three feet?

The Witness: Yes, it is perfectly proper if the aeroplane as a whole is three feet off the ground.

Juror Number Eight: Three feet off the ground, a plane the size of that, when it made that turn——

The Court: No. You see, he is assuming the wing is three feet off the ground.

Juror Number Eight: You are assuming taking the wheels and wing?

The Court: Take the plane and show him.

The Witness: (Illustrating with a toy aeroplane) This part of the aeroplane here, the aeroplane in itself entirely is three feet off the ground so that it will clear obstructions.

Juror Number Eight: You explained the outside of the wing or you explained the wheels?

The Witness: I mean any part of the aeroplane is really what I mean.

Juror Number Eight: You mean so long as any part of it does not touch the ground you can fly.

The Witness: Yes, certainly.

By Mr. George:

Q. May I ask this question? A sharp turn without any consideration for wind retards the speed of the plane, doesn't it? A. Slightly.

Q. A sharp turn only slightly? A. Yes, only slightly.

Juror Number Five: Providing it is made properly?

The Witness: Providing it is made properly.

Q. Let us assume, then, that the aeroplane is still in the process of taking off and had only left the ground to the extent that even on a one hundred and eighty degree bank the wing, his right wing, would be three feet off the ground, could a turn be made then with safety? Would you consider it good piloting? A. I have done it.

Q. You have done it? A. Yes, sir.

Q. There is no such thing, of course, as wind bumps or wind pockets so close to the ground, is

there? A. There is no such thing as air pocket or wind pocket.

Q. Is there? A. No.

Q. (Indicating with a toy aeroplane) So that if the plane is just taking off and just has enough speed to get three feet off the ground, every bit, I mean, on the turn assuming that the plane swings around, it requires— A. (Interrupting) He is not on a bank like that. You are exaggerating, but go ahead.

Q. He is not on a bank like that? A. Any aeroplane is not taking off at a bank like that.

Q. I am not asking whether any aeroplanes do. I am asking you if the plane was taking off like that and were able to get up enough speed to be able to make a one hundred and eighty degree turn, the wing only three feet from the ground, with the retarding effect of a sharp turn of that kind, however slight you might think it would be, would it be good piloting? A. What do you mean by a one hundred and eighty degree turn? In that you hold the aeroplane in a vertical position. That has absolutely no reference to one hundred and eighty degrees.

Q. We will take out one hundred and eighty degrees and illustrate it as I do now. The plane going off in this direction and he gets off about three feet over all and makes his turn, or suppose he gets up about seven or eight or ten feet and then makes a sharp turn in this direction——

Mr. Carpenter: You are putting the plane vertical.

Q. But with the tip of the wing three feet from the ground, would it be truly good to make such a turn? A. No, because that is not a normal turn.

Q. The question is whether or not that is not

a good turn. The dangerousness or safety of the turn depends on the angle of the turn, is that right? A. Yes, to a certain extent. Anything about forty-five degrees would be considered a normal turn.

Q. Under all conditions? A. Yes. May I ask what you meant when you spoke a while ago——

Mr. George: You answer my question.

By Mr. Carpenter:

Q. I want to bring this out. What do you mean by one hundred and eighty degree turn? A. That means the direction is roughly one hundred and eighty of the circle.

Q. It is half a circle. Do you mean by one hundred and eighty degree turn it is a half turn around and that the wings are vertical? A. Certainly not.

Q. When you said this particular tri-motor plane made a one hundred and eighty degree turn you mean it went off, we will say, in a northerly direction and made a turn so that it came back in a southerly direction? A. Yes, sir.

Q. What kind of a bank did that plane make that day as you saw it? A. Just a—what we term a shallow turn.

Juror Number Eight: Explain it, that shallow turn.

The Witness: He made a turn to the right. I should judge he was in a position like that (illustrating) and went around to the right.

Q. Over how large an area did he go on the ground? A. At least a half a mile.

Q. So that a turn was made over an area of at least a half a mile? A. Yes. I should say that very safely.

Q. Can you give us an accurate description of the turn by any such a small plane as this? A. Not very well, because there are two many forces acting on an aeroplane which you cannot have here.

Juror Number Five: Did it look to you as if he was making the proper kind of turn, actual normal flying?

The Witness: Yes. We can tell from the ground and we criticize a great many pilots for skidding on their turn. It is a common fault of amateur pilots and even some old timers skid on their turns. You can see it very readily from the ground because as that aeroplane is making the turn you will see it skid up like that (indicating).

Juror Number Five: Did he do anything like that?

The Witness: No, sir.

Juror Number Five: It looked good to you?

The Witness: Surely.

William G. Rector, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Mr. Carpenter: I have to call Captain Rector out of turn because I believe he is going south tomorrow.

The Court: All right.

Q. Whereabouts do you live? A. 90 St. Marks, St. George, Staten Island.

Q. Are you in the Government service? A. I am, yes, sir.

Q. What is your position? A. I am Captain Adjutant of the 27th Division, Aviation.

Q. Stationed where? A. Miller Field, Staten Island.

Q. How long have you been in the Government service? A. Since January 4th, 1913.

Q. Since January 4th, 1913. Are you an aviator? A. Yes, sir, I am.

Q. How many years have you been flying? A. Since January 4th, 1913.

Q. What types of ships have you flown? A. I have practically been in all types of ships. Practically all types manufactured.

Q. How many hours' flying have you had? A. Something over three thousand. I don't remember.

Q. You do have to keep record of it in Army service like you do in civilian service? A. No, sir.

Q. Have you ever flown a Ford tri-motor plane? A. Yes, sir.

Q. How many hours have you had on Fords? A. Not one hour.

Q. Not an hour? A. No, sir.

Q. What type of ships have you flown, Captain Rector? A. Flown the Curtiss, Curtiss Falcon, and the J N-4, that is the old type of Jennie plane.

Q. Pursuits and bombers? A. No pursuits, no, sir. I have bombers and observation planes.

Q. Observation planes, too? A. Yes, sir.

Q. Whereabouts were you on the 17th of March in the afternoon between four and five o'clock? A. At the Newark Airport.

Q. Why did you go to Newark Airport? A. By appointment with Captain Weatherdon.

Q. What were you planning to do? A. To fly with Captain Weatherdon that afternoon.

Q. From Port Newark to where? A. To Miller Field.

Q. That was your headquarters, Miller Field? A. Yes, sir.

Q. Had you ever seen that Ford tri-motor plane belonging to the Colonial before that day? A. Yes, sir.

Q. Where had you seen it? A. At Newark Field and Albany, New York.

Q. Had you flown in that plane before that day? A. I had, yes, sir.

Q. Did you fly over that morning from Miller Field to Newark? A. No, sir, I did not.

Q. Had you ever observed while you were at Miller Field the condition in which that plane was kept and maintained? A. Yes, sir, I did.

Q. Tell the jury how that plane was kept and maintained from your observation. A. From my observation, it was kept in good condition at all times.

Mr. George: I ask that it be stricken out as calling for a conclusion. The witness can testify, of course, what was done on it.

The Court: It is perfectly proper, the same as an automobile. We could not tell any other way. It would be impossible.

Q. How did the plane and its engines function when you were riding in the plane and when you observed it in the air? A. Very satisfactory.

The Court: When was the last time you were in it or saw it?

The Witness: Sir?

The Court: When was the last you had seen it prior to the accident?

The Witness: I could not say exactly, but within a week.

Q. Within a week before that day? A. Yes, sir.

Q. Did you have anything to do in your official capacity with planes that are kept at Miller Field? A. Yes, sir.

Q. What? A. When a plane drops in at Miller Field to stay over night or two or three days, it is the duty of the commanding officer, the engineering officer and myself to see that the plane is in proper condition, that it would not be a menace to other planes on the field while flying.

Q. Was this particular Ford tri-motor kept in the hangar every night it was in this vicinity at the Miller Field Hangar? A. I would not say every night, no, sir, but the majority of the time.

Q. Kept there the majority of the time? A. Yes, sir.

Q. When she came in there did you see her every time she came in? A. Practically every time.

Q. I wish you would tell the jury whereabouts you stood at the Newark Airport when this plane took off on its last trip, as near as you can describe the location by this map. A. I stood about the lower end of the hangars, facing the runway.

Q. Is that hangar depicted here on the map? Perhaps if you come down— A. I could not say until I look at the map.

Q. This, by the way, Captain, was taken November 7th, 1930. The accident was March 17, 1929. Here is the northwest runway. The runway has

been changed since. That is the northwest runway. The arrow shows this is north up here? A. Standing right in here (indicating on map) at this end of the hangar.

Q. You were standing there at the northeast corner of the hangar? A. Yes, sir, if I remember correctly the end of the bull pen as they call it is out here. I was between the bull pen and the hangar.

Q. At any rate you were north, on the north side of the hangar? A. Yes, sir.

Q. Did you have a plain view of the aeroplane? A. I did, yes, sir.

Q. Did you see the plane as it filled up with passengers—the passengers boarded it? A. No, sir, I did not notice it.

Q. What did you notice the plane do? Where did it start from on its last flight? A. On this runway down here is when I first paid any attention to the plane, after it got down here and started on the runway to take off.

Q. Did you see the plane before it started or as it started? A. As it started.

Q. As it started? A. Yes, sir.

Q. Now, this is the northwest runway here? A. Yes, sir.

Q. Just tell the jury in your own words how that plane took off. How it acted from the beginning of that take-off to the last you saw it? A. Very normal.

Q. Point out on the map where it went and how it went? A. The plane took off in this manner, climbed to an altitude, I should say, of five or six hundred feet——

Q. In a northwest direction? A. Yes, sir. I don't know the scale.

Q. One inch is two hundred feet on the ground. A. And it came out to make its turn around in here.

Q. About a point off the map on the left side? A. Yes, sir. It went off the map and made a normal turn five or six hundred feet in the air and came back down in this direction.

Q. Going easterly? A. Yes, sir.

Q. You say that the plane on its last flight came out here to a point where it went beyond the edge of this map? A. Yes, sir.

Q. Over territory not on the map? A. Yes, sir.

Mr. Reed: Indicating which map?

Mr. Carpenter: Indicating the photographic map.

Q. How far would you say the plane went from the airport in going out there before it made the turn? A. I should judge four or five thousand feet.

Q. There are five thousand two hundred and eighty feet in a mile. Somewhat under a mile, from four thousand to five thousand feet? A. A little bit under a mile.

Q. That was your best judgment where you stood on the airport? A. Yes, sir.

Q. You saw it all the time it was going out there and making that turn? A. Yes, sir.

Q. When you say whether, as that plane took off and went up in the air, did you notice any sputtering of any of the motors? A. I did not.

Q. Did you notice whether any smoke was being emitted from any of the motors? A. No, sir.

Q. If there had been any were you in position where you would have seen it? A. Yes, sir, I would have.

Q. You would have observed it? A. I would, yes, sir.

Q. Now, then, it has been said by several—several people say that that plane after leaving the take-off, coming to a point a short distance northwest of this intersection of the highways made a sudden, sharp turn to the right and ran—went up to South Street parallel to Route 25 and within from one hundred to three hundred feet of it. Did you see any such thing? A. No, sir.

Q. Did it do that? A. No, sir, it did not.

Q. What sort of a turn—just describe in your own words to the jury what sort of a turn that ship made in turning from its northwesterly course and around until it went down east. What sort of bank did the ship make? A. A normal flying turn.

Q. Was there anything sharp or sudden about that turn? A. No, sir, I would not say so.

Q. Whereabouts was the ship—pointing again to the map—at the point where you say it started to come down? A. I should say along just about there. Possibly off the map.

Q. Either off the map or at the very edge of the map? A. The very edge of the map.

Q. At the point about opposite South Street extended? A. Yes, sir. I would say so.

Q. Whereabouts with reference to the plane was it, if you noticed, that the ship started to come down? A. Immediately after it made its turn it stated to go down in an easterly direction, started to lose altitude.

Q. At the time he started to lose altitude about what was his altitude? A. About six hundred feet.

The Court: What distance did it make from the time it started to go down until it was all the way down?

Q. What distance did it make in going down? A. That I could not say exactly, sir, because it went behind an embankment here and we lost the ship when it went behind the embankment. I did not go over to the scene of the accident.

Q. You did not go over there at all? A. No, sir.

Mr. Carpenter: I will scale it on the map, if there is no objection. The point from that edge of the map over to the railroad in a straight line is thirty-one and three-quarter inches, about six thousand feet.

Cross-examination by Mr. George:

Q. Were you familiar with the terrain around Newark Airport at that time? A. The airport itself, yes, sir.

Q. And the terrain around the airport? A. No, sir, I was not.

Q. You say that she had gone off in a north-west direction about five thousand feet before she started to make a turn? A. Yes, sir, five to six thousand feet.

Q. You said just a little under a mile? A. Yes, sir.

Q. A mile being fifty-two hundred feet? A. Correct.

Q. You are sure about that, aren't you? A. Yes, sir.

Q. Do you remember testifying at the trial in Newark? A. I do, yes, sir.

Q. Do you remember being asked this question —fourteen forty-four, Mr. Carpenter and Mr. Reed: I wish you would tell this Court and jury— I am on fourteen forty-three—"I wish you would tell this Court and jury how that ship acted on

her last take-off?'' A. ''From my observation and experience it made a normal take-off, climbed to an altitude of between five and six hundred feet, an approximate distance of four thousand yards away from the airdome.''

Mr. Carpenter: He has corrected that later.

Q. Just a minute. Let him correct that. Did you so testify? Do you remember making that statement? A. Yes, sir.

Q. You made a mistake then, didn't you, you mean four thousand feet? A. I did, yes, sir.

Q. Now, is four thousand feet correct? A. Approximately.

Q. Now, which is it? Five thousand feet or four thousand feet? A. Four to five thousand feet.

Q. About four to five thousand feet? A. I believe, sir, I corrected that.

Q. You did as to feet from yards, but it still remained four thousand feet, didn't it? A. Yes, sir.

Q. Can you give us any idea about the height of the ship above the viaduct which he crossed at that point, how high it was? You understand the question, don't you? This viaduct 25, when she crossed the viaduct, what was her altitude?

Mr. Carpenter: Going east?

Mr. George: Yes, sir.

The Witness: About two hundred feet, I should judge.

Q. About two hundred feet? A. Yes, sir.

Q. Above the viaduct? A. Yes, sir.

Q. Can you estimate how high the viaduct is from the ground below? A. That I could not say.

Q. You won't dispute the statement it is fifty-three feet, will you? A. No, sir.

Mr. Carpenter: I object. It is twenty-eight feet according to my recollection.

Mr. George: The top of the viaduct is fifty-three feet according to the testimony by the civil engineer.

Mr. Carpenter: I thought it was twenty-eight, he testified. Is your Honor's recollection of that fifty feet?

Q. How frequently did you go to the Newark Airport, Captain? A. Very seldom, sir.

Q. What was your object in going to Newark Airport when you did go? A. I had an engagement with Captain Weatherdon, one of the Colonial pilots.

Q. I am not speaking of this one occasion. I am speaking of all of the infrequent visits. Was it always to meet Captain Weatherdon? A. I had flown over there.

Q. Did these meetings or engagements have anything to do with business at that airport or just social? A. No, sir, none.

Q. Private between yourself and the Captain? A. Yes, sir.

Q. How many times altogether did you visit that airport? A. Not more than two or three times.

Q. Not more than two or three times. How long did you remain on each of those occasions approximately? A. Possibly thirty minutes to an hour.

Q. And in March, 1929, how many planes were operating from Newark Airport as near as you were able to observe? A. There were possibly—do you mean——

Q. Planes of all kinds? A. At all times? That I could not say.

Q. At the times you were at the airport? A. Planes that were actually out on the field flying that day?

Q. Out on the field and in the hangar? A. That I could not say.

Q. Were there more than thirty? A. Yes, sir, I should say so.

Q. More than fifty? A. No, I would not say more than fifty.

Q. Somewhere between forty and fifty? A. Somewhere between thirty and fifty.

Q. All kinds of planes, Captain? A. Practically all types.

Q. Mr. Weatherdon is one of the officers of the Colonial Western Airways, isn't he? A. No, sir, he is one of the pilots.

Q. He is chief pilot, isn't he? A. That I don't know.

Q. You don't know that? A. No, sir.

Q. Connected with the Colonial, however? A. Yes, sir.

Q. Now, how frequently were you at Miller Field? A. My duties called me there on Thursdays and Fridays—Thursdays and Sundays I was there quite frequently, particularly at that time.

Q. Do you remember testifying along this line —fourteen forty-six—speaking of the Ford plane in question: Q. "Do you know whether it was housed at any other place except Miller Field?" A. "That I could not say." A. I could not.

Q. So far as your personal knowledge is concerned the only places the plane was ever housed were at Newark Airport and Miller Field? A. Yes, sir.

Q. And so far as your own acquaintance with the plane is concerned that was limited to what you observed at the both of those fields? A. Yes, sir.

Q. And at most at Newark Airport not more than two or three times at the most and then by casual observation, isn't that so? A. Right.

Q. Because you went to Newark Airport to visit Captain Weatherdon socially? A. Yes, sir.

Q. Not connected with any of the business at the airport? A. No, sir.

Q. And there were thirty to fifty planes at that time? A. Yes.

Q. And this one plane had no greater significance to you than any other plane? A. It did.

Q. It did. Why? A. Because I had friends down there that day that were going to ride in that particular plane.

Q. I am speaking of your note of it. A. Yes, sir. I would observe that plane more than I would any other plane.

Q. Why? A. Because it was a plane kept at Miller Field part of the time. It was a plane flown by a friend of mine and it was a plane that my friends were going to ride in.

Q. Now, then,——

Q. "It was there all the time, wasn't it?"—speaking of Miller Field—and your answer was "No, sir, it was not there all the time." Did you so testify and that was true, of course? A. That was true.

Q. "Except when it was flying in Newark and other points"—"that I could not say". That is true, too? A. Yes, sir.

Q. "You were always at Miller Field?" "You are stationed there?" "Only on Thursday evenings and week-ends." A. Right.

Q. So that was the limit of your acquaintance with the aeroplane in question, right? A. No, sir. My duties called me to Miller Field on Thursdays and week-ends.

Q. You were asked the question——

Mr. Carpenter: What page?

Mr. George: 1447.

Q. (Continuing) "It was there all the time, wasn't it?" "Why, no, sir. It was not there all the time." "Except when it was flying in Newark and other points." "That I could not say. I am not familiar." "You were always at Miller Field and you are stationed there?" "Only on Thursday evening and week-ends" and that was your answer, wasn't it? A. Yes, sir.

Q. What do you mean by "week-ends"? A. Saturday afternoons and Sundays.

Q. Don't you know on those week-ends the plane was doing hopping service in Newark Airport? A. It possibly did. That I could not say.

Q. Now, Captain Rector, you recall testifiying in the other trial and you were asked the question to describe the course of the plane in question and you did not go outside of the map, isn't that the fact?

Mr. Carpenter: I object to the question.

The Court: Sustain the objection.

Q. On the other trial did you testify—withdraw that. Do you recall testifying "Will you indicate on that map where you think that ship started to turn to the right? The scale of the map is two hundred feet to the inch. Now, can you give us an approximate idea where in your estimation that ship turned to the right?" Do you remember that question? A. I do, yes, sir.

Q. Was that photographic map the one referred to in that question? A. That I don't remember.

Mr. Carpenter: Read the answer and you will get it.

Mr. George: Just a moment. I am examining this witness.

Mr. Carpenter: I get impatient, I guess.

Mr. George: Counsel, you will get over that.

Q. Did it look like this map? A. It did, yes, sir.

Q. And your answer: "He started making his turn somewhere around in here." Do you remember that answer? Now, where did you indicate when you said he started making his turn somewhere around in here? Will you step down here please? Use the pointer, please. (Witness indicates.)

Q. Right at that point? A. Approximately.

Q. Put an "X" there—with your permission—as if indicating the place where he started to make the turn. Is that right? A. It might be a little below that.

Q. What do you mean? Down here? A. Yes, sir, I would say——

Q. About here? A. Yes, sir.

Q. Do you know what railroad this is? A. No, sir, I don't.

Q. Do you remember answering the Court in this case: "By the Court: Indicating the railroads there, the Lehigh Valley and Pennsylvania?" A. Yes, sir. Just across the railroads, I should judge.

Q. Now, you have not made any mark on this map, the railroads, did you?

Mr. Carpenter: Will you please read the next by Mr. Biro?

Mr. George: I am examining this witness, Mr. Carpenter.

The Witness: This is the railroad down here.

Q. There are not any railroads indicated where the "X" marks are? A. Apparently it would be right over the railroad.

Q. Is that what you mean? A. It must have been, yes, sir.

Q. You are not certain, though, are you? A. I am certain, yes, sir.

Q. Now, how many turns did the pilot make? A. He made one gentle turn and came around in this manner and heading down in this direction here.

Q. Now, would you regard it as a gentle turn from here, coming back in this direction? A. I would, yes, sir.

Re-direct examination by Mr. Carpenter:

Q. I would like to read the rest of the testimony where it was omitted by Mr. George. "Will you indicate on that map where you think that ship started to turn to the right? The scale of the map is two hundred feet to the inch. Now, can you give us an approximate idea where, in your estimation, that ship turned to the right?" A. "He started making his turn somewhere around in here." The Court: "Indicating the railroads there, the Lehigh Valley and Pennsylvania." Witness: "Yes, sir, just across the railroads, I should judge." Mr. Biro: "Over the edge of the map, about there (indicating)." Did you at that time indicate the same location you have indicated here today? A. Yes, sir.

Q. You have been asked something about your testimony on the other trial: "I wish you would tell this Court and jury how that ship acted on her last take-off". "From my observation and experience it made a normal take-off, climbed to an altitude of between five hundred and six hundred feet, an approximate distance of four thousand yards away from the airdome." "Four thousand yards?" "Four thousand feet, I should say. My mistake, and made a normal turn and went into a gentle glide until it disappeared behind the railroad embankment." Is that your testimony? A. It was, yes, sir.

Q. I understand you did not go over there to see what the terrain was over the railroad track? A. No, sir, I did not.

Q. Right at the place where the plane struck the ground? A. No, sir, I did not go over to the scene of the accident.

Re-cross-examination by Mr. George:

Q. Just one question. You say he took off northwest, went in a straight line to this place marked "X", with your permission? A. Yes, sir.

Q. And then turned. Now, of course, when he took off he did not turn to the right and he did not turn to the left, did he? A. No, sir.

Q. It was a perfectly straight line? A. Yes, sir.

Q. You saw the take-off? A. I did.

Q. He did not veer to the left as he took off? A. No, sir, he did not.

Q. Were you here in Court while the preceding witness was on the stand? A. Only part of it, sir.

Q. So, you are sure, Captain, when he took off he did not veer to the left and then straighten out? A. No, sir.

Mr. George: All right, that is all.

WILLIAM C. CARRAHER, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Reed:

Q. By whom are you employed? A. I was employed by the Tidewater Oil.

Q. Were you employed by the Tidewater Oil Company in March, 1929? A. Yes, sir.

Q. Do you remember the day of the accident to the tri-motor Ford plane of the Colonial? A. I do.

Q. Did you have something to do with that plane early in the afternoon with reference to gasoline? A. Gassed it up.

Q. What kind of gasoline did you put in the plane? A. Aviation gas.

Q. And is aviation gas something different than the ordinary gas you put in a Ford car? A. Yes, sir.

Q. Do you remember what time the plane was filled with aviation gas on the 17th of March, 1929, the day of the accident? A. Around one-thirty.

Q. Will you tell us whether you filled it half full or all full? A. Filled it right up, three tanks.

Q. Three tanks right up to what? A. The top. As much as you could get in.

Q. What hour did you say that was? A. Around one-thirty.

Q. Did you make a slip at that time on that day showing the amount of gas you put in to fill up the tanks? A. This is the slip.

Q. That is the slip?

Mr. Reed: I offer it in evidence.

Mr. Geoge: That is objected to.

The Court: Sustain the objection. He may refresh his recollection, but it is not as evidence.

Q. Is there any receipt on there by the representative of the Colonial? A. A mechanics.

Q. What is his name? A. Adam Wtorowski.

Q. Was that the plane that later had the accident that you filled up with gas? A. Yes, sir.

Q. How many gallons of aviation gas did you actually put in? A. One hundred and sixty-seven.

Mr. George: How many?

The Witness: One hundred and sixty-seven.

Mr. George: Gallons?

The Witness: Gallons.

Q. Did you use anything to strain that aviation gas in putting it in? A. Yes, sir.

Q. What did you use on that day? A. We have a strainer on the truck and the mechanic uses a chamois strainer.

Q. What kind of strainer did you have in the pipe or hose? A. It is made of screen.

Q. It is made of screen? A. Yes, sir.

Q. So that all the aviation gas you put into the plane was screened through this screen? A. Yes, sir.

Q. In addition to that what did the mechanic use? A. He had a chamois funnel.

Q. Did the gas pass through the chamois funnel of the Colonial mechanic? A. Yes, sir.

Q. Before it went into the tank? A. Yes, sir.

Q. Did you see the tri-motor Ford plane taking off after the gas had been filled in at one-thirty that afternoon? A. Yes, sir.

Q. Did you observe anything unusual in those trips in any way? A. No, sir.

Q. Did you see it go up and come back from other trips from time to time? A. Yes, sir.

Q. Did you see the ship at the final take-off? A. Yes, sir.

Q. Where were you at the time you observed the ship, if you personally observed it? A. Right this side of the bull pen.

Q. Did you see the ship take off? A. Yes, sir.

Q. Describe as much of it as you saw. All that you saw on the take-off? A. Why, I seen it take off and pass right over our heads. I said to the other fellow——

Q. Not what you said. You are not allowed to say what you said. A. Well, I started to go home then.

Q. Now, how far up in the air did you watch the ship on the take-off? A. As we turned around I noticed it was around five or six hundred feet up making a slow, right turn.

Q. You saw it make a slow, right turn. How far away was it then when it made the turn—a slow right turn? A. I should judge a half a mile out.

Q. When you say a slow right turn, what kind of an arc was that? A. What kind of a what?

Q. What kind of a circle? A. Why, forty-five degree turn right, wide turn right.

Q. A right wide turn. Did you see what part of the airport or what part of the location it got to after it made this long right turn? A. No. I did not watch it after that.

Q. Your attention was directed to something else? A. Directed on the road going out.

Q. Now, where did you drive to? A. Up on the viaduct.

Q. Did you see the plane again afterward? A. I seen it in front of us again.

Q. When you were where? A. Coming back over the viaduct.

Q. Coming back over the viaduct? A. I was going out.

Q. How far away was it from you then? A. I judge about a half a mile.

Q. Then did you see it as it was headed toward New York? A. No, I did not see—it was not headed toward New York when I seen it.

Q. Did you see it when it was coming down over the viaduct? A. Yes, sir.

Q. How far was it there over the viaduct? A. About two hundred feet.

Q. What was it doing then? A. It was coming down, losing altitude.

Q. And as you observed it how did it come down, that is, did it come down— A. Like a natural forced landing, making a nice landing.

Q. What kind of a keel was it on, if any? A. It was not on any keel.

Q. Maybe you don't understand the question. I mean, were the wings evenly straight out or was it dipped? A. Straight out. It was going along like a regular plane would, straight along.

Q. Did you observe the glide or descent of the plane? A. It was going along smoothly, just losing altitude.

Q. From where you were could you see it crash? A. Well, I seen one wing come up when it crashed. Q. Now, you observed the plane, the take-off, then again as you saw it when it was descending, will you please tell us whether or not any smoke was coming from any of the motors at all? A. No, sir.

Q. Did you hear any motors sputtering or missing? A. No, sir.

Q. Either on the take-off or any time did you hear any motors sputtering or missing? A. No, sir.

Q. Did you at any time see the plane lop over like that (indicating), sideways? A. No, sir.

Q. Did you at any time see it go that way and then that way (indicating)? A. No, sir.

Q. Who was with you on the automobile that you were on? A. Helper.

Q. Is he in court? A. Yes, sir.

Q. You understand about this map, the survey? Do you understand about that? A. I seen it in the other court.

Q. Can you point where you were on the map? A. I just don't remember how it was laid out now.

Q. You don't understand that lay-out? A. No. If you just point out where the airport was I could tell you. I just don't remember where it lay.

The Court: How near to the place where the plane started to take off were you? We take up so much time with the map it does not mean anything. All that we want to know is how many feet—that's what we want to know—whether you were behind the garage or front of it. How many feet were you away? You say you saw this take-off. How many feet was he away from you?

The Witness: The plane passed right over my head.

Q. When it passed over your head, how high was it? A. I judge about fifty feet.

Q. Then did you see it go out somewheres? A. I seen it go out and make a right turn.

Q. How far was that when it was out there and made the wide turn? A. About a half mile out.

Q. Then did you see it as it came back—this is South Street in here and this is Route 25; the viaduct cuts along like that. Did you see the plane when it was up in here in this section? A. I seen it crossing the viaduct again.

Q. At that point how high was it? A. About two hunded feet above the viaduct.

Cross-examination by Mr. George:

Q. About how high over your head at that time when you first saw the plane? A. When I first seen it?

Q. Yes. A. About fifty feet.

Q. Over your head, and you were on the viaduct at the time? A. No. Not then it wasn't over my head. It was in front of me.

Q. You were on your truck? A. Yes, sir.

Q. It has a cabin? A. What?

Q. It has a cabin, your truck has? A. Yes, sir.

Q. You did not hear any sputtering on the take-off, did you? A. No, sir.

Q. And you did not see any clouds of smoke? A. No, sir.

Q. It looked to you like a regular take-off? A. Yes, sir.

Q. You saw the take-off, didn't you? A. Yes, sir.

Q. On its last flight? A. Yes, sir.

Q. And you told the Court and jury less than a minute ago when you saw the plane for the first time you were in your truck on the viaduct and it was overhead?

Mr. Reed: I object to that.

A. No, sir. I said it was in front of me, not over my head.

Q. Which way were you going? A. I was going out towards South Street.

Q. You were going out toward South Street. You were going northeast, weren't you, out this way, the truck was moving? A. Yes, sir.

Q. And when you first saw the plane it was in front of you? A. Yes, sir, in front of me.

Q. Beyond you? A. Yes, sir.

Q. When you first saw the plane your truck was about fifty feet south of the South Street drop?

Mr. Reed: I object. He has not said that at any time.

The Witness: No, sir.

The Court: He is asking him.

Q. You say "No, sir"? A. No, sir.

Q. Well, the airport was to your back at the time, wasn't it? A. It was to my back and my right.

Q. To your back and your right? A. My right side.

Q. And if there was smoke coming from the plane on the take-off you would have noticed it, wouldn't you? A. At the time of the take-off I was at the airport.

Q. So that you saw the take-off? A. Yes, sir.

Q. You are sure about that? A. Positive.

Q. How near to South Street did you get when you saw the plane ahead of you? A. We were heading along when I seen the plane ahead of us.

Q. Answer my question. How near to the South Street entrance was your truck when you first saw the plane? A. I should judge quarter of a mile this side.

Q. A quarter of a mile this side? A. When I first saw the plane, the South Street drop.

Q. You were about a quarter of a mile this side of the South Street drop when you first saw the plane? A. When I first saw the plane.

Q. What kind of a truck were you driving? A. I was not driving.

Q. Or riding in? A. Ford.

Q. Large truck though, wasn't it? A. Yes, sir. It carries one thousand gallons.

Q. One thousand gallons of gasoline. How much —withdraw that. What did you do when you completed your loading of the gas into this plane? You were through, weren't you? A. No. I had to stay there and solicit business on other planes.

Q. Had you solicited business on other planes? A. One or two small ones.

Q. By the way, how far is South Street from the airport? A. I judge about three quarters of a mile or half mile.

Q. You had gotten, however, between this intersection of the highway and Port Street and South Street when you first saw the plane? A. When I first seen the plane I was in the airport.

Q. Didn't you tell the Court and jury that you were half way this side of South Street? A. You mean when the plane was coming back?

Q. Wait a minute. Moving along when you saw the plane ahead of you, isn't that what you said? A. Yes, when the plane was coming back.

Q. Just a minute.

Mr. Reed: I object to cutting it off.

The Court: Are you finished?

The Witness: I mean when I first seen the plane at the port——

Q. I didn't ask you whether you first had seen the plane at the airport. You testified when you first saw the plane over the highway, crossing the

highway, losing altitude it was ahead of you and that you were about half way back this side of South Street? A. Yes.

Q. Is that true? A. That's true.

Q. Now, then, you were proceeding along in your truck? A. That's right.

Q. Was it a fast or slow truck? A. Whatever way you want to drive it.

Q. How was it driven? Slowly? A. Around fifteen or eighteen miles an hour.

Q. Around fifteen or eighteen miles an hour. And you had been driving along and for the first time saw the plane ahead of you? A. I had not been driving.

Q. It was being driven and you were riding in the truck? A. Yes.

Q. And yet you tell the Court and these gentlemen of the jury you saw the take-off? A. I seen the take-off.

Q. On its last flight? A. On its last flight.

Re-direct examination by Mr. Reed:

Q. You said a moment ago when you first saw the plane you were in the airport? A. Yes, sir, that's right.

Q. Just where were you at the time you saw the take-off of the plane? A. Right on the side of the bull pen.

Q. On the side of the bull pen? A. Yes, sir.

Q. And you saw the take-off, you said? A. Yes, sir.

Q. How far up did it get at that point over your head? A. Over my head? When it passed over my head it was about fifty feet up.

Q. And where was your automobile at that time when the plane passed fifty feet over your head? A. Right alongside of me.

Q. What is that? A. Right alongside of me. I was standing by it, by the truck.

Q. Where was the automobile? A. Right this side of the bull pen.

Q. Then, after the plane went over your head, passing over your head fifty feet, then what did you do? A. We turned the truck around and started to go out.

Q. What road did you go out? A. Route 25.

Q. That is this roadway here, is it? A. Yes, sir.

Q. As you were going out to Route 25, is that the time you observed the plane in flight as you described? A. As we turned around I seen the plane make a slow right turn. As we went along the viaduct I seen it come back.

Q. So, you were observing the plane practically all the time when you started? A. Not all the time, no.

Q. First you saw it when you were standing by your truck at the airport as it went over your head right at the take-off? A. Yes, sir.

Q. Then you got in your truck, turned around and proceeded out Route 25? A. That's right.

Q. Then you observed the plane a distance away making a slow gradual turn? A. Yes, sir.

Mr. George: I object to this method of re-direct examination. Counsel is telling the witness all there is to it.

The Court: Yes. Don't lead him, Mr. Reed.

Q. Yes. When did you see it finally, the last time? A. When it crossed the viaduct.

Q. Where were you then at that time? A. Riding along the viaduct.

Re-cross-examination by Mr. George:

Q. Just let me ask you this to be sure. You were riding in your truck in a northeasterly direction and you saw the plane as it was crossing the viaduct? A. That's right.

Q. Now, as the plane crossed the viaduct how far away from the South Street drop was your truck? A. About a quarter of a mile.

Q. Let me refresh your recollection, if I may, and ask you this question: Do you remember testifying in the trial in Newark, don't you? A. Yes, sir.

Q. Do you remember being asked this question —fourteen hundred is the page, Mr. Reed—"How long did you remain at the airport that day?" "About four forty-five". Right? A. That's right.

Q. "Where were you at the time you say you saw the plane come down?" A. "On the viaduct". Is that right? A. That's right.

Q. "Where on the viaduct?"

Mr. Reed: You skipped one there, reading. I think if you want to read one or two questions you ought to read them consecutively.

Q. "Where were you at the time you saw the plane come down?"

Mr. Reed: Yes, but you skipped one.

Q. No I didn't. That's right. I am sorry. Mr. Reed is correct. I apologize. "How long did you remain at the airport that day?" "About four forty-five." The one I skipped was this: "Where did you go then?" A. "On my way home when I seen the plane come down." Is that right? A. That's right.

Mr. Reed: Yes, sir, that is the one.

Q. "Where were you at the time you say you saw the plane come down?" A. "On the viaduct." Q. "Where on the viaduct, if you can tell the jury where?" A. Why, about fifty feet this side of the South Street drop where you go down South Street". Is that true? A. That is after I pulled into the curb, yes, sir.

Q. Did you pull into the curb long after you had seen the plane come down? A. As I seen it come over the viaduct I told him to pull into the side and we stopped there to see it land.

Q. Then you were asked this question—fourteen hundred and eight—"As you were going along the highway did anybody call your attention to the plane or did you notice it yourself?" A. I noticed it myself and called the attention to the driver.

Q. You called the attention of the driver? A. Yes, sir.

Q. It was not that your attention was called to it, was it? A. No, sir.

Q. "And when your attention was first called to that ship west of the highway was it when you first noticed it?" A. "Why, it seemed to me to be about fifty feet the other side of the viaduct when first——". Then you were interrupted. Was that correct up to that point? A. Fifty feet that side——

Q. Did you make that statement I have just read?

Mr. Reed: I object to interrupting him in the middle of an answer, if the Court please.

The Witness: I don't remember that.

The Court: He says he does not remember.

Q. Will you say that is not correct? A. I would not say anything. I just don't remember that question.

Q. Is it a fact when your attention was first called to that ship west of the highway was when you first noticed it? A. I first noticed it just a little the other side of the highway.

Q. Answer my question. Was it correct when your attention was first called to that ship west of the highway was when you first noticed it? Is that true or isn't it? A. My attention was not called.

Q. Now——

Mr. Reed: Won't you let him answer?

The Witness: I noticed it myself. Nobody called my attention to it.

Mr. Reed: That was when it was coming down.

Mr. George: That is not proper.

The Court: It is not your turn yet.

Q. Had you sold all your gas that day? A. No, sir.

Q. How much did you have left? A. I just can't say.

Q. About how much? A. About a tank and a half full.

Q. How long did it take you to travel from the airport to the place where you first saw the plane crossing the highway? A. A couple of minutes.

Q. Two minutes.

Mr. George: That is all.

Re-direct examination by Mr. Reed:

Q. This drop into South Street, that is before you get really up on the viaduct, isn't it? That is

the cut-off taking you down? A. Before you get on the viaduct?

Q. Yes? A. No.

Q. Where is it? Right at the beginning of the viaduct? A. No. It is on the viaduct. You got to drive up about a mile.

Amiel Hoff, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Reed:

Q. Mr. Hoff, were you an employee of the Tidewater Oil Company? A. Yes, sir.

Q. On March, 1929? A. Yes, sir.

Q. Were you the man operating the Tidewater truck on that day of that accident? A. After Mr. Carraher—I was late that day. I got there after Mr. Carraher.

Q. You were not there at the time of the gas being put into the plane? A. No. I came afterward.

Q. About what time that afternoon were you there? A. It must be two o'clock.

Q. Now, then— A. Maybe before.

Q. —coming right down to the last flight of the aeroplane where was—withdraw that. Were you the operator of the truck as you left the airport that day? A. Yes, sir.

Q. Did you see the take-off of the tri-motor Ford aeroplane of the Colonial on its last take-off? A. Yes, sir. I saw him first by the bull pen.

Q. Where was your automobile truck standing at the time that aeroplane took off? A. This side of the bull pen coming in from the street.

Q. Now, then, where were you standing then? A. I was in the truck.

Q. What? A. I was in the truck.

Q. Were you able from the position where you sat in the truck to see the take-off of the aeroplane? A. Yes, sir.

Q. How much of the take-off did you see of the plane? A. As it passed us on the front of the bull pen.

Q. As it took off how much of the take-off did you see? A. I saw the whole take-off.

The Court: How far did it go while you observed it at the time of the take-off?

Q. How high? A. How high?

Q. At that time? A. I think one hundred feet.

Q. And then what did you do, you and whoever was with you? A. After Mr. Carraher was through about five o'clock and we both have to fill out the tickets, I bring him up to the boss. I started right after that ship passed us. I started out to bring him up to the boss.

Q. Right after the ship passed you, you started to bring Carraher to the boss? You mean by that you started the truck? A. I started it and drove the motor car.

Q. Where did you drive it? Along what road? A. Up to the highway, that main highway.

Q. The main highway? A. Number 25.

Q. Did you drive it in the direction—may I lead on this?

Mr. George: Yes.

Q. —in the direction of Newark? A. Yes, to South Street.

Q. Now, as you were driving the car to South Street what did you see of the aeroplane, if any? A. I saw the take-off and that she fly.

Q. Did you see how it was flying, the aeroplane, how high it flew? A. Oh, how high?

Q. Yes. How high did it fly? A. At least five or six hundred feet.

Q. How far away did it get as it went— A. I did not watch him so much. I had to drive the truck at that time. I went up the viaduct in the meantime.

Q. You did not watch it so much because you had to drive the truck? A. It was easy. Nothing happened that I could see.

Q. As you saw it right at the take-off, and as you saw it the second time when you saw it this five or six hundred feet in the air did you observe any smoke or anything coming from the motors of that aeroplane? A. No, sir.

Q. Was there any smoke coming from it? A. No, sir.

Q. Did you hear or see any sputtering or missing of the motors of the aeroplane? A. No, sir.

Q. Then did you see it finally the last time when you were nearer the viaduct, please? A. It was over away ahead. It came right up over us and before we went down to the viaduct. Then Mr. Carraher told me to pull to the side there. I pulled right over in front of the viaduct and we stopped. In the meantime before I saw it, it was laying in the marshes there.

Q. Were you able to tell how high it was as it passed the viaduct? A. Two hundred feet for sure over the viaduct.

Q. In the meantime your truck had been going along Route 25? A. No. I came up. I was right on top of the viaduct to go down to South Street.

Q. I say from the time when you had started— from the time when you started you had driven your truck to that point? A. Towards it. From the airport to South Street.

Q. Now, did you see the plane after it passed the viaduct down to the place where it crashed? A. No, sir. I got enough to do when Mr. Carraher told me to pull to the side to watch traffic.

Q. When you make the estimate that this plane was five hundred to six hundred feet in the air off in the distance, have you had any experience in judging heights of air vehicles? A. I think so.

Q. Are you able to tell by your experience as to the height of an aeroplane, from your experience? A. I think so.

Q. Well, what is your experience in the air with reference to air navigable vehicles? A. I drove during the war three airships, dirigibles.

Q. You are German born? A. Yes, sir.

Q. You fought for your country in the war? A. Yes, sir.

Q. On the German side, didn't you? A. Yes, sir.

Q. What were you in the war? A. First helmsman.

Q. What is that? Pilot? A. Pilot.

The Court: On a dirigible?

The Witness: On a dirigible, yes, sir.

Q. You piloted a dirigible? A. Yes, sir.

Q. And how many dirigibles did you pilot? A. Three.

Q. How long were you in the service of your country? A. Eight years.

Q. And were you in the air service? Is that what you call it? A. Yes, sir. Three years in the air service.

Q. And as such did you become accustomed to estimating the height of dirigibles? A. I think so.

Q. So, based on your experience, as you saw this plane going off in the distance you say it was how high? A. At least from five to six hundred feet.

Cross-examination by Mr. George:

Q. Now, Mr. Hoff, what were you? The helper or driver? By the way, who was the helper on the truck? A. We was both—at that time I was the helper until five o'clock.

Q. Who was driving the truck? A. I was driving the truck.

Q. You arrived there two o'clock? A. Yes, sir.

Q. And what did you do from two o'clock until you started away in the truck? A. We was waiting for customers.

Q. And the motor, of course, was shut off, wasn't it? A. Sure.

Q. While you were waiting for customers you were not using it unnecessarily? A. Yes, sir.

Q. You stayed around there yourself about three hours, didn't you? A. Yes, sir.

Q. And all during the time you were standing there your motor was shut off and you were waiting for customers? A. Yes, sir.

Q. Did you get any customers between two and five? A. I could not say.

Q. Well, you were there? A. That is a long time ago, sir.

Q. You remember the other things very well? A. I got it all in black and white. I got so many customers I don't even know on that day what I got.

Q. What have you got in black and white, Mr. Witness? How high the plane was when it went over the viaduct? A. Black and white.

The Court: Written down?

Q. And you were talking about black and white a moment ago. I don't know what you are referring to. You said, "I got it all in black and white." A. I did not say nothing about that.

Q. Didn't you say I got him in black and white? A. No, sir.

Q. You did not say that? A. No, sir.

Mr. Reed: Mr. Stenographer, will you read it?

(Repeated by the stenographer as follows.) "I got it all in black and white. I got so many customers I don't even know on that day what I got."

The Witness: What I sold. The man asked me. I don't know who is who. He asked me if I got any more customers that day. I have to make each sale slip out for my customers for my company, so it must be black and white, what I call it.

Mr. Reed: Like this (indicating slip of paper).

The Witness: Like that.

Q. You left at five o'clock, didn't you? A. I left the airport to bring Mr. Carraher up.

Q. What time did you leave the airport? A. About five o'clock, but not for home.

Q. I don't care where you were going to go. You started your motor after the plane took off, didn't you? A. Yes, sir.

Q. On the last flight? A. Yes, sir.

Q. Is that the fact? A. Yes, sir.

Q. And when the plane—this plane that crashed—when it took off—you know what I mean by "take off"? A. Yes, sir.

Q. When it took off where was the driver or the other fellow standing? A. By my truck.

Q. Where were you standing? A. I was inside of the truck.

Q. Inside the truck. Were you looking at the aeroplane as it took off? A. Yes, sir.

Q. The motor was shut off at that time, wasn't it? Your motor did not run then? A. My motor, that's right.

Q. It was not, was it? Then you saw the plane take off? A. Yes, sir.

Q. How long did you stay there after the plane took off on the last flight? A. As soon as he passed us.

Q. How long? A. When it passed us I went and brought Mr. Carraher up.

Q. How far did you have to go to get him? A. To get who?

Q. Mr. Carraher. A. He was standing right next to the truck.

Q. You said as soon as the plane took off I went to get Mr. Carraher? A. I told him to get in and the time was by five o'clock.

Q. Then he got up into the truck and sat down beside you, is that right? A. That's right.

Q. Who was at the driving wheel? A. I.

Q. Then you started your motor, is that right? A. Yes, sir.

Q. Then you pulled out of the airport? A. Yes, sir.

Q. And you started to go up the highway? A. Yes, sir.

Q. Is that right? A. Yes, sir.

Q. And when the plane was crossing the viaduct you were right near the South Street drop, weren't you? A. Pretty near.

Q. About fifty feet? A. That is not where I stopped.

Q. One hundred feet? A. More.

Q. One hundred and fifty feet? A. More.

Q. Will you tell us then? A. Quarter of a mile for sure.

Q. How far is the airport from the South Street drop? A. I think it pretty near a mile.

Q. Are you sure of that? So that you were about three quarters of the distance from the airport to South Street, is that right? A. Yes, sir.

Q. So that from the time the plane started, you saw it take off, it was already in the air over your head at the airport, you then called Mr. What's-his-name, the helper or driver, he got into the truck and you started off with your load of a half of a load of gasoline and had gone about three quarters when you first saw the plane crossing the viaduct is that true? A. Yes, sir.

Mr. George: That is all.

Re-direct examination by Mr. Reed:

Q. Can you indicate—do you understand that survey? A. I never saw the map.

Q. You say then at the time you last saw it you were a quarter of a mile from South Street drop? A. That's where Carraher told me to stop. I went over and pretty near stopped fifty feet ahead of the viaduct.

Q. When you drew it up to the curb? A. Yes, sir.

Q. That is where it was when you finally brought it to a stop after Carrher told you to do it? A. Yes, sir.

Mr. Reed: I would like to note, if the Court please, that seventeen inches from the intersection of South Street on the map—seventeen inches from the intersection would be thirty-four hundred feet. I think a mile is five thousand two hundred and eighty feet.

The Court: It used to be.

EDWARD WEATHERDON, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Reed:

Q. Are you a flyer? A. Yes, sir.

Q. When did you start flying? A. During the war, 1918.

Q. Were you in the service of your country? A. Yes, sir.

Q. As a flyer during the war? A. Yes, sir.

Q. Where did you get your training to be a flyer? A. I got my ground training at Cornell University, flying training in Louisiana, Lake Charles, Louisiana.

Q. Not so fast. A. My flying training at Lake Charles, Louisiana.

Q. Where did you get your wings? A. Lake Charles, Louisiana.

Q. In the service? A. Yes, sir.

Q. Then what did you do? A. Why, when I graduated from flying school I was made an instructor at Lake Charles. I stayed here about a month and I was transferred to Florida as instructor, Carston Field, Florida, and stayed there for the rest of the war.

Q. How long were you in the service during the war, in the flying service? A. About fourteen months.

Q. And after that did you do some flying? A. Yes, sir.

Q. Tell us about some of it? A. Well, I did a little barnstorming, flying at county fairs, meetings and things like that.

Q. Hopping? A. Yes, sir, taking up passengers. I have been flying steady practically ever since the war.

Q. How many hours of flying time have you at the present time? A. Oh, about five thousand.

Q. Five thousand hours? A. Somewhere around there.

Q. How many hours flying time on tri-motor aeroplanes have you? A. A little over two thousand.

Q. What? A. Over two thousand.

Q. By whom are you employed at the present time? A. American Airways.

Q. What is the nature of your work in your employment by the American Airways? A. I am pilot in the Tri-motor Line, New York to Boston.

Q. How many tri-motor Ford aeroplane trips have you made between New York and Boston? A. One thousand.

Q. One thousand round trips? A. About five hundred round trips, I would say.

Q. Are you in that regular service at the present time? A. Yes, sir.

Q. Flying passengers. What do you fly? A. I fly mail and passengers between New York and Boston.

Q. How many trips do you go to Boston and back? A. Every day, a round trip a day.

Q. You are not going today? A. I might.

Q. With passengers? A. Yes, sir.

Q. Do you use a tri-motor passenger plane? A. Yes, sir.

Q. Were you there yesterday or the day before? A. No, sir. I was coming down from Boston the day before yesterday. I had yesterday off.

Q. Yesterday was Sunday? A. Yes.

Q. Were you familiar with the tri-motor Colonial plane in question? A. Yes, sir.

Q. Were you in 1929 in the employ of the Colonial Western Airways at that time? A. Yes, sir.

Q. Did you at some time in 1928 go out west to the Ford Tri-Motor factory, the Stout Metal Airplane Company? A. Yes, sir.

Q. In relation to the purchase of this plane that had the accident on the 17th of March of the following year? A. Yes, sir.

Q. Do you remember the date you went out there? A. It was the latter part of September. I believe I took delivery on this ship September 28th.

Q. When you went out there, what did they first do with reference to your flying this particular plane? A. Well, they tried me out to see if I could fly it before they would give it to me.

Q. What did they do in that connection? A. Well, I believe I made two round trips to Chicago and they gave me landings at Chicago to see if I knew how to handle it, and they gave me final check at Dearborn on the morning of the twenty-eighth.

Q. What is that last? A. They gave me final check at Dearborn on the morning of the twenty-eighth. That is where the ship is made. On the twenty-eighth of September.

Q. Who tested or checked you? A. Mr. McGee gave me the final check.

Q. He was their test pilot at that time? A. Yes, sir.

Q. Did you have those flights to Chicago in a tri-motor Ford plane? A. Yes, sir.

Q. After you had been checked out at Dearborn by their chief check pilot, then did they deliver to you this particular tri-motor Ford we are interested in? A. Yes, sir.

Q. 41, was it? A. I believe so. I am not sure.

Q. You purchased that plane on behalf of the Colonial by whom you were then employed? A. Yes, sir.

Q. Do you remember the amount that was paid for it? A. I believe I took a certified check for $55,000.

Q. This plane was purchased for $55,000 in September, 1928?

Mr. George: He does not say that was the cost of it. He said he took a certified check for $55,000. That is the extent of his answer.

The Witness: That was the cost.

Q. Was that the cost of the plane? A. That was the cost of the ship.

Q. And that check did not pay for anything else? A. Not that I know of.

Q. On the delivery of that check was the plane delivered to you? A. Yes, sir.

The Court: It was a brand new plane?

The Witness: Brand new.

Q. Did you fly that particular plane at the Dearborn Airport? A. Yes, sir. I went through the final check in that ship.

Q. You checked the ship? A. Yes, sir.

Q. They first checked you and you checked the ship? A. The ship was not completed when I first went out there. I saw the ship being made.

Q. Did you become familiar with it? A. The best I could. They showed me everything they could.

Q. Then, when it was all completed was it checked and tested by their tester pilots? A. Yes, sir.

Q. Did you see that done? A. Yes, sir.

Q. Did you yourself fly in it out there before accepting it as a proper ship? A. Yes, sir.

Q. How did you find it as a ship, as to its qualities?

Mr. George: I object to that as being to remote, September of the year before.

The Court: Overrule the objection.

Q. How did you find it as to air worthiness? A. Very good ship.

Q. Did you fly the ship after that? A. I took delivery on it and brought it home.

Q. Took what? A. Took delivery of the ship.

Q. What does that mean? A. They turned it over to me and I took it home.

Q. Where did you fly it? A. I went from Dearborn to Buffalo to Albany on the twenty-eighth, I believe it was. Then I went to Montreal on the next day.

Q. Where did you go from there? A. I stayed in Montreal two or three days, then returned to Albany. I stayed in Albany for the opening of the airport and then went to Buffalo.

Q. On the opening of the airport you flew the ship, did you? A. I took passengers up. At all my stops I would take passengers up.

Q. I didn't hear that? A. At all my stops, Montreal, Albany, I would take passengers up.

Q. You mean hopping trips? A. Yes, sir.

Q. Did you have any well known people fly in that plane?

Mr. George: That is objected to.

The Court: In the plane?

The Witness: In the plane.

The Court: Sustain the objection.

Q. What did you do at Montreal? A. Why, I went up to Montreal for the opening of the Canadian Mail run, and they turned the ship over to the Canadians and anybody could ride in it who wanted to free of charge.

Q. The Canadian people? A. Yes, sir.

Q. How many people did you take up there approximately? A. I don't remember off hand.

Q. Did you have a mechanic with you? A. Yes, sir.

Q. Then where did you go from there? A. From Montreal?

Q. Yes? A. I came down to Albany for the opening of their airport.

Q. From Albany where did you go? A. To Buffalo.

Q. What did you do at Buffalo? A. Took up passengers.

Q. Hopping trips? A. Yes, sir.

Q. Many of them? A. Quite a few. I was there for pretty near a month, I believe. Two weeks, anyhow.

Q. Hopping trips with passengers? A. Yes, sir, day and night.

Q. By the way, when you went to Montreal from Albany with passengers, had you ever been to Montreal before? A. No, sir.

Q. Were you familiar with the terrain of Montreal? A. No, sir.

Mr. George: May I object? I cannot see the relevancy of the terrain in Montreal in September of 1928.

The Court: I don't think you have proven anything, but you alleged this pilot Foote was not sufficiently familiar with the terrain, and here is a pilot who flew there with-

out knowing anything about the terrain. All right. Go ahead.

Q. Had you ever been to Montreal by train? A. No, sir.

Q. Had you ever seen anything about Montreal? A. No, sir.

Q. Then you went to some other places? Syracuse, Rochester, Buffalo? A. Well, I went to Buffalo. Then I came back to Rochester, Syracuse and Schenectady.

Q. When you were in Buffalo did you take any trips there? A. Yes, sir.

Q. Where did you fly in that country? A. All around Buffalo. Over the Niagara Falls.

Q. Had you ever been to Niagara Falls before? A. Never in my life.

Q. Had you ever been up and studied the terrain or landing place in Niagara Falls? A. No, sir.

Q. Did you take passengers in this very Ford tri-motor plane over Niagara Falls? A. Yes, sir.

Q. You had never made any landings there? A. No, sir.

Q. Was Buffalo new to you? A. Yes, sir.

Q. How many days were you hopping, approximately, in the vicinity of Niagara Falls and Buffalo? A. Well, we worked out of Buffalo. We went to Niagara Falls from Buffalo. I don't remember. Two weeks or a month, something like that.

Q. Was Schenectady also new to you when you went there in this particular plane? A. Yes, sir.

Q. You went all over there with passengers? A. Yes, sir.

Q. Ultimately did you bring that ship down to Newark after your hopping trip with passengers in the State of New York? A. Yes, sir.

Q. Approximately when did you bring the plane to Newark Airport? A. The early part of November, I believe.

Q. During all this time how had the plane functioned? A. Very well.

Q. How was the plane as to air worthiness? A. Very good.

Q. After you came to Newark what work did the plane do? A. Just hopping work. Hopping. Carried mail. Charter trips. That was all.

Q. When you went on a charter trip where would it go? A. Any place that the people wanted me to go.

Q. Did you hesitate to go to places you had never been to before with charter trip passengers? A. No, sir, not since I knew there was a good airport there.

Q. Not since you knew there was a good airport there. Back in 1929, in March, how did the Newark Airport compare as to size with other airports about the country? A. Fair. About as good as most of them.

Q. It has been testified the Newark Airport was small. Was it any smaller, comparatively, than other airports, or was it of the approximate size as of that date? A. I think it was about the normal size.

Q. Did you have a man taking care of the plane for you by the name of Adam Wtorkowski? A. Yes, sir.

Q. Where did Adam Wtorkowski first become associated with your plane? A. I believe it was some time in October, 1928. He started with me in Buffalo.

Q. He started in Buffalo? A. Yes, sir.

Q. What were the duties of Adam Wtorkowski in connection with that plane? A. He had complete charge of the servicing and care of it.

Q. Of the servicing and the last? A. And the care of it.

Q. Did he take care of it? A. Very well.

Q. Did he keep your engine functioning normally during those trips, hopping trips or charter trips? A. Perfectly.

Q. Did you at any time from the time when you first took over the plane at Dearborn, Michigan, down to the day of the accident have any serious trouble of any consequence with any motors or any parts of that plane? A. No, sir.

Q. Now, what was your method that you adopted as to hopping trips at Newark or at other places? I mean by that, did you have any definite schedule for leaving the port for a trip? A. No, sir.

Q. Did you have any advertised time when the plane went on a trip? A. No, sir.

Q. Who decided when you would make a trip? A. Myself.

Q. As the pilot of the trip? A. Yes.

Q. Were you continuously the pilot of that trimotor Ford plane from September, 1928, when you took it over at Dearborn down to the seventeenth of March, 1929? A. Practically, yes.

Q. You personally flew it on those hopping trips? A. Yes, sir.

Q. And from the time Adam Wtorkowski joined you at Buffalo in 1928 was his entire time devoted to the care and maintenance of the engines and mechanical parts of that aeroplane? A. Yes, sir.

Q. Well, did you have any occasion to refuse or reject passengers by reason of the number—limited number or anything of that kind on those hopping trips? A. Yes, sir. The weight of the ship controlled that. The gross load, and if we

didn't want to—didn't have over eight we would not take-off. We would return the money.

Q. Assume, if you please, six people got in that ship and no more came? A. Well, if we did not get any more we would most likely return their money to them because it would not pay us to take up six.

Q. You estimate the expense of gasoline and so forth on the trip would not pay you if you took any less than eight? A. That is it.

Q. Will you tell us please whether or not on occasions you declined to go up whether or not a lesser number than eight purchased tickets? A. If I had refused less than eight?

Q. Yes. A. Yes, several times.

Q. What did you do then? A. Returned their money to them.

Q. On any hopping trip was there any particular destination? A. No, sir. Up over New York, if we were in Newark.

Q. Would you vary your trip on any occasions? A. Yes, sir.

Q. Was there any other occasions when you declined to take any particular passenger for any reason at all on those hopping trips from Newark and from other places? A. If a person is intoxicated we would not take them or if any fellows came out who were noisy and who we thought would disturb the other passengers we would not take them.

Q. Did you ever have any occasion of refusing a person because of their large weight? A. Yes, sir.

Q. Have you done that? A. Yes, sir.

Q. Did you use your own good judgment, or your own whim, if you please, of accepting or re-

jecting a person even though they bought a ticket? A. Yes, sir.

Q. How long—for how long a period had hopping trips been made over New York from Newark Airport? A. For about from the time I arrived until the time of the accident.

Q. Can you tell us approximately the total number of hours the ship had made from the very time of its purchase down to the time of the accident? A. About two hundred and seventy, I believe.

Q. And was that kept accurately by you? A. Yes, sir.

Q. How and where was it kept? A. In the ship log book and my personal log book.

Q. In other words, if the plane actually flew ten trips on a certain day of fifteen or twenty minutes, that would be that many minutes altogether, ten times fifteen, one hundred and fifty minutes? A. Yes, sir.

Q. How long a trip was it on a hopping trip from Newark Airport over New York and return? A. It varied from fifteen to twenty minutes.

Q. Now, coming down to the time in March, 1929, how was your aeroplane functioning at that time? A. It functioned very well all the time I had it.

Q. And on the seventeenth day of March, 1929, how was it functioning on that very day? A. Very well.

Q. As you observed it? A. Very well.

Q. Do you remember about the gas that was put into the plane about what time it was? A. Why, I believe it was about one o'clock, that's all.

Q. What kind of gas was used on it? A. Aeroplane gas, the best we could get.

Q. And has aeroplane gas some better quality than the ordinary automobile gas we use in our automobiles? A. Yes, sir.

Q. Were you familiar with the method and care that was adopted for keeping it clean? A. Yes, sir.

Q. Tell us about that. A. Well, we always carry a strainer of our own and we strain our gas as it is put in the tank, with a chamois strainer. We get it from the gas truck. We strain through our own chamois strainer before going into the tank.

Q. Was that in addition to the strainer used by the gas companies themselves? A. Yes, sir.

Q. Can you picture the aeroplane as you sit in that cockpit there? Can you picture that? I want you to describe it to the jury. First, the cabin. What was the capacity for passengers in the cabin? How many? A. In this particular ship I believe there were nine seats and a bench, a bench at the rear by the door.

Q. The bench carried how many? A. Four.

Q. So that in the cabin here there was a capacity for thirteen passengers? A. That's right.

Q. The ship was built for that capacity, was it? A. That was my understanding.

Q. In the cockpit, how many seats were there there? A. Two.

Q. So that then that ship had a carrying capacity of fifteen persons all told? A. Yes, sir.

Q. Tell us about the gas tanks. How many were there? A. Three gas tanks, two main and one reserve up in the wings over your head.

Q. Where was the reserve tank? A. In the middle. In the center section.

Q. And two side tanks? A. Two side tanks situated like this (indicating) and the reserve was right in the middle.

Q. What was the capacity approximately of each one of those tanks? A. I believe the main tanks each held one hundred and ten gallon, the reserve twenty-five.

Q. How did you usually fly, Captain Weatherdon? How did you usually fly? I mean, was the reserve tank kept in reserve or what did you use in flying? A. We flew on the two outside tanks, leave them on at all times.

Q. You had the two outside tanks on at all times? A. The reserve tank turned off.

Q. How were they on the seventeenth of March, 1929? A. Both turned on.

Q. The two outside tanks? A. Yes, sir.

Q. Now, assuming that for any reason one flowed out faster than the other, what happened in those tanks as to the level of the gas? A. It would equalize each other.

Q. When you say it would equalize, do you mean the gas arrangement was so if one drained out faster than the other there would be the same level just the same? A. One gas tank would flow from the high tank to the low tank.

Q. Where were the stop cocks that turned them on or off? A. Right behind your shoulder. The left tank was right behind your shoulder, the right tank was over here to your right (indicating).

Q. Were the stop cocks convenient of access? Were they not? A. Right over your shoulder.

Q. It has been testified here by Colonel Chamberlin it was with some difficulty you could reach the stop cocks on that plane. Was it? A. No. They are right behind your shoulder. One is right behind your shoulder, the other is over here to the right away from your shoulder.

Q. Any trouble at all to turn them out? A. No, sir.

Q. Where was the emergency tank stop cock? A. Right above the right one.

Q. Any difficulty in a man sitting in his plane turning that cock on at any time— A. No, sir.

Q. —in flying?

The Court: Were there three and a reserve or two and a reserve?

The Witness: Two and a reserve. Two large tanks and one small one.

Q. The two large tanks were kept on all the time? A. Yes, sir.

The Court: The small tank contained how much?

The Witness: Twenty-five gallons.

Q. That made two hundred and thirty-five gallons altogether? A. Two hundred and forty-five.

Q. The reserve tank is thirty-five? A. Twenty-five.

Q. Two hundred and forty-five gallons altogether. Now, what does gasoline weigh a gallon? A. Six and one half pounds.

Q. On a twenty minute trip how much gasoline is used approximately? A. About fifteen to twenty gallons. Those motors burn up about twelve to fifteen gallons an hour. That would give you twelve to fifteen gallons on a twenty minute trip.

Q. How many trips did the aeroplane take that day altogether, the day of the accident? A. With passengers?

Q. Yes. A. Nine, I believe. It was on its tenth trip when the accident happened.

Q. Where did you fly the ship the first thing that day? A. I brought it over from Miller Field.

Mr. George: From where?

The Witness: Miller Field, Staten Island.

Q. You lived at Staten Island? A. Yes, sir.

Q. You are a married man? A. Yes, sir.

Q. You would go home in the plane at night? A. That is right.

Q. In the morning you would take the plane from Miller Field near your home in Staten Island across to Newark? A. Yes, sir.

Q. So that on this day you flew from the Miller Field to the Newark Airport? A. That is right.

Q. About what time? A. Oh, I say between ten and eleven, somewheres in there, no set time. I don't remember off hand. We used to go over about between ten and eleven thirty, somewheres in there.

Q. Now, had your mechanic checked that plane, your motors, prior to that, that day? A. Yes, sir. He did it every morning.

Q. Just tell us what he did every morning in checking the plane before you made your start from your home airport over to the Newark Airport.

Mr. George: I object unless the answer is based on personal knowledge.

The Court: Upon your personal knowledge.

Q. Have you seen him do it many times? A. Yes, sir. He would check all the controls, both inside and out, check the motors, check the gas and oil, then he would run the motors up to make them warm, he would run them up and tell me the condition, tell me the condition of the ship and the motors, the amount of gas and so on.

Q. And were there other times also when he would do other work on the motors, on the ship,

and other parts? A. When the ship did not fly he would work on it, checking the motors, checking each part.

Q. Were there substantial periods in the week when it did not fly?

Mr. George: May I ask counsel not to lead?

The Court: He is not leading.

The Witness: We used to repair the motors during the week. Our man does the work, except Saturdays and Sundays and holidays. When the ship was not in use the mechanic usually checked it over.

Q. Did this man Wtorkowski spend his entire time in working in the care of that ship? A. Yes, sir. That is all he did.

Q. Did he have any other work in any other ship or any other aeroplane at all? A. No, sir.

Q. So, then, on the morning when you took your plane out of the hangar on March 17, 1929, what was the condition of that ship mechanically? A. Excellent.

Q. As you flew it over to the airport, what was the condition of that ship as to air-worthiness on that day? A. Excellent.

Q. Was there anything wrong with any motor at all? A. No, sir.

Q. When you landed at the Newark Airport, what was done there? Who went with you, first? A. I don't remember offhand. I believe I had three of four men with me, fellows used to help us over at Newark, plus Mr. Wtorkowski.

Q. Do you remember when the first trip was made? A. No, I don't know the exact time. Somewhere between eleven and twelve, I would say.

Q. There has been testimony some time around the first trip on that day there were a total of two or three mechanics or others gathered around the left motor. Was there any special incident or circumstance in any way in reference to the left motor on the morning of the 17th just prior to your first trip? A. No, sir.

Q. Did Wtorkowski have somebody to help him? A. You mean as a mechanic?

Q. Yes. A. He might have a man from Miller Field give him help on large things he couldn't handle himself, when one man could not do it.

Q. Did you, with Wtorkowski at any time there before that first trip gather around any particular motor in reference to any trouble at all on or about the left motor? A. No, sir.

Q. Who flew the ship on the first flight on the 17th? A. I did.

Q. Was anyone with you? A. Passengers, plus one of the new pilots named Wonsey.

Q. Where did you go? A. Up over New York some place.

Q. Did you vary those trips over New York, sometimes over the business section downtown, other times over Central Park and other places? A. If a passenger asked for any certain place we generally take them there. We had no special place to go.

Q. You just strove to please? A. That is the idea.

Q. Did you from time to time, when possible, usually go flying with full loads? A. Yes, sir, most all the time.

Q. How many trips did you make in this particular plane on that day of the accident? A. Six, including one from Miller, I believe.

Q. Including the trip from Miller's? A. I made one trip with Wonsey, four with Foote.

Q. First from Miller Field to Newark? A. That is right.

Q. Then you made a trip with Wonsey and how many with Foote? A. Four.

Q. How did the plane act on the trip with Wonsey? A. Very well.

Q. Now, going now to the—oh, yes—when you are starting off, is there a period of time in the beginning of the day when the motor is warmed up, you have your wheels chocked and you rev it up and down and so forth? A. Yes, sir.

Q. Tell us about that, please? A. Well, generally we start the ship in the morning. We take it and warm the motor slightly until the oil warms up and the cylinders get warm, gradually increase the speed until it gets full speed, then we try both magnetos, see if they are working and turn it off, shut it down and let the gas run out of the motor. From the center and left—the three motors would be the same way, run each one up separately.

Q. How high do you run them up when it is on the ground and the wheels are chocked? A. Full speed on the ground.

Q. By the way, are you a licensed transport pilot? A. Yes, sir.

Q. Licensed by your government? A. Yes, sir.

Q. How long have you been so licensed by the government as a transport pilot? A. Since licenses came out.

Q. That was in what year? Do you remember? A. I believe it was in 1927.

Q. You were flying long before that? A. Yes, sir.

Q. Before that they had letters of authority, before the licenses, did they not? A. For about a year, I believe, yes.

Q. Now, on these hopping trips do you have any lighter equipment than the ordinary ship's equipment? A. Well, we used to take all the tools and cases, baggage, take everything out of the ship except the necessities for flying.

Q. And in your earlier flights on the 17th of March were they full loads? A. I believe some of them were, yes.

Q. And were they without the extra equipment? A. Yes, sir.

Q. And, of course, as the ship flew more trips that reduced the weight from the gasoline, did it not? A. Yes, sir.

Q. At the rate of six and one-half pounds to the gallon? A. Yes, six and one-half pounds to the gallon.

Q. You spoke about revving up the motors and revving them down, and then about the magneto. I ask you do you attempt to synchronize the motors while the ship is on the ground? A. No, sir.

Q. It has been testified here that while the ship was on the ground for the morning trip, the first trip, half past eleven or twelve o'clock, that the motor did not synchronize. Do you synchronize them at all at such a point of time while you are standing on the ground? A. No, sir.

Q. Do you make any effort at all to have your motor synchronized as to the even number of revolutions per minute in that straight position? A. No, sir.

Q. When and where are the motors synchronized? A. Not until you are up in the air and made your first turn.

Q. And just what does that mean "synchronize"? A. It means having all run smoothly so that one does not run faster than the other.

Q. You wait until you get up in the air and made your first turn, then you bring them all to the same running speed? A. Not necessarily your first turn, but when you are in the air, after you are up about five or six hundred feet.

Q. So, they are not synchronized on the ground at all? A. No, sir.

Q. Did the motors on this ship on these trips that you made before the last—before the accident, did they synchronize as you attempted to synchronize the motors? A. Yes, sir.

Q. Did you have any trouble synchronizing the motors on that ship at all on that day? A. No, sir.

Q. Tell us about the trip with Mr. Foote, the other pilot. You say you made four? A. You mean you want me to tell about the trips with Foote?

Q. Yes. What did you do with Foote on his first trip? A. He knew all about the aeroplane.

Mr. George: I ask that that be stricken out.

The Court: Yes, strike out "he knew all about the aeroplane".

Q. Just what was done? A. I told him about the rules of the airport——

Q. On the first trip who flew the ship? First, who took it off first? A. I took it off and landed it.

Q. What? A. I took the ship off.

Q. And landed it. After you took it off and landed it where was Foote? A. Sitting on my right.

Q. Dual controls? A. Yes, sir.

Q. After you took off the ship on the first flight, what did you do then when you were in the air?

A. I showed Foote all the points of interest around.

Q. By "points of interest" what do you mean? A. Showed him the terrain, the swamp, the railroad tracks, the places he might land.

Q. Points of interest to you aviators, to you fliers operating the ship? A. Yes, sir.

Q. What was the terrain you showed him that was swamps and so forth? A. Well, I showed him all the terrain around the airport, showed him the Jersey City Airport, and there is a park down here, I believe they call it the Hudson County Park in Jersey City.

Q. That is, you showed Foote, who was in the plane at the time of the accident? A. Yes, sir. Showed him Central Park, showed him the filling alongside of the Hudson River up around 70th Street, showed him Governor's Island. Those are the possible places to get a landing. I showed him about where people would like to fly. Told him the airport rules, told him the company rules.

Q. Not what you told him or what you said, just in reference to landing places, emergency landing places and so forth? A. The ones I just mentioned are about all I told him.

Q. Were there swamps about the Newark Airport? A. All swamps around there.

Q. Then did you observe how he handled the ship? A. He handled it very well.

Q. After you had given him your instructions, told him the different things, tell us whether or not you turned the ship over to him? A. On the next three trips he flew it himself. I just sat there and watched him.

Q. And did you observe him make landings and take-offs? A. Yes, sir.

Q. How were his landings and how were his take-offs? A. Very good.

Q. How did he fly the ship? A. Very well.

Q. Did you observe the turns, the manner in which he made the turns to the right? A. Yes, sir.

Q. What kind of turns did he make as he made his turns? A. Nice gentle turns, smooth gentle turns.

Q. How did the ship respond under his handling of the aeroplane? A. Very well.

Juror Number Five: Did he have passengers?

The Witness: He had passengers.

Q. Did he have passengers during these trips? A. Yes, sir.

Q. You had passengers on all those trips, did you not? A. Yes, sir.

Q. And some of them full loads? A. I believe all of them were full loads.

Q. And the passengers reposed in the seats in the cabin in the usual way? A. Yes, sir. It did not make any difference where they sit.

Q. The full capacity of thirteen in that cabin? A. Yes, sir.

(Recess until two o'clock P. M.)

(After Recess, 2 P. M.)

Mr. Reed: If the Court please, by consent of counsel we have a Weather Bureau man, Professor Ball, whom we would like to call out of order. He has some meteorological engagement.

Mr. George: I have no objection.
The Court: All right.

HOMER W. BALL, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Reed:

Q. Professor, what is your full name? A. Homer W. Ball.

Q. What is your profession? A. Meteorologist.

Q. How long have you been a meterologist? A. About twenty-six years.

Q. Are you in the employ of the United States Government? A. Yes, sir.

Q. Where is your present station? A. Newark Airport.

Q. Where were you stationed on the 17th of March—in March, 1929? A. Royal Center.

Mr. George: Where?

A. Royal Center.

Q. Have you on your person the subpoena for the records of the United States Weather Bureau taken at Hadley Field or at Newark on or about the 17th of March, 1929? A. I have, yes, sir.

Q. Have you them with you? A. I have.

Q. What are they? A. I don't understand that question.

Q. What are they that you have? A. I have the records of wind velocity, ceiling, the temperature, visibility and general weather conditions.

Q. And where were these records that you hold in your hand taken? A. At Hadley Field.

Q. How far is Hadley Field from Newark Airport? A. About twenty miles.

Q. In what direction? A. Southeast.

Q. Are you able to give us the wind velocity on the afternoon of March 17th? A. Yes, sir.

Mr. George: May I interrupt here, your Honor, to inquire whether this witness is referring to records kept by him or whether they are merely records of the Weather Bureau? I understood the witness to say in March, 1929, he was somewhere else. Is that a fact?

The Witness: That is right.

Mr. George: So I take it the records for this particular section and from which you are now reading were kept by somebody else?

The Witness: Kept by assistants in the station, yes, sir.

Q. Are they official records of the United States Government? A. Yes, sir, official records.

Q. Were those records that were kept by Hadley Field and were they used by aeroplanes in the vicinity of Newark? A. Made primarily for aviation.

Q. To guide aviators as to wind and weather conditions? A. Yes, sir.

Q. What was the wind velocity at five o'clock on the afternoon of March 17th, 1929——

The Court: At Hadley Field.

Q. —at Hadley Field? A. About thirty miles an hour.

The Court: At what time?

Mr. Reed: At five o'clock.

Q. How high was the recording instrument at Hadley Field at that time? A. About fifty feet above the ground.

Q. Have you the wind velocity of the ten minutes prior to five o'clock? A. No, sir. These were taken on the hour. That is at the hour under five o'clock, but the wind velocity there would not be any particular difference than ten minutes previous.

Q. It would be substantially the same? A. It would be substantially the same, yes, sir.

Q. At 30 miles an hour? A. Yes, sir.

Q. What was the ceiling? A. The ceiling is unlimited.

Q. Just what does that mean? The sky is the limit? A. That means the sky is the limit, yes, sir.

Q. What was the other word you used? A. Visibility.

Q. Yes. A. That was unlimited also.

Q. Unlimited visibility, unlimited ceiling, wind thirty miles an hour? A. Yes, sir.

Q. Will you tell us please, whether or not it was a steady wind or what kind of wind it was? A. Practically steady. Two hours previous to five o'clock is thirty miles an hour, at three o'clock and also four o'clock. At six o'clock it was thirty-five; at seven o'clock it was twenty-five.

Q. Then, at three it was how much? A. At three it was thirty.

Q. At four? A. At four it was thirty.

Q. At five? A. At five it was thirty, yes, sir.

Q. I am not interested after that. Was it a steady wind of thirty miles an hour then at those times? A. Yes, practically so.

Q. As recorded by the government officials—or by the instrument? A. Yes, sir.

Q. And noted by the proper government officials? A. Yes, sir.

Q. At Hadley field? A. That is right.

Q. Were any records kept at Newark at that time? A. Not on that particular date.

Q. That is what I am asking about. A. No, sir.

Q. Then, if a plane wanted to go to New York or to Boston or Chicago to what field would they refer? A. They would refer to Hadley Field.

Q. From the records you are giving? A. Yes, sir.

Q. So a plane taking off from Newark Airport desiring to get a finding on the weather condition would refer to this record? A. Yes, sir.

Q. That shows thirty miles an hour steady wind at five o'clock on the 17th of March, 1929? A. Yes, sir.

Mr. Reed: Your witness.

Cross-examination by Mr. George:

Q. What was the wind velocity between five and six o'clock, Professor Ball? A. We have no record particularly between five and six. We have it at five and at six.

Q. You were in the trial in Newark which you recall being a witness in, don't you? A. Yes, sir.

Q. This question—576—bottom of 575—"What was the direction and velocity of the wind at five o'clock?" A. "Northeast thirty." Right? A. That is right.

Q. "Does that last 30 include from five to six?" A. "That is from four to five." A. That is right.

Q. "At five o'clock?" A. Yes, sir." "Thirty miles an hour?" A. "Yes."

Q. "Northwest wind?" A. "Yes." And by the Court: "Now, between five and six what was

it?'' Witness: ''Between five and six it was northwest thirty-five.'' Was that true? A. That is ending at six. I can't tell exactly when it took place.

Q. You did answer the question that was asked by the Judge: ''Now, between five and six what was it?'' and your answer—you said, ''Between five and six it was northwest thirty-five.'' A. Possibly.

Q. What? A. Possibly.

Q. What was it at six? A. Thirty-five we have it recorded, yes.

Q. How? A. Thirty-five miles at six o'clock.

Q. You don't know, Professor Ball, do you, when, at what particular moment, what period between five and six the wind velocity increased from thirty miles an hour which you said was the wind velocity from three o'clock on? A. No.

Q. You don't know? A. No, I couldn't tell you.

Q. It might have been two minutes after five, might it not? A. Yes, possibly.

Q. And between four and five inasmuch as you have the wind velocity recording only as of the hour, you are not able to tell us what the wind velocity was between four and five, are you? A. It would not be very much greater than what we have recorded. If it had we would have made a special observation.

Q. You are not able to say whether there was any requirement for a special observation? A. No. It would have been recorded here if there had been.

Q. As a matter of fact those records which you are reading are not kept by you? A. No.

Mr. Reed: I object. He has already answered that.

Q. And they were kept by your assistant? A. That is right.

Q. And you are relying merely upon the accuracy or efficiency of your assistant's observation? A. Yes, sir, necessarily so, sir.

Q. What? A. Necessarily so.

Re-direct examination by Mr. Reed:

Q. Are they accurate records as far as you know in accordance with your system? A. Yes, sir.

Q. Did you also in answer to this question immediately following what was read by my adversary say: "Q. So that at five o'clock then on that day the wind was thirty miles an hour?" "A. Yes, sir." A. That is right.

Re-cross-examination by Mr. George:

Q. Just one more question. Those records are taken as of Hadley Field, which is about twenty miles southeast of Newark Airport, is that right? A. That is right.

Q. And the wind in its direction from the northeast had to pass over the City of Newark and over Sonaman's Mountain, isn't that a fact? A. I don't know where Sonaman's Mountain is.

Q. Or, some mountain or some hill in between Hadley Field and Newark Airport, isn't that so? A. No, sir. I don't know of any hill of any size that might be called a mountain in there.

Q. Are you acquainted with the Watchung Mountains? A. I am, yes, sir.

Q. Didn't the wind in its course have to come in contact with the Watchung Mountains? A. Yes, sir.

Q. What is the elevation of the mountains? A. Seven hundred feet.

Q. You want to say to the Court and jury the wind in its progress had—the mountain had no retarding effect on the velocity of the wind? A. But in the distance the mountains are away from Hadley Field it would not.

Q. How far away are they? A. About five miles.

Q. You are not able to say what the wind velocity was fifteen miles northwest of those mountains, are you? A. Northwest of those mountains?

Q. Or the Newark Airport? A. We have no written record at Newark Airport on March 17th.

Q. You are not prepared to say, are you, Professor Ball, that at five o'clock the wind velocity at Newark Airport was under thirty-four miles an hour? A. No. We could not say that except by hearsay.

Q. What? Beg your pardon? A. We could not make a statement in regard to that except by hearsay.

Q. It would not be impossible, even from the records that you have, concerning your knowledge of the territory, for the wind to have been thirty-nine miles at Newark Airport?

Mr. Reed: I object to the form of the question as speculative and problematical.

The Court: It would not have been "improbable."

Q. Yes, improbable? It would not have been improbable, would it? A. Well, I would say for that distance away that is rather a big change from Hadley Field, considering the general conditions of the weather over this section on that date.

Q. But it is not entirely improbable that was or could have been the wind velocity? A. I would say it is improbable. It might not be impossible.

Q. You are not prepared to deny that that was the fact, are you? A. Not from written records I am not.

By Mr. Reed:

Q. Now, then, in your opinion, Professor Ball, given a wind velocity of fifty feet above the ground at Hadley Field, what is probable as to the velocity of the wind at Newark Airport? A. It would be practically the same within two or three miles, possibly.

Q. Then, is it your opinion the wind was substantially and practically thirty miles an hour at Newark Airport? Doesn't this record show it was thirty miles at Hadley Field? A. Yes, sir, I would say that is so.

EDWARD WEATHERDON, recalled.

Direct examination (continued) by Mr. Reed:

Q. Did you have occasion, Captain, to examine the wind or notice the wind on the 17th of March, 1929, in the afternoon? A. Not especially. I knew it was blowing to my estimate about twenty-five or thirty miles an hour.

Q. Was it a steady wind when you observed it? A. Yes, sir.

Q. Are you able to state whether or not in your opinion as an expert flyer a wind of thirty or even thirty-four miles an hour or thirty-nine miles an hour would prevent proper, good flying with a

tri-motor Ford plane? A. No, it would not have any effect on it.

Q. Have you ever flown your plane in more than thirty-five or thirty-nine miles an hour with passengers? A. Yes, sir.

Q. How recently have you flown a tri-motor Ford plane in a wind of that much velocity or even more? A. About a week or ten days ago at both Cleveland and Buffalo.

Q. What was that again? A. About a week or ten days ago at both Cleveland and Buffalo.

Q. A tri-motor Ford plane? A. Yes, sir.

Q. Loaded with passengers? A. Yes, sir.

Q. What was the wind velocity? A. It was around forty at Cleveland and thirty-six at Buffalo.

Q. Now, in any event, given a strong wind, does it have any effect as to the flying capacity of the plane when you are off the ground? A. No, sir.

Q. How high did the hopping trip of the Colonial tri-motor Ford on the afternoon of March 17th—how high did you go over New York City? A. About twenty-five hundred or four thousand feet.

Q. And on these trips that you took on that afternoon, the afternoon of the day of the accident, the one with Wonsey and then three or four times with Foote, how high did that very tri-motor Ford plane and its passengers go on those trips over New York? A. About twenty-five hundred to four thousand feet, somewhere in there.

Q. Did you, as you flew the ship prior to the last flight that you took, experience any difficulty in attaining that altitude? A. No, sir.

Q. And that carried you over the tall buildings in New York City, did it? A. Yes, sir.

Q. And over Central Park, you said, at times? A. Yes, sir.

Q. Coming back you went down around the State of Liberty on the round trip? A. On some of the trips, yes, sir.

Q. And did you experience any difficulty by reason of the wind that did exist on that afternoon as you flew this Ford tri-motor plane with passengers? A. None at all.

Q. Where were you after you left the plane and turned it over to Foote to fly alone without you as an instructor or guide? A. At the airport, around the bull pen or around the ship.

Q. Did you observe those flights with passengers after you turned the ship over to him as he continued to make the flights? A. Yes, sir.

Q. Do you remember how many flights he made without you as instructor or guide? A. Maybe three. He was on his fourth one.

Q. His fourth alone was the fatal one? A. Yes, sir.

Q. Did you observe his take-offs and his landings on those flights prior to the last flight? A. Yes, sir. They were all normal.

Q. Did you observe the course that the plane took on those flights? A. Yes, sir.

Q. On those flights prior to the last flight, how far out did he go before making the turn? A. He would go out about two thousand feet, I would say, make a gradual turn to the right and head for New York.

Q. When you say after getting out two thousand feet the plane made a gradual turn to the right, what do you mean by a "gradual turn"? A. About a ten to twenty degree bank. Just take the ship and turn it around. Just make a gradual turn, not a sharp turn, just a gradual gentle turn.

Q. Now, the northwest wind, the runway in the position it was, the take-off brought you how as to wind? A. Takes you right off into the wind.

Q. Head into the wind? Then, to head your ship to New York, did that require a semi-ircle or a one hundred degree turn? A. About one hundred and eighty degrees.

Q. One hundred and eighty degree turn. Then, to put your ship in the direction of New York you turned to the right? A. Yes, sir.

Q. Were those the turns that were made that day under the wind conditions as you observed them as you saw the plane take off? A. Yes, sir.

Q. Is that the way you made them? A. Yes, sir.

Q. Is that the way Wonsey made it? A. Yes, sir.

Q. Is that the way you saw Foote make it alone? A. Yes, sir.

Q. Was there any difficulty at all as to your visibility either to the right or to the left as you sat in the left hand side and making that turn in a hundred and eighty degrees gradual turn to the right to New York? A. No, none whatsoever.

Q. Did you have plenty of visibility on that day of your terrain as you made your right hand turn in the direction of New York? A. Yes, sir, perfectly. Nothing stopped your visibility.

Q. From your left hand side was your visibility clear and distinct as you made your right hand turn? A. Yes, sir.

Q. Was there any consultation or conference or discussion about any of the motors at any time from the time you brought the plane there until the time of the last take-off? A. None whatsoever.

Q. Was there any difficulty or any trouble over the left motor as defined from any other motor? A. No, sir.

Q. Was the revving up of your motor done just the same on each take-off? A. What do you mean by that? You mean, sir——

Q. I mean go through the same procedure? A. We don't shut the motors off after every trip. If there were passengers we would taxi it, load the plane—load passengers and then go.

Q. You would keep your motor idling? A. Only if there were passengers waiting. If we had fifteen or twenty minutes we would shut them off.

Q. And on this day there were passengers waiting all the time? A. Towards the end.

Q. Your motor was idling during the time you were taking on and letting off passengers? A. On the last five or six trips.

Q. Where were you at the time the last take-off was made? A. Standing out by the ship at the loading platform.

Q. How far away was that from the bull pen? A. Fifty yards.

Mr. George: How many?

The Witness: Fifty yards, about.

Q. Prior to that last take-off something has been said by a witness by the name of Ingold that the plane slid into some mud on the field. Do you recall that incident? A. I don't remember that, no.

Q. How far was the plane from the bull pen altogether? Seventy-five feet, did you say? A. I would say fifty yards, about fifty yards.

Q. A hundred and fifty feet from the bull pen? A. About that.

Q. Did the ballyhoo man, Ingold, have any occasion to go over and assist anybody into that plane from the bull pen? A. No, sir.

Q. Did he go over and assist anybody as you observed, into the plane, leave his bull pen and go over there? A. I didn't see him.

Q. How far were you from the plane when she took off? A. Five or ten feet.

Q. Describe what you saw of the take-off. A. Well, I was five or ten feet from the loading platform when it started to taxi away.

Q. Tell us in your own way, in your own words to the jury just what you saw and what you observed. A. Well, when the ship was loaded and the door closed the ship taxied down to the end of the runway, ran out his motors, turned around and took off, took off right straight down the runway and I watched him until he got off right into the wind——

Q. Yes. A. —and he passed by me, I would say, about thirty-five feet up in the air, then I turned away.

Q. Was there any black smoke coming from any motor? A. No, sir.

Q. Was there any motor missing or sputtering? A. No, sir.

Q. Was there indication as you observed it, as it took off and raised in the air overhead to a height of fifty feet, any indication of any trouble with any motor whatsoever? A. No, sir. If there had been I would have kept watching him.

Q. You turned and directed your attention to something else? A. Well, Wonsey was standing there and I started to talk to him and I walked towards the bull pen.

Q. Where was the ship when you next saw it on that flight? A. Mr. Wonsey said——

Mr. George: I object.

Q. He may say Mr. Wonsey said something to him. A. I would say it was about five or seven hundred feet high and about three quarters of a mile from the airport behind the viaduct.

Q. Something was said to you by Mr. Wonsey who was with you. A. He said, "See, it is coming down."

Mr. George: Wait a minute:

Q. Just, "see, it is coming down?" A. Yes.

Q. Then after that something was said to you, then your attention was directed to the ship and you saw it five or seven hundred feet high? A. About, I say, three-quarters of a mile from the airport over and behind the viaduct.

Q. Can you take the pointer and point to the photographic map, if it is on the map where the ship was at the time you saw it from five to seven hundred feet high? A. I would say roughly about in here.

Mr. George: Make a mark there, please.

Mr. Carpenter: Don't mark that map, will you, Mr. Weatherdon.

Mr. Reed: Roughly indicating a point about South Street.

The Witness: Somewhere around in here, about there.

Mr. Carpenter: About the center of the intersection of South Street and Pennsylvania Railroad, Route 25, and the Lehigh Valley Railroad.

Q. Now, then, what did you then observe about the ship? A. Coming down it seemed to be a normal glide until the accident occurred in there.

Q. Where did the accident occur? A. Right there.

Q. As you observed the ship was it a straight course or what? A. Seemed to be a straight course to me.

Q. How was it as to its keel, that is, did the wings flop, turn to one side and then the other, or how did it go? A. Perfectly normal, perfectly level.

Q. Level keel? A. Down to the very end.

Q. How was the plane going as to speed? A. It seemed to me to be about a normal glide.

Q. From the time you saw it gliding down from a distance of five, six or seven hundred feet high, going down in a normal glide, could you estimate if there was anything to indicate by its speed as to whether or not he had his full power or part power or what? A. No. He might have had part power, but I would not say he had full power.

Q. How much power would you say? A. Well, I could not say that.

Q. He was not going, then, at full speed, is that what you mean? A. No.

Q. He was not at full speed. A. No.

Q. Did he at any time side-slip or anything of that kind? A. He seemed to slip—seemed to fall into a stall just before he hit the ground.

Q. That is out there at this point? A. The ship seemed to pull and fall off on the left wing.

Q. All the way from here to here he kept gradually losing out and going even? A. If anything, it might have been a flat glide than a normal glide. It was a flatter glide.

Q. It was a flatter glide? You mean a glide that— A. He was trying to stretch his glide a little bit, maybe. He might have had some power doing that. It was a rather flat glide, a little flatter than normal.

Q. Now, assuming, Captain Weatherdon, that a plane in this section here at an altitude of five or six or seven hundred feet going along, having made its turn, going towards New York, in the direction towards New York, and that after making his turn the left motor quit and then that the center motor revved down to seven or eight hundred revolutions per minute; what in your opinion as an expert flier was the proper course for that pilot to pursue, given the wind conditions and the full load in his ship on that day?

Mr. George: Objected on the ground there is no testimony in this case that the center motor was revved down or revved up.

The Court: I imagine that there will be. Assuming that there will be I will receive it subject to such proof.

The Witness: The proper thing would be to go ahead.

Q. Will you tell what the reason is for your answer that you would go ahead? A. You have a very heavy ship, a very large ship which does not maneuver as easily as a smaller ship and in making a turn he might lose flying speed and spin in.

Q. In other words, if he had made a turn around about he would have lost his flying speed or might slip in? What is meant by that? A. When the ship cuts around and stalls it has nothing to hold it up. It slides and he goes right on his nose.

Q. That would result in what? A. The same thing we had, a fatal accident.

Q. Result in a crash? A. Yes, sir.

Q. Is that the rule in a case of that nature with that altitude, go straight ahead? A. Yes, sir.

Q. Is that the rule of aviation? A. Five hundred feet, in a ship of that size I would say go straight ahead.

Q. After the accident what did you do? A. I went over to the ship.

Q. Where was it? A. It was by that railroad trestle.

Mr. Reed: Unless there is some objection I will point to where it was.

Mr. George: What was that?

Mr. Reed: The ship.

Mr. George: That's all right.

Q. Is that where it was, right in here? A. About in there.

Mr. George: Somewhere around in there?

Mr. Reed: Yes.

Q. Did you go right over and render assistance? A. I went over. I could not render any assistance because the police would not let me get near it.

Q. Afterwards were they guarded by guards against despoilers of the dead and the ship?

Mr. George: That is objected to. It is not material.

The Court: It would not make any difference. They were guarded and they would not let you in.

The Witness: Yes. It took about a half an hour to get in, because of the mud, garbage dumps and so forth.

Q. What was this terrain in this section? A. Mostly garbage dumps. Garbage dumps and swamps, burning fires.

Q. What is that? A. Garbage fires.

Q. And were fires burning there on that afternoon at this time? A. Fire burning all around Newark Airport all the time.

Q. Was there any decent place around in there where the pilot could land without danger of a crack-up and crash? A. No, sir.

Q. What was the terrain in this section? A. Buildings.

Q. That is Newark, isn't it? A. That is the built-up area.

Q. Up in here you got also swamps and dumps? A. Yes, sir.

Q. Indicating to the left of the photographic map? A. Yes, sir.

Q. Here you have got tiers of railroad tracks, elevated railways, have you not? A. It is a railroad yard.

Q. What was right here, along here? A. There is a railroad track and your telegraph wires.

Q. What kind of wires were there? A. I guess they were telegraph wires. Wires on poles.

Q. What was that last remark? A. Wires on poles.

Q. Do you know whether they were high tension wires or not? A. I don't know that.

Q. Captain Weatherdon, during that six months that you were flying that plane day by day, right or wrong, month after month, week after week, had the engines in that plane ever quit in flights before? A. No, sir, never.

Q. Had you ever had any occasion when your motors went dead or one motor went dead and another one revved down at any time when that plane was in flight down to that trip? A. No, sir.

Q. How had they acted at all times before? A. Perfectly.

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Q. So far as you knew as an aviator in using that plane every day was that plane equipped with the very best type of equipment throughout as of March 17, 1929? A. Yes, sir. The best money could buy.

Q. Did you have any knowledge or notice whatsoever of any defect anywheres in the motor or any mechanical part of that plane? A. No, sir.

Cross-examination by Mr. George:

Q. This plane involved in this crash was known among the aviators of the Newark Airport as the "Funeral plane", wasn't that so? A. Not to my knowledge.

Q. "Flying hearse," is that a fact? A. Some might have nicknamed it that. I don't know anything about it.

Q. Is that because you did carry corpses in that plane on flights?

Mr. Reed: I object.

The Court: Oh, yes, sustain the objection.

Mr. George: All right. I withdraw the question.

Q. Do you recall carrying a corpse in this plane coming down from Buffalo, do you?

Mr. Reed: I object.

The Court: Yes. On the flight from Buffalo did you have motor trouble?

The Witness: Buffalo? I didn't have any motor trouble any place.

Q. Isn't it a fact when you were coming down from Buffalo with the corpse one motor failed?

Mr. Reed: I object.

The Court: Sustain the objection. I take exception myself as to whether there was a corpse in it or not. I don't think a corpse has anything to do with the engine.

Mr. George: The corpse did not have anything to do with it, except that it recalls to his mind the incident as defined from all his other flights.

The Court: In this plane did you make any more than one flight down from Buffalo?

The Witness: The flight he was referring to was from Schnectady, New York, but there was nothing wrong with the ship.

Q. Now, whether it was a corpse or live person is neither here nor there, but is intended only to do the very thing which you helped us with, as recalling the incident I am referring to.

Mr. Reed, Obviously, if the Court please, what some slanderous person may have said because perhaps a plane went on an errand of mercy on some occasion certainly has no bearing whatever on this case.

The Court: Not a bit. Unfortunately it is in such a shape I cannot tell whether there was a corpse in there or a case of wet goods. Whatever was in there would have no bearing on the question before this Court. That is the best I can do. Have we not this question now? You say you made a trip. Now, go ahead.

Mr. George: This was not a trip from Montreal.

Q. Isn't it a fact that one of your motors failed on that trip? A. No, sir.

Q. On the take-off? A. No, sir.

Q. Didn't you have some trouble with it? A. None whatsoever.

Q. Never? A. No, sir.

Q. Now, isn't it a fact that in October, prior to the accident, one of the motors or the cylinders scorched and it had to be replaced? A. No, sir. It was not a scorched cylinder we had, a cracked cylinder which we replaced.

Q. Which motor? A. I forget offhand. I believe it was the left one, but that had no effect on the operation of the motor.

Q. I didn't ask you whether it did or not. By the way, so long as you volunteered that, do you want to tell the Court and jury a cracked cylinder has no effect on the full and efficient functioning of the motor, the crack that was in this cylinder? It was a small crack? A. That is right.

Q. It was sufficient to require taking down the motor and replacing it with a new cylinder? A. We did not have to. We asked for it because it was a new motor.

Q. It was not, therefore, as efficient as the other motors? A. It was.

Q. It was? A. Yes, sir.

Q. With the crack in it? A. Yes, sir.

Q. Weren't there any cracks in the cylinders of the other motors? A. No, sir.

Q. Now, how did you come to notice the crack in the cylinder? A. The mechanic noticed it.

Q. What? A. The mechanic noticed it.

Q. If it did not amount to anything why did you take down the motor? A. It was a new motor. We might still have our service with it.

Q. It would not impair the efficiency of the motor? A. It might eventually.

Q. What do you mean by that? A. Well, if the crack wears. We repaired it but the crack got big.

Q. So as the crack increases as the length of time increases in which the crack remains, it has a tendency to diminish the efficient functioning of the motor? A. Providing the crack gets larger.

Q. Now, Captain, what was the capacity of the ship, authorized by the Department of Commerce under its license? A. Thirteen passengers and crew of two.

Q. Sure about that? A. The license says twelve but the Department of Commerce laws say "seating capacity."

Q. I didn't hear the last part. A. The Department of Commerce said "seating capacity."

Q. How many crew? A. Two.

Q. Never had more than two in that kind of plane to constitute the crew, did you? A. Might have three.

Q. What? A. Might have three.

Q. This one is built for a crew of two, isn't it? A. You can have a steward in the back.

Q. As a matter of fact, any one of the passengers may be utilized and called members of the crew, but so far as the construction of the plane is concerned there are facilities only for two members of the crew, isn't that so? A. Two in the pilot's cockpit.

Q. This license says "seating capacity exclusive of crew twelve", is that right? A. Right.

Q. Not thirteen? A. No.

Mr. Carpenter: The license says twelve.

Q. Isn't that so? A. The license says twelve.

Q. Do you know what that license means as to how many passengers shall be carried in that plane?

Mr. Reed: I object to that. I think that is a legal interpretation, sir.

The Court: Legal?

Mr. Reed: Unless he asks him as to the entire license. He is now only asking as to one line.

Mr. George: Referring to the whole license, every aspect of it, considering the capacity of load, the dead weight, useful load and otherwise——

Mr. Reed: Show him the card.

Mr. George: Here it is, right here.

Mr. Reed: You have it covered up, haven't you?

Mr. George: No. I would not keep it from him for the world, Mr. Reed.

Q. Now, having the whole works before you, Captain, can you tell us what that means? A. Well, it says twelve passengers and crew, but it also gives a gross weight the ship can carry and the Department of Commerce laws at that time said the seating capacity was twelve. The license says plus the gross weight—rather, provided it did not exceed the gross weight.

Q. Then, so far as the law is concerned, as evidenced by that card, it means that you could not carry any more than fourteen persons in that plane?

Mr. Reed: I object to what the law means.

The Court: The number of people in this plane had nothing to do with the crash.

That is the testimony. I shall so tell the jury. The question is what was the weight? The number of people had nothing to do with it?

The Witness: No, sir.

The Court: You could carry sixteen or twenty-six children in there, or you could carry thirteen adults?

The Witness: Yes, sir. Ten thousand one hundred and thirty pounds was the determining factor.

The Court: You were permitted, therefore, to carry what weight? Gross weight?

The Witness: Ten thousand one hundred and thirty pounds, that included the weight of the aeroplane, passengers, gas and oil and equipment.

The Court: That is the gross weight of everything, including passengers?

The Witness: Yes, sir.

The Court: Now, as I very much suspect—we might as well have it right out on the table clearly so we can look at it—that seating capacity——

The Witness: It says "seating capacity exclusive of crew, twelve."

The Court: That is nothing more than contained in our bus licenses that run along the ground, that you must have a seating capacity for that number of persons, isn't it?

The Witness: I don't know.

The Court: That merely shows the number of seating places in the plane?

(No answer.)

The Court: All right, never mind.

Mr. Carpenter: On this thing, this particular thing——

Mr. Reed: May we ask the amount of weight that was taken out?

Mr. George: May I continue with the cross-examination?

Q. What is the total weight of gasoline and oil fully loaded? A. I would have to figure it out. I don't know offhand.

Q. Do you want a piece of paper?

Mr. Carpenter: We have an expert who will give you that later on.

The Witness: It is six and one-half pounds times two hundred and forty-five gallons of gas.

Q. How much—what do you say the total is?

Mr. Carpenter: I could not tell you. We have an expert engineer who will testify to that.

Q. Now, Captain, referring to the number of trips this plane made, the total number is twelve—or, ten, including the last fatal trip, right? A. Well, the one trip from Miller to Newark. I made one trip with Wonsey. Wonsey made a trip with Foote. That's three. I made four with Foote—seven. Foote made three by himself—ten. And, the last one was eleven. Eleven total trips that day, but ten with passengers.

Q. Now, you testified that if the motors while the plane was on the ground did not synchronize it does not make any difference. The synchronization has to occur when it is in the air for it to count, is that right? A. That is right.

Q. How can you tell anything about whether or not the motors will synchronize after the plane gets up in the air if no tests are made while the

plane is on the ground? A. You don't have to. That is a matter of personal ability.

Q. You mean you take a chance that they will work all right? A. No. You try all three of them out on the ground separately. You don't run all three motors together on the ground. You run each one individually and when you get them in the air it is just a question of adjustment until you get them so they sound nice and smooth.

Q. When they sound nice and smooth they are running normally and efficiently? A. They are synchronized.

Q. If one sputters it is not running efficiently? A. No.

Q. If the motor gives off black clouds of smoke intermittently that is an indication to you also as an expert it is not functioning properly, isn't that so? A. That is right.

Q. Now, the capacity of the motors to synchronize after they get into the air may be determined by the revving up while the plane is on the ground, each motor separately, isn't that so? A. You try the motors out on the ground. If they are o. k. on the ground——

Q. Have you answered the question? A. You try the motors out on the ground. If each revs up individually o.k. that is all you got to know on the ground.

Q. That is exactly what I said a moment ago. By revving up you mean you speed it up and watch the tachometer? A. That is right.

Q. If the tachometer indicates, for instance on a high compression J-5 motor it will rev up to 1800 r. p. m's., then it is all right? A. They only run about 1600 on the ground.

Q. Whatever it is, if they run up to capacity and each one runs substantially the same, you

know they are likely and reasonably expected to synchronize in the air? A. Yes.

Q. So that if two motors—the tachometer indicated that two motors while being revved up on the ground showed 1800 and the other one not above 1200, that would be some indication that requires observation or inspection, wouldn't it? A. On two motors you would not get 1800.

Q. Well, assuming that that were the fact, that the other two did run up to 1800 and one made only 1200, that would be an event that would require inspection? A. Yes, sir.

Q. Yes. That indicates, doesn't it, to you, that one motor is not functioning properly? A. That is right.

Q. And it would not be good judgment to take off under those circumstances, would it? A. No.

Q. As a matter of fact with fourteen passengers beside the pilot into even a thirty mile an hour wind, it would be pretty dangerous to take off under such circumstances? A. It would be dangerous to take off under any circumstances with one motor running down.

Q. Well——

Mr. Reed: I object. Let him answer.

Q. Did you answer the question? A. I think I did.

Mr. Reed: I can't hear you. You start the next question while he is still talking. The stenographer may get it, but I don't get it.

The Court: Let us proceed. Let the witness talk.

Q. Even if you had a dead wind, even if you had an unloaded plane, Captain, with one motor

showing the indication that I have illustrated, it would be dangerous to take off, wouldn't it? A. With an empty plane it would not be dangerous. It might be bad judgment.

Q. What do you mean by "bad judgment"? That means dangerous, doesn't it? A. You are talking of without your factor of safety.

Q. If a fellow's motor was sputtering or revving intermittently, that would be an indication to an experienced and careful pilot not to take off, isn't that so? A. That is right.

Q. You saw this plane take off, didn't you? A. Yes, sir.

Q. Will you please be good enough to step down here, Captain, and point out on this survey map, if you can, just what course the plane took up until the last time you saw it on the take-off. A. When it started?

Q. From the airport, just on the take-off. A. He was on the runway here when he started. He came along here, about here.

Q. When you last saw him? A. Just about there.

Q. Let us assume this situation: with the wind as it was—it was a pretty strong wind, that was? A. About twenty-five or thirty miles an hour.

Q. That is considered a fairly strong wind, isn't it? Thirty miles an hour would be considered a fairly strong wind, wouldn't it? A. Fairly strong, but not especially strong.

Q. With fourteen passengers beside the pilot, if he had gone to this point on the survey map marked "I-1" here, and reached that point, an altitude of not more than one hundred and fifty feet, it would not be good safe piloting to make a sharp turn at that point? A. No, sir.

Q. It would be dangerous, wouldn't it? A. Yes, sir.

Q. Almost suicide? A. I would not say dangerous. It would be poor—bad judgment.

Q. Poor judgment because it is dangerous? A. Slight risk.

Q. Risk—some danger is pending? A. Yes, sir.

Q. By the way, without regard to wind, Captain, on the take-off, would you consider it safe piloting to make a turn with an altitude of fifty feet? A. No, sir.

Q. That would be suicide? A. It depends what is ahead of you what would be dangerous or not.

Q. Assume there is nothing ahead of you. However, let us assume to the extent that there is an arbitrary turn taken there with no part of the plane on the turn being any more than three feet from the ground, what would you think of that for piloting?

Mr. Reed: I object on the ground there is no such testimony.

The Court: There is no such testimony.

Mr. George: If the Court please, there has been testimony by a witness to the effect that even——

The Court: No, no. He merely said that it would be all right to make a turn. Not that one was made at three feet.

Mr. George: Oh.

Q. Well, Captain, you do believe, don't you, it would be unsafe—be bad piloting to make a turn at this point if such were the case—I am not stating to you that it was—but if a turn was made at that point on this survey map marked "I-1" at an altitude of one hundred and fifty feet, that would be dangerous.

Mr. Reed: I object to that. It is the same question over again.

Mr. George: If the Court please——

The Court: Let us have it over and out of the way.

The Witness: It would be poor judgment, poor flying judgment.

Q. With a load of fifteen human beings in that sort of a plane on a sharp turn at that point and at that altitude it would be even worse judgment, wouldn't it, if such were the case?

Mr. Reed: This is the third time. There is nothing gained by repeating, repeating and repeating.

The Witness: It would be poor judgment.

Q. By that do you mean dangerous, Captain? A. It might not be dangerous. You might get away with it, then you might not.

Q. If you get away with it, it would be because of good luck?

Mr. Reed: I object to the question. Purely argumentative.

The Court: Sustained.

Q. What do you mean "you might get away with it"? A. Why, because the greatest danger in flying is on the take-off—take-off and immediately after.

Q. I suppose the proper thing to do in a take-off is to go straight ahead until you get enough altitude to meet a situation of emergency, isn't that so? A. That is right.

Q. Then, in making a take-off where it is necessary to go forward far enough to reach a safe altitude, it is better to take off in that area which is not built up as much as other parts, isn't that so? A. That is right.

Q. That is the reason it is preferable to make a left turn on this airport on a northwest runway.

Mr. Reed: I object to the form of the question.

The Court: Yes, sustained.

Q. You testified in your direct examination that you instructed Foote as to the rules of the airport. as to the rules of the company, didn't you? A. Yes, sir.

Q. Now, as to the rules of the airport, what did you say, if anything, to Foote respecting turns on the take-off? A. I told him——

Mr. Reed: I object to that as immaterial and irrelevant.

The Court: No. He said that on direct examination. I took it down, and he said he instructed him as to the rules. In other words, you merely asked what the instructions were.

Q. What were they? A. The rule in this case you can make a turn either way when you are one thousand feet from the airport.

Q. One thousand feet from the airport?

The Court: Either way?

The Witness: Either way.

Q. One thousand feet from the airport? A. From the runway, from the edge of the field.

Q. From the end of the runway? A. Yes, sir.

Q. From this point I am indicating here, right? A. Yes, sir. I guess that is it.

Q. What instructions did you give him as to what altitude to attain before making a turn? A. That is generally considered five hundred feet before you make a turn.

The Court: No. What did you tell him, was the question.

The Witness: I told him to get five hundred feet before making a turn.

The Court: Did that machine have an instrument to record altitude?

The Witness: Yes, sir.

Q. Are you familiar with the Ford specifications as to the gliding ratio of the plane 41 here? A. I believe it is nine to one.

Q. Nine to one. You are sure it is not five to one? A. Well, nine to one is what the factory says, but five to one is what you might get.

Q. As a practical thing five to one is what is practically obtained? A. Five to one is all I think you can get. Other people may think otherwise.

Q. You know of more having been gotten than that? A. No, I don't.

Q. That, of course, means all motors stopped, isn't that so? A. That is right.

Q. And no wind? A. Yes.

Q. That is the gliding ratio on all things being dead excepting the law of gravitation and the momentum of the plane, which would make a ratio of nine to one by specification, and about five to one according to your practice? A. That is right.

Q. What else did you tell Foote as to the rules of the airport? A. About giving preference to landing off? I told him how to taxi.

Q. What did you tell him about how to taxi? A. Well, I mean, we had to get off the side of the runway and taxi. We could not taxi down the middle of the runway and block it out for another ship.

Q. The reason being there was so many ships at this other place at that time? A. Yes, sir.

Q. On this particular Sunday afternoon it was quite busy, wasn't it? A. Yes, sir.

Q. A lot of hopping flights being made? A. I believe there were five or six ships hopping.

Q. Competition was sharp? A. It was not especially sharp for the Ford. The Ford did not have to worry much about competition.

Q. I mean by that without regards to who did the most shooting there was a lot of competition there between the four or five planes that were making hops? A. Yes, sir.

Q. Isn't it a fact you told Foote he must take off and reach an altitude of one thousand feet before making a turn and then turn left because of the great number of planes in the vicinity of the airport to avoid a collision? A. No, sir.

Q. Isn't it a fact that that would have been better piloting under the circumstances and the conditions as they existed there, particularly where the pilot had a full load and was driving from the left side with greater visibility on the left? Didn't you instruct him to turn left? A. I instructed him to turn right.

Q. You instructed him to turn right? You told the court and jury only a moment ago that you told him he could turn either to the left or to the right. A. I told him that was the airport rule.

Q. You told him that was the airport rule? You told him to turn to the right? A. That is right.

Q. Why? A. Because everybody else was doing it.

Q. Isn't it a fact everybody else was doing just the reverse and turning to the left? A. No, sir, they were not.

Q. And didn't you think as a good pilot that it would have been better piloting to have turned to the left with a strong wind such as you had on

that day because of the greater area of open country rather than to have gone right into the territory of built-up Newark? A. He would not have to go into built-up Newark in turning right. No matter where you turn at, if your motors fail you are going to have an accident.

Q. If he had turned to the left and had gained sufficient altitude, might he not then have been able, with his glide ratio, plus whatever power he had left in the surviving motor, to go back to the airport? At least, he would have had this open country, he would not have been gambling. A. It is as much of a gamble to the left as to the right.

Q. But if you have enough altitude you could have made the air port back again, couldn't you? A. He could with a left or right hand turn if he had enough altitude.

Q. If he had enough altitude even with his motor going dead, or revving down, as Mr. Reed referred to on his direct examination, if he had had enough altitude he could have gotten back to the airport in that glide with the little push of the surviving motor.

Mr. Reed: I object, unless you put in the question——

The Court: For this turn.

The Witness: Where is he supposed to have turned from?

The Court: Right where he did.

The Witness: I don't know where he turned. I did not see him.

Q. Didn't you make any investigation? A. I heard several stories of where he turned.

Q. Did you make any investigation?

Mr. Reed: Certainly we can't frame a question on what he heard in investigation.

The Court: You give him the point that you want him to answer.

Mr. Reed: That is what I want you to do.

Q. Did you make any investigation of your own, either on your own behalf or on behalf of this defendant company to ascertain where the turn was made?

Mr. Reed: I object to whether he did or not.

The Court: Sustained. It would make no difference.

Q. Did you talk with Foote?

Mr. Reed: The same objection.

The Court: Sustained.

Q. You were asked by Mr. Reed if you saw the plane after he took off and your answer was you saw it at the time of the take-off and did not see it again until when? A. Until it was back of the viaduct.

Q. When you say "back of the viaduct," you mean— A. Put your hand to the right a little bit. Right in there some place.

Q. Right about where I am indicating? A. About there.

Q. What was the altitude there? A. I would say five to seven hundred feet over the ground.

Q. Now, with one motor going dead, and the other one revving down, and the third still firing away full speed ahead, on a turn back toward the airport, could he have made the airport? A. I don't think so.

Q. Now, at what altitude would he have had to be at that point to have been able to make the airport under those circumstances?

Mr. Reed: I object to that. It is outside of the case entirely.

The Court: No. I think he is put here as an expert. He said he could not make it at this distance. I think counsel is perfectly justified in cross-examination as to what altitude it could be made.

Mr. Reed: Will he put in the left motor quit and the center motor reved down?

The Court: He said that.

The Witness: You will have to remember there were several people on the airport and several automobiles on the airport and you could not skin in. You might if there were no cars there. You would be coming down wind as it was, and in coming down wind you need more room to land than you do going into the wind. You land faster.

Q. Knowing the conditions as they existed, the wind as it was, the number of passengers, knowing the plane as you did, in order to have made a turn and gotten back safely on the runway, if necessary, at what altitude would Foote have had to reach at this point where you saw it to be able to accomplish that turn and land at the airport? A. I would have liked to have had twelve hundred feet. That is me personally.

Q. That is speaking personally. Now, speaking from the standpoint of the expert pilot, what is the minimum altitude required to accomplish that landing back to the airport?

Mr. Reed: I object. That is not the test. It should be according to the scale of the average normal pilot.

The Court: We are assuming this man. He is not shown to be anything but a normal pilot.

Q. What is your answer? The minimum altitude? A. That would vary with every pilot. I could not say any minimum.

The Court: While they are looking for another question, let me ask you: You were pointed to a place on the map which was probably three hundred feet or so west of the road of the air port where it was indicated by—some witness has said there was a sharp right turn and ran the plane down along parallel with route 25 and you gave some answer to the question on that location. What I want to know is with the plane loaded with these fifteen people, and you saw those people, most of them, and the weight of the plane, and all that considered, and with the wind blowing at the velocity it was on that day at that time, was it proper to make a turn, if one had been made, at that particular first turning point I have indicated at an altitude of from 200 to 250 feet in the air?

The Witness: It would be rather poor judgment, I would say.

The Court: Had the wind at the velocity it was blowing, around thirty to thirty-five miles—had the wind any bearing upon that?

The Witness: No. That would go for any type of day.

The Court: Any type of day.

Q. Do you recall testifying before the investigation before Major Copsey in Newark on March 19, 1929? Do you recall testifying there? A. Before Major Copsey?

Q. Yes, and Lieutenant Aldworth? A. I believe I did, yes.

Q. In the City of Newark? A. Yes, sir.

Q. Do you remember being asked this question: "Will you give us an opinion, if you have any, of the probable cause of the accident under this assumption that one of the engines quit?" A. ——

Mr. Reed: I object, if the Court please.

The Court: Hearing no reason——

Mr. Reed: I will state the reason with pleasure. It is not for any witness, this one or any witness to give his opinion as to the cause of an accident. That is for the jury.

The Court: No doubt about that.

Mr. Reed: Therefore, I object to a question framed evidently by a layman asking for such an opinion.

The Court: I will have to sustain the objection.

Mr. George: It is only for the purpose of affecting the witness' credibility as to statements made under oath elsewhere.

The Court: It was not proper for him to be asked such a question as he was asked, in any event, whether it is here or there.

Mr. George: Withdraw that question.

Q. Do you recall being asked: "I ask for your opinion as a pilot——"

Mr. Reed: I object. It would be the same thing.

The Court: There is nothing there, just "I ask for your opinion as a pilot." If there

is anything else attached to it it is proper to ask it.

Q. Do you recall being asked this question: "Should that ship, Captain Weatherdon, fly with two motors with the load he had, should that ship fly with two motors with the maximum amount of load authorized for this particular aeroplane under the Department of Commerce?"

Mr. Reed: I object to that.

The Court: I don't understand that question.

Mr. George: "Should that ship fly with two motors with the load he had, should that ship fly with two motors with the maximum amount of load authorized for this particular aeroplane——"

The Court: Sustain the objection. It is a ridiculous question. Nobody even suggested he had two motors dead. Everybody says three were working when she went up. I don't know just how you would get it down. I don't know any mechanism that will reach up in the sky and let it down nicely if one would have cut out.

Q. Captain, could this particular ship fly with the two motors functioning?

Mr. Reed: I object to it.

The Court: Yes.

Mr. Reed: No condition stated, no circumstances.

The Court: Wait a minute, please. Could this ship fly in the condition in which it was in the air, altitude of seven hundred feet where you last saw it with two motors

working, two motors functioning properly and one gone?

Mr. Reed: Which one?

The Court: Any one of them.

The Witness: It could fly, yes.

The Court: Would it make any difference as to which one? Would it make any difference as to which one was dead?

The Witness: It would make it a little harder for the pilot if one of the outboard motors were dead.

The Court: Assuming that the left one was dead, and the middle one was revved down considerably, could it still be flown, aside from gliding, I mean? Could it be maneuvered?

The Witness: It would be very hard. It might be maneuvered but it could not fly.

Q. Well, I think I have you noted here at five hundred feet or under the pilot should always go straight ahead, to gain more altitude before making a turn, is that right?

Mr. Reed: That is not the testimony.

Mr. George: Just a minute. If you have an objection——

Mr. Reed: It is not the testimony. I object to that.

Mr. George: I asked him did he say that.

The Court: What he did say was at 500 feet with one of these motors out and the other revving down at 500 feet the proper procedure would be to go straight ahead and not attempt to make a turn.

Mr. Reed: Yes.

Q. Suppose over five hundred feet, then what course should be taken?

Mr. Reed: He has answered that.

Mr. George: I would like to have it.

The Court: Not exactly that way.

The Witness: It depends on the altitude what you do.

Q. You have said, Captain, that under the circumstances of one motor being dead and the other one revving down, if he has five hundred feet or under he should go straight ahead? A. That is right.

Q. Now, if he has over five hundred feet and up to seven hundred feet, what should he have done under the circumstances? A. I would have done the same as he did.

The Court: What?

The Witness: I would have done the same as he did.

Q. What would the average expert pilot do? A. The same as he did.

Q. The same as he did, and that was what? A. Go straight ahead.

Q. Then, of course, your statement to the Court and jury in answer to Mr. Reed to the effect that five hundred feet or under go straight ahead—over does not make any difference there, does it, up to seven hundred feet? A. There is so many things in there you have to consider.

Q. For instance? A. There is—two hundred feet is not much altitude between five and seven hundred. That is not much. It is a very fine point. You might go straight ahead and you might turn, depending on how near your airport was. If your airport was fairly close you might turn. If it was a considerable distance away you would not go to it.

Q. How near to the airport would one have to be under the circumstances at five hundred and fifty feet, for instance, to make a turn? A. I think I would want to be at least half as near to the airport again as he was.

Q. At five hundred and fifty. How about seven hundred feet? A. It is practically the same. There is not enough distance in there to make any variation.

Q. How about one thousand? Would that be all right? A. At one thousand feet you might make an attempt to turn.

Q. Now, was it a calm day—I mean, so far as the wind was concerned—or, was it a gusty day? A. It was fairly windy. It was not especially gusty, I don't think.

Q. It was not gusty? A. Not especially.

Q. Well, never mind whether especially or not. Was it gusty or not? A. Well, gust might be anything. There are various forms of gust. Any windy day is apt to be gusty.

Q. As a matter of fact it was very rough, wasn't it? A. Not especially.

Q. Do you remember being asked this question: "Do you think you could without cutting the other gun and come out under five hundred feet"? Your answer was: "I think so."

Mr. Reed: I object to that. It does not say what preceded it or what other facts are given or anything.

The Court: I hardly think you gave enough of the testimony to him to know, and, what effect does the jury gather from it? I don't know.

Mr. George: May I have permission then to lead up to it?

The Court: That is what we want.

Mr. Carpenter: Only for the purpose of contradiction.

Mr. George: That is all.

Q. Question: "Is it your opinion if either the right hand or the left hand engine quit and the ship nosed—went down in that direction without either cutting either your top guns that you could pull the ship out of a gradual dive by the use of the elevators and 'airelons' "? "I am going along like this and it goes like that."

Mr. Reed: I object on the ground he is asking him whether he gave that testimony at this particular hearing. That is not in contradiction of anything that has been brought out on his testimony.

Mr. George: Not that particular question, but I am coming to a flat contradiction.

The Court: No, but if it leads up to anything go ahead.

Mr. George: I will consent it be stricken out if it does not.

Q. Question: "Now, you are going down like this and it has gotten down and up like this, couldn't you cut it out with a long sweep with your elevator and airelon and run it"? "Of course, it all depends on how much I was going down if I would try it or not." "If you were under five hundred feet would you try in a case of necessity"? "If I thought I was going into a spin I would gradually shut off the outside motor, but if I felt there was not any danger, I would try to pull it up with the other airelon." Do I pronounce it right? A. Aileron.

Q. (Quoting) "I might have a tendency instead of trying to go into it a little bit, I might maneuver

where you will get in a side slip unintentionally. I mean, there would be a tendency on my part to do that."

Mr. Reed: I object to that, if the Court please, as no contradiction of anything here, and it is just surplusage.

The Court: I cannot see a bit of contradiction.

Mr. George: I have it in this question, counsel. I said that I would lead up to it. I have this question.

The Court: All right, give us the question.

Q. "I think so. There is another thing to take into consideration. The day was very rough and although he might have been in a gentle glide when the motor cut with him up like that, that would have a tendency to throw him into a spin." Did you make that statement?

Mr. Reed: I object.

The Court: Did you make the statement, "It was very rough"?

Mr. Reed: Everything else is eliminated?

The Court: Yes.

Q. Did you? A. If it is in the paper I think I did. I have forgotten.

Q. Do you deny it was made? A. I don't remember. I don't deny.

Q. What? A. I don't remember it.

Q. But you don't deny you made this statement under oath? A. I don't know.

Q. Do you deny now it was a rough day? A. Any windy day is rough.

Q. Then when I asked you awhile ago was it a rough day why did you say "no"?

Mr. Reed: I objected to that very thing before.

The Court: Not particularly.

Q. I ask you was it very rough? A. No, it was not.

Q. It was not? Now, respecting your testimony, Captain, as to what you saw of the take-off, do you remember testifying in this other proceeding as follows: "Did you watch it from the time it started until the time it went out of sight—speaking of the ship on its last take-off—"? A. "No. I watched him take off and he was fifty feet in the air going out where I generally park the ship. I had taken Parsons out and put him in the ship. I watched him taxi and take off. I went back to the mechanic and turned to Wonsey. I was coming in. I wasn't paying any attention to him because his air work and everything had been excellent with me and I had seen him make two perfect landings out there. His first one was a little bit rough but it was all right, and he came recommended by the Ford people so I did not pay any attention to him. He took off and I started talking to Wonsey and walked in." Is that true? A. That is right.

Q. Then you did not see the plane again, did you?

Mr. Reed: I submit that is not in any way contradictory of what he said about the plane.

The Court: I don't think so. He answered the question.

The Witness: I said that that's right. If you continue on you will see I also said something else.

Mr. George: I know you did.

Mr. Reed: About seeing the plane again.

Q. Do you remember being asked this question, speaking of the operation of that plane: "Well, would you, knowing the country, conduct yourself differently"? A. "In landing I would have tried to get in this swamp right here. I imagine myself, that is, if my motor was cut and I could not go any place, I would try to sweep in here."

Mr. Reed: I object on the ground that it is not in any way contradictory of the testimony.

The Court: Not a bit.

Q. Now, which is the proper way in making a take-off, Captain, with the wind or into the wind? A. Into the wind.

Q. Why? A. It is that you get off quicker and it will give you more lift.

Q. Safer, too, isn't it? A. Yes.

Q. Would you consider it good piloting to take off with the wind on the tail? A. Well, it all depends upon the circumstances. You might have to in some cases.

Q. I mean, when you don't have to would you consider it good piloting? A. No.

Q. It diminishes the safety factor, doesn't it? A. It holds you on the ground longer.

The Court: There is not a scintilla of evidence that this pilot did not take off into the wind that I can recall.

Mr. George: No, but there has been some testimony by another witness, another witness called by the defense it makes no difference in the take-off whether you are with or against the wind.

Mr. Reed: No witness said that.

The Court: All right, go ahead.

Mr. Reed: What witness?

The Court: One of them did say that.

Mr. Carpenter: He said you would have to run a long way along the ground in order to get off. It could be done.

Q. Now, Captain, this plane was making frequent hops on the afternoon of the fatal crash? A. That is right.

Q. And therefore it did not require any revving up of the motor, just a case of landing, motors idling, propellers turning slowly and just waiting for another load, is that right? A. The motors are run up before the take-off.

Q. Beg pardon? A. The motors are always revved up at the end of the runway before taking off.

Q. By the pilot? A. Yes, sir.

Q. When he is ready to go? A. That is right.

The Court: That afternoon from the time you started making these hops until this fatal crash, there was no overhauling or inspection of the plane or the motors by any mechanic?

The Witness: No, sir. That is all done in the morning for the day.

The Court: That is all done in the morning for the day.

Q. Now, when you saw the plane for the second time—rather the first time after the take-off it looked to be acting rather unusual, didn't it? A. It seemed to be in a glide.

Q. What do you mean by that? A. It was coming down.

Q. And was it a sudden glide or rather sudden dropping, or was it gradual? A. It was a gentle glide. If anything, a flat glide.

Q. So the wind was pushing on the tail? A. That did not make much difference. When you are gliding you are coming down. You would not know whether your wind was on the tail or into it.

Q. What do you mean by "flat" glide? A. Normal so they glide at that angle (indicating). A flat glide would be when you pull it up and glide at that angle (indicating).

Q. Just one more question. Assuming as you have already described this one kind of turn at the altitude of 150 feet, not higher than 150 feet, which you said would be dangerous, suppose that same plane had made this turn at this point on the survey map marked "I-1" and had gone northeast in this direction I am indicating to a point here marked on this survey map "I-2" and then had made a sharp turn to the right at 350 feet, would you have considered that good piloting? A. It would still be poor judgment.

Q. Because frought with danger, right? A. There is danger there, yes.

Q. You are still employed by the defendant company, aren't you, Captain? A. Yes, sir.

Q. It is a subsidiary of the Colonial, this American Airways, isn't it? A. Well, the Colonial is not any more. There is no more Colonial. This American Airways bought them out and the Colonial division is a subsidiary of the American Airways now.

Q. Now, how many hours were these particular motors which were in the plane on the day of the crash—how many hours did they have in that plane? A. About two hundred and seventy.

Q. Do you know whether they had ever been taken down? A. You mean taken out of the ship for overhauling?

Q. Yes. A. No, they had not.

Q. Do you know anything about Foote having made a bad landing and getting stuck in the mud? A. I don't recall it.

Q. You were there all day, weren't you? A. Yes, sir.

Q. And don't you know that he had to be towed out of the mud by a tractor? A. I don't remember.

Q. And even while he had a load of passengers aboard? A. I don't remember that.

Q. Well, you mean you don't know whether it happened or not or if you did know you don't recall now? A. That is it.

Q. You won't deny that that was the case? A. I just don't recall.

Mr. Reed: If the Court please, if he does not know anything about it the question is improper.

The Court: Yes.

Q. Are you acquainted with the rules and regulations of the Department of Commerce, Division of Aeronautics, to the effect that every motor has to be taken down and overhauled after one hundred hours of service? A. There is no such rule as that.

Q. What? A. There is no such rule as that.

Q. There is no such rule as that? You are acquainted with the rules, then, I take it? A. You are talking of one hundred hour check, which does not say taking the motor out of the ship.

Q. What do you mean by check, then?

Mr. Reed: You will agree there is no such rule as that?

Mr. George: No. I will do nothing of the kind. You know it is asking too much to ask me to agree that way.

Mr. Reed: You infer there is such a rule. I would like to see it.

Q. What do you mean, Captain, by "one hundred hour check"? A. There is two checks. There is a twenty hour check and there is the one hundred hour check. The twenty hour check is just to check the motors over casually. But the one hundred hour check is to check the whole ship plus the motors.

Q. Is that the only difference? A. The one hundred hour check is more thorough than the twenty hour check. No parts are taken off the ship.

Q. They don't have to be taken off the ship? A. No, sir. Not in the one hundred hours.

Q. You mean this, that they give a little better inspection for the one hundred hour check than the twenty hour? A. That is right. The one hundred hour check is inside and outside. The twenty hour check is just outside.

Q. What is the meaning of the inspection involving the engine installation? A. That comes on your twenty hour check.

Q. Twenty hour check? Sure about that? A. Well, the twenty hour check and the one hundred hour check installation is just looking at the bolts, the bolts and all the parts on it, to make sure everything is all intact.

Q. I understood you to say you did not have to take anything apart or off the plane for such inspection? A. Nothing major, no. No major parts. The motor itself stays in the aeroplane.

Q. You would not consider the propellers as a major portion of the aeroplane, would you, even though they just carry you along? A. No.

Q. Are they taken off from time to time? A. They are.

Q. What for? A. Inspection.

Q. In what connection and to what extent? A. Why, you inspect them for alignment and for cracks.

Q. Now, is there any other kind of check required? Had the one hundred hour inspection been made? A. We made a one hundred hour inspection on this ship every twenty hours.

Q. What is that? A. We made the one hundred hour inspection on this ship every twenty hours.

Q. And who made the inspection or check? A. The mechanic.

Q. What is his name? A. Mr. Wtorkowski.

Q. Is he is court? A. Yes. He is sitting back there.

Q. Isn't it a fact he was not able to make the one hundred hour check because he did not have the proper tools for that purpose? A. No, he did not.

Q. Are you sure about that? A. Yes, sir. You don't need any special tools for the one hundred hour check.

Q. Do you need any special tools for the twenty hour check? A. The mechanics always carry those with them.

Q. Now, the right gas cock for the right hand tank is a way over to the right side of the plane to be used by the operator or pilot if he is operating in the right hand control, is that so? A. You have access to both controls, no matter which side you sit in.

Q. But he has a longer reach for the right hand one than the left? A. About a foot and a half to two feet.

Q. About a foot and a half to two feet. So that if somebody was sitting to his right he would have to reach beyond and over the shoulder of the man sitting to his right to reach the right cock, isn't that so? A. That is right.

Q. While the plane is in operation what is he doing with the left hand while he has to reach over for the right cock? A. Holding his hand on the wheel.

Q. It is a little more difficult to maneuver with one hand under those circumstances? A. You never operate with two hands. One hand is enough to fly with.

Q. Does it have any effect on the maneuvering of the plane in an event of an emergency to be obliged to lean a way over to the right, over the shoulder of your passenger or co-pilot sitting on the right to reach the cock? A. I don't think so because it is done too quickly.

Q. What? A. There is no reason he should reach over. It is turned on.

Q. Suppose you wanted to turn it off, would it interfere with his efficient maneuvering of the plane? A. No.

Q. Even if he were on a sharp bank? A. No.

Q. Even if he saw himself going down? A. That is less than a second's operation.

Q. It does require the movement of his body over to the right? A. You don't have to move your body, just reach up like this and turn it.

Q. Over to the right side? A. The cockpit is only three to three and a half feet wide at the most.

Q. Wide enough for two people to sit side by side? A. There is about that much room when you get two people in there (indicating).

Re-direct examination by Mr. Reed:

Q. You gave certain answers in reference to seeing the plane. Did you give these answers: "Were you close enough to the ship to have detected trouble if the engines had not been working

properly?'' Answer: ''Yes, sir.'' ''How do you say they were working when he went off?'' Answer: ''Perfectly.'' ''When did you next see the ship?'' Answer: ''Wonsey and I were standing together and Wonsey saw it next. He saw it after it turned first and it was coming towards New York. Wonsey made a remark it was coming down.''

Q. ''Did you keep your eye on it from that time until the end?'' Answer: ''Yes, sir.'' ''Will you please tell us what you saw?'' Answer: ''I will leave out what Wonsey said. I looked at it and it seemed to be coming down in a gentle glide.'' And did you give this answer: ''When I saw it it seemed to be about five or seven hundred feet.'' Did you give that answer? A. Yes, sir.

Q. Is that the height it was at the time you saw it the second time? A. Yes, sir.

Q. Then you did testify to seeing it twice at the Mayor's hearing, did you not, as I read it to you? A. I did not say I did not.

Q. Were you asked this question and did you give this answer: ''How far would you say the plane was from the field when you saw it at that time?'' ''Well, about a distance of a mile and a half from the airport. Coming right down here running parallel to the road, running along the airport.'' ''When you first saw it, was the plane in the vicinity of Heller and Merz? That is Port Street, the one that runs parallel to the airport?'' ''I think so, I am not sure.'' Q. ''When you first saw it the plane was in the vicinity of Heller and Merz?'' ''It was right over that road to South Street, I think it runs into South Street, that viaduct there, right over that way, maybe a little west of it.'' Did you give that answer? A. That is right.

Q. Now, you have told us that the one hundred hour check was made by your company every twenty hours. A. Of this particular ship.

Q. Was that the rule of your company that you were working for? A. I don't know the company's rules. That was my rules.

Q. So that you gave what the government requires—the department requires every hundred hours, you gave all the things required under that requirement every twenty hours, did you? A. That is right.

Q. And you say, do you, now, that there is no rule or regulation that requires the motor to be taken down and out of the ship every one hundred hours? A. That is right.

Q. Now, you say that some time in the use of the plane you discovered a small crack in one of the cylinders. How was the small crack discovered inside of the cylinder? Was that in the check-up? A. It was in the check-up, discovered by a slight seepage of oil.

Q. On the check-up? A. That is right.

Q. There was not any other cracks in any of the cylinders? A. No.

Q. Just when was that when you on the check-up discovered that small minute crack? A. I don't remember offhand. The mechanic discovered it and showed it to me.

Q. About when was that? A. When we first got the ship. I say—I think we changed the first part of November, or the first week in November or the second week in November. It was changed.

Q. And did you consider it good judgment and care to have that removed and a new one put in? A. Yes, because the crack might have become larger.

Q. In other words, were you giving the utmost care to each one of those details on the check-ups and in the care of the ship? A. That is right.

Q. Now, directing your attention to the entire history of that plane, was there any other trouble of any kind that developed outside of that little crack that was discovered on the check-up and changed? Was there any other trouble at any time that required any replacement? A. The only thing I remember is a broken spring, a broken spring in one of the valves.

Q. Was that discovered on the check-up? A. Yes.

Q. When was that? A. That was—I don't know offhand. It is something you would only notice in a check because there are three springs in there.

Q. Was that replaced after the check? A. Yes.

Q. Were you sure then, every twenty hours of going over every part? Was the mechanic directing his attention to every cylinder and everything about that machinery in the care and check-up of the plane? A. Yes, sir, every twenty hours.

Q. It has been stated here in a question put to you at the beginning of your cross-examination, that while the plane was on the ground the two motors revved up to 1800 and one motor revved up to 1200. I ask you would a passenger sitting in the cabin of the plane be in a position to testify or to see, or could he see from any seat in the plane the three motors on that plane to give a reading of the revs per minute, that the three motors were going all at the same time or continuously while it was waiting there loading passengers? A. No, not unless he actually went and looked for them.

Q. Assuming he was seated on the right side of the plane, in order to see the revs per minute, or the clock of the left motor, would he have to get up out of his seat and go over and look at it? A. He would have to strain himself to look from the right, but he could not see the center because the door was closed.

Q. He could not see the center at all? A. No, sir.

Q. Could he from any one position tell that at a certain time through the continuous period of time of ten or fifteen minutes see that one motor was only going 1200, one motor going 1800 all the time, and the other motor going 1800? A. No, sir.

Q. Is it physically possible from any position inside of the cabin of that plane? A. Not unless he gets up and walks around.

Q. Well, he could only look at one motor at a time? A. That is right.

Q. If he went to look at the clock on the front motor he couldn't see what the clock was doing on the right or left motor? A. No.

Q. What about the pilot? A. He has the center motor right in front of him. The left is on the outboard. He turns his shoulder like that to see his left outboard, turns his shoulder.

Q. Is the pilot position higher than that of a passenger sitting in the cabin? A. Yes, sir.

Q. It is raised up? A. Two feet.

Q. In other words, in going from the cabin you have to take a couple of steps to go into the cockpit? A. One large step.

Q. You are about two or three feet higher than any passenger sitting in any seat of the cabin, are you not? A. About two feet.

Q. Also in addition to the door in front that cuts off any view of the front motor, are there not

struts that entirely block the passenger's view unless he leans forward out of the window? A. Yes, sir.

Q. Do the struts obstruct the view of the clocks of your motor? A. The further back he is the more chance he has of seeing the instruments on the struts.

Q. So that then you say it would not be possible for anyone inside the cabin to say that the motors during the period of fifteen minutes were just doing so and so? A. No, sir.

Q. You said that certain materials and tools and appliances were taken out of the plane. What was the amount of weight that the plane weight was decreased by the removal of those tools and appliances and so forth? A. I would say one hundred to one hundred and fifty pounds, the mechanic's personal tools and all special tools for the ship.

Q. Was there a ladder that was removed? A. There was a step-ladder. I believe I had a suitcase in the back that was taken out.

Q. Those things are things taken on long flights, that step-ladder, and your mechanic's tools and your dress suitcase. A. And the motor covers were taken out.

Q. What are they? A. They were canvas covers you put over the motors when you leave them out in the open.

Q. What was the total weight reduced? A. I would say one hundred to one hundred and fifty pounds.

Q. Speaking about your bag, your dress suitcase, did any of these passengers on this trip take any baggage at all? A. No, sir, none.

Q. This plane, you say, is designed to carry thirteen people in the cabin and two in the cock-

pit. Is it also designed when these persons in the preceding arrangement go on long trips—is it also taken into consideration each one of those passengers will carry a certain amount of poundage in baggage? A. That is right.

Q. What poundage in baggage is allowed to persons when they go on a long trip, this plane having thirteen seats and two in the cockpit? A. I believe on that ship it was twenty-five pounds per passenger.

Q. Twenty-five pounds per passenger. Ten persons mean two hundred and fifty pounds and so forth? A. Yes.

Q. And was there any such baggage on this hopping—on any of the hopping trips taken on the 17th of March, 1929? A. None whatsoever.

Q. Now you also told us that before you would attempt to make a turn to the right with the wind behind if your motor was failing you would want 1200 feet altitude before you would attempt to turn right. Assuming that the left motor cut out and was dead and the center motor was just revving around seven or eight hundred or nine hundreds revs per minute, what effect would that have if the right motor were going full power as against turning toward the airport, assuming you are heading towards New York? A. It would have a tendency to turn to the right.

Q. If your right was going you would turn in which direction? A. Left, I should say.

Q. You are indicating to the left.

Q. Turn to the right or to your left? A. When the right hand motor—sitting looking forward—the right hand motor is running, and the other two are stopped you will turn around to the left.

Q. So that if the plane were up here five hundred or six hundred feet high and the left motor

quit, and the center motor revved down the torque or pull of that right motor would be over that way, wouldn't it? A. That is right.

Q. And over in that direction would be in the direction of the buildings in Newark? A. That is right.

Q. And in that emergency, even to overcome that torque he would have to use his rudders and his ailerons, have I got it right? A. Ailerons.

Q. That is right. A. That is right.

Q. So that in that situation the mechanical difficulties would be against turning to come over here, would it not? A. Yes. It would be harder to make a right hand turn.

Q. And attempting to overcome the torque by the rudder and the ailerons, that would—would that have an effect on the loss of altitude in attempting to make any turn against that torque with that motor, just the one right motor? A. Yes, naturally. One motor going, no matter which way you turn you would come down.

Q. Now, I am not sure that the jury or some of us laymen understand this matter of synchronization of the motors. When you are on the ground just exactly what do you do with the right, left, and center motor? In the first place, it is chocked? A. You have blocks of wood in front of the wheels to prevent the ship from going ahead. You start each motor separately. We had a hand crank on the ship. You start the left, center and right. You would warm them up until they got to about eighty or ninety degrees temperature, then you would run the left one up full, the other two idling. You have two magnetos in each motor. That gives you double ignition on each motor. If both motors work at full throttle you would pull your motor down, pull the throttle back

on that motor. Do the same for the center and right separately.

Q. So that if you found by your instrument that your left motor revved up to 1600, then having tried that out you would pull that down? A. That is right.

Q. And let the left motor idle, is that right? A. Yes, sir, that is right.

Q. And let it idle? A. About 400 revolutions.

Q. Then you would try your next, your right, perhaps. A. You go left, center, right.

Q. Then you would try your center one, rev it up and let it run down again to a lower rev per minute? A. That is right.

Q. Is that the procedure? A. That is the procedure.

Q. Where were the throttles for those motors? A. As I said, they are right up in front, the right of me.

Q. Right within reach of your right hand? A. In the middle of the cockpit, yes.

Q. Within reach of your right hand? A. Three separate throttles right alongside of each other, put your hand right on top of them.

Q. How do you work the rudder to overcome the torque of the motor when your motors quit? A. If your left motor quits you drop the right one and give it right rudder.

Q. Do you do that with your hand or foot? A. Your rudder with your foot, your aileron with your hand.

Q. And the board is right in front of you? A. The instrument board is right in front of you.

Q. Was that operating, functioning, in every way, on the day of this accident on this afternoon? A. Yes, sir.

Re-cross-examination by Mr. George:

Q. Just one question. If this same plane were traveling at an altitude of 500 feet with all motors going and having reached a point about three miles from the airport, would it have been reasonably possible with good piloting to have brought that ship back to the airport?

Mr. Carpenter: I object unless the statement contains—the witness is given the statement the two motors were operating, were operating at full efficiency. Of course, they may be just idling.

Mr. George: This is cross-examination as to his knowledge and expertness.

The Court: Oh, yes.

A. With two good motors you could bring the ship back.

Q. At an altitude of 500 feet? A. Yes.

Q. Three miles from the airport? Two motors running full, yes.

Q. With a load? A. Yes, sir.

Adam Wtorkowski, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. Mr. Wtorkowski, whereabouts do you live? A. In Harrison.

Q. How old a man are you? A. 35.

Q. What is your business? A. Aeroplane and engine mechanic.

Q. Do you hold a government aeroplane and engine machanic's license? A. I do.

Q. Have you got it with you? A. I don't think I have it with me.

Q. Whereabout's did you study to be an aeroplane and engine mechanic? A. The first school I have been to Kelly Field, Texas, 1920.

Q. Kelly Field, Texas, 1920? A. That is right.

Q. Did you go through the army school for aeroplane and engine mechanics? A. Yes, I did.

Q. Graduated, did you? A. Yes, I was.

Q. From that time down to this tell what army fields, army areoplane depots you have worked at. A. Well, after I was graduated from Kelly Field, Texas——

Q. I just want to know what fields you have worked at. That is all I want to know. A. Kelly Field, number one, in the first place; Mitchell Field, Long Island.

Q. How long were you at Mitchell Field, Long Island? A. A little over three years, I think.

Q. Where did you go from there? A. Then I went to Chanute Field, Illinois.

Q. How long were you there? A. I have been there for nine months.

Q. You were there at Chanute Field, Illinois, for nine months. Then where did you go? A. I returned back to Mitchell Field, Long Island.

Q. How long did you stay there then? A. Well, I finished my time in the army service in 1927.

Q. In 1927 your service in the regular army ended? A. Yes.

Q. Then you went to Miller Field, Staten Island, did you? A. That is right.

Q. You were there in the New York National Guard Air Service, weren't you? A. That is right.

Q. How long did you work there? A. A little over a year.

Q. What was your position at Miller Field? A. I was their hangar chief.

Q. What is a handkerchief? A. Hangar chief.

Q. How long were you a hangar chief at Miller Field, Staten Island before going to work for the Colonial? A. About eight months, I think.

Q. And then you went from the service of the New York National Guard Air Service into the service of the Colonial Western Airways? A. That is right.

Q. What was your work for the Colonial? What job were you given to do? A. Up to this time?

Q. No. Up to the time of March 17, 1929, up to that date, what was your work while you were in the employ of the Colonial? A. I was a mechanic on that tri-motor Ford which crashed on March 17th.

Q. Whereabouts did you join that Ford tri-motor plane? A. In Buffalo.

Q. And the date? A. I think it was the tenth of September.

Q. Tenth of September, 1928? A. '28, that is right.

Q. Whatever the date was you went to Buffalo and joined the plane there, and who was driving the plane at that time? A. Pilot Weatherdon.

Q. And from that time when you joined the plane at Buffalo down to the 17th of March, 1929, did that plane go anywhere, from one city or town to another, when you were not on board? A. Well, I always went with the plane wherever it went to.

Q. Went with the plane wherever it went to? A. Yes.

Q. What did you do with reference to inspecting the plane—strike it out. Do you know the requirements of the Department of Commerce as to the twenty-four hour or the daily inspection and also the one hundred hour inspection? A. Yes, I do.

Q. You know what they require. Did that plane receive at your hands the daily inspection? A. Yes, it did.

Q. How often was that inspection given to the plane? A. The daily inspection was given every day before flying.

Q. Every morning, every day before it flew at all? A. Yes, sir.

Q. Now, just tell the Court and jury what that inspection was. What did you inspect in that daily inspection? A. I started to inspect the controls of the plane, ailerons, rudder, elevators, cables, hinges.

Q. Cables and hinges? A. Yes.

The Court: Inspect all the engines?
The Witness: All the engines.

Q. What did you do to the engines? A. Well, check over the oil tanks to see if it had enough oil in each tank.

Q. Tank for each engine? Was there a separate tank for each engine? A. A separate one for each engine.

Q. You checked them to see that there was enough oil for each engine? A. Yes, sir.

Q. Yes? A. Also checked the gasoline in the tank.

Q. What did you do with the gasoline tanks? A. Well, took the cap off from the top and looked into it and also put my hand into it and see just how much gas he had in it, look in the bottom of

the gas tank to see how clear they are, inspect all the controls for movement.

Q. All the controls for movement of the controls? A. Yes, and the throttles, such things as tires.

Q. Looked at the tires to see that they were properly inflated? A. Yes. Running gears and navigation instruments.

Q. Are they checked every day? A. Always, yes.

Q. Was there any inspection of the carbureters? A. Well, drain off and flush the gas line and drain the carbureter chambers.

Q. When did you do that? A. That was done daily.

Q. Why was it done? A. Why was it done?

Q. Yes. A. It was a rule of the company to be done every day.

Q. What was the purpose of the rule?

Mr. George: That is objected to.

Q. What was the purpose of the inspection? A. To see if any water had been formed in the gas tank at any time why it would be a chance for all the water to drain out from the gas tank.

Q. In other words, they were drained in order to get any water that might have accumulated over night in the gasoline or gas tank? A. That is right.

The Court: What about spark plugs? Did you make an examination of them?

The Witness: I only look over the outside of the spark plugs to see that all the wires were safely on the spark plugs so that they are in good shape.

The Court: Tested them out for fire?

The Witness: Not on daily inspection, no.

Q. Not on the daily inspection? A. No.

Q. What inspection was it, if any, that you tested or examined the spark plugs? A. That was done every twenty hours flying time.

(Recess until December 1, 1931, at 10 A. M.)

(After Recess, December 31, 1931, 10 A. M.)

(Trial resumed pursuant to adjournment.)

(Appearances the same.)

Mr. Carpenter: With the permission of my opponent I would like to put Mr. Balchen on now.

Mr. George: I have no objection.

Bernt Balchen, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. Mr. Balchen, where do you reside? A. I reside at Hasbrouck Heights, New Jersey.

Q. What is your business? A. I am a test pilot and engineer.

Q. You are a test pilot and engineer? A. And engineer, aeronautical engineer.

Q. How many years have you been flying? A. Since 1919.

Q. Where did you get your training? A. In the Royal Norwegian Air Service.

Q. The Royal Norwegian Air Service? Have you ever flown in a Ford tri-motor plane? A. Yes, I have.

Q. Flown other types of tri-motor planes? A. Yes.

Q. How many hours of flying have you had? A. About 2500 hours.

Q. About 2500 hours. Have you had occasion to test not only the flying ability but the carrying ability of a 4-AT tri-motor Ford plane? A. Yes, sir.

Q. Would you mind telling the jury about the ability—the load carrying ability of that plane? What will it lift? A. I had a very specific case which I had to apply to one of the Ford 4-AT's and that was in the Antarctic Expedition of Admiral Byrd, where the weight-carrying ability of the plane was the whole solution of the problem.

Q. What was that trip? A. That was the flight to the Pole.

Q. The Ford 4-AT which you used in that plane did not have three Wright J-5 engines? A. No, it did not have it, but the intention was originally to have three J-5 engines and that was the plane we started out to test with to carry out our load test and performance test to see if the plane could have sufficient performance to undertake the flight.

Q. The Ford 4-AT with three J-5 engines, what would that lift and fly?

Mr. George: Objected to unless the witness is qualified in load tests on that particular kind of plane with that kind of motor.

The Court: He made the test himself.

The Witness: Yes.

Mr. George: With three J-5 motors.

The Witness: With three J-5 motors. I made a series of tests. For that flight the question involved was how high could the plane go with a load of eleven thousand pounds. In other words, a little over-load to a commercial load.

Q. An over-load of how much? A. An over-load of about seven hundred and fifty pounds. We found the plane could get an altitude of 8800 feet.

Q. What is that? A. 8800 feet.

Q. You could go with eleven thousand pounds— A. 8800.

Q. —in the air? A. Yes, sir. You see, the height you can obtain with a plane is proportionately to the amount of excessive horsepower you have at sea level. The plane had sufficient horsepower to give very satisfactory maneuverability with that load. And later I took off bigger loads with J-5's in a Ford 4-AT in 1928 in the flight to Greeley, where I had to take the Bremen——

Q. Did you in going to Greenley Island to bring back the crew of the Bremen, did you use a 4-AT with three J-5 engines? A. That's it.

Q. What load did you take off at that time? A. I took off—you see, my average length of the flights on that trip was between one thousand and eleven hundred miles.

Q. In one hop? A. In one hop, yes, and in addition to the gasoline sufficient to carry me there I had to carry fuel for the Bremen, a whole landing gear, spare parts, in addition to my crew. So, I first took off the wheels at Dearborn Airport with better than eleven thousand pounds. Then I came to Murray Bay and took off at eleven thousand two hundred.

Q. Murray Bay? A. Yes. I did not dare to take off more because the place I took off was very small, like in between high hills, so that was the maximum load I estimated to get off with there. I flew to Seven Islands, where I loaded the ship up to fourteen thousand two hundred.

Q. Seven Islands? A. Yes, Seven Islands, on skiis. I took off on skiis. Taking off on skiis is not as good as taking off on wheels.

Q. You used skiis, which are not as good as wheels, and you took off with fourteen thousand how many pounds? A. Two hundred pounds.

Q. Fourteen thousand two hundred pounds. And did the plane fly with that load? A. Yes.

Q. What altitude did you reach with that load? A. I raised about three thousand feet. I could have reached higher, of course, but there was no necessity calling for it.

The Court: You say you got up eight thousand eight hundred feet with three J-5, with eleven thousand pounds aboard?

The Witness: Yes.

The Court: Total weight?

The Witness: Yes.

The Court: Perhaps the jury would like to know why, if you got up that high, why you could not go on indefinitely, why you stopped your altitude at that height.

The Witness: That is the characteristic fundamental equation the lift of the plane comes in. The ability you have in a plane to go to a certain altitude depends on the excessive horsepower you have above what is needed to keep you flying level. In other words, the excessive horsepower is the prime factor. In addition to that, of course, you have the characteristics of the

air foil of the plane and the plane itself. Still the question it boils down to is the amount of excessive horsepower you have.

Q. The amount of excessive horsepower you have determines the ability to reach a high altitude? A. To climb, yes. That is why we calculate our altitude before, knowing the excessive horsepower we have over what is needed to keep the plane in flight.

Q. The test you made in taking up that eight thousand pound load—eighty-eight hundred—was in preparation for the Byrd flight over the South Pole? A. Yes, it was.

Q. Did you fly the ship from the South Pole? A. No.

Q. You flew the Byrd ship over the North Pole, too, didn't you? A. No, that is the wrong impression. I flew Byrd across the Atlantic.

Q. What was the ship you flew across the Atlantic? A 4-AT with J-5's? A. It was a Fokker with three J-5 engines.

Q. Three J-5 engines on a Fokker ship? A. Yes. At that time we took off very close to fifteen thousand pounds with wheels.

Q. Is the Fokker plane itself any heavier than the Ford plane or lighter? A. Structurally they are about the same.

Q. Both the same structure as far as weight is concerned? A. Yes.

Q. Now, then, at the time of March 17th, 1929, was the Wright J-5 engine a powerful and efficient aeroplane engine? A. Oh, yes, no doubt, because the J-5 engine was out already in 1927 and always we considered it a very reliable motor. You can just see what we trusted ourselves to that motor on all our long flights and it carried us through.

Q. Yes, across the Atlantic. A. Across the Atlantic. Practically all Atlantic flights in 1927 were made with J-5 motors.

Q. Practically all of them? A. All of them from the States.

Q. And over the South Pole did you have any J-5 engines? A. Yes, I had two.

Q. Two of the three engines on the ship were J-5 engines? A. Yes.

Q. Did they function efficiently? A. Perfect.

Q. Now, Mr. Balchen, I wish you would tell the jury whether you are familiar with the Newark Airport? A. Yes, I have been in there many times because the airport is adjacent to the airport where I am located at Teterboro.

Q. The Teterboro Airport is your headquarters? A. The Teterboro Airport is my headquarters. It is only ten minutes down there. Many times I have to go to Newark Airport for miscellaneous purposes. We had some planes stored down there and we went there pretty often.

Q. I wish you would tell us whether a Ford 4-AT plane with three Wright J-5 engines at the time of March 17, 1929, would take off and carry a load of fifteen persons, average weight about one hundred and fifty pounds, into a wind of between thirty and thirty-five miles an hour, assuming that the engines were functioning properly. A. Well, that is a load that don't exceed the Department of Commerce load.

The Court: What is that?

The Witness: I say that is a load that don't exceed the customary load the Department of Commerce allows. I can't see as you have any difficulty at all. Then, you are having a strong wind to take off in.

That diminishes your take-off because when you fly a plane, the speed of the plane is in relation to the air and not to the ground. You see, if you have the air flying against you, that diminishes your run, your take-off, and you get up in a much shorter distance.

Q. Is it possible to take off with the wind on your tail if you have got a sufficiently long runway? A. Yes, it would be, but it would prolong the run so much more and also the climbing ability of the ship forwards relative to the ground.

Q. Would this Ford tri-motor plane with the engines functioning climb either going against the wind or with the wind once it got in the air? A. The climbing ability there is not influenced by the wind against the Ford because when you are in the wind you are just like a boat in the river. You are in the fluid there because of different density, but you are flying relatively to the wind and not to the ground, so your rate of climb is the same against the wind as with the wind.

Q. The flying of a ship in the air is in relation to the wind, not to the ground? A. Yes. The only place where the question comes in is in a very sharp bank where your acceleration of the ship comes in because that is in relation to the earth, to the terrain.

Q. Now, another thing. Assuming now, Mr. Balchen, that a plane loaded with fifteen persons took off from the northwest runway of the Newark Airport on the 17th of March, 1929, and flew straight out into the wind, northwest wind, for from four to five hundred feet and then made a turn to the right, a wide turn to the right, which has been described as a gentle bank, and after

reaching an altitude of five or six hundred feet, and then at a point where I will point to you here on the map, approximately in this neighborhood, being in the neighborhood of South Street, here is Route 25, and his left engine suddenly stopped and the center engine slowed down so that he had no power, what in your opinion would be the proper normal thing for the pilot to do, assuming, now, his plane had a load of fifteen persons which was less than the gross load allowed by the Department of Commerce?

The Court: And the wind ranging from thirty miles to thirty-nine miles from the northwest?

The Witness: From the northwest? Well, in a case like that there is not one fact involved. When you are against it like that the pilot has to use his judgment, and in most cases turning at low altitude you have to have a certain space. You are always losing more altitude when making a turn with the plane than going straight ahead, so, it is mostly recommended if you are at low altitude and your motors quit, it is the golden rule in the service, keep going straight ahead and try to hit the best spot that way. It is the golden rule we generally follow.

Q. That is the rule recommended as the safest thing to do? A. Yes. You are losing proportionately so much altitude in turning in relation to what you can get out of the plane straight ahead. In turning gravitation force works on you. When you go straight ahead, on the other hand, your centrifugal force also works on the

lift of the plane and would decrease to a certain extent any banking over.

Q. In banking, in making turns at some low altitude, what is likely to happen? A. Well, many times, when you have a fairly low altitude you won't have space enough between yourself and the ground to enable yourself to make the turn, and in that case you might make a cross wind landing and that is worse than having the wind on the tail, because it will turn you over, literally, and make more of a mess out of it. If you try to hold the ship up, as many pilots do, and try to stretch it around, you might fall out. You see, the lifting ability as to speed also decreases and you fall out and results in a fatal accident. Surely enough while you still have a flying chance to come out, go straight ahead, keeping your plane under control.

Q. In other words, if you lose flying speed—in other words, if your plane gets to the point where it does not have sufficient altitude, sufficient momentum to fly— A. Sufficient lift—the momentum has not anything to do with it. The lift of the wing, that is proportionate to your speed.

Q. If you do not have sufficient speed, what happens to your ship? A. You get out of control. Any aeroplane depends on the pressure of the air. When you lose your flying speed your pressure is one thing by which you safely control. If you have not got sufficient flying speed you can fly on your control.

Q. When you lose control what happens? A. When you lose control Old Man Gravity will work on your ship and drag it on the ground and that ends things.

Q. Assuming, now, the pilot at the time his engine quit in the manner I have described was over

buildings, railroad yards, elevated highway and ahead of him was a burning dump, beyond that was a swamp and beyond that was a green meadow—the green meadow being east of this pencil of mine which is leading along the Central Railroad, what in your opinion was the advisable, probable thing for the pilot to do assuming his engines quit under those conditions at an elevation of five or six hundred feet?

Mr. George: How many engines?

Mr. Carpenter: I said one on the left would not hold and the center one slid down to 800 revolutions a minute.

The Witness: I think in that case I would try to stretch it over to that green lawn and try to make it in there with the plane.

Q. You think that was a proper maneuver to make? A. Yes, when I could not see any opportunity for turning around and getting in the wind and landing on some clear space any other place.

Q. Do you know whether there was any landing place proper to put down the ship in the neighborhood of South Street, elevated route number 25 and the railroad track? A. Oh, no, you can't land in there.

Q. How about this particular point here below the railroad? Do you know what that was in March, 1929? A. There was swamp.

Q. Just swamp? A. Yes—and with only five hundred feet it is a question of your judgment at the time, but it just looks to me it would not be possible to turn in and try to make a landing in there. You would not have altitude enough to do that maneuver.

Q. Is a Ford 4-AT making a turn at a low altitude—does it turn as rapidly as a smaller ship with one motor? A. Oh, no. The turning ratios in a Ford is entirely dependent—is proportionate to the size of the ship and the weight of the ship, and when your power is off that question is eliminated. The bigger the ship, the larger the turning ratio.

Q. I wish you would tell the jury whether you think in your judgment as an expert on Ford tri-motor planes, assuming that it went off from Newark Airport in a northwesterly direction with a load of fifteen persons and after crossing this intersection of Route 25, would it be possible for that ship to make a sudden turn to the right and go parallel to Route 25 to a point near South Street distant from one hundred to three hundred feet west of Route 25, and then when it got here, in the neighborhood of South Street, to make a right turn and then go down to this place where it crashed on the Central Railroad tracks—would that maneuver be possible with a Ford tri-motor plane with a load of fifteen persons averaging one hundred and fifty pounds per person? A. You got in the neighborhood of eleven thousand pounds load. You can't have more than a couple of hundred feet altitude at that crossing there.

Q. That's right. Assuming the altitude at that point. A. From then on with disabled motors——

Q. No disabled motors at that time, all of them functioning properly—under the testimony described by witnesses for the plaintiff, one of the left motors was sputtering—that is denied by the defense— A. Well, with all three motors functioning properly you can do that kind of maneuver because you can fly right down in the road if you want to. It depends on the height you want

to fly. If you want to use excessive horsepower you could get that much more speed. If he is intending to climb I don't see why he should do that thing.

Q. But would the ship fly and make those turns at an altitude of a couple of hundred feet? A. It would make it at one thousand feet.

Q. Assuming such a turn as described by the plaintiff's witnesses had been made suddenly to the right within a couple of hundred feet past this intersection——

> Mr. George: I am not so sure that Mr. Balchen knows what the plaintiff's witnesses testified.
>
> The Court: They have testified—or some of them testified that was a sharp turn made at an altitude of about one hundred to two hundred feet—two hundred or three hundred feet beyond this road.

Q. Would such a turn as that, Mr. Balchen, have any influence upon the stopping of the motors? A. No.

Q. It would not. Would a second turn to the right, a sharp turn, even, as sharp as a forty-five degree turn, would that have any influence on the stopping of the motors on the flight? A. No, it would not influence it at all, because the fuel system, as long as the bank is correctly made, works as well in curves as in straight ahead flying. It does not influence the fuel.

Q. It does not influence the fuel system at all? A. No.

Q. Would it influence the ignition system at all? A. No. If it did it would not be safe to fly and perform any stunts in planes.

Q. Can stunts be made in a Ford tri-motor plane? A. Of course, you can stunt every plane.

They have been stunted, but we never do it. They are designed to carry loads of passengers and freight. It is the same as taking a big car and taking a roadster, an automobile. You don't do the same with a big bus as you do with a roadster.

The Court: While Mr. Carpenter is consulting here, I want to ask you a question or two. Assuming that there were fifteen persons aboard this ship on this day and their average weight was one hundred and fifty pounds, taking off in a northwest direction, in a northwest wind, averaging from thirty to thirty-nine miles an hour, say that it is not terribly gusty but a fairly gusty wind, would that load of live freight there be excessive for that plane under those conditions? In other words, would it be good piloting to take off with that load aboard on that day under those conditions, assuming that when you left the runway your engines are functioning perfectly?

The Witness: Yes. We are doing it daily.

The Court: It would be all right?

The Witness: Yes.

The Court: Would that be an excessive load for that plane?

The Witness: No, your Honor.

Mr. Carpenter: You may cross-examine.

The Court: I notice that the license says "seating capacity twelve persons".

The Witness: Inclusive or exclusive of crew?

The Court: Exclusive.

The Witness: Exclusive, yes.

The Court: Would fifteen persons including the pilot be in excess of that seating capacity?

The Witness: No. I don't see why, because a plane of that size generally is figured on for a crew of two or three. On an ordinary run we will carry a pilot, a co-pilot, and a radio operator or steward, either one of the two, that would be three, fifteen persons all told in the ship.

The Court: Now, does the number of persons—leaving out the question of their weight—have anything to do with the safety of the operation of the plane, the mere number?

The Witness: No. The primary question is the weight in the plane. Whether they are alive or not don't make any difference.

The Court: I shall give the Court's impression to counsel in the matter. I have not heard anything that will indicate on either side that this plane was overloaded.

Mr. Carpenter: I haven't either.

The Court: If I am in error now is the time to correct me. There has been no evidence there was. Other witnesses have said it did not depend on the number of persons, it depended on the weight. We have not gotten yet any evidence as to the fact it did exceed the license. Isn't that correct, Mr. George?

Mr. George: In poundage, your Honor means?

The Court: Yes.

Mr. George: Yes, your Honor is right, I think.

The Court: So far as I see it, the way the license reads it should not carry any more than provided for in the license has nothing to do with this case.

Mr. Carpenter: We think that was caused by the original plane that was licensed for one dozen—for twelve persons, and from the time they wrote the license for a Ford they wrote the same thing as on the first one.

The Court: I want to be clear. Counsel for plaintiff said he is not pressing it for a point.

Mr. George: We are pressing it so far as we are able to.

The Court: You have not pressed it very far yet.

Mr. George: We have pressed it hard.

The Court: I have not got anything. If I have missed anything——

Mr. George: I am hopeful your Honor will now catch it.

Cross-examination by Mr. George:

Q. Now, Mr. Balchen, you are acquainted with the Department of Commerce license? A. Yes.

Q. And this one that covered that particular plane? A. Yes.

Q. It is conceded by defense's counsel that this license covered the plane 41, Ford Model 4-AT, and that speaks of a seating capacity exclusive of crew, of twelve. A. Twelve.

Q. Now, if the crew is in the cockpit, and it provides for two members of the crew, that would make a total seating capacity of fourteen persons including the crew, isn't that so? A. Yes, and there is also often an additional man in the crew in the cabin.

Q. You can even have a keg of beer in there and that would increase the weight too? A. No,

that is not what I am driving at. I say many times they carry three in the crew.

Q. Yes, and you can carry seven more than permitted in the regulations, isn't that a fact? A. Yes, so long as you don't exceed the weight, the regulation of the license.

Q. But weight does make a difference in the plane? A. Yes, that is the prime question.

Q. So much as it is the prime question, Mr. Balchen, let me ask you this: In the case of a forced landing and the plane is in the process of landing either by reason of motors shut off or losing power or relying solely upon the glide ratio, if he has one passenger less in that plane, it would permit the plane to travel so much further on a glide, isn't that so? A. Yes, theoretically it would, but really practically it would not make any difference.

Q. It makes some difference? A. A couple of feet.

Q. In other words, the drop would be about two feet? A. With the higher weight.

Q. With the higher weight of one person of a hundred and fifty pounds, isn't that so? A. Yes.

Q. Now, then, if the plane on a forced landing is—I will use this little object here (illustrating with toy plane)—making a forced landing if it has one person less it is likely to clear the object more readily than if it has one person more, isn't that so? A. The difference will be so little.

Q. I am not asking the amount of difference, I am asking if it makes a difference? A. It would make—if you are calculating theoretically you will then have a difference of a couple of feet.

Q. I am not dealing with theories. I am dealing with the practical maneuverability and the practical workings of an aeroplane in its relation to old man gravity, as you describe it. A. Yes.

Q. As she is coming down, and knowing and understanding as you do the glide ratio of a plane of this type, if it had four people left in the plane why it would clear away over the object, wouldn't it? A. It might.

Q. It might. It is reasonable to suppose that it would, isn't that so? A. With four left, yes.

Q. Beg pardon? A. With four left it would not make a noticeable difference.

Q. It would go so much closer to the object.

Mr. Reed: I object to that as speculative.

The Court: Let us speculate on it.

Q. In other words, one passenger does make a difference of a hundred and fifty pounds, doesn't it? A. It makes a difference theoretically but you won't notice it on the ship.

The Court: I don't see that. You are an expert. I don't see whether five persons would make a single bit of difference. What difference could it possibly make if you had no passengers in it? Isn't the weight the controlling feature and not the number?

The Witness: Yes, that is it exactly.

The Court: You are getting mixed up.

The Witness: Weight is the primary factor.

The Court: It is the weight?

The Witness: Absolutely.

The Court: We have a different idea about this license entirely. This is just for convenience so the passengers will not be inconvenienced by being herded too much together. Useful load 3,961 pounds, that means human freight aboard, doesn't it?

The Witness: It means everything.

The Court: Everything except aeroplane and engine?

The Witness: Yes.

The Court: Now, if you do not exceed that weight of 3,961 pounds useful load, does it make any difference whether you have twenty people or ten people, so long as the weight does not exceed that poundage?

The Witness: No.

The Court: I may be dumb, but I cannot see anything different than that.

Q. Now, Mr. Balchen, what is the glide ratio of a Ford 4-AT plane? A. I have not any data on that. You may be able to get that from Dearborn from Ford engineers.

Q. Well, let me say to you it has been proved here that the Ford Motor Company specifications designate a glide ratio of nine to one. Do you disagree with that? A. With what load?

Q. What? A. With what load?

Q. This load on the particular plane in question. You disagree with that ratio? A. No.

Q. With that load? A. No. They have tested it and they have found it out.

Q. Beg pardon? A. I say I entirely depend on their figures.

Q. Well, will you accept as an expert the correctness of their calculations that this particular plane, considering its manufacture, its size, its weight and its capacity, would have a nine to one ratio? A. I would accept their figures without hesitation.

Q. So that we may understand what the glide ratio means, it means that on a glide with motors dead, no wind— A. Ideal condition.

Q. —ideal condition, the glide ratio will be nine feet forward to one foot elevation or altitude? A. Right.

Q. So that if the plane is seven hundred feet in the air with ideal conditions it will travel 6300 feet on a glide according to that ratio? A. Right.

Q. Or about a mile and a third? A. Yes.

Q. Or a mile and a quarter, is that right? A. Yes.

Q. With that load capacity? And, that would even be true, wouldn't it, with the wind on the tail? It would be the same thing, wouldn't it? A. No. Your glide would be lengthened with the wind on your tail relative to the ground.

Q. Your ratio would be even more, wouldn't it? A. Yes.

Q. If you have the wind on the tail, let us assume a thirty-three mile wind, would the ratio be eleven to one approximately? A. The most efficient gliding speed of the ship—the weight will come and enter into question and will lengthen the speed and will increase the ratio percentually to that.

Q. I am talking about this particular plane, fifteen passengers approximating 150 pounds each, with the wind on the tail, approximately thirty-three miles an hour. A. With a high velocity coming from the place there where you had a lot of obstructions would be very turbulent and it would not be possible to glide the ship at the speed that would be most efficient to glide.

Q. I am not talking about any particular locality. I am not talking about the Newark Airport or anywhere else. I am talking about this type of plane with fifteen people approximating a hundred and fifty pounds each with the wind on the tail. A. Still, the only thing I am concerned

about in this thing is the weight of the plane, 10,300 pounds.

Q. I am talking about this plane. A. The number of passengers does not interest me. From the question of performance the number of passengers is not interesting to me.

Q. Then, this full load of 10,130 pounds? A. Yes.

Q. That is a full load? A. Yes.

Q. With the wind thirty-three miles on the tail the glide would be increased, wouldn't it? A. Sure.

Q. About ten or eleven to one? A. I can't say. If you can figure it out.

Q. It would be more than nine to one, wouldn't it? A. Certainly.

Q. Of course, that is with ideal conditions so far as the dead motors are concerned but the wind on the tail, is that right? A. You know the ideal condition is with the idling motor.

Q. So you can say with the wind on the tail at thirty-three miles an hour, even though it is an engineer's test of nine to one, the glide ratio with the wind on the tail is increased, isn't that true? A. Yes.

Q. And the motors dead. Now, having one motor will that increase the glide? A. Indeed.

Q. It would. And if you have one dead motor and one partly functioning motor up to 800 r. p. m.'s that would increase it some more, wouldn't it? A. I think one motor idling at 800 r. p. m.'s is about indifferent.

Q. All right, then, we will cut that entirely and have only one motor, just one motor, would increase the glide again, wouldn't it? A. Yes.

Q. With a full load of ten thousand one hundred and thirty pounds? A. Yes.

Q. Well, about what ratio would you suggest, Mr. Balchen? I respect your opinion in that re-

spect. About what ratio would the glide be under those circumstances, one motor, thirty-three mile an hour wind on the tail? A. And ideal weather? Absolutely ideal conditions?

Q. Yes, unlimited ceiling. A. That don't make any difference. I mean, no turbulent conditions in there?

Q. What do you mean by turbulence?

The Court: Gusty wind.

The Witness: Gusty wind.

Q. No turbulence, the wind on the tail. A. That don't make any difference.

Q. All right. You said awhile ago— A. It makes a difference relative to the ground, your gliding ratio. It don't make any difference on the performance of the ship whether it is on the tail or on the nose.

Q. But, it increases the glide? A. Yes, sir.

Q. You don't have to land so much quickly? A. You land faster.

Q. You land faster, but you land further away? A. Yes.

Q. The ship at 700 foot altitude, wind of thirty-three miles on the tail, one motor functioning, capacity load as authorized by the Department of Commerce, would it be twelve to one glide? A. Under those conditions there?

Q. No. Don't look at that map. Just listen to my question.

The Court: He would have to get out his sliding scale and his old trigonometry.

Mr. George: I am asking for an approximate estimate.

The Witness: It would be likely it would be something in the neighborhood of that.

Q. Of twelve to one? A. Ideal conditions and no turbulence.

Q. If the wind is steady, that is considered sufficiently ideal for that purpose, isn't it, as defined from gusty winds? A. No. You say gusty wind, and from common information of the terrain underneath——

Q. I am not talking about terrain. I am talking about wind, steady wind, no turbulence. A. Just what I said, no turbulence. That's a steady wind, that's right.

Q. With that steady wind, no turbulence, thirty-three miles wind on the tail, one motor functioning perfectly, load authorized by the Department of Commerce, what is the glide ratio? A. I have not got the figures of the plane there.

Q. How much? Your best guess. A. I don't want to say in a guess.

Q. It would be at least eleven to one? A. Most likely would be.

Q. Eleven to one would make it, at an altitude of seven hundred feet, seventy-seven hundred feet? A. Yes, but it would not apply to this case at all.

Q. I didn't ask you whether it would apply to this case. The jury will determine whether your estimate will apply to this case. A. No. The weather conditions will determine that.

Q. Yes, sure. You will be good enough to give your estimates on the form of the question I give you without consideration to this accident or anything else at all until such time that counsel on the other side will object, and you can be sure they will object when necessary. A. Counsel don't mean anything to me. I want to clear up my own mind you have it right.

Q. That is what we are having such a pleasant time about, Mr. Balchen. Then, on your estimate

the plane would not land for a distance of approximately 7700 feet, isn't that so? A. Under ideal conditions, yes.

Q. Those conditions I have mentioned to you? A. Yes, sir.

Q. 7700 feet is more than a mile and a half, isn't it? A. Yes.

Q. Now, we get back to the airport with which we are so familiar. By the way, you have done a lot of flying, haven't you? A. Oh, yes.

Q. And at the time of the last trial you had—between the time of the last trial to today, how much flying have you done? How many hours in the air? A. The last trial was in——?

Q. April of this year. A. —April? I have got one hundred and fifty hours, something like that.

Q. One hundred and fifty hours is a lot of time in the air? A. Yes.

Q. You recall testifying in the other trial at that time you had done 2100 miles?

The Court: Hours.

The Witness: Is that so?

Q. Let me read the question. I don't want to be unfair to you, Mr. Balchen. I would not take advantage of you for all the world.

Q. You did testify—I am sure counsel will agree that that is the fact—in April when you testified in Newark— A. I don't recall how much. I got something around 2500 hours.

Q. I am not disputing that. And, six or seven thousand hours is quite a lot of flying, isn't it? A. Oh, yes.

Q. In fact, there are very few pilots in the world today who have much more than seven thousand hours? A. Yes, a minority of pilots.

Q. Beg pardon? A. Very few who have more than seven thousand hours.

Q. Even Lindbergh probably hasn't as much as that? A. I don't think so.

Q. Mr. Balchen, what effect does a cracked cylinder have upon the efficiency of the motor? A. Where is the crack?

Q. What? A. Where is the crack?

Q. In the cylinder. A. Where in the cylinder?

Q. Any part of the cylinder. A. It can be in the part of the cylinder where it don't make any material difference. It can be in a part where it can make the motor stop.

Q. Well, now, suppose it were a crack in the cylinder which permitted of the escaping of oil, would that have any effect upon the efficiency of the motor? A. It depends on where it is.

Q. Well, with oil escaping while the motor is in operation. A. As long as it don't foul up the plugs.

Q. What? A. As long as it don't foul up the plugs it don't make any difference.

Q. Is a cracked cylinder which causes the escaping of oil likely to foul up the plugs? A. It depends on where it is.

Mr. Carpenter: I object. This is long before. What difference does it make? It has been repaired. You can't talk about it months after.

The Court: The whole line was taken out and replaced.

Mr. George: That, of course, assumes what that witness said was true.

The Court: All right, go ahead. He says it depends where it is.

The Witness: It depends on where it is. I have flown with a cracked motor over 1500

miles and it ran just as good as any other motor.

Q. Now, Mr. Balchen, what effect does the sputtering of a motor while in flight have upon the efficiency of that motor? A. It has the effect that you lose your revolutions and its consequent loss of power the minute the motor sputters. As soon as the motor takes again you got your efficiency back.

Q. While it is sputtering it is not working efficiently, is it? A. No.

Q. And you are not getting the power? A. No.

Q. What effect does the emission of black clouds of smoke intermittently have as an indication of efficiency or lack of efficiency in a motor? A. I can indicate several things. Excessiveness of oil —excessiveness—too rich mixture in the carbureter.

Q. All of those things have an effect on the efficiency of the motor, haven't they? A. The question boils down to the efficiency of the motor, the r. p. m.'s it turns up, that means how many revolutions it can turn.

Q. If the motor is functioning perfectly and making proper r. p. m.'s it would not throw off black clouds of smoke intermittently? A. It can do that many times if the motor has been filled up with too much oil.

Q. And filling up with too much oil, meaning overflow in the oil tank? A. Not necessarily meaning that. It means the oil can pass by some of the clearances in the bearings in the motors.

Q. If it does pass by, the motor does not fire on all cylinders, does it? A. Sure, it has nothing to do with that.

Q. Then you say the emission of black clouds of smoke intermittently—not steady black smoke,

but a big cloud, puff of smoke—within a moment or two later another black puff of smoke—that has no effect upon the efficiency of the motor? A. I did not say that.

Q. Well, does it? A. Sure, it has. Certainly.

Q. It means the power is diminished to some extent, doesn't it? A. Well, it might be negligible.

Q. I did not ask you negligible or how much. I am asking you does it diminish the power of the motor? A. It might be.

Q. It might be. It certainly does not increase the power of the motor, does it? A. No.

Q. So, at best it diminishes the power of the motor, doesn't it? A. Some negligible amount.

Q. I did not ask you how much. It does to some extent? A. Some negligible amount.

Q. Where the motor is sputtering and it throws off black clouds of smoke intermittently, isn't that a very cogent indication of a bad motor? A. Not necessarily.

Q. The motor is functioning with full power? A. You have what you call a mixture control on an aviation motor by which you can set the mixture. It might be a question of your mixture control not being set in the right place.

Q. If it is sputtering it is not hitting properly? A. There is another question in there.

Q. I am talking about sputtering and black clouds of smoke. Would that be an indication to you of a motor that is not working well? A. Certainly. It would be to everybody.

Q. Now, Mr. Carpenter was discussing with you take-offs. Which is the better piloting, to take off into the wind or with the wind on the tail, assuming you have a capacity load as authorized by the Department of Commerce? A. Nobody would think of anything else but in the wind.

Q. It would be bad policy to take off with the wind, wouldn't it? A. Yes, as a theoretical consideration, we have figured it out.

Q. And the theoretical consideration as it has been determined by aviation engineers, was the result of a so many crack-ups on the take-off, isn't that so? A. Not necessarily.

Q. They have found from experience most of the disasters in aeronautics resulted on the take-off? A. Yes, but not from taking off down wind.

Q. I am not talking about wind. Because, the take-off is the most dangerous part of the whole flight, itsn't it, generally? A. I would not say that.

Q. Well, is the take-off less dangerous than the landing? A. I think you can equalize them.

Q. In other words, you have a good take-off and have good luck in the landing, that is pretty well equalized, isn't it? A. Sure. In other words, to use your American slang, it is about fifty-fifty. Fifty-fifty.

Q. Suppose the take-off is ten instead of fifty, resulting in a crack-up, the other ninety percent does not make so much difference any more? A. Here is the thing. You are under the wrong impression. The fatal accidents in the take-off are more than in the landing on account of in the take-off you are generally leaving a field and getting away from the possibility of making a landing. In a forced landing you have some time to look around and see where you can get the plane in.

Q. That is one reason. Isn't another reason most of the danger is in the take-off because you have your throttles wide open on the take-off and you give the gun and away she goes, and if anything happens on the take-off while the plane is

still on the ground or just a few feet above the ground you crack up generally? A. Not generally. You run into some obstruction.

Q. Suppose you are on a field, there is also the likelihood of the plane turning over? A. Not from a couple of feet. I have had happenings of that kind on forced landings. It is a very usual thing in test work to have it when we are finding out things about planes.

Q. Weight is a great consideration in the safety factor in take-offs, isn't that so? Once you are safely up in the air you are all right. Then, as you suggested, you can look around where to land if you are up high enough. A. Weight comes in here in two functions. It comes in the functions of the wind and load. Those two together make interconnected equations on the take-off ability of the ship.

Q. Of course, weight was so important in take-offs and so fraught with danger, is there a possibility of a crack-up if you don't get off the ground as is evidenced by Herndon and Pangborn in their take-off from Japan? Didn't they drop off their under gear in order to get off? A. That is an entirely different question.

Q. If it was not a question of weight, Mr. Balchen, why did they play with old man Death and drop off the under carriage? A. It was a question of getting more miles to your gallon of gasoline. The under carriage hanging there offers resistance. Resistance means horsepower to overcome that resistance when you take off. You use less gasoline.

Q. Didn't they drop off their under carriage, Mr. Balchen, because with the load that they had for the tremendous flight across the Pacific they could not get off the ground and make enough

altitude with that weight and they dropped off their under-gearing, is that a fact? A. No, absolutely not. You don't drop it for that. You drop it to save gasoline.

Q. When you flew——

Mr. Carpenter: Let him answer.

Q. Are you finished with the answer? A. Yes.

Q. If what you say is so, when you flew across the Atlantic with Admiral Byrd, you cracked up, didn't you? A. I would not say I cracked up.

Q. Well, you had a forced landing? A. A voluntary landing.

Q. A voluntary landing because you ran into a storm. A. No. I landed because my gasoline supply was nearly giving out. I chose my landing place. I didn't take the landing place I was forced to take any more than when my gasoline quit.

Q. The same principle was involved in the Pacific flight of Pangborn, wasn't it? A. Yes. That was not a crack-up.

The Court: Why did you go down on the water?

The Witness: Because I could not see anything. It was dark. I came in in the dark. The only place I knew I could not hit any obstruction coming in for a landing was the water.

The Court: You knew you were over the water?

The Witness: Yes.

The Court: You knew you were pretty near land? A. I could see from the beacon light, from the lights. I flew the beacon around. By that I got an idea of the underlying country.

Q. You were bound for Paris, weren't you? A. Yes, sir.

Q. You had difficulty in finding Paris? A. I could not get in on account of fog and storm.

Q. Now, if you had more gas you might have made Paris, might you not? A. No, I'd stay up to daylight and find a field some place and land.

Q. Well, why didn't you drop your undergearing? A. It was not possible with that kind of design of ship to drop the landing gear. If we could have dropped the landing gear we would have gas to stay up the rest of the night and perhaps some time in the forenoon.

Q. That would have enabled you by reason of the lesser amount of load, isn't that so? A. The load is a secondary factor, but the lesser resistance.

Q. You told us before, Mr. Balchen, that the load is the primary factor. A. Not in a long distance flight. That is a different problem again.

Q. You will have to pardon me because I don't know anything about long distance or short distance. A. The question comes in long distance how many miles you can get to the gallon. They are two different problems.

Q. Now, Mr. Balchen, taking this particular plane with fifteen persons, take-off on the northwest runway into the northwest—you are acquainted with that runway? A. Yes.

Q. —and the wind blowing from the northwest between thirty-three and thirty-nine miles an hour, having reached a point just about two hundred or three hundred or not more than four hundred feet beyond this state highway to a point just marked here "I-1", and then having reached an altitude of one hundred feet, making a sharp turn at that point with that load, with that wind in that direc-

tion, and that velocity, would you consider that good piloting at one hundred and fifty feet altitude to make a sharp turn? A. Why didn't they get more than one hundred and fifty feet?

Q. That is what I would like to know. A. I don't understand why he would do that.

Q. Neither do I?

The Court: But assume that that is so, Mr. Balchen, assuming that is what happened, not that it did, but assuming that it did, the question is would it have been good piloting to have made that turn under all those conditions he indicated on that day?

The Witness: To have made that specific kind of turn?

The Court: Yes.

The Witness: I don't think it would be advisable.

Q. Dangerous, wouldn't it? A. Not that I would say dangerous with all motors intact.

Q. Bad piloting? A. I would not say that. I say it would not be advisable.

Q. You say it would not be advisable. Now, assuming the same wind condition, same direction, same load, same plane, and after having made that turn, I understand from what you said on direct examination that sharp turn would affect or slow up the speed of a plane, is that right? A. No, decreasing the lift of the plane.

Q. Decreased the lift, and a sharp turn retards the speed, doesn't it, to some extent? A. Well, you have to retard the speed to make a real sharp turn.

Q. Well, whether it is done by the pilot or whether it is done by the law of gravitation or wind alone, or the impact against the wind, what-

ever it is, it does slow it, doesn't it, on a sharp turn? A. How sharp a turn do you want to make?

Q. What? A. How sharp a turn are you considering?

Q. A sharp turn at thirty-five degrees. A. A thirty-five degree bank?

Q. Yes. A. You would not slow up an appreciable amount on that.

Q. It would slow it up some, wouldn't it? A. A mile or two.

Q. Then, having made this turn, this same plane, assuming this is a fact, and continuing northeasterly in this direction— A. What is he doing? Climbing or flying level?

Q. Wait a minute. This first turn was at one hundred and fifty feet and he is going along in a northeasterly direction until he gets to where I have my finger here, marked on the survey map "I-2", and reaches an altitude there of three hundred and fifty or four hundred feet and makes again a sharp turn at that point to the right—easterly, would you consider that circumstance good piloting with a down wind on his tail at this altitude? A. At five hundred feet with the city right in front of him I would consider that a proper thing to do to get away from the obstructions and from the turbulence from the city. You get over calmer land when you get over an unobstructed area.

Q. I am not talking about the city. A. You are looking at the map. I am looking at the map, too.

Q. I ask you, please, to confine your consideration only to my question. On the basis of piloting with this first turn here only a few hundred feet from the runway, one hundred and fifty feet, which you said was not advisable to do, and continuing and reach away up here at this point, and

having at altitude over the highway, over the railroad, at about three hundred and fifty and making a sharp turn into a down wind, would you consider that good piloting? A. At that time you have so much surplus speed on the plane it would not make any difference.

Q. How? A. At that time you have so much surplus speed on the plane it would not make any difference. The difference would be immaterial.

Q. Supposing one motor was dead at that sharp turn.

Mr. Carpenter: I object. There is nothing to support any hypothesis such as that.

Mr. George: You have examined——

The Court: I think all the evidence has been: Assuming the motor or motors was or were sputtering and emitting black smoke intermittently from the exhaust in that way out to and beyond the first turn.

Mr. Carpenter: Beyond the first turn there is no evidence of any sputtering.

Mr. George: I will withdraw that question.

Q. Mr. Balchen, assuming this same kind of plane with fifteen persons averaging one hundred and fifty pounds— A. How much weight? Not exceeding the Department of Commerce load? I am not interested in passengers. I am just interested in poundage.

The Court: Not exceeding that load.

The Witness: All right.

Q. Not exceeding the load authorized, but one hundred and fifty pounds average for fifteen persons—that gives you the load—with the wind thirty-three to thirty-nine miles northwest before

the take-off, and in the process of the take-off one motor is sputtering and emitting black clouds of smoke, would it be good piloting to take off with the plane under those conditions and under those circumstances and with that load with the motor functioning in that way? A. No.

Q. It would be dangerous, wouldn't it? A. I would not say dangerous. It depends upon the condition of the motors. Many things come in there.

Q. The motor is sputtering and it is emitting black clouds of smoke. A. Lots of motors do that.

Q. Would it be dangerous to take off in that kind of wind with that kind of load? A. The wind is to your advantage in the take-off?

Q. Wouldn't it have been dangerous to take off with a motor functioning that way? A. I would not say it was dangerous.

Q. You would not consider it good piloting, would you? A. No, I would not consider it good policy.

Q. Why? A. I did not say good piloting. I said "not good policy".

Q. Why? A. I am always of the opinion I want to have my motors clear.

Q. Why? A. Because I always like to see the motor working at the uppermost efficiency.

Q. But why wouldn't you take off under those conditions? A. I didn't say I wouldn't. I might determine I would.

Q. It would not be good piloting to take off under those conditions? A. It would not be good policy, I say.

Q. Why? A. If you know your motors on your plane, the motors have a tendency when they stop idling on the ground to load up, and the mixture gets too rich. They turn up a couple of seconds

and get clear again, then we don't pay any attention.

Q. I am not talking about the aeroplane in the air. I am talking about the take-off. Considering that plane with that kind of load under those conditions you said it would not be good policy to take off under those conditions.

Mr. Carpenter: The witness has not said that.

Q. Why wouldn't it be good policy? A. Just a matter of training. I don't do it. I want to have my motors clean before I go off.

The Court: Would any consequences likely to occur have an influence in making you say it would not be good policy?

The Witness: No. It generally has no consequence. A daily occurrence. Your motor loads up on you. It clears up in the first few seconds of flight.

Q. What is the maximum r.p.m.'s on a J-5? A. What amount?

Q. Yes. A. 1580, 1600.

Q. What is the maximum in the air? A. Straight-away, full level flight?

Q. Yes. A. Sixteen to eighteen. It depends on what you set your throttles at.

Q. In revving up your motor, just what does the pilot or mechanic do in revving up the motor —on the ground, of course? A. If you take the whole procedure from the time you get the plane out from the hangar, you warm up the motor until by that means you get your oil temperature. When your oil is thin enough you can pull the throttle over. That depends on the temperature of the air, how long it takes.

Q. Assuming the motor is warm, supposing the plane had been working right along all during the day and was still warm, had just come back from a hop and just before the take-off that we are now imagining—this is just a hopping proposition. A. What we do is generally the rule before we take off, when we come down to the end of the runway we stop the ship and turn it over—the motor—to see if it turns all right.

Q. Turn it up to what? A. Its maximum r.p.m.'s.

Q. That is eighteen? A. No, it is sixteen to eighteen.

Q. I suppose, Mr. Balchen, it is possible to rev up a motor to eighteen hundred on the ground, isn't it? A. If the motor is set for full at eighteen hundred you can't.

Q. I mean immediately before the take-off, you can't rev these motors up to eighteen hundred on the ground? Are you sure? A. Yes. Absolutely. What is holding your motor back is your throttle. The throttle is set. A motor turning at eighteen hundred would develop the maximum horsepower. When you turn your motor up on the ground the pitch of the throttle is the function of that.

Q. Can you set it for eighteen hundred? A. You can set it for eighteen hundred, then you won't get any efficiency in climbing in the air. You get more speed, perhaps, and the motor would then turn twenty-two or twenty-three hundred in the air. It is very exceptional to do that.

Q. Suppose the motors are set for eighteen hundred on the ground, then the revving process means the throttle is opened up for the purpose of revving it up and the tachometer will indicate just what it does, isn't that so? A. It will indicate eighteen hundred revolutions.

Q. Suppose two motors, in revving up show eighteen hundred each? A. They might show two thousand, too.

Q. Please listen to me. Will you please listen to my question?

The Court: Listen to the question.

The Witness: Excuse me.

Q. Two motors show by the tachometer 1800 r.pm.'s and the other one by the same revving up process shows a maximum of 1200, would that be any indication to you that there is anything wrong with that motor?

Mr. Carpenter: I object. There is no hypothesis in fact sufficient to support that question in this case.

The Court: I think one of the witnesses who was a passenger in this plane testified about it.

The Witness: You have that in two extremities there, as though you put the difference between the r.p.m.'s to such an extreme that such a thing could not happen. If you get a motor at 1200 r.p.m.'s I don't think you could keep that motor running rightly.

Q. If three motors are revving up and two of them show eighteen and the other shows twelve hundred, does that indicate to you a lack of efficient performance between that one motor and the other two? A. It surely does, but it is a very unreal case you are referring to there. It does not react to reality.

Q. Whether it is real or unreal is not the question, unless you mean you are acquainted with

this motor that was involved in the crash? A. J-5's are all alike.

The Court: Mr. Shaw said that the tachometer showed that two of the motors went from eighteen hundred to two thousand, that one, the best that could do, was sixteen hundred, not twelve hundred, sixteen hundred.

The Witness: Sixteen hundred is the normal r.p.m.'s on a motor. It is good r.p.m.'s for that motor on the ground.

The Court: Therefore, if it was sixteen hundred, would it show any indication of improper motor, with the others revving up to eighteen hundred or two thousand?

The Witness: But, your Honor, we never turn those motors to eighteen hundred on a ship of that kind.

The Court: A lot of things are being said here that may never have happened, but, the point is, supposing it did happen, two of them were eighteen or two thousand and one other one, on the left hand side, I think he said it was, showed not over sixteen hundred while the others revved up to eighteen hundred or two thousand at the same time, would that indicate anything wrong with that motor that was revved up to sixteen hundred? That is the question.

The Witness: If that motor was set to rev eighteen hundred it would.

The Court: But, if not, it would make no difference.

The Witness: If that motor was set to rev sixteen hundred it would be then normal r.p.m.'s.

The Court: If they are not revving alike it would show what?

The Witness: It would show a deficiency in that motor.

The Court: The jury will disregard the question with regard to twelve hundred. Counsel and the court were in error about what Mr. Shaw said.

Q. Is there a plane of this type—withdraw that. Taking off a plane of this type under the conditions as they existed on March 17, 1929,—you are familiar with the conditions as they existed on that day— A. A northwest wind.

Q. —were you at the airport that day? A. No, I was not. I was in the Antarctic. I was in the other end of the world at that time.

Q. You have been made acquainted with the condition? A. I fly in and out of there very frequently.

Q. You have been made acquainted with the conditions as they existed that day? A. Yes.

Q. You have been informed by other persons? A. Yes.

Q. This particular plane, and under the conditions that have been described to you, what altitude would have been necessary for the pilot to have attained with that plane and with that kind of load to have been able to make the airport again? A. Well, that is a question that is very difficult to answer. In the bumpy air of that kind I should judge he needed around between eight hundred and one thousand feet.

Q. Eight hundred and one thousand feet? A. That is just my guess.

Q. I am only asking you to guess. With how many motors going? A. With the motors throttled down?

Q. With the motors throttled down? A. Yes, to come in for a landing.

Q. In other words, with the motors throttled down he would have required at least eight hundred feet? A. That is my guess.

Q. Now, Mr. Balchen, with this plane under the conditions as they existed at the time of the accident, with the motors functioning properly, with the altitude of five hundred feet, would it have been safe to make a turn back towards the airport? A. With the motors functioning properly, you said?

Q. Yes. A. Yes. I see no objection.

Q. Would you recommend the making of a turn under those circumstances at five hundred feet? A. Your engines functioning properly to go back to the airport? I should say, "Why not"?

Q. Assuming that the plane was in the middle of the marshes there at five hundred feet with the motors functioning properly, would it have been recommended—would you recommend a turn toward the airport? A. Yes.

Q. At five hundred feet? A. I don't see any danger in that.

Q. Do you recall being asked this question—1439—Question: "After all that, what would you say would be the proper height to turn?" Answer: "To make what kind of turn? A sharp turn or long turn?" Question: "To turn to the right." Answer: "To the right. All right. Motors functioning properly, you should have all when you are in the middle of those marshes, ample altitude to make either a turn to the right or left." Question: "What would that ample altitude be?" Answer: "Five hundred feet. Five hundred or a thousand feet", you said. Do you remember that? A. Yes, between five hundred and

one thousand. This question is entirely outside of the premise you gave me in the question on there.

Q. Now, question: "Anything below five hundred would not be safe, would it?" Answer: "Not recommendable." A. Not recommendable, sure.

Q. Not recommendable because it would be dangerous to make a turn under those circumstances under five hundred feet? A. Out in the marshes?

Q. Out in the marshes. A. Not as long as your motors are functioning properly.

Q. Suppose it were under five hundred, down to three hundred and fifty feet, would it be recommendable to make a turn? A. With your motors functioning properly?

Q. Yes. A. I would not recommend it to do it, but still I would not say there was any danger involved in it as long as you have your whole speed, that is the only question.

Re-direct examination by Mr. Carpenter:

Q. Did you also in this case in Newark testify this way: Question: "It is a set rule, isn't it, an accepted rule of flying, that if the motor fails, or any of them, to land into the wind, isn't it?" And did you answer: "Yes, but there are also other things happening, that in cases they are failing you are going down wind. There are many pilots killed also trying to land into the wind with a dead stick and crashing on account of losing their speed in the turn. Under those conditions there might be cases where it would be advisable just to try to let her go right straight ahead?" A. Yes, make the best of it.

Q. Numbers of pilots when, in trying to turn out of a situation where they are going down wind at low altitudes, try to turn around into the wind? A. Yes, quite a number.

Q. That is one of the most frequent causes of frequent accidents? A. It is one of the great causes of fatal accidents in connection with motor failures close to the ground.

Q. Assuming, now, Mr. Balchen, that the motor—the ship described to you, the left engine quit cold and the center engine revved down to eight hundred revolutions a minute, and the right engine going properly, what would you say about the feasibility of attempting to make a turn around into the wind then with an altitude of five hundred or six hundred feet, and over the area which I have described where there were buildings and dumps? A. When you are over there and going away from the airport your left motor that is away from your center line of the ship is dead, you see, and your right motor is down, too, so low it is just idle, you can consider that out of the question. You got your right engine pulling and your right engine is pulling—trying to turn you left. In other words, your maneuverability towards the right is decreased.

Q. It is decreased? A. It is decreased, yes, on account of your motor with its distance away from the center line is trying to pull you left. So, what you generally do in that case, there is one chance, is to go around to the right and get out to the marshes instead of going into the city. You have to try drawing her to the opposite for the tendency of the motor to turn around towards the left, so we will fly the plane a little to the right when low with hard right rudder applied and try to sway her around.

Q. Is that all you can do ? A. That is all you can do.

Q. Is it much of a job to keep the plane straight under those conditions? A. Yes. You have to

apply a considerable amount of pressure on your rudder. I don't think the 4-AT would keep on an even keel.

Q. Would it be the policy under those conditions to try to turn around and land head into the wind on the swamp or buildings or whatever there is? A. Your maneuverability is correspondingly that much increased to the right because you have not sufficient control to get the plane in a steep bank to the right unless you either throw her over, which is not a desirable thing to do at low altitude. The best thing to do would be to take a spot which you can see ahead of you, which you know you can clear and try to make the best you can out of it. A big transport ship is not a ship to maneuver around and set it on its ear with a passenger load. It is more advisable to make gentle turns.

Q. Is a thirty-five degree bank a sharp turn? A. It is a comparatively sharp turn on a ship of that size.

Q. You said something about a glide ratio of eleven to one. You said it would not apply in this case. Why? A. Because on that day you had wind from the northwest. It was gusty and it was coming from over a lot of obstruction and things. The air, it follows the ground. If you are flying over prairie, to take the extreme, you can have a pretty stiff wind blowing and still have not so much turbulent air, but if you are flying over mountainous area and you have a stiff wind blowing, you have your hands full of work to keep your ship on a balanced keel on account of all those air currents.

Q. Is there such a thing as pockets in the air? A. I would not say exactly pockets. Your high air currents go in different directions. In a case

of this kind with any bump you need more control on your ship. You need more pressure on your control surfaces. You need more speed. If you need more speed, with a dead motor, that will mean you have decreased your glide ratio.

Q. You were asked some questions about black smoke and you were asked some questions about sputtering. What causes an engine to sputter? A. Most generally the cause of a sputtering—it can come from two causes. From a too cold motor and it also can come from mechanical causes, as, generally, from the engine being a little cold.

Q. Generally from the engine being a little cold, that is the general rule? A. That is the general rule. Also it can be caused from the mixture not being set properly, the mixture control.

Q. What does black smoke indicate, assuming no other condition, just black smoke? A. It might indicate that you are not setting your mixture control in the proper place, or there might be a spark plug or two fouling on you once in a while also. Most likely due to improper mixture.

Q. Mostly improper mixtures? A. Yes.

Q. What effect would it have on the power of the engine? A. It would have the effect that you would lose your revolutions.

Q. Assuming the engine had been revved up before the take-off and that they revved up all right to the same power on the ground, and then were slowed down again, and in revving up they checked up to their maximum power and then throttled down, what would you say then about the probability of black smoke issuing out of those motors as it was taking off, and the engines sputtering on the way up? Is that probable? A. No. I think—we think it to be a remote possibility such a thing would happen. Anyway, only once

in a thousaand hours a thing of that kind would happen. If you control your engines from the ground just before you leave and clean them out and see everything is o. k., you have no more guarantee, you have done everything in your power possible to safeguard against any such occurrence.

Q. The very purpose of revving up your motors to the maximum power and back again is what? A. That we see the motor is taking, the magnetos are working properly and there is nothing exceptionally wrong with anything in the installation. We also clean out the motors.

Q. It blows them out? A. It blows them out. Just as you take a car, it loads up when you idle it too long. The main purpose is to clean out the motors so we can get them to the maximum efficiency.

Q. So, if the motor revs up to the maximum power on the ground before the take-off, would you expect that in the take off, after she rose from the ground, there would be any clouds of smoke or any sputtering of the motor? A. No. You have done everything in your power then to prevent such a thing to occur.

Q. Now, furthermore, if one of these Ford trimotored planes with three Wright J-5 engines had been used in hopping all day long and had flown on nine or ten trips without accident or incident during the day on the kind of day described to you, and that on the last take-off—before the last take-off the engines had revved up all right and then she ran around off the runway all right and lifted up off the ground, what is the probability that there was any sputtering of one motor or any smoke coming out of the exhaust of that motor? A. You can never say never, of course, in every-

thing. You don't know what is going to happen, but the chances are still less when you have been flying a plane for such a thing. There should be more of a guarantee the motors will keep running satisfactorily than if you took the motor out from a hangar.

Q. If the ship—after revving up these motors and leaving the ground had climbed up to an elevation of five or six hundred feet, even if the motors had sputtered as she left the ground and black smoke had come out as she left the ground, and she got up to an elevation of five or six hundred feet, what would that indicate about the fact of the sputtering or the smoking? A. That would give you an indication it was nothing serious because the plane would then have sufficient excessive power to be able to climb and gain altitude the whole time. Of course, in the case of sputtering you would not get the maximum power out of it, but it would indicate you were pretty close to maximum.

Q. Is the maximum speed of the motors applied as your plane leaves the ground? A. Maximum? The motor don't turn up at maximum, but you fly in level flights close to the ground because as you are climbing you are supplying a higher load. It is just like pulling a motor up a hill. It is the same way you drive in a car, when you are coasting on level grade you can attain a higher speed in a car.

Q. Assuming that a sharp turn was made at two hundred feet as described by Mr. George here at a point several hundred feet past this intersection, you said that would not be good judgment on the part of the pilot? A. No, it would not be advisable.

Q. Well, would that have any effect? Assuming now the plane went on for another three or four thousand feet—another two or three thousand feet, would that turn, that sharp turn which you said was bad flying, would that have any effect at all after the ship straightened out and commenced to climb again or would it be a past event? A. It would be a past event then, the turn.

Q. The same way with the second turn. You said that second turn with an elevation of three hundred and fifty or four hundred feet there would not be so good. A. I said I would do the same. I would not go over the city.

Q. Oh, you would do the same thing? You would make your turn right instead of going over the city? A. Yes, I would turn away from the houses there.

Q. Would that have any effect on making the motor sputter? A. No.

Re-cross-examination by Mr. George:

Q. But, with the wind on the tail on the second turn, assuming he had only three hundred and fifty feet of altitude here after his first turn, the first turn I described which you criticized as bad policy, with the wind then on the tail, down wind, he would have more difficulty in maintaining altitude, wouldn't he? A. No, he would not, because he is flying relatively to the air.

Q. Relatively? A. His speed is in relation to the air. He is traveling in the air, that is his medium and his climbing ability in the air—we take a concrete example here—that is six hundred feet per minute. In one minute he climbed six hundred feet. He will climb six hundred feet whether he goes with the wind or against the wind,

but the distance covered across the ground will be much further down wind than it will be against it.

Q. I see what you mean. You mean if he had had three hundred and fifty feet at this point with a down wind he would still be able to climb? A. At the same rate.

Q. But, if he wanted to make nine hundred and fifty feet—using your illustration—or six hundred feet over this point it would take—he would have to cover more ground? A. Yes.

Q. That is what you mean? A. Yes, sir.

Q. Well, that is a different way of putting it. In other words, if he were going against the wind in this direction he would make nine hundred and fifty feet here, whereas if he is going with the wind he would make nine hundred and fifty feet away down further? A. Right.

Q. In other words, then, it is more difficult in the sense it takes more territory to reach the same altitude if you are going with the wind? A. Well, it does not make it any more difficult.

Q. I am not speaking of difficulty. I mean the time required. A. The time is exactly the same, but the distance on the ground, that is the difference.

Q. He does not go up off the ground in the same way? A. Going down wind he has to travel further distance.

Q. One more question, Mr. Balchen, and I will be all through.

Q. Would you regard it as safe piloting to take off a plane with the load in question with a cold motor? A. No.

Q. And you said that sputtering would be one indication of a cold motor? A. Yes.

Q. So that as the plane is—as the motors are being revved up immediately before the take-off

a sputtering motor would be an indication that a take-off should not be made under those conditions, isn't that so? A. If the motor sputters on the ground in revving up I would investigate it.

By Mr. Carpenter:

Q. I want to ask you one question: whether you turned up wind or down wind at the elevation given, three hundred and fifty to four hundred feet, whether the wind was blowing at thirty miles an hour or forty miles an hour before making that turn down wind, would it have any effect at all upon the motors or their function? A. Not on the function of the motors.

Juror Number Three: Does the loss of altitude indicate any trouble? A witness said he made a turn, that he began to lose altitude on a gentle glide.

The Witness: Yes, loss of altitude will indicate in that case when he is close to the ground his motors are not working at one hundred per cent.

The Court: Have you any mark where he said he made that gentle turn, after he completed the turn he began to lose altitude?

Mr. Carpenter: There is testimony given by one man who seen this plane come out in the air through this point where there is a mark and then off the map and turned right and at about this point the plane was at an altitude of five or six hundred feet and from then on started to do down and continued down to this point over where it struck the railroad.

Juror Number Three: You also said the idea was to keep on going straight?

The Witness: Yes.

Juror Number Three: Would you have tried when you saw that obstruction, that railroad, would you have tried to land in those marshes instead of going on straight when you saw an obstruction ahead of you, when you were losing altitude?

The Witness: When I see an obstruction ahead of me, of course, and I knew I could not clear the obstruction. If I thought I had a chance to clear——

Juror Number Three: How would you know you could clear it or not? You say you were having trouble.

The Witness: That is just the question.

Juror Number Three: You would have tried to land in the marshes instead of going straight ahead?

The Witness: If I knew I could not clear the obstruction I certainly would.

Juror Number Three: How would you know whether you could or could not clear that?

The Witness: It is your judgment that comes in there. It is entirely your judgment.

Juror Number Three: You would have tried. You think you would have tried when you saw the obstruction, to land in the marshes?

The Witness: Of course, if I saw a green field over there I would put quite a lot of faith in the thought I would be able to make it over to the field, if I had that belief in myself I could make it over there.

It is just like a sinking ship. You don't want to run it on the rocks. If you thought you could get over there and tried to get over there you would make a pretty hard stab at it.

Q. Assuming, now, that west of the railroad there was a creek about four feet deep and twelve feet wide.

Mr. George: There is no testimony as to the depth of it.

Q. Assuming that creek was there——

The Court: It will be stricken out if it is not connected.

Q. —and it was very soft and that that was not over one thousand feet in width from the edge of the dump to the railroad and the ship was coming down wind, would you be able to land in there? A. Not going down wind with that amount of wind on your tail.

Q. Why wouldn't you, Mr. Balchen? A. You would hit it on around one hundred miles an hour going down wind with that amount of wind on your tail and one thousand feet is a mighty small distance for a ship to land at one hundred miles and hour, especially with that weight.

Q. You would have to go over in the meadow? That was his only chance. A. That is his only chance, even if you have got meadow ahead of you, you have got a chance to over-shoot that too.

Mr. George: According to this scale of the airport, is that about how far you say he went out?

Mr. Carpenter: About there. 4800 feet.

By Mr. George:

Q. Mr. Balchen, assuming the plane is functioning normally, all the motors functioning and going into the wind, which means that you make your altitude in less distance, less area— A. Less distance, yes.

Q. —4800 feet from the airport, what altitude going straight ahead into the wind northwest would this particular plane with that kind of load be reasonably expected to have made? A. I should say something in between five to seven to eight hundred feet.

Q. Not more than five to seven or eight hundred feet? A. Not that kind of a day.

Q. Not that kind of a day? A. There are so many things come into the question. If the pilot is flying in and out there the whole day he don't want to strain his motors more than he has to. He most likely would do like most of us as soon as he gets off, throttle the motors down and not use the excessive horsepower we have and he would keep the surplus speed, but that would lower, of course, your climb and have more control in a gusty wind and not have an unpleasant feeling for the passengers being bounced all around.

Q. It was gusty that day? A. That is what I am informed.

Q. And the gustiness of the wind was an added strain on the plane and motors, wasn't it? A. Oh, no, nothing on the motors.

Q. It was something? A. It don't amount to anything on the plane.

Q. I didn't ask you whether it amounted to anything or little. There was some. A. Oh, yes.

Q. That was the reason you say he couldn't make more altitude in that space, but he does not

want to strain his motors under the condition that existed, isn't that what you said? A. No, not on the conditions, but that is the policy we always have, not to strain our motors more than we have to.

Q. If he naturally made seven or eight hundred feet, as you say, in that space and he turned down wind, he could have made the port again, couldn't he? A. I don't dare answer you on that question.

Q. What? A. I can't answer you on that.

Q. You told the court and jury awhile ago— A. Yes, but it was in a different location.

Q. Let me get the question in first. You told the court and jury, Mr. Balchen, that the ratio—glide ratio under those conditions, motors functioning perfectly with that kind of wind on the tail would be eleven to one? A. I said I guessed.

Q. That would have made eighty-eight hundred feet at an eight hundred foot altitude, isn't that so, and it would have been twice the distance or once again the distance beyond the airport? A. No, no. You are not applying the guess right.

Q. I am not applying it right according to your standpoint or Mr. Carpenter's? A. No.

ADAM WTORKOWSKI, recalled.

Direct examination (continued):

By Mr. Carpenter:

Q. You say that you made a certain inspection every twenty hours of flying time? A. Yes.

Q. Now, you said also that was the inspection that was required by the Department of Com-

merce to be made every one hundred hours? A. Yes, that is right.

Q. Now, then, whereabouts was it that you made those inspections every twenty hours of flying? A. You mean where?

Q. Where was the ship, yes. A. Well, most of the time it was at Miller Field, Staten Island.

Q. Most of the time at Miller Field? A. Yes, sir.

Q. Do you remember when it was that you made that twenty-hour inspection previous to this 17th of March, 1929? When had you been making that inspection? A. That must have been about a week before time.

Q. Where was the ship then? A. At Miller Field.

Q. Now, what did that twenty-hour inspection cover? What did you have to examine? What part of the engine and the ship? A. Well, beginning with the engine first I drained all the oil out of the oil tanks, took out all the oil strainers and examined them and cleaned them, put them back in again. Of course, I flushed the tanks at the same time. Then I started pulling the push rods from the engines.

Q. The push rods? A. Yes, sir; took them out and examined them for defective spots and cleaned them also if they were good, greased them, put them back in place again.

Mr. Carpenter: I think the only thing we are concerned of are the spark plugs, are we not, your Honor?

Q. Did you make any examination of the spark plugs in particular? A. Well, the spark plugs we took out at the same time, on every twenty hours flying time and I washed them in gas, in-

spected the porcelains for cracks, adjusted the gaps.

Q. What do you mean by adjust the gaps? A. Adjust the gap clearances.

Q. The gap clearances? A. Yes, adjust them on the magneto in the motor shop to see if they were functioning all right.

Q. Did you have a testing machine in the machine shop? A. We had a magneto for testing spark plugs.

Q. How many spark plugs are there on the engine? A. Two spark plugs to each cylinder.

Q. Two spark plugs for every cylinder? A. Yes, in the motor.

Q. How many cylinders to each motor? A. Nine.

Q. That is eighteen spark plugs for each motor, and there were three motors? A. That is right.

Q. Fifty-four spark plugs on the three motors of that ship? A. That is right.

Q. What was the time prior to the 17th of March, 1929, that you had last inspected and tested the spark plugs? During what time? A. Well, I remember the last twenty-hour inspection I did on the plane, that was about a week before time and on the two side engines I remember I finished, and the center on the plane also. On the Saturday before the crash I worked on the center engine again.

Q. When did you work on the center engine again? A. It was a Saturday morning. Saturday before the crash.

Q. That was the day before the crash? A. Yes, sir.

Q. You were working on the center motor then? A. That is right.

Q. During the week preceding the 17th of March what was the weather like? A. The week before? I think we had a lot of rain before that.

Q. Was the ship in the hangar practically the whole week? A. Yes.

Q. During that whole week what were you doing? A. During that week I was working on the plane, making inspection of the wings, gas tanks and wire installation.

Q. I mean, what inspection were you working on? A. Well, during that week I did the twenty hours inspection on the center engine which I finished Saturday.

Mr. George: The center engine?

The Witness: The center engine, yes, which I finished Saturday, and also I did the inspection on the plane and the side engines did not call for—in fact neither one of those engines called for twenty hours' inspection. I did not have anything else to do. I brought myself time ahead, so I did twenty hours inspection on the plane and the center engine.

Q. Had the two end engines, the two outside engines have 20 hours' on them of flying since you had taken them apart at the previous twenty-hour inspection? Did they have twenty hours on them yet? A. No. One had about thirteen hours flying time since the last inspection.

Q. How about the other one? A. Which one? The center?

Q. You said you finished the center one on Saturday? A. Yes, sir.

Q. When did you finish the right engine, the one on the right side? A. That was the week previous to the accident.

Q. About how many hours of flying? A. About thirteen hours.

Q. On the other, on the left motor, when did you finish that inspection? A. The left and the right engines were inspected at the same time.

Q. And they had about thirteen hours flying on them since the last twenty-hour inspection, is that what you say? A. Yes.

The Court: Right here I would like to ask: Do I understand from the previous answer some time back that you said you last inspected the spark plugs about a week before this accident?

The Witness: Yes.

The Court: Where did you get the idea that you should give the twenty-hour inspection? Is that the rule on this particular plane? The reason I ask is this: there is no governmental regulation about any twenty-hour inspection.

The Witness: No, that was the pilot's.

Mr. Carpenter: Weatherdon said yesterday he required that one hundred hours required by the Department of Commerce every twenty hours.

The Court: May I break in at this time and ask you this question: You made the line inspection called for by the air commerce regulations?

The Witness: Yes.

The Court: Did you make a line inspection to ascertain the working conditions and state of repair of these parts I am going to read to you within twenty-four hours preceding this flight?

One, open control wires, all control wires and pulleys open to inspection, all hinges and control surfaces?

The Witness: Those inspections were made.

The Court: Did you?

Mr. Carpenter: Yes or no.

The Witness: Yes.

The Court: Within twenty-four hours before this flight?

The Witness: Yes.

The Court: Two, landing gear, wheels, fittings, and shock absorbers?

The Witness: That is right.

The Court: Fuselage parts open to visual inspection?

The Witness: That was made.

The Court: Main plane, external bracing, including fittings, struts and external wires, cable turnbuckles, fabric of cover?

The Witness: Yes, sir.

The Court: Control surface fabric and covering?

The Witness: Yes, sir, that was done.

The Court: Six, engine exhaust manifold and exhaust pipe in extension?

The Witness: Yes, sir.

The Court: The engine shall be given a warming up. Did you give that? Proper function of the engine instruments shall be ascertained.

The Witness: That is right.

The Court: Carbureters and fuel feed line open to visual inspection to insure full function?

The Witness: Yes, sir.

The Court: Cowl to insure cowling are properly secured and fitted?

The Witness: Yes, sir.

The Court: Propeller as to condition?

The Witness: Yes, sir.

The Court: You made all that within twenty-four hours before this flight was made?

The Witness: Yes, some of those inspections, that line of inspection, the Department of Commerce line inspection we call the twenty-hour inspection, that is daily before flight.

The Court: But with particular reference to the spark plugs you say you inspected them last one week before the crash?

The Witness: Yes, sir.

The Court: At that time you gave them a thorough cleaning and inspection? Might I also pursue that thought? You say you used an instrument to see that there was the proper opening between the stems of the plugs?

Mr. George: His testimony was that they had an instrument in the machine shop, but that is as far as he went.

The Court: Did you use an instrument to see the proper gap on each of the spark plugs?

The Witness: Yes, a thickness gauge.

The Court: How many spark plugs were there on each one of these three engines? Normally, I mean, not after the accident. I mean, when you made your last inspection.

The Witness: All spark plugs were on the engines. They were in place.

The Court: Eighteen on each one of them?

The Witness: Eighteen on each engine, yes.

The Court: Now, what was the gap that you said each one of those spark plugs had or you tried to get?

The Witness: Well, I used a thickness gauge of fifteen-thousandths of an inch clearance between the gaps on those spark plugs, but the spark plugs had been in operation for two hundred and seventy hours and, that type of spark plugs have a tendency to burn between the points and to separate the opening gap in an oval shape and the thickness gauge I had been using, it was very flat and the clearances between could not be obtained by using a twenty-thousandths gauge which was the proper setting for the jumping spark, so, I had to use a flood gauge which was fifteen-thousanths and the opening between the spark jumping was twenty.

Q. You made this drawing for me and gave it to me last night? A. Yes, for a simple illustration, yes.

The Court: They had been in operation how many hours?

The Witness: Two hundred and seventy.

Q. Did you give me last night after the close of court these two diagrams that you had made? A. That is right.

Q. You made these yourself? A. For simple illustration.

Q. For simple illustration. Take this first one. What does that show us? A. This shows a type of a spark plug, A.C. spark plug when it is brand new.

Q. All right. What clearance is there at that time between those two points? A. The clearance varies between twenty and twenty-five thousandths.

Mr. Carpenter: I want to mark it in evidence.

Mr. George: Objected to. That is objected to on the ground this witness is not qualified as an expert on spark plugs, therefore any drawing of a spark plug made by him is not evidential.

The Court: I think he satisfied us as a licensed mechanic. If there is any doubt about it you may examine him to test his sufficiency. I say that because the court is satisfied.

Mr. George: If the court is satisfied——

The Court: Let them be marked for illustration.

(Sketches received and marked D-2-A in evidence and D-2-B in evidence.)

Q. What is this other drawing you have made (referring to D-2-B)? A. That is a drawing I made the way a spark plug looked just about after that amount of time being in service.

The Court: I would like to ask what is the normal, full, useful life a spark plug of that type on that kind of an engine?

The Witness: Just about the same life as it has on the engine between major overhauls. About three hundred hours.

The Court: About three hundred hours?

The Witness: Yes.

Q. Now, I see, Mr. Wtorkowski, that you have broken the straight line below the center electrode. What causes that break? A. That is caused by the spark jumping between the electrode and the cross bar.

Q. In other words, when the spark jumps across there what is the effect? A. Burning out your metal.

Q. Now, how did you measure—with the metal burned out in a sort of a semi-circle like that, how did you measure the gap to get the exact thickness? A. I had a long wire which has a thickness of twenty thousandths. I used that wire for the proper measurement. I was losing too much time using a wire. After I got the clearance between the center of those points measured by wire I used a flood gauge which gave me simply the outside measurement which was fifteen thousandths.

Q. If you found the gap in between the electrodes was not as you wanted it, what did you do? A. That is simple enough. The cross piece that sets in the spark plug, if it is too wide to get, it can be narrowed a little bit closer to the side of the electrode. If it is too close you can push it away a little bit to obtain the proper clearance.

Q. What do you do with those spark plugs when you put them back in the motor? A. When I took them out I cleaned them first, scraped the corrosion out of them and cleaned the carbon and put them back in the engine.

Q. Did you test every one of those spark plugs on the machine before you put it back? A. Yes, sir.

Q. In other words, after you cleaned it and adjusted the points you put it on the testing machine? A. Yes, sir.

Q. How did you find those spark plugs? A. How did I what?

Q. How did you find them? What was their condition when you put them back? A. They were in good condition.

Q. In good condition at the time you put them back? A. Yes.

Q. Were there any porcelains cracked on any of them? A. Not on the last inspection, no.

Q. Had you ever discarded any spark plugs since the machine was bought? A. Yes, sir.

Q. If you found any defective spark plugs what did you do? A. Well, I just got some new ones and put them in and the other ones I threw out.

Q. But, the spark plugs that were put back in the engine the last twenty hour, what can you tell the jury about their condition and efficiency? A. Well, they looked good and tested all right.

Q. As far as you could tell they were all right? A. As far as I could remember, yes.

Q. Now, Mr. Wtorkowski, you were on the airport on the 17th of March, 1929, weren't you? A. Yes.

The Court: May I just ask a question relative to what we are leading to?

Mr. Carpenter: There is another thing I omitted too.

The Court: Let me ask you this: I notice on this line inspection it says "engine shall be given warming up test during which the proper function of the engine instruments shall be ascertained".

Do you consider the spark plugs one of the engine instruments?

The Witness: No, your Honor. The instruments—the navigation instruments which give you the oil pressure.

The Court: That answers my question. What I wanted to ask further is whether or not the line inspection includes any inspection of the spark plugs? I don't see it specially mentioned.

The Witness: No, it does not.

Q. Now, Mr. Wtorkowski, to follow out the same sort of question the Judge asked you, in your twenty-hour inspection did you examine to ascertain the working condition and state of repair of the engine installations, control systems throughout, propeller alignment, fuselage, including fittings, tail skid and tail skid shock absorbers? A. That is the twenty-hour inspection.

Q. You did that every twenty hours of flight? A. Yes.

Q. What was the condition of that plane on the 17th of March, 1929? A. Good condition.

Q. Had any one of the engines of that plane ever stopped in flight before that day—before this last flight that day? A. No, never.

Q. Had you had any trouble with the function of that plane at any time prior to this last flight that day? A. No. I don't remember having any trouble at no time.

Q. You did have a—Captain Weatherdon said yesterday you did find a crack in one of the cylinders of that plane in October, 1928. A. I found out through the twenty hours' inspection it was not cracked at all, only it was a leaky barrel.

Q. A leaky barrel? A. Yes. The cylinder is made out of three pieces and the combustion chamber had been screwed on into the flanges of the rest of the body of the cylinder and that is where the leak appeared. I could see just a little bit of oil coming out through the space where the

cylinder is joined together. There was no crack in it at all.

Q. There was not a crack? A. No.

Q. What did you do? A. I told the pilot what trouble we had and he says, "Well, all right, we will get another cylinder". So, he got another cylinder from the Wright Aeronautics, I think, in a couple of days' time, and we changed.

Q. Did you have that trouble any more with the leaking oil there? A. No.

Q. That stopped that? A. It did.

Q. Aside from that was there anything about that plane that got out of order or broke at any time? A. Well, we also found a few valve springs broken some time before that.

Q. What did you do when you found a broken valve spring? A. Removed them. Put new ones on.

Q. As near as you can tell—strike it out. On the morning of this accident, the 17th of March, 1929, did you do anything with that plane over at Miller Field before you came to Newark? A. In the morning I finished the twenty hours' inspection of the center engine and did daily on all the rest of the plane. After the daily inspection was done took the plane outside of the hangar and started up all the motors, warmed her up and checked her for proper function. That was all I done to it.

Q. How did you find their operation that morning before leaving Staten Island? A. As usual it was all right, everything checked all right.

Q. What time did you get to work that morning over there at Miller Field? A. Well, some time between eight and nine.

Q. What time did the ship leave from there to come to Newark? A. Some time between eleven and twelve.

Q. In that interval of a couple of hours, was that the time you were working on the ship? A. Yes, sir.

Q. And when the ship came over to Port Newark did you ride with it? A. Yes, I did.

Q. Where did you sit? A. Alongside of the pilot, I think.

Q. Did you observe the function of the motors as she flew over? A. Yes.

Q. What condition were they in? A. Good condition.

Q. Any trouble with any of them? A. No.

Q. After the ship got to Newark what was done with the tools and spare parts? A. Well, after we got to Newark, after we made a run in at the place provided to stop every day when we came over I took all the tools out of it. I think we had a short stepladder. I took that all out and laid it alongside of the ship just about a few hundred yards away from the plane, between seventy-five to one hundred feet, something like that, distance away from the plane. They were laying there all day.

Q. By the way, that morning did you drain out any of the carbureters before you left Staten Island? A. That consists of a daily inspection.

Q. That is part of your daily inspection? A. Yes.

Q. Now, were you standing on the airport over there all day while that ship was flying on her hopping trips? A. Yes, I was.

Q. Did you observe every take-off and every landing? A. I was, yes.

Q. Do you remember—something has been said here about the ship one time when she was coming in or going off getting in the mud. Do you remember what trip that was? A. I don't know

what trip, but the ship did get into the mud all right.

Q. She was hauled out with a tractor? A. No. We did not use a tractor at all. The tractor came out to the plane at the time just about when we got the plane out of the mud.

Q. How did you get it out? With a shovel? A. Well, the right wheel got stuck in the mud and I dug an opening in front of the wheel and gave a signal to the pilot to go ahead and he gave her the gun and pulled out by engine power.

Q. Now, on this last trip whereabouts were you when the ship took off on her last trip—strike it out. Was anything done about the fuel towards the middle of the day? A. Yes. We refueled the plane once.

Q. At one o'clock?

Mr. George: I wish counsel would not lead the witness. He has been leading right along. I object to leading.

The Court: All right, go on.

Q. What happened? A. After we got to Newark I think we stopped for awhile that day. Then we made one trip over New York, then after that I refueled the plane. I don't know what time. It must have been between twelve and one. It might have been a little bit afterward of one. I don't just recall.

Q. How did you refuel it? A. The pilot told me to refuel the plane.

Q. What kind of gas? A. Regulation gas.

Q. What company made it? A. Vedol.

Q. You mean Tidewater? A. Tidewater.

Q. Vedol is the oil. What part did you take in the fueling of the ship? A. I went up on the top of the plane with a funnel that was provided for

service and the gas man drove over the truck and handed up the hose to the top of the wing and pumped the gas into the plane, of course.

Q. All right. Now, was that gas put through—you said you had a funnel. What did you use the funnel for? Or, was it used? A. Yes. I always use a funnel to strain the gas through.

Q. Did you strain the gas through this funnel? A. Yes, sir.

Q. How was that funnel equipped? A. Well, the funnel was just about, I could say, that large in diameter.

Q. A foot and a half in diameter? A. Yes, and it had an opening in the bottom about four inches and we had a chamois inside of that and also in the filler neck of every gas tank there was a wire screen which always remained in the gas tank. So, the gas was strained through the chamois of our own and through the strainer also.

Q. That is, through this wire screen also? A. Yes, sir.

Q. Was there any screen, do you know, inside of the truck? A. Yes, there was double screens in the truck, two wire mesh screens and a chamois.

Q. How much gas did you put in the three tanks? A. I don't remember just how many gallons we put in there. I filled all three tanks to the top.

Q. You filled all three tanks to the top? A. Yes.

Q. After they were filled to the top what was done? A. We covered up all the gas tanks and always the cover is on top of the panel, and I came down and signed for the gas.

Q. You signed a receipt for the gas? A. Yes, and I checked the oil after.

Q. What was the condition of the oil in each motor? A. I think we had enough oil at that time.

Q. Do you remember how many gallons of oil you had in each motor? A. We had five gallons in each oil tank and when I checked it it was just about right because I always got some oil at Miller Field.

Q. What type of oil did you use? A. Mobiloil.

Q. How much oil was there in each of those oil tanks that day? A. Then about five gallons, I could say.

Q. How many gallons did each tank hold? A. Eight gallons.

The Court: How many tanks were there?
The Witness: Three.

Q. Why didn't you fill them right up to the top? A. The rest of the opening is left for expansion. When oil gets hot it expands. So it would not have a tendency to explode, to blow up.

Q. Did you ever fill your tanks full? A. Not oil tanks.

Q. Now, then, taking this last flight that day. Did you notice the engines as they were revved up prior to that last flight before the ship took off? A. At Miller Field, yes.

Q. I mean, over at Port Newark the last flight? A. Yes, sir.

Q. Had you seen the plane take off and land all day? A. Yes, I did.

Q. Did you see it come in from the flight preceding the last flight? A. Yes, I did.

Q. Did you see it rev up the motors before the last take-off? A. Always.

Q. And did you see it as she ran along the runway and took off into the air on the last flight? A. Yes, I did.

Q. Tell the jury whether you saw anything in any of those flights that indicated any of those motors were not functioning properly? A. I did not see anything that did not function proper at no time.

Q. At no time? A. All the flights and taking-offs and endings were made, as far as I remember.

Q. Did you at any time see any smoke coming out of the exhaust of any of those motors as she took off? A. Nothing unusual, no.

Q. Did you see any or hear any sputtering of that left motor there as she came in from her preceding flight or as she went along the ground or took off on her last flight? A. I did not.

Q. If there had been anything of that kind which was noticeable were you in position where you would have noticed it? A. I was by the plane all the time. In fact I had to go by the plane to take the chocks from underneath the front wheels.

Q. How close were you to that plane when the motors were revved up the last time? How close to it? A. Right by the plane. I could say ten feet away from it.

Q. Did you hear or detect anything the last time those motors were revved up to indicate any one of them was not functioning properly? A. No, I did not.

Q. Did you see, as that plane went along the runway and took off into the air, whether there were any clouds of black smoke coming out of it? A. I did not see anything unusual at all.

Q. How did the plane act on its last take-off into the air? A. Normally.

Q. Did you continue to watch the plane after it left the runway and took off into the air? A. I watched it for awhile.

Q. Whereabouts was it when you last saw it? Whereabouts over this field as near as you can tell? A. Well, just about—I could judge a distance away from the airport about three-quarters of a mile, maybe a little bit more.

Q. In which direction was it going? A. Going——

Q. Come down and tell the jury on the map which way did it go during that time you watched it? A. Just about here some place. From here to there somewheres. So, the plane took off from this just about——

Q. East end of the runway? A. —and rolled over the ground past the main runway, I judge, between the main runway, because it was at that time he left the ground just about here somewheres.

Q. About the middle of the runway? Right? A. About two-thirds of the runway that he rode and he left the ground just about two-thirds on the runway.

Q. Two-thirds. After he had gone two-thirds on the take-off on the runway? A. That is right. He went out in that direction. It seemed to me he turned there left and around like he would have turned to his left somewheres in here. When he first arose he was proceeding in that direction about, well—somewhere just about in this part. When he was beginning to turn to his right, that is the time I took my eyes off him.

Q. You indicate about there? A. Just about somewheres in there. Just about at the track. Right in there somewheres.

Q. It might have been fifteen or sixteen inches from where she left the ground? A. Yes.

Q. Now, Mr. Wtorkowski, what did you do after the plane got in that angle? You saw it start to

make the turn. What did you do? A. I was talking to somebody and walking towards the hangar all the time when I was watching the plane just beginning to turn and I just took my eyes off. I was talking to somebody.

Q. When was your attention next directed to the plane? Where was it? A. It was already coming in the opposite direction or from the skirts of Newark.

Q. Where do you mean it was? Where was it? Point on the map where it was. A. Away up in the corner somewheres up past the tracks. Might have been just a little bit lower. About an inch over to your right. A little higher. Just about there somewheres around that spot.

Mr. Carpenter: Indicating the fourth block from the upper corner and the second one in.

Q. You indicate a point then, about seven inches from the extreme top of the map and about four inches from the extreme left of the map? A. He might have been a little bit higher, as far as I can remember it.

Q. He might have been up there (indicating)? A. Somewheres around that spot.

Q. That would be six inches from the very edge of the map and four inches from the extreme left. In that neighborhood, as near as you can tell? A. Yes.

Q. How high was it at that time in the air? How high in the air? A. Oh, about—say about three or four hundred feet.

Q. You were then down here at the airport, were you? A. Yes.

Q. Approximately how high was the plane when you saw it at the point where you say it started

to make the turn to the right? A. I should judge about between five and six hundred feet.

Q. Five or six hundred feet, then, between the place where you say you saw it start to turn to the right and the point where it was when your attention was called to it again. You had not been observing its flight, had you? A. No, I had not.

Q. What directed your attention to the plane again? A. I don't know whether I looked up or someone said something about it. I happened to look up and I saw him gliding down towards the ground.

Q. He was at that time in a glide, was he? A. Yes.

Q. What sort of a glide was it? A. Well, a steady glide, a steady glide.

Q. Did you follow the ship with your eyes? A. Yes, I did, as long as I could see it.

Q. You saw it go down behind the embankment? From the time you again saw it in this intersection you described up here to the time it disappeared from sight, was there any change in its course or direction? A. No. The direction seemed to be the same.

Q. What was the direction? A. Straight. He was traveling straight ahead and there was a lot of glide.

Q. What? A. Lot of glide.

Q. With a lot of glide?

Juror Number Five: When you first saw it make that loop what did you think for the minute?

A. I thought there was something wrong when he was coming down so fast and getting lower right along.

Juror Number Five: Something wrong. What did you think, for example, for the minute, could be wrong?

The Witness: There is hundreds of things could be wrong. I did not think just what could have been wrong. I knew he was in some predicament coming down so low over the buildings in that spot somewheres.

Q. You knew something must be wrong? A. Yes.

Q. Did you have any idea what it was? A. No, I did not.

Q. Did you go over to the wrecked plane after that? A. Yes, I went over shortly after.

Q. When you got there what did you notice? A. When I got there——

Q. I direct your attention particularly did you smell anything? A. I could smell gas, of course. The plane crashed up against the car and there was a few men around it.

Q. You did smell gasoline? A. Yes.

Q. Was it a strong odor of it? A. Why, yes, you could smell gas. In fact all that night—I was out there until twelve o'clock—there was a smell of gas all around the place.

Q. Could you see any gas when you got there? A. No, I did not see any gas but I seen a lot of oil around the front part of the engine, oil dripping down.

Q. About how high was the plane, Mr. Wtorkowski, when it passed over this viaduct here, when it went over that viaduct? How high was it over Route 25? A. Well, over about around three hundred feet. It might have been a little lower. I could not say.

Q. By the way, did you ever have any mechanic do any—withdraw that.

Mr. Carpenter: That is all.

Cross-examination by Mr George:

Q. You testified at the last trial, didn't you, Mr. Wtorkowski? A. I did, yes.

Q. You are still employed by the Colonial, aren't you? A. American Airways.

Q. It is the same thing, isn't it? A. Well, I don't know if it is.

Q. The same bosses, isn't it? A. No, different boss.

Q. You know that it is the one organization sold out to the American? A. That is the way I understand it, yes.

Q. Then you understand it is practically the same organization, isn't it? A. Practically the same, yes.

Q. Now at the last trial you did not testify to seeing the plane after the take-off, did you? A. I think I did.

Q. You think you did? A. If I didn't, I seen it anyway.

Q. But can you tell us now whether you testified at the last trial concerning the take-off? A. No, I can't.

Q. Now, you testified that the plane took off on the northwest runway and got to a point about here and then started to turn, is that right? A. Yes, sir.

Q. Which way did he turn, right or left? A. As he took off on the ground before he got to that spot he was turning to his left just a little bit, a very, very little bit.

Q. I don't care whether he got to this point. When he got to this point he was going in this direction, northwest? A. Yes, sir.

Q. That is, before he got to that point he was going northwest. When he got to that point he was making a turn which way, to the right or left? A. Right.

Q. Right? In this direction? A. I don't know. I didn't see him after—I only seen him when he started to make the turn.

Q. How? A. I only seen him when he started to make the turn.

Q. You only seen him when he started to make the turn to the right? A. Yes.

Q. New York being over in this direction? A. Somewheres around there.

Q. When he got here he started to make the turn. If he continued the arc he started he would go around that way, is that right? A. I don't know if he would.

Q. How much gasoline was put into your motors that day? A. I just don't remember how many gallons. I know we filled the tanks up to the top.

The Court: They were full?

The Witness: Yes, sir.

The Court: How many did all three hold?

The Witness: Two hundred and forty-five gallons.

The Court: Two hundred and forty-five?

The Witness: Two hundred and forty-five.

Q. Now, after the gas man had loaded the gasoline into this plane where did they go? A. Well, he stayed right by the plane. When I got through

on the top of the plane I came down and he called me to sign a slip for the gas. After I signed for the gas he gave me a receipt and went away. I didn't know where he went away after.

Q. Did you see him drive away? A. I seen him drive away.

Q. The motor went away—I mean, his truck? A. His truck.

Q. He left the airport? A. I don't know whether he left the airport or not. I know he drove away from the plane.

Q. Did you see the gas man again after that? A. After that?

Q. Yes. A. I don't remember if I saw him or not.

Q. Tell us about how long it took for the plane from the time of its take-off until it got over here over the highway? Did it take a minute? A. No, it took more than that. I could say about—well, it took him about three or four minutes.

Q. Three or four minutes? A. I think so.

Q. What speed was the plane making on the take-off? A. I don't know. He was making normal speed according to my judgment.

Q. What is that? A. The speed of the plane? The speed usually averaged in flying, ninety-five miles.

Q. Per hour? A. Yes.

Q. Or a mile and a half a minute? A. Something like that.

Q. Right? A. Something like that, yes.

Q. What was the distance between the place of the take-off and this place where you next saw him over here? A. You mean straight distance?

Q. Yes, straight distance. A. Straight distance it would be, I could say, a mile and a half.

Q. A mile and a half. You say it was about a mile and a half, so that it would have taken no more than a minute if he went straight ahead, is that right? A. Yes.

Q. But with this difference of the turn, about a half a minute difference? A. Well, no. You are talking about a plane flying. When he is taking off he does not go that ninety-five mile speed. You have to get your altitude before you get your mileage.

Q. Did it take more than three minutes? A. Between three and four minutes.

Q. Now, you made a daily inspection, twenty-four-hour inspection, didn't you? Now, you tell us what you did as comprising your twenty-four-hour inspection. A. Yes, I can tell you. It might not be exactly up to the time. What I mean as to making the daily inspection of the plane. I started from the beginning and remained until I finished.

Q. What I want to know is what was the inspection that you made of that plane on the 17th of March, 1929, as required by the Department of Commerce. A. I drained out the gas tank sumps.

Q. Sumps? A. Yes, a sump underneath the gas tank. After that I flushed all the gas lines and drained off the flood chambers of all the carbureters, examined the screens, I examined the control surfaces, which means the aileron, elevators and rudder, all the hinges, control cables, turnbuckles, fittings, wheels, and landing gears, all the instruments, navigation instruments, in general the propellers, engines, engine cowlings and check oil and gas and all tanks.

Q. And what? A. All tanks.

Q. And all things? A. Tanks. Oil tanks.

Q. Anything else? A. Internal braces, inside of the cabin and fuselages and cockpit, such things as brakes. That is as far as I recall it.

Q. You are familiar with the rules——

Mr. Reed: Let him finish.

Q. Did you finish? Did you do anything else? A. I might have left out something, but as I said, on the regular routine work you come to everything. Off-hand, in talking of what we are doing, you might leave out something you do and not think about it. As far as I could recall, I recall everything, yes.

Q. Are you acquainted with the rules and regulations of the Department of Commerce respecting inspections? A. Yes.

Q. How long have you been acquainted with those rules? A. Ever since 1927.

Q. Were you just as well acquainted with the rules and regulations of the Department of Commerce in 1927 as you are now? A. I guess I was.

Q. Do you recall testifying in the other trial in Newark in answer to this question: "Will you tell us, then, what was the requirement at that time to be given—what was the requirement, with reference to the maintenance of ships in March, 1929?" Answer: "Well, I can't just exactly recall the rules, what the rules were." Did you make that statement? A. I probably did.

Q. Then you were asked: "Well, now, Mr. Wtorkowski, you recall everything so wonderfully in detail, except the rules you don't recall?" Answer: "Because the rules were changing right along at that time; perhaps new—a few rules would change ever since". Did you say that? A. I might have said that. I might have said that.

Q. You don't deny you made that statement? A. No, I would not.

Q. Now, you were asked this question: "Well, were these rules not plain enough to remember?" Answer: "Rules are plain enough, but there is so many rules put into effect with every twenty-four hours or something like that, a man doesn't go into those rules". Is that right? A. That's right.

Mr. Reed: You skipped a question.

Mr. George: I am examining him from the testimony.

Mr. Reed: You are reading right along. You left out a question and answer. I think if you are reading right along——

The Court: Read it as it goes.

Mr. Reed: He read two questions and answers, then he skipped one, then he asked the questions and answers immediately following.

Mr. George: I will read the question and the Court can see why I omitted it. "Do you remember anything else that happened in March, 1929?" Answer: "Anything plain enough I can remember, yes". You so testified, didn't you?

The Witness: Yes, I guess I did.

Q. You remember that? A. I don't remember exactly just what words I have been using for explanation or what questions were put up to me one after the other, but that was in the questions all right.

Q. Do you keep a log as required by the rules? A. Yes.

Q. You kept a log? You? A. The log is with the plane. Many times I would take it home to straighten out the log.

Q. Did you make the entries as required by the regulations of the Department of Commerce? A. Yes, sir.

Q. In your own handwriting? A. Yes, sir.

Q. The log, of course, means a detailed history of everything that is done concerning that plane? A. That is right.

Q. Now, have you that log with you? A. No, I have not got any logs with me.

Q. Where is it? A. I never had that ever since the crash.

Q. You told the Court and jury a moment ago you took logs home. A. No, I didn't.

Q. Didn't you just say that? A. Yes, before the crash. You asked me if I have them with me now.

Q. Yes. Have you any? A. No.

Q. Where is it? A. I told you I have not got them since the crash.

Q. Why not? You had them home? Didn't you say you would take the log home before the crash?

Mr. Reed: He said in making entries he took the log home.

Q. What did you eventually do with the logs? Where are they now? A. I don't know.

Q. Where were they the last time you saw them? A. The last time I saw them they were on the plane in the shelves.

Q. Weren't they required to be kept in the machine shop? A. Not in the machine shop. In the plane, I said, on the shelf.

Q. Wasn't one required to be kept by you and the other to be kept by the pilot in the plane? A. The Department of Commerce requires for the log book to be on the plane every time the plane leaves the station, leaves the home station.

Q. That is as to the plane trips, and so forth, in carrying passengers, and so forth? A. Yes, sir.

Q. I am talking about the log respecting inspections. A. Everything should be with the plane, yes.

Q. Always with the plane? Now, did you make entries in the log? A. Yes.

Q. Over your own signature? A. Yes.

Q. Daily? A. Daily as well as twenty's.

Q. You did make a daily, didn't you? A. Yes.

Q. Do you recall testifying at the other trial in Newark: "You made an entry in your log book under your signature?" Answer: "Yes, sir." Question: "Have you that log with you?" Answer: "No, sir. The log book is lost." Did you say that? A. I think I did.

(Quoting) Question: "And do you swear now that you did make an entry in the log book?" Answer: "Yes, I did." Question: "When did you make those entries in the log book?" Answer: "Whenever I did the work; say perhaps whenever I had a chance to do it." Did you make that statement? A. That's what I did do, yes.

Q. Did you so testify in Newark? A. I don't remember if I made that statement, but that is what I did all right.

Q. Was it true? A. Yes.

Q. Now, did you, two days after the accident make a sworn statement that you did not keep logs in that book, and that you did not sign any entries in that book?

Mr. Reed: I object unless the statement is read to him as to the question and answer.

The Court: Yes, sustain the objection.

Q. Page 923—Do you remember—"And you also remember telling him of the daily twenty-four hour inspection that you had no records at all—do you remember telling him that?"—speaking of Major Copsey. Answer: "I don't remember what they were telling me". Did you say that?

Mr. Reed: Same objection. The question and answer is not read to the witness as elicited at the Mayor's hearing, if that is what it was.

The Court: All I hear is whether he was asked a question and made this answer.

Q. Did you make a sworn statement on March 19, 1929 under oath to Lieutenant Aldworth and Major Copsey at Newark Airport as follows: "From the standpoint of the aeroplane log and engine logs there is no evidence to show that either plane or any of the three engines was ever inspected or that any repairs were ever made for aeroplane or engines."

Mr. Reed: I object to that upon the ground that it is an important conclusion and it does not give the question and answer. It does not appear it is a signed statement by him.

Mr. George: Oh, yes. Signed, sworn statement.

The Court: If it is then the objection is sustained.

Mr. George: It is in contradiction of his testimony.

The Court: I don't care if it is in affirmation.

Mr. Reed: I ask your Honor to instruct the jury to disregard what he just said.

The Court: The jury will disregard it. That is not the proper way to prove a statement.

Q. I show you a copy and ask you if that is a copy of the statement you made? Read it over. A. I would not exactly remember any statement.

The Court: That is not signed by you, is it?

The Witness: It is not signed by me.

Q. The question is is this a copy of a statement made by you?

Mr. Reed: I object.

The Court: Sustained.

Q. Did you make a statement to Major Copsey as to your knowledge of the accident? A. Yes.

Q. Did you make it under oath? A. I made a statement in the hangar.

Mr. Reed: Explain what that means.

Q. Did you swear to it? A. I don't remember.

Q. You don't remember whether you put your hand on the Bible and swore to tell the truth? A. I don't think I did.

Q. But you do remember making a statement to Major Copsey two days after the accident? A. I don't know how many days, but I made a statement to Major Copsey.

Q. I ask you to look at this and ask you if that does not represent the statement you made to Major Copsey.

Mr. Reed: I object unless it is the original statement.

The Court: Sustain the objection.

Mr. George: I am not offering the statement in evidence.

The Court: I don't care. I am not going to let you offer any of it in evidence. There is only one way to do that and that is to subpoena Major Copsey to bring the original here, and there can't be any other way about it.

Mr. George: We have it under subpoena. I want to lay a foundation for the introduction of the proofs.

The Court: As I understand your testimony you did keep the log book required by the regulations?

The Witness: I did, yes, sir.

The Court: You made the entries with respect to the engines therein in your own handwriting?

The Witness: Yes, sir.

The Court: It was kept in the plane?

The Witness: Yes, sir.

The Court: You don't know what has happened to it since?

The Witness: I don't.

(Recess until two o'clock p. m.)

(After Recess, 2 p. m.)

(Trial resumed pursuant to adjournment.)

Adam Wtorkowski, resumes the stand.

Mr. Biro: With the court's permission, may I direct the examination?

The Court: Yes.

Cross-examination (continued) by Mr. Biro:

Q. Mr. Wtorkowski, you remember testifying in this case in April of this year, don't you, in Newark? A. Yes.

Q. Since that time, of course, you have discussed this case with Mr. Carpenter and Mr. Reed and others of the company? A. Yes, I did.

Q. You also had occasion to read over the rules and regulations since that time, didn't you? A. Yes.

Q. But you remember testifying last April that there were many rules of the Department of Commerce did you not say that? A. Yes, I did.

Q. Now, as a matter of fact, you now say that there are only two rules with which you as a mechanic for an aeroplane are concerned with, isn't that true?

Mr. Reed: I object. He has not said that. He has not stated that there were only two rules. We can correct it, perhaps, if we can refer back.

The Court: I don't think he said that.

Mr. Biro: I withdraw that question.

Q. As a matter of fact, Mr. Wtorkowski, there are only two lines of inspection, a twenty-four

hour inspection and a one hundred hour inspection required on aeroplane engines as per rules of Department of Commerce? A. Mechanical rules, yes.

Q. Yes.

The Court: Well, inspection.

The Witness: Yes.

Q. Therefore, there was no rule required by the Department of Commerce for any twenty hour inspections, was there? A. Twenty hours?

Q. You can answer yes or no.

Mr. Reed: Don't the rules speak for themselves?

The Court: I think so, but he wants to get this before the jury. There were not, were there?

Mr. Biro: I want to test his knowledge.

The Witness: Well, no.

Q. What is that? A. No, there was not, no.

Q. You stated in detail on direct examination as to what you did to those motors on Saturday or a week before the accident. Will you tell us how you know you did all those different things to those motors, whether from memory or from any memoranda you have written down. A. Only from memory.

Q. Now, will you tell us from your memory or otherwise whether or not you complied with the second rule of the Department of Commerce, and that is the one hundred hour inspection at any time? A. Yes.

Q. Well, did you at any time prior to this accident give this aeroplane or its motors the one hundred hour inspection as required by the rules?

If so, when? A. I gave every twenty hours flying time, yes.

Q. Now, when was the last so-called one hundred hour inspection that you call twenty hour inspection given by you to this plane prior to the accident? A. About the week before the accident.

Q. What did you do at that time and where? A. At Miller Field.

Q. Miller Field. What did you do? A. Well, you want me to go through detail?

Q. Well, now, the one hundred hour inspection, if you recall, according to the regulations, only calls for five items, five major items, isn't that true?

Mr. Reed: What page is that?

Mr. Biro: Page nine, chapter two. I will withdraw the question.

Q. Let me ask you: do you know what the one hundred hour requirement is? A. Yes.

Q. Tell us what it is. A. It means the same thing what I did in twenty hours which I explained before lunch.

Q. For instance, explain number one, subdivision, of that section, engine installation. What does that mean in your estimation? A. Engine installation means the frames where the engine is mounted to.

Q. Did you do that part in this job? A. Do what?

Q. The engine installation job? A. Well, the job was done only I did see the inspection of it and everything was perfect so there was nothing to be done on it.

Q. Well, as a matter of practical mechanics, will you explain to the jury what that engine installation means as practical mechanics? Take it

out of the fuselage or what? A. The best I can explain the engine installation is it is no more but the frame of the plane that holds the engine in place.

Q. What are you supposed to do with it? A. Well, supposed to do—everything is supposed to be checked over, look for cracks and see that all the nuts and bolts are tightened up and everything is in proper place, nothing bent or cracked or out of place or loose.

The Court: In other words, to see that it is installed—set and fastened in the frame of the plane, isn't that it?

The Witness: That is right.

The Court: And you did that?

The Witness: Yes, I did.

Q. Didn't you testify in Newark that that particular job you could not do because you did not have the tools for one reason?

Mr. Reed: I object.

The Court: Sustained.

Q. How much of a job does that mean on the engine in the hundred hour inspection? A. You mean how many hours?

Q. Yes. How long would it take you to do it? A. Well, it takes about—that particular job on the engine, it takes about from eight to ten hours.

Q. What does it mean? After each one hundred hours to take the engine down? A. No. The engine is recommended to be taken out after three hundred or three hundred and fifty hours.

Q. Do you remember testifying—page 932—in Newark: "Well, what does it mean, after each one hundred hours?" Answer: "Every one hundred hours, that means as to some engines."

What did you mean by that? A. As to some engines?

Q. Yes. A. Well, the engine installation.

Q. Did you also say to this question "No——"

Mr. Reed: What page?

Q. (Quoting) "No, I mean this particular 4-AT Ford we are talking about." Answer: "Well, the engine itself don't have to be taken out every hundred hours. Every three hundred hours is sufficient." Did you say that? A. That's right.

Q. Questioning further: "What rule says that?" "Is there any rule of the Department that says that?" Answer: "Well, the Department of Commerce rules doesn't say whether that particular type of engine or a different type of engine."

Q. "We are talking about this one hundred hour periodic inspection, of which you mentioned nothing Saturday in all your talk. Now tell us, now, what the department rule requires after one hundred hours, with respect to the engine installation."

Mr. Reed: I submit the rules are the best evidence as to that.

The Court: I assume he is endeavoring to elicit the statement he did not make those inspections, if that is the purpose. I think it is the purpose. Otherwise it is not proper.

Mr. Reed: There is nothing in the rules to show an engine must be taken down in one hundred hours or two hundred.

The Court: No, no. That is true.

Mr. Biro: He has testified on some engines. I am trying to elicit from him——

The Court: I have not stopped you. I get your purpose. It is not to prove any rule to that effect or anything of that kind, but you are simply trying to contradict him, if you can.

Q. Did you so testify? A. I think I testified, the question was put up to me——

Mr. Biro: That is all.

Mr. Reed: Let him finish.

Q. The answer requires yes or no.

The Court: Did you testify that way or not, according to the way he read the questions and answers?

The Witness: I just forget the question right now.

The Court: Never mind.

Mr. Biro: It is immaterial. I withdraw it.

Q. As a practical proposition, isn't it true someone told you or you got the idea from some source that those engines should only be taken down after three hundred hours and in view of the fact this plane flew only two hundred and seventy hours you were not going to do that job, isn't that true?

Mr. Reed: I object.

The Court: Sustained as to the form of the question.

Q. Now, Mr. Wtorkowski, with regard to the inspection of this particular plane on March 17th, as you testified, is your memory so good about that particular day by reason of any particular

event? A. Well, that was—why, I can remember because I have been doing this every day for previous flights. It was the regular routine of my work. It is hard to have this all on your mind.

Q. Therefore, you say you made this inspection because it was routine work and you presumed you did make it? A. I remember I made it.

Q. You remember March 17th particularly? A. Not only March, the days previous to that.

Q. Do you remember the Sunday before that? A. I might.

Q. Was there any difference in that Sunday than the one on March 17th? A. I suppose it was not different in inspection, but different in memory.

Q. Was there any difference from the Sunday, March 3rd? A. There might not be any difference.

Q. As a matter of fact, you don't know, do you? A. I don't recall.

Q. There is nothing particular that causes your attention or your memory to be so fixed on March 17th, is there, about what you did, I mean? A. Well, I would not say.

Q. Of course, you don't remember any operations or work you did on this plane in February, do you? A. Well, if you want to take from day to day I don't think I could recall anything for that motor.

Q. Therefore, isn't it true, now, Mr. Wtorkowski, that you don't know of your own memory what you did exactly on that ship on March 17th, do you? A. Well, that is only my memory I am using for explanations, nobody else's.

Q. That's the only reason you say you did, because you presume you must have done it, isn't that true? A. No, it is because I did it.

Q. I call your attention to your testimony also in this record on page 945: "Question: And that is the only reason you say you did it, because you presume you must have done it?" Answer: "Yes." Did you say that? A. I might have said it.

Q. You would not deny that now, would you? A. No, I would not deny it, but I still say on March 17th, especially after an accident when you come to think about it, just what you did do, every particular thing, you can just picture like you see yourself in a mirror, what you did.

Q. But you did not write any of this stuff in that log book? A. Yes, I did.

Q. Are you sure you did? A. Sure I did.

Q. I call your attention to testimony on page 946. Question: "Well, you didn't write it in the log books, did you?" Answer: "Yes, sir; I did." Again, I call your attention to this: "This particular plane had its own log books, didn't it?" Answer: "Yes." Question: "And that log book had not been entered since December preceding the accident——"

Mr. Reed: You are skipping from the first question and answer you just read.

The Court: Just read the preceding question.

Mr. Biro: I don't have to read all the questions.

The Court: If you start in to read don't skip any. I mean, don't leave any in between.

Mr. Biro: That is it exactly, your Honor. I have not done that. I am referring to the log book.

Mr. Reed: You read a question beginning on folio 20, then you skipped the next question.

Mr. Biro: All right, I will read it. Shall I read the entire discourse before this?

Q. (Quoting.) Question: "Now, you say you wrote that thing in the log books?" Answer: "Yes, I wrote that book, in our own log book." Question: "Didn't you say on the stand before that you did tell Lieutenant Aldworth and Major Copsey that you did not enter those things in the log book?" Answer: "I did say that I didn't write in these particular log books that they had in the front of them, when they were questioning me. They had four log books which I could tell you about—I don't know just what month—and the other, rest of the entries were not put in those log books, but on that personal log book, the book was about that large (indicating)." Question: "On the very log books as required by the Department, as a matter of fact, you made no entries since the December before, did you?" "Mr. Carpenter: I object to what is required. He kept his log book." "The Court: The question may be answered." Answer: "The Department of Commerce does not say what log book you put it on, either one or the other, just as long as you put it in the log book." Question: "You are sure about that?" Answer: "Any log book can be used." Question: "Hasn't each ship got a log of its own?" Answer: "Some planes have four, five logs; yes." Question: "Isn't it a matter of fact that this particular plane had its own log book in it—nothing to do with any other plane?" Answer: "No." Question: "It had its own log book, didn't it?" Answer: "Those entries had to be made at that very time." Question: "You know what I am asking you: this particular plane had its own log book, didn't it?" Answer: "Yes." Did you say that? A. I must have.

Q. Then the further question: "And that log book had not been entered since December preceding the accident—yes or no." Answer: "No." Is that true? A. That's right.

Q. Then, as a matter of fact, now, I am asking you if you did not make any entries of anything you did on this ship in its log book which the Department requires since December; in other words, about five months prior to the accident? A. I made them right up to the time.

Q. Then what did you mean by the answer to the question you did not enter? A. Can I explain?

Q. Sure. A. At that time when I was at the office, or at Lieutenant Aldworth's office, Major Copsey was present. They had a book from the plane; in fact, they had four of them, if I recall.

Q. Now, listen——

Mr. Biro: That is not responsive, your Honor. The question is very specific.

Mr. Reed: He said he might explain, if the court please.

The Court: You are now running into one of the dangers of cross-examination. You asked him to explain.

Mr. Biro: Withdraw the objection.

The Witness: I remember there was four books laying in front of them, in front of Lieutenant Aldworth and the time when he questioned me, "Did you make any inspections, reports into this log book up to that time?" he was pointing with his finger to those four books. In fact, I did not make any entry into those log books except carrying the engine times and plane times, and the log book I was making entries to, that was out of sight and that was not referring

to the log book I was making an entry to. On that log book there was no entry made of any time of inspections or repairs or adjustments.

Q. Now, I ask you again, after this explanation, isn't it true, as a matter of fact, that you made no entries with regard to these mechanical inspections in the ship's log book? A. Yes.

Q. The way the Department requires it to be done since December?

Mr. Reed: I object to what the department required. The question is, did he make entries of his work.

The Court: Yes, in the ship's log book.

The Witness: Yes, I did.

Q. Then, why did you say "no" to this question (indicating)? A. Because the man pointed out to me with his finger whether I made any entries into this log book and he did not express into whose log book he was pointing at with his finger at the time.

Q. Do you remember the question I asked at the time, "You know what I am asking you; this particular plane had its own log book, didn't it?" And your answer was, "Yes," wasn't it? A. Yes.

Q. And to that particular log book which you recognized and identified, you said you had made no entry since December preceding the accident.

Mr. Reed: I object to the form of the question.

The Court: Sustained.

Q. Now, when you made any of those entries which you now say you did make, did you sign your name to it? A. Yes.

Q. Do you remember testifying—page 961—"Did you make any entries in any of those four books after December, 1928, yourself, under your signature?" Answer: "I did not sign my signature to any of those log books, but I was making entry in it."

Mr. Reed: I object. He has not said he signed those four particular books. That man refers to the four particular books that had been discontinued.

The Court: That may be true, but now he is asking him if he did so testify there. Of course, there may be explanations made. You can't say from the question and answer.

Q. Did you so testify? A. I testified I did not make any—that I did not sign any name to any particular work that was made in those four books, no.

Q. Did you sign your name to any entry? You made entries? A. Not in those books, no.

Mr. Reed: That is not the question. He says to any book anywheres.

The Witness: Yes, in the plane log, I did, yes.

Q. And that is the book in which you made no entries since December, isn't it? A. I am talking about the books discontinued up to the date from the time I had the plane.

Q. What book was continued up to date? A. The plane log.

Q. Where was that book kept? A. With the rest of them up in the shelf.

Q. In the plane? A. At that time, yes.

Q. Let us understand each other, Mr. Wtorkowski. Didn't you testify and tell Major Copsey——

Mr. Reed: I object.

Mr. Biro: To what?

Mr. Reed: Unless you show the question and answer or some original statement or something like that, but not generally. I object to the general form of the question.

The Court: I have not had the question yet.

Mr. Biro: I will withdraw that question.

Q. I will ask when you stated just two minutes ago to one of my questions that you did sign the entries you made with regard to some of the mechanical inspections, what did you mean? What did you sign? A. Well, say, for instance, if I made daily inspection and there was no adjustment made of any kind, everything was in proper shape, nothing out of place, just put down daily inspection and sign my name to it.

Q. Put it down where? A. In the plane book.

Q. Now, you told us that that plane book you kept up to date? A. Yes. Up to that Saturday I remember. On the day of March 17th I would not say whether I made any entry on that particular morning. That is something I don't remember, but up to that Saturday I remember everything was right up to date.

Cross-examination (continued) by Mr. George:

Q. Mr. Wtorkowski, the life of the plugs in this plane run about three hundred hours, isn't that so? A. The life of a plug? That is my—that is what I said before, but the life of a plug can be much longer, but our company and also the pilot did not want me to use it any longer than 300 hours.

Q. And the plugs in this particular motor—rather, the motors in the plane were in there during the whole life of the plane, two hundred and seventy hours, is that right? A. Most of them, yes.

Q. Pretty close to the limt of what should be used?

Mr. Reed: I object to that as argumentative.

The Court: Sustain the objection.

Mr. George: I think that is so too, Judge.

Q. You say that the proper gap in a plug should be about fifteen-thousandths, is that right?

Mr. Reed: He has not said that so far.

Mr. George: He did on direct examination.

The Court: He said they ranged from fifteen-thousandths to twenty-thousandths. Is that what you said?

The Witness: Yes.

Mr. George: I think that is all.

Re-direct examination by Mr. Reed:

Q. You said something about twenty-five one-thousandths, too.

M. George: Objected to as based upon an unwarranted assumption of fact—withdraw the objection.

Q. Did you say something about twenty-five one-thousandths? A. At the time the plug is brand new the clearance can be anywhere between twenty and twenty-five thousandths. That does not matter, the five thousandths variation on that particular spark plug.

Q. That variation is not important? A. No, it is not.

The Court: Did you on your last inspection find any of those plugs that had a greater gap than twenty-five one-thousandths of an inch?

A. I don't think I did on the last inspection. On the last inspection, if I can recall, everything—all the gaps were pretty close to the gap that I did not have to adjust.

The Court: What about a gap of thirty one-thousandths on that type of engine?

The Witness: On that type of a plug thirty thousandths would be too big, too much of an opening.

The Court: You rejected them after that width?

The Witness: I would not reject. I would reduce the clearance.

The Court: Reduce the gap?

The Witness: Yes, sir.

Q. You would reduce the gap and bring it down to what? A. To about twenty.

Q. About twenty. You said some or most of the plugs remained in the plane during the hours that it had flown. When you say that most of them, as to the others did you make some changes in the plugs? A. I changed quite a few on the center engine.

Mr. George: Center engine?

The Witness: Yes, on the center engine. I found some of them with cracked porcelain so I had to reject them and put some new ones in it.

Q. So that you kept your plug, then, from any crack in the porcelain? A. Yes.

Q. On your daily inspection? A. Twenty's—hours' inspection.

Q. I want to ask this further question: After what flight on that day was the plane refueled with gas? A. After what flight?

Q. After what flight? A. I think it was refueled after we made one flight over to New York.

Q. Then, after the gas was put in the plane do you remember how many flights there had been to the time of the last one? A. Not exactly, but probably it was seven or eight flights.

Q. After the gas was put in? A. Yes.

Re-cross examination by Mr. George:

Q. A spark plug with a cracked porcelain is a defective plug, isn't it? A. Yes, sir.

By Mr. Reed:

Q. Were there any defective plugs in that plane at all at the time of your last inspection? A. No, sir, there was not.

By Mr. George:

Q. That was a week before, wasn't it? A. Well, that was a week before when I made the last twenty hours' inspection.

Q. On the center motor? A. On the center motor I made Saturday, the day before.

Mr. George: All right, that is all.

WILLIAM D. KENNEDY, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. Whereabouts do you live? A. Clifton, New Jersey.

Q. What is your business? A. I am service manager of the Wright Aeronautical Corporation.

Q. Service manager of the Wright Aeronautical Corporation? Where is their plant? A. At Paterson.

Q. What preliminary education have you had? A. Just the ordinary education, nothing remarkable.

Q. This plant of yours in Paterson, how large is that? A. It is quite a large one, one of the largest in existence.

Q. The largest plant manufacturing aeroplane engines in the world, isn't it? A. I think it is, yes, sir.

Q. Did you, at the request of the Newark Police Department, make an examination of the three motors that came from this Ford tri-motor plane shortly after the 17th of March, 1929? A. No, sir, we did not make it at the request of the Newark Police Department.

Q. Did you examine the three engines? A. Yes, sir.

Q. I understood it was at their request, Whereabouts did you make that examination? A. At our plant.

Q. Did you personally make the examination? A. Yes, sir.

Q. I wish you would tell the jury in your own words what you found from examining those three engines. Take one at a time.

Mr. George: May I have the time fixed, the commencement of the inspection?

The Court: When was it?

The Witness: I will have to refer to the records on that.

Mr. Carpenter: You may do that.

The Court: All right.

The Witness: This was made—this inspection report which was made out at the time was made on March 21st, 1929.

Q. That was at the conclusion of your inspection of the engines? A. Yes. There was other inspections made owing to the importance of this thing. We made several inspections. They were made by looking for different features in the engines and continued over several days but these reports were made on the 29th.

Q. Can you distinguish those engines, left, center and right?

Mr. George: Do I understand, if the Court please, this witness is testifying as to his own knowledge as the result of inspections made by him or by some other person?

The Witness: Both.

Mr. George: I would ask the witness be directed to confine himself only to his personal knowledge.

The Court: Yes. Confine yourself only to the inspection made by yourself or that knowledge you gained from your own observation, not what was told you or reports made by others.

The Witness: These reports are made under my direction. In a case of this kind I go over the report myself to be sure that

the person making it has not made any errors or has covered everything that we can possibly think of.

Q. Did you check it as to accuracy with your inspection of the plane itself? A. Yes, sir.

Q. They are made on your own findings or checked by you against the engine to find out whether it is accurate? A. I personally checked the reports against the conditions as we found them.

Mr. George: Do I understand the time is fixed as March 21st, and the place is where, Mr. Witness?

The Witness: Paterson, New Jersey.

Q. At the Wright Aeronautical Corporation's plant? A. Yes, sir.

Q. Just tell the jury—suppose we start with the left engine first.

Mr. George: I object to that on the ground that this witness has not shown that nothing had transpired so far as the motors are concerned between the time of the crash, four days before the 21st of March and the transmission or transportation of the motors to the Wright plant in Paterson.

The Court: It will be received subject to being connected up.

Q. How were those engines taken to your plant, Mr. Kennedy? A. By truck.

Q. From where? A. From Newark.

Q. Do you know whose truck it was? A. I could not say as to that. It presumably was our

own truck that was used. We usually use our own trucks for that purpose.

Q. Now, tell the jury what you found. Take the left motor. A. The left engine was damaged by the impact, quite badly cracked up, as we say it; our method of expressing it. It apparently struck some solid object, in some cases very hard. It had torn the cylinder casings apart, the cylinder head casings. In one case the casing was broken in two.

Mr. George: A little louder, Mr. Kennedy.

The Witness: The master rod and some of the smaller connecting rods were bent and broken; the pistons were mutilated by the impact; the crankshaft was badly damaged. I can go over this thing at great detail, if you wish.

Q. Perhaps you can shorten that. They can cover anything on cross-examination I omit. Could you tell anything from your inspection of the engine after it was removed to your plant concerning the care it had had before the accident? A. We could usually get an approximate idea of the care that an engine has had by the general condition of certain wearing parts and by the condition of the interior of the crankcase as to whether the oil screens are clogged, whether there is any accumulation of old oil or slugs.

Q. What did you note from the examination of the screens in this case? A. In this particular case there was no accumulation, slugs or sediment or any indication that the engine had not been taken care of properly.

Q. Did you see any of the gasoline line screens? A. Examining the carbureters—what there was of

the carbureters—and found no evidence of any sediment or clog either.

Q. Was the carbureter from this left motor—left engine—found? Was that with the engine? A. I can tell you in a minute.

(Referring to paper.) According to this record it was not found.

Q. How about the center motor? Was the carbureter on that motor found? A. Pardon me just a moment; I would like to refer to all three of these before I answer that.

Q. All right. A. According to this record that I have there was one carbureter missing and that was from the center engine.

Q. What was the condition of those that were found? A. The carbureters that we found were in what would be considered a normal condition. There was no sediment on the screens or anything to indicate that they had not been functioning properly.

Q. Had those screens, could you tell, been cleaned since the accident? A. Apparently not. You can't say positively that they had not, but there was nothing to indicate that they had.

Q. Was there anything to indicate that they had been cleaned? A. Oh, yes.

Q. What would indicate that to you? A. The fact that they were free from any sediment or foreign matter whatsoever. They were exceptionally clean in this case.

Q. How about the oil screens? A. The oil screens were in a normal condition, that is, there was no sediment or anything in them that might clog them. On any oil screen you will occasionally find evidence of carbon. They are almost microscopic but in this case they were so few and

scattered they would not clog the screen in any way. It is a very large screen.

Q. Was there anything about these engines that from the examination you could make afterwards that would tell you how well they had been taken care of? A. Yes. There are certain parts of the engine that require—that particular type of engine that requires outside lubrication. By that we mean lubrication similar to the spring shackle of an automobile, going around and alemite with a gun and give them a shot of grease now and then, and where that is not done regularly, it causes the bushings to seize and you get in a lot of trouble over it. In this case the condition of the bushings indicated that they had been regularly attended to as far as lubrication was concerned.

Q. Were any of the bushings burned out to indicate they had not been properly lubricated? A. No, sir, there was not.

Q. Did you examine the spark plugs that were in the engines afterwards? A. We examined two of the spark plugs that were sent with the engine. They were not all there.

Q. Do you remember how many were missing? A. I think I could tell that from these records.

Mr. George: This is subject to my objection, your Honor?

The Court: Yes.

Q. You may proceed. A. In the case of the center engine this record shows that there was six spark plugs short. In the case of the right motor there was six short. In the case of the left engine there was seven short.

Q. Did you examine those that remained? A. Yes, sir.

Q. First tell us what spark plugs they were. What manufacture and what type? A. They were what we refer to as a standard equipment plug that was specified for this type of engine by our engineering department. It is an A. C. plug. While there is no indication of the type on the plug itself, they are known in our stock rooms as the type "N" that come in a box which is marked type N and we have always known them as type N.

Q. Will you tell the jury what condition you fund those remaining spark plugs in, that is, those that were in those engines when they came in? A. Ordinarily when we make an inspection of that kind we don't make a minute record of spark plug conditions unless we find that there is something would indicate that it contributed to the failure. In other words, if the spark plugs look all right we don't make any remarks about them. This inspection record does not bear any detailed information about the spark plugs because we found they all had the appearance they were functioning properly at the time of the crash.

Q. Did you gather that from your own inspection of the plugs, that they were in proper shape to function? A. I personally saw every plug that came in to us with those engines.

Q. Were those plugs as you examined them proper for the proper functioning of that engine at the time you examined them? A. They were. They were normal in appearance. They had indications that they had been in use and that they had been properly taken care of, that is, that the gap had been set up periodically. We did not measure the gaps because of the fact that they appeared to be all right.

Q. Did you save any of those plugs? A. All of this material was later returned to the Colonial Airways as far as I know.

Q. By the way, did you rebuild any of those engines? A. I think we did. We rebuilt the center engine.

Mr. George: I object to that. I can't see its materiality.

The Court: Yes, sustained.

Q. Was any of them so badly smashed or damaged that they could not be repaired?

Mr. George: Objected to on the same ground.

Mr. Carpenter: It may not be important.

The Court: I don't think it is. He said some of them were damaged fully in the impact.

Q. What was the condition of the spark plugs as to cleanliness? A. They were clean.

Q. Were you able to form an opinion from your examination of those engines as to what caused one or more of them to fail?

Mr. George: Objected to on the ground this witness has not been qualified as an expert.

The Court: Sustained.

Q. How many years, Mr. Kennedy, have you been in charge of the service department of the Wright Aeronautical Corporation? A. I have been in complete charge for about a year and a half.

Q. How long have you been with the Wright Aeronautical Corporation? A. About four years.

Q. What have been your duties and work? A. I have always either been in charge of the ser-

vice department or next in line to be in charge, assistant to the service manager.

Q. What, if any work have you done on such motors?

Mr. George: I take it this is prior to March 21, 1929?

The Court: Yes.

Q. What has been your—what work have you actually done on these engines in that period of time since you have been with the Wright Aeronautical Corporation?

Mr. George: I object. It is not experience he acquired three years ago, it is experience he acquired on the inspection of those motors. How could he form an expert opinion?

The Court: Yes. In giving his opinion as to conditions as of that time, he would have to base it on his knowledge at that time, but other matters may arise on which he could give an expert opinion. All right, go ahead.

The Witness: What was the question?

Q. What was your experience before March 17, 1929, with the Wright Aeronautical Corporation? What work did you do? A. Before the accident?

Q. Yes. A. I first went with the Wright—we spent a lot of time in investigating certain troubles which existed in engines more or less in the experimental stage and later in the production stage, and in doing that work I tore down and built a great many of this particular—a great many engines of this particular type.

Q. Right in the shop yourself? A. Yes, sir.

Q. Did you run any tests or experiments on these engines? A. Yes, sir.

Q. For the purpose of discovering what? A. Running down different troubles, some in relation to high oil consumption which at one time bothered us in production, some of the very minor troubles, investigating the wear on certain parts.

The Court: He has satisfied me unless there is some question.

Mr. Carpenter: I think so.

Q. Can you tell the Court and jury whether from your examination of these engines you could form any opinion as to what caused them to stop in flight? A. I can't.

Q. Was there any part of any one of those engines that you found from your examination had in any way been defective? A. No, sir.

Q. Will you tell the Court and jury something about the ignition system of this engine? How many spark plugs were there to each cylinder of the engine? A. There is—it is a dual ignition system with two spark plugs to each cylinder.

Q. And the charge of electricity that went to the two spark plugs, did it come from somewhere? A. The ignition systems are entirely independent. There are two separate magnetos and one will function without the other. The same thing is on the engine in duplicate and you can take one off and it will run with the other.

Q. If one ignition system would not run, the engine would run on the other? A. Yes.

Q. In normal flight, normal operation of the engine, are both ignition systems in action? A. It is customary, and in fact it is universally done, to operate with both magnetos functioning.

Q. Operating both at the same time? A. Yes.

Q. That was so on each of the three engines? A. That is right.

Q. I wish you would tell the Court and jury whether the spark plugs which had a gap of thirty thousandths of an inch would function in a Wright J-5 engine? A. In my opinion it would.

Q. Have you known them to function properly? A. Yes, sir.

Q. With a gap of that size? A. Yes, sir.

Q. It has also been testified here that the A. C. spark plug was not a proper spark plug to use in that engine, was not the proper spark plug for that engine.

Mr. George: That is objected to as based on an unwarranted assumption of fact. There is absolutely no testimony in this case——

The Court: I think Mr. Lang testified to that.

Mr. George: He testified as to the gap.

Mr. Carpenter: The type and also the gap.

Mr. George: If he said that, I withdraw the objection.

Q. How about the type of spark plug you found to be in that engine? A. I am naturally not in position to answer that question. It is a matter that is left to our engineering department. They determine the type of accessory and conduct experiments to qualify those accessories.

The Court: When they go out are they fitted up with that type?

The Witness: Yes, sir, they are.

Q. Is that the same type you use for that engine today? A. It is.

Mr. Carpenter: You may cross-examine.

Cross-examination by Mr. George:

Q. Mr. Kennedy, it was in the Wright plant at Paterson where you first saw these motors? A. Yes, sir.

Q. On the 21st of March, 1929? A. That is as far as I know. I might have seen them when they were being built.

Q. Well, where? At the Ford plant? A. No. At our plant.

Q. Oh, yes. What is the name of the person, if you can tell us, who brought those engines into the Wright plant on the 21st of March? A. As soon as this accident was reported to us and we received word that we were to make an inspection of the engine I sent a young man who I use for checking full particulars around the office, to Newark, to see that they were properly loaded and that they were brought back to the plant without anyone touching them as we were afraid of souvenir hunters.

Q. By souvenir hunters you mean the persons who would tamper with the motors and change its original condition from the time of the crash, right, isn't that the fact? A. Yes, right, to some extent.

Q. You did not accompany this checking—full—particulars—handy man, did you? A. No, sir.

Q. You did not assist in transporting the motors? A. No, sir.

Q. When did you send this handy man to the airport? A. If I may refresh my memory I think this accident occurred on Sunday, wasn't it?

Q. Yes. A. As I recall it he left our plant on the Tuesday noon after this accident.

Q. That is Monday the 18th—the 20th, is that right? A. It would be the 19th.

Q. Tuesday the 19th, that is right; and he left your plant on Tuesday the 19th, is that right? A. About noon, as near as I can recall.

Q. About noon?

The Court: Just a minute. Mr. Lang said this plug is not the right kind for this kind of service if you did not ride with the throttle open.

Q. Now, Mr. Kennedy, what time of the day was it on that following Thursday, or Thursday following the accident, or the 21st of March, when you first saw the motors? A. I saw the engines the same day they arrived at the plant.

Q. What time of the day was it? A. I don't remember, probably around four or five o'clock. It may have been six or seven. I don't remember.

Q. In the evening, you mean? A. Yes.

Q. Of your own knowledge you can't tell what had been done to those engines between the time of the crash at about five o'clock on the evening of the 17th of March to the time the engines came into your plant and came under your observation for the first time, can you? A. No, sir.

Mr. George:. I respectfully move that the testimony of this witness regarding his findings as of the 21st of March, 1929, be stricken out.

The Court: I said I would admit them subject to being connected up to show that they were in the same condition as at the time of the accident.

Mr. George: He has not done that.

The Court: He can't do it. He will have to bring somebody else on the stand.

Mr. George: Oh, by somebody else?

The Court: Yes.

Q. How much experience did you have with J-5 Wright motors prior to this accident? A. Prior to the accident?

Q. Yes. A. Well, I would have to go back into a lot of history. I have been mixed up with engines a long time.

Q. Do you have little or much? A. I have considerable.

Q. You have occasion to examine or inspect quite a large number of them? A. Yes, sir.

Q. Prior to the accident? A. Yes, sir.

Q. One hundred and fifty? A. I would say roughly that many.

Q. One hundred and fifty J-5 motors? A. Not complete inspections, but from various features of those engines.

Q. You did some kind of work to some extent on about a hundred and fifty J-5 motors prior to this accident? A. Yes, sir.

Q. How many J-5 motors which had been damaged had come under your inspection or observation prior to the accident and which you examined? A. I would not attempt to say.

Q. One hundred? A. I would not like to say because I see parts that are removed from engines and sent in there which are not complete engines, but only a damaged part.

Q. Well, substantially complete engines, J-5's, have you had occasion to examine one hundred and fifty damaged motors of that type prior to the accident? A. Well, I would want to know what

you mean by "damaged". I could examine an engine which may not be damaged. It may be it is not simply functioning right.

Q. Well, damaged in accidents similar to the one in question? A. No.

Q. In greater or less degree? A. I don't think I have examined one hundred and fifty accidents of this kind.

Q. I am not talking about accidents. I am talking about motors which had been damaged by any cause, but damaged nevertheless. How many of those did you inspect or examine prior to the 17th of March, 1929? A. I don't know.

Q. Well, would you say one hundred? A. Possibly more than that.

Q. How many did you examine which were similarly damaged as were these motors which you inspected on the 21st of March? Seventy-five? A. No.

Q. Fifty? A. I would not want to answer, I don't know.

Q. I am trying to find out, Mr. Kennedy, what your experience has been upon which you base this expert testimony that you are giving now. Well, was it fifty? A. In my entire life?

Q. Of course your entire life prior to March 17th? A. Are you confining this to this particular type of engine or to any engine——

Q. J-5's. A. J-5's?

Q. Yes. A. I probably have seen up to this time around twenty-five or thirty damaged J-5 engines, damaged in some degree, enough so you would call it damaged. It is pretty hard to define damage, and a lot of other things that can happen to engines.

Q. I mean damaged similarly to those involved in this case. Did you examine twenty-five up to the time of this accident? A. Twenty-five or thirty, possibly.

Q. You recall testifying in the other trial in Newark, don't you? A. To some extent.

Q. You were asked this question:—page 1183, Mr. Reed—Question: "All right. Had you, prior to the examination of these J-5's, had occasion to examine other J-5's that were similarly damaged?" Answer: "Yes, sir." Question: "How many?" Answer: "Probably about six." A. Well, that is getting around to the point of what you call damaged.

Q. Do you recall making that statement? A. I do, yes, sir.

Q. Just a moment ago I asked you about how many motors, J-5's, you had examined, which had been similarly damaged as those that are involved in this case, and your answer is twenty-five or thirty. A. There is lots of degrees of damages.

Q. I used the word "similarly damaged", didn't I? A. Even that does not bind it down very tight,

Q. You did not answer the question. A. Yes, you used "similarly damaged".

Q. "Had you prior to the examination of these J-5's had occasion to examine other J-5's that were similarly damaged"? A. "Yes". Question: "How many?" Answer: "Probably about six." Was that statement true in Newark? A. It was as it was qualified there, yes.

Q. You testified on direct examination to the effect that no minute examination was made of the spark plugs, is that a fact? A. No minute record was made of the inspection of these spark plugs.

Q. You are testifying only from memory or from the record? A. I explained a while ago we look over the spark plugs and if we don't indicate anything that shows mal-function on the failure we don't make a record of it.

Q. By the way, this was your first job on damaged motors for the Wright people, wasn't it? A. What is that?

Q. Wasn't that the first job on J-5 motors for the Wright? A. My first job?

Q. Yes. A. Personally?

Q. Yes, this particular job? A. What do you mean by "job"?

Q. Just what I said. A. I don't understand.

Q. Working on the motors, inspection or otherwise? A. No, it was not.

Q. It was not? Are you a licensed aeroplane mechanic? A. No, sir.

Q. Are you acquainted with the rules and regulations of the Department of Commerce respecting— A. I am.

Q. What did you think I was going to say? A. Regarding licensed mechanics.

Q. No, no, that is not what I was going to say— regarding inspection and character of inspection which is required to be made of aeroplane motors? Are you acquainted with those rules and regulations? A. I have read them but I would not want to be cross-examined on them.

Q. I am not cross-examining you on it. I am asking you if you are acquainted with those rules and regulations? A. More or less, yes.

Q. Now, what is the governmental requirement on inspection of aeroplane motors? A. I don't know.

Q. When you said "more or less", you mean less, don't you? A. Yes.

Q. Can you tell us what is a proper gap in spark plugs on a J-5 motor of the type that is involved in this case that gives the greatest amount of efficiency? A. Can I tell?

Q. Yes. A. Yes.

Q. What? A. We specify on this particular type of plug between twenty and twenty-five thousandths of an inch gap.

Q. Now, you said—what do you think about a thirty thousandths gap? A. You find a thirty, and find more in engines that have been in operation.

Q. Even more than thirty? A. Yes.

Q. And would the motor function properly? A. Yes.

Q. At all speeds? A. It might be a little rough at idling. It might be slightly rough in idling, but it would function.

Q. But if it is pushed into high speed it will function better? A. Yes.

Q. So, that the higher the speed on a thirty-five thousandths gap you would have good function, is that right? A. No, not exactly.

Q. Well, would you have it at thirty? A. Ordinarily the gap can increase to thirty or thirty-five thousandths of an inch if everything else was in good shape and you would not know it.

Q. At high speed? A. As far as high speed operation is concerned.

Q. But you would not be likely to have a lack of efficient functioning on an idling motor with a gap of thirty thousandths, would you? A. It might not function so well.

Q. Not so well as a motor under pressure? A. What do you mean by "under pressure"?

Q. High speed. In other words, the higher the speed the better the function with a wide gap,

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isn't that so? A. Yes, your magneto is putting out more juice in high speed.

Juror Number Five: Have you ever flown a plane.

The Court: Have you ever flown a plane, is the question asked by number five.

The Witness: Yes.

Q. May I ask just this one question? Those motors which were examined are manufactured by the company that employs you? A. Yes.

Q. Of course, you would not want the world to know now that you are speaking in public that the Wright J-5 motor which was used in this plane and manufactured by the Wright Aeronautical Corporation was a bum motor, would you?

Mr. Carpenter: I object to that question. What's the idea?

The Court: Sustain the objection.

Re-direct examination by Mr. Carpenter:

Q. How widely is the J-5 Wright engine used, Mr. Kennedy? A. It has been sold in practically all parts of the world.

Mr. Carpenter: I think that is all.

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TAINE G. MCDOUGAL, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. Where do you live? A. Flint, Michigan.

Q. What company are you with? A. A. C. Spark Plug Company.

Q. What is your position with that company? A. Vice-president in charge of spark plug development.

Q. In charge of spark plug development. How many years have you been in that sort of work, Mr. McDougal? A. The past eight years.

Q. In the course of your work have you had occasion to run tests for the A. C. Spark Plug Company on motors of various types? A. I have.

Q. What sort of tests have you made of the spark plugs? A. The tests in general are divided into two categories, the life test and the efficiency tests.

Q. Have you had occasion to test the type "N" A. C. spark plug on the Wright J-5 engine? A. I have not.

Q. Do you know anything about the efficiency of such spark plug with gaps of various widths? A. I certainly do.

Mr. George: On what kind of engines? J-5?

Mr. Carpenter: That does not make any difference, what type of engine.

Mr. George: I object to the question as being too remote, too vague, and as not being germane to the issue.

The Court: Overrule the objection.

Q. Does it make any difference, Mr. McDougal, as to what engine is used, so long as it is an internal combustion engine that is lubricated with oil and uses gas—gasoline? A. That is basically true with one variation—the compression ratio.

Q. The compression ratios would change it? A. Yes, sir.

Q. Changes with each type of engine? A. That is right.

Q. Do you know what the compression ratio of a J-5 engine is? A. Not by having measured it myself.

Q. Well, now, have you had occasion to inspect spark plugs that have been used successfully in the J-5 engine? A. Yes, I have.

Q. Mention one case particularly. A. I inspected with Colonel Lindbergh the plugs that we took from his plane when we landed in Paris.

Q. Were you in Paris when he landed? A. I was.

Q. Did you take the—help Colonel Lindbergh in taking the plugs from his engine? A. I did.

Q. Did you measure the gaps between them? A. We did.

Q. You and Colonel Lindbergh together? A. Yes.

Q. I wish you would tell the jury what you learned at Paris after he landed. A. Well, the insulators were exceptionally clean and the gap surprisingly even. The distances were what we considered even, from about 26 to 31.

Q. From 26 to 31? A. Yes.

Mr. Reed: Thousandths?

The Witness: Thousandths of an inch, that is right.

Q. What else did you inspect, if anything? A. There was nothing else abnormal at all in the appearance of the plugs.

Q. How was that engine operated from its flight across the Atlantic until the time it landed?

Mr. George: I object.

The Court: Sustained.

Mr. George: I understand he went alone.

Q. What kind of motor was that, Mr. McDougal? A. Wright J-5.

Q. Same type as the J-5. What spark plugs did he have? A. Type "N" A. C. spark plugs.

Q. Manufactured by your company? A. Yes.

Q. How would such spark plugs function in a J-5 engine with a gap of 15 to 30 thousandths of an inch? A. I have never tested them myself. I could not say.

Q. I wish you would tell us whether it is possible by examining the gaps in a spark plug with a flat gauge accurately to tell just what the clearance is?

Mr. George: I object. This witness is not qualified as having experience in that connection sufficiently to be able to testify.

Mr. Carpenter: I am asking about the spark plug, not about the engine.

The Court: He is not asking this in connection with any type of engine. This man is engaged in developing these plugs. He ought to know something about them.

(Question repeated by the stenographer.)

The Witness: It would depend upon the type that it was, the relative positions of the two electrodes.

Q. I show you two diagrams, one was described as D-2-A, and the other D-2-B. D-2-A is supposed to be a drawing of this type of plug before use and the other is designed to show such a plug with a clearance of twenty thousandths of an inch. With that sort of wear shown on D-2-B, would it be possible with a flat gauge accurately to get the distance? A. Not if the flat gauge had any appreciable width, it would not.

Q. Why not? A. Because you can't get a—can't make a straight surface conform to a circular one.

Q. That is the reason for it. Furthermore, is there any other reason why—strike that out. I wish you would tell us in the normal wear of a spark plug in operation whether the wear is uniform between the top of the electrode and the nearest portion? A. It seldom is uniform.

Q. What is your experience with that? A. Because the extreme tip of the central electrode is subjected to higher temperature than that portion that is closer to the tip of the porcelain. The extreme tip will wear more readily so you would have a wedge-shaped gap after some service.

Q. Is that one of the reasons why with a straight gauge you cannot tell accurately? A. That is one reason you could not tell with any kind of gauge unless you gauge it very carefully and knew just what you were doing.

Q. What do you say about the efficiency of using a wire, say, 20 thousandths of an inch? A. Such a method would be about the only one you could use for gauging gap such as shown in this D-2-B diagram.

Q. Now, is it possible by just taking the width of the gap alone from examining two spark plugs, given the gap alone—say it is thirty thousandths

of an inch—and thereby say that—from that draw a conclusion that that will cause pre-ignition and cause an engine in operation to slow down and not function efficiently? A. No. The gap width has absolutely nothing to do with pre-ignition in a motor, positively nothing.

Q. Why is that? A. Pre-ignition is a function of the temperature. If some internal part of the cylinder, whether it be in the edge of a valve or the tip of a spark plug electrode and is hot enough, it will ignite your mixture before the spark occurs. Therefore you will get an explosion before the piston reaches the top of its stroke. You get a knock which is known as the pre-ignition phenomena.

Q. In other words, could you tell anything about how an engine would function in operation, given the fact merely that an A. C. spark plug is involved, plus the fact that the gap between the electrode is thirty thousandths of an inch? A. There are too many other factors that enter.

Q. What are some of the other factors involved? A. Well, the voltage at the spark gap which depends on the speed at which the magneto is running, the amount of wireless harness that is on saps the effectiveness of that voltage according to which spark plug is fouled, and the compression in the motor are some I can recall off hand.

Q. Are these spark plugs built and designed for any particular motor, or for what condition? A. They are designed for each particular motor.

Q. Taking what factors into consideration? A. The final proof of the pudding is running the plugs in the motor.

Q. Have you conducted tests of these spark plugs in motors of various degrees of compressions? A. Not myself personally.

Q. Under your supervision and direction? A. That is right.

Q. How did you run these tests on motors? A. The life test or efficiency test?

Q. Efficiency test. A. The efficiency test is run by getting the motor up to full speed, full load, shutting off the ignition and timing the period over which the motor will continue running with the ignition cut off.

Q. Now, the other test. A. The life test is simply full load, full throttle test for a given number of hours with examination at various periods during the test of the plugs.

Q. Such a test as that is run with the idea of what? A. Of determining the weakest part of the plug to see what goes first.

Q. To see whether the plug goes first or the engine goes first? A. That is right.

Q. If the plug goes first, what part of the plug goes first, that is what it is determined for, isn't it? A. That is right.

Q. Has such tests as that been run under your direction? A. Yes, sir.

Q. With all types? A. With various types. I would not say all types.

Q. In other words, high compression and low compression motors? A. That is right.

Q. And run with all types of fuel? A. No, we standardize the fuel as nearly as possible.

Q. Does the type of fuel used in the motor make any difference in the operation of a spark plug in a given motor? A. None of the ordinary fuels, I would say.

Mr. Carpenter: You may cross-examine.

Cross-examination by Mr. George:

Q. Now, in a high compression motor, a J-5 motor, Mr. McDougal, where the gap is wider than is normally expected to give the greatest amount of efficiency, does it function—if it does function at all—better on low speed or high speed? A. I stated that. I had no experience with the J-5 motor.

Q. You don't know. Therefore you can't tell, can you, Mr. McDougal, what the effect upon a high compression motor rotated at 1800 R.P.M's. with the throttle— A. (Interrupting) May I ask what you mean "on high compression," please?

Q. —the J-5 motor. A. What is high or low or relative?

Q. 1800 R.P.M's. would be high. A. That has nothing to do with compression.

Q. Are you acquainted with the J-5 motor? A. No, sir.

Q. Do you know the difference between high compression motors and low compression motors? A. Yes, sir.

The Court: Do you?

Mr. George: No. I am going to find out in a moment.

The Court: All right.

Q. Inasmuch as you do know the distinction between a high compression motor and a low compression motor, we will now take the high compression and your A.C. type "N" spark plug. A. Here is a point, please. Here is high. Here is low. Where does low speed and high begin?

Q. You are not acquainted with the J-5 motor? You said "no." Didn't you inspect Lindbergh's motor? A. I inspected the spark plugs in Lindbergh's motor.

Q. You are not able to tell what the extent of function of the type "N" plug which you manufacture would have upon a J-5 motor if the gap was thirty thousandths of an inch, are you? A. From Lindbergh's experience for one.

Q. I am not talking about his experience. I am talking about your experience. A. I told you I never ran any tests on J-5 motors.

Q. Then you are not able to say of your knowledge, are you, that a thirty thousandths of an inch gap in that particular type of spark plug in a J-5 motor with the throttle wide open would function properly, are you? A. I believe I am.

Q. You are? Now, I am asking you, what effect has a thirty thousandths of an inch gap upon a J-5 motor with the throttle wide open and the rating being 1800 R.P.M.'s.? A. It functions.

Q. It functions. Do you know that of your own knowledge?

The Court: Would 1 to 5 compression mean anything to you?

The Witness: Yes. 5 to 1, it is, your Honor.

The Court: Or 5 to 1. The witness said 1 to 5. That is what these engines are according to Mr. Lang.

Q. Of course, there is no such thing as a defective plug being sold, is there, Mr. McDougal? A. Being sold by whom?

Q. By your company? A. I hope not.

Q. I hope not, too. A. It depends upon the human element, such as you and I inspecting the plugs. If our eyesight is good there should be no defective ones go out.

Q. Considering the human element that is involved, there is always a probability of a sale of a

defective plug by your company, isn't that so? A. Yes, sir.

Mr. George: That is all.

Re-direct examination by Mr. Carpenter:

Q. You say you know about the 5 to 1 compression—engine with a ratio of 5 to 1. Assuming that that is the type of engine the J-5 is, that is the compression of that engine, have you run tests with engines with that compression so that you know how the A.C. spark plug, type "N," will operate in such an engine? A. Yes, that is true.

Q. How will that spark plug—such a spark plug, operate in that type of engine with a gap of thirty thousandths? A. Normally.

Q. What is the range at which it will operate normally? What is the range of gap from your experience? A. You could operate a plug with all other conditions being ideal for such a stunt at fifty thousandths.

The Court: Well, now, let me ask you this, because it has been injected into the case. A low compression motor can have a wider gap than a high compression, is that so?

The Witness: That is right.

The Court: And would thirty thousandths of an inch be too great a gap for a 5 to 1 compression engine?

The Witness: No, your Honor.

Q. Would fifteen thousandths be too low? A. Only if the motor were being operated under conditions where extreme fouling——

Q. Extreme what? A. —fouling of the insulator surface resulted.

Q. What is the ideal range for the operation of a spark plug of that type in a 5 to 1 compression engine? A. We set the gap on that type of plug now for shipment to Wright for their J-5 motor at twenty-five thousandths.

Mr. Carpenter: That is all.

Re-cross-examination by Mr. George:

Q. Now, what is—withdraw that. What is the effect, Mr. McDougal, of a cracked porcelain upon the efficiency of a spark plug? A. There again it depends entirely upon conditions. I was shown one this morning with the top of the insulator cracked clear in two and the gentleman who showed it to me told me it was functioning when he took it out of the motor.

Q. Who was that gentleman?

Mr. Carpenter: He will be the next witness.

Q. Who is the gentleman?

Mr. Carpenter: Mr. Conway.

The Witness: Mr. Conway.

Mr. George: He is capable of saying so. If he is not able to remember, I think Mr. Carpenter has done that frequently in the week we have been together. It is unfortunate.

The Court: But he is desirous of rushing along the trial.

Mr. George: He can rush it, but not rough shod over me.

The Court: I would be perfectly willing to get off the bench and leave it to you two together. I don't think either one of you have anything on the other. In other words,

it is another way of saying it is fifty-fifty. I am very fond of both of you.

Mr. George: Thank you very much. I think that is the reason your Honor has tolerated us to the extent you have.

The Court: That goes for Mr. Reed as well.

Q. Are you willing to say, Mr. McDougal, that a crack on the inside porcelain of the spark plug does not impair its efficiency? A. There is only one porcelain. There is no inside porcelain.

Q. Well, the one porcelain. It does not impair the efficiency of the plug, does it? A. It depends upon the position of the crack and what is in the crack.

Q. Now you said also that fifty thousandths of an inch gap would not be too much for proper functioning of a spark plug. Is that so? A. With all conditions ideal for such a stunt, that is true.

Q. Is that at high speed or low speed? A. Either.

Q. It does not make any difference? A. At low speed if you were getting your voltage from a generator whose speed varied with the speed of the engine, you would not have generated enough voltage to jump so large a gap, but if you had an outside source for your voltage, a storage battery, or coils, you could do it at low speed as well as high.

Q. Are you acquainted with the ignition system of a J-5 motor to the extent of being able to tell us whether it had these very facilities? A. No, I am not.

Q. Assuming it did not have this facility for extra voltage, would it make any difference

whether the motor were at high speed or low speed with a fifty thousandths of an inch gap? A. I don't get the question. It does not make any sense.

Q. I don't know whether that is my fault or yours. A. It may be mine.

Q. I asked you a while ago, Mr. McDougal, whether a fifty thousandths of an inch gap—we will call it for convenience sake—a fifty thousandths gap, whether it makes any difference whether the speed is high or low as to the efficiency of the spark plug with a fifty thousandths gap, and your answer was that would depend upon whether it has a battery to furnish the extra voltage in order to throw the spark across the gap, is that right? A. That is right.

Q. Assuming that it has not that extra voltage, using your own term,—just an ordinary system of ignition—would the speed make any difference with a fifty thousandths gap? A. Yes.

Q. All right. That is the point. What would the difference be on high speed and low speed with a fifty thousandths gap? A. At low speed your generator would not be running at high enough r.p.m.'s to generate the voltage necessary to jump that gap.

Q. Yes. A. And at high speed you could rev it up to the point where it would be delivering that voltage.

Q. It would be delivering that voltage? A. Yes.

Q. And, therefore, the plug would be more efficient at high speed than at low speed under those circumstances. Is that what you mean to say? A. More efficient?

Q. Yes. A. Your plug has the same efficiency all the time. In one case you would be giving the

operating voltage necessary to jump the gap of the plug. In the other case you would not be giving it the necessary voltage.

Q. In which case yes and in which case no? You said in one case you would be giving it the necessary voltage and the other you would not be. Which do you refer to? A. The slower you turn your generator the slower your voltage, therefore you would not be getting the voltage you were at high speed.

The Court: If a piece of porcelain is out of one of these "N" type plugs, A. C. plugs, would that show in any way on pre-ignition?

The Witness: If a piece of porcelain would break off the end and be supported by the cross wire, not falling entirely out of the plug, it would have no way of transferring the heat it gets to the outside and it would get so hot it would cause pre-ignition. On the other hand, if it dropped clear out of the plug, go out through the exhaust valve, it would be out of the sphere of bad influence.

By Mr. Carpenter:

Q. Even assuming you had a gap there of fifty thousandths of an inch, would that have anything to do with causing pre-ignition or heating of the engine? A. Causing what, please?

Q. Pre-ignition or heating of the engine? A. No. The gap width has nothing to do with pre-ignition.

By Mr. George:

Q. Suppose the gap was sixty-five, would that have anything to do with it? A. With pre-ignition?

Q. Yes. A. The gap has nothing to do with pre-ignition. Whether there is any gap——

The Court: If these questions are directed to the Court's question, you misunderstood the Court's question. I am not talking about the gap. I am talking about a piece of porcelain.

Mr. George: Yes. Just one more question.

Q. Eliminating the question of pre-ignition, but when the gaps are wider than even you in your judgment believe to be the proper gap or limit of space—suppose it is beyond that—what effect would that extra wide gap have on the function of the motor? A. If you get no spark, you get no explosion.

Q. Then what would happen to the motor?

The Court: It would die, wouldn't it?

The Witness: At least that cylinder in which that one plug is. If it had only that one plug in that cylinder.

Juror No. 5: With reference to the plane, was that equipped with a battery?

Mr. Carpenter: With two magnetos.

Juror No. 5: I mean, there was no battery to generate power without the generator?

Mr. Carpenter: We will have to have Mr. Conway tell about that. I cannot tell you.

(Witness excused.)

ARTHUR CONWAY, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. Mr. Conway, where do you live? A. East Orange, New Jersey.

Q. What is your business? A. Superintendent of experimental testing for the Wright Aeronautical Corporation.

Q. How long have you had that position? A. I have had that position for the last five months.

Q. What was your position before that? A. Experimental tester.

Q. How many years have you been in the experimental department of the Wright Aeronautical Corporation? A. Three years, the first of the past November.

Mr. George: First what?

The Witness: First of the past November.

Q. What was your position before that? A. I was in business for myself in automotive, electrical repairing.

Q. And what studies have you made of internal combustion engines and the ignition of combustion system? A. I began my experience in electrical equipment in 1916 with the Splitdorf Electrical Company of Newark.

Q. Did you go to any technical school? A. Through high school, two years of electrical engineering—I am now attending Columbia University Extension, engineering.

Q. Have you run any tests on the J-5 engine—strike it out.

Q. Did you have anything to do with the developments of the J-5 engine with the Wright Aeronautical Corporation? A. The engine was well developed when I came with the company.

Q. Did you run tests on it during its development? A. Probably forty-five hours total with the J-5 engine.

Q. Have you run tests since then at various times? A. We rarely receive engines into the plant. As a matter of fact, our department is entirely separated from the J-5 engines that return to the plant at the present time.

Q. Well, before that, I mean, have you run any in the last five years—run various tests with J-5 engines, various kinds of spark plugs? A. One test consisted of about forty hours at full throttle running, full load, full throttle running.

Q. What spark plug, Mr. Conway, was—does your company specify as standard and did you back in 1929, for the J-5 engine?

Mr. George: That is objected to. It don't make any difference what his company specified as standard spark plugs.

The Court: I think it is all right.

The Witness: At the time the J-5 engines were being used and run in this experimental test department they used an A.C. spark plug with an inbored ground electrode.

Q. Have you any of those types with you? A. I have some in my coat—in my overcoat over there.

Q. Which coat is it? A. That brown coat in the first seat there.

Q. Is this the one? A. That is correct, yes.

Q. Is that the type of spark plug that was used? A. This, to the best of my knowledge and belief was the spark plug that was used as standard equipment on J-5 engines.

The Court: Is that an A. C.—N?

Q. Is that an A.C. type N? A. I never refer to them by number, your Honor.

The Court: Well, is it an A.C.?
The Witness: It is an A.C. plug.

Q. You have there with you these plugs with various gaps, haven't you? A. These plugs have various gaps and they are all marked accordingly.

Q. What gaps have you got here on those various plugs? A. Well, we have one at fifteen and we have one with a gap at twenty-five with the porcelain cracked. We have another one at thirty-seven and the one you have there is forty.

Q. Have you run experimental tests with J-5 engines with plugs of this type to determine efficiency in operation? A. No.

Q. What did you run the tests for? A. The test, the full throttle test for forty hours was primarily for the valve—to determine the amount of wear on the valve stems and valve seats and taps after full throttle running a considerable number of hours.

Q. What do you call "full throttle running?" A. That is where the engine carries full throttle load and the throttle is wide open.

Q. When did you run such a test as that? A. The forty-hour test was during the first part of February—the latter part of January of 1929. I am pretty sure it was in February of 1929.

Q. Did you use the same type of spark plug? A. No. It was not. That was a B.G. spark plug.

Q. It was a different type of spark plug? A. Yes, that was a different manufacturer.

Q. Have you run the Wright J-5 engine with this particular A.C. type spark plug? A. I have, yes.

Q. You know the efficiency of the engine, do you? A. Yes.

Q. Is this a high compression engine? A. No. It is not considered a high compression engine. It is a 780 cubic engine. Its compression volume ratio is 5.1 to 1.

Q. How about the electrical system? How is the electricity supplied? A. The electricity—the ignition is supplied by two independent magnetos. The left-hand magneto fires the rear line of spark plugs in the cylinder, and the right hand fires the front line of spark plugs in the cylinder.

Q. From where is the current supplied to the magneto? A. The current from the magneto is self-induced. That is, it is a self-contained instrument which produces its own energy, and therefore needs no outside source of current.

Q. How does it supply its own energy? Through operation on what? A. By the method of wires from the magnetic field. The induced current in the primary winding and the re-induced current from the secondary winding induce high voltage over the gap at the plug.

Q. How will the Wright J-5 engine function with an A.C. type spark plug at various gaps? Tell the jury. A. At any gap to my belief between—with an A.C. spark plug any gap from twenty to thirty-five thousandths of an inch between the electrodes the engine should perform in a normal manner at all speeds.

Q. Now, how about when you get down low? A. When you get under ten you have not got much

flame production in the cylinder, and the result is you cannot cause inflammation of the mixture unless you have flame production. You have to have heat to create that chemical energy to drive a combustion engine.

Q. How about thirty-five? A. Above thirty-five you run into difficulty in starting because you have that self-contained ignition system.

Q. But, in between twenty and thirty-five—strike it out. When the gaps are between twenty and thirty-five one-thousandths of an inch, what is your experience as to the firing of the engine or operation of the engine? A. It should always perform in a normal manner.

Q. As a matter of fact, do you know what the gap is in the spark plugs that are designed for the J-5 engine as they come from the manufacturer brand new? A. As they come from the manufacturer I don't know, but if I may refer to our specification book I can give you the requirements that are entered there.

Q. Do you remember what they are? A. We require twenty to twenty-five.

Mr. George: Just a minute. That is objected to. That is not proper proof of what the gap is when the plugs come right from the factory.

Mr. Carpenter: He is now giving you what their specifications provide.

The Court: What they require.

Q. You specify gaps of how much? A. From twenty to twenty-five one-thousandths of an inch between the electrodes.

Q. Now, assuming that the spark plugs have gaps thirty thousandths of an inch between the electrodes——

Mr. George: How much?

Mr. Carpenter: Thirty thousandths of an inch. I think that was what was testified to by Lang.

Q. —would a gap of that width have a tendency to cause pre-ignition in that engine, in a J-5 engine in use at high speed? A. About as much as that clock on the wall up there.

Q. You say it would have none at all? A. None at all.

Mr. George: He did not say that. He said, "As much as that clock on the wall."

The Court: He says now "none whatever."

Q. Would the engine have a tendency—strike it out. Would a J-5 engine with A. C. spark plugs with a thirty one-thousandths of an inch gap at full throttle burn out the plug in from five to ten minutes? A. Absolutely not.

Q. Would a J-5 engine with its A. C. spark plugs with thirty one-thousandths of an inch after operation of a few minutes—five to ten, maybe fifteen—have a tendency to overheat and slow down? A. Well, the only thing we have got to consider is the fact that the plug itself is a component part of the cylinder and subject to the internal heat condition.

Q. Would the gap have anything to do—gap of thirty thousandths of an inch have anything to do with the internal heat conditions of the engine? A. None whatever.

Q. Now, taking the diagrams made by Mr. Wtorkowski which have been offered as D-2-A and D-2-B; D-2-A shows the spark plug new, never used? A. Yes.

Q. Now, D-2-B shows the spark plug used with part of the field burned away because, I suppose, of the spark jumping over between the electrodes. Is that normally found in spark plugs, after they are used, that condition? A. That is a very normal condition, yes.

Q. Now, can you tell with a thickness gauge—flat thickness gauge, accurately the gap between the electrodes with such a flat thickness gauge? A. I don't see how you could.

Q. Is it the proper way to ascertain the exact gap to use a wire rather than a flat gauge? A. Use a wire?

Q. Yes. Won't you more accurately get the width than you will with any flat gauge? A. I think a wire or a gauge having the radius of this burned portion of the ground electrode would be the proper thing, which would probably give you the accurate measurement.

Q. How many r.p.m.'s must a J-5 run in order to generate sufficient voltage to jump thirty one-thousandths gap in an N type A. C. plug? A. That should be about three hundred and fifty or seventy-five revolutions a minute.

Q. How many r.p.m.'s for thirty-five thousandths? A. We cut out probably fifty revolutions a minute to every five thousandths gap increase for a low speed.

Mr. Carpenter: I think that is all. Cross-examine.

Cross-examination by Mr. George:

Q. Have you some spark plugs before you? A. Yes, sir, right here.

Q. Where did you get those, Mr. Conway? A. These are spark plugs that have been laying

down at our Teterboro Airport for probably three or four years.

Q. Why were they kept there? A. Well, probably some of these plugs have been used recently. I could not say exactly.

Q. Why did you bring them here? A. Why, a couple of weeks ago I was curious to find out just about what those plugs would do that all this talk is about.

Q. All what talk? A. All this talk of spark plug gap.

Q. Where was this talk of spark plugs? A. We had quite a bit of it at the trial some months ago.

Q. That was seven or eight months ago? A. Yes, indeed.

Q. What about this talk—all this talk a couple of weeks ago? A. Did I say anything about talk a couple of weeks ago?

The Court: No. He did not specify when the talk was.

Q. What was the incident or passage or circumstance a couple of weeks ago? I think you mentioned "a couple of weeks ago." What was that you are referring to? A. I refer to the fact that I had brought up in my mind to get some of these spark plugs here and see what they would do under different conditions.

Q. You did testify in the trial seven or eight months ago, did you not? A. I believe I did, at that time.

Q. The thing is all over so far as you were concerned, as far as that trial was concerned? A. Nothing is ever over. You can always learn more.

Q. Was there anything following that trial which induced you to try to learn something else

about the spark plugs either in that case or concerning the spark plugs which you took out of Teterboro which had been laying there for three or four years? A. Nothing whatsoever except what might have come up in my own mind.

Q. Two weeks ago, right? A. It might have been three weeks ago. I say about two weeks ago.

Mr. Carpenter: Mr. George——

Mr. George: If your Honor please, I appeal to the Court to direct Mr. Carpenter——

The Court: Mr. Carpenter, please don't interject.

Mr. Carpenter: I am trying to tell something to Mr. George.

Q. Three weeks ago. Then, answer the question with that modification, three weeks ago, will you, please? A. How do you want that question answered?

Q. In the best way and as truthfully as you can. A. What do you want answered? I don't quite understand.

(Question repeated by the stenographer as follows: "Was there anything following that trial which induced you to try to learn something else about the spark plugs either in that case or concerning the spark plugs which you took out of Teterboro which had been laying there for three or four years?")

A. I thought at that time the case had been finally settled and no other condition or occasion in mind induced me to look up these spark plugs other than the brain child in my own mind.

Q. When you say that, "that trial" or "that case" you mean it was a closed incident? Nothing would be brought up again, isn't that what you said just a moment ago? That is your last statement? A. Exactly.

Q. And that was months and months ago, wasn't it? A. Seven months is not a long time.

Q. It was months and months, wasn't it? A. Yes, anything more than one is months.

Q. You and I are going to be very good friends if you will stop quibbling and try to answer my questions just as readily as you answered Mr. Carpenter's questions. Then, suddenly your brain child was reborn three weeks ago, is that it? A. I wish it had not. No. It was not.

Q. Then what was it that brought these spark plugs into being again by resurrection or otherwise? A. Curiosity.

Q. What was it that brought the thought to your mind? Any incident? A. The fact of my continual testing and dickering—and dickering with spark plugs.

The Court: You knew this case was coming up? You had been interviewed by some of the persons who had to get witnesses, hadn't you?

The Witness: I was notified, your Honor, to be ready for trial.

The Court: Did that excite your curiosity?

The Witness: Absolutely not, your Honor.

Q. Why, Mr. Carpenter wrote you a letter two or three weeks ago, didn't he? A. That is right.

Q. To get ready for trial, isn't that right? A. Yes.

Q. But his writing of the letter had nothing to do with the resurrection of your brain child dealing with the spark plugs? A. Absolutely not.

Mr. Carpenter: Whether it did or did not, the letter is the best evidence.

The Court: Yes, go ahead.

Q. Now, did anybody ask you to bring spark plugs to court with you? A. No.

Q. Well, did you know what you were coming here to testify to? A. Yes, indeed.

Q. About what? A. The spark plugs.

Q. Now, were those spark plugs in the trial in Newark? A. No, indeed.

Q. And where were you working at the time of the trial in Newark? A. Where was I working?

Q. Yes. A. At the Wright Aeronautical Corporation.

Q. In Paterson? Right? A. Exactly.

Q. And they have a lot of motors there? A. Several hundred, I think.

Q. Smashed up ones and new ones? A. Very few smashed up ones.

Q. Some. Wright motors do not crack up, the general impression we have here now, but they have a lot of motors and many, many spark plugs there, right? A. Yes.

Q. By the way, are you still employed by Wright? A. I hope so.

Q. Come, now, answer my question. Are you or aren't you? A. I was up until a few hours ago.

Q. Yes. I hope you are still employed there, too.

The Court: He ought to be.

Q. When this brain child got going again about three weeks ago and not because of any letter that

Mr. Carpenter had written to get ready to come to court and testify on spark plugs, why did you go to Teterboro to hunt out some spark plugs that had been laying around there for two, three or four years? Why didn't, instead, you bring spark plugs from the Wright Aeronautical Company at Paterson where you are employed constantly testing and working on motors?

Mr. Carpenter: I object.

The Court: Sustain the objection.

The Witness: To answer your first question, I did not go to Teterboro for spark plugs.

Q. Answer this question, please.

The Court: You have got another one yet.

The Witness: Your second question—now, you have got me off.

Q. I will repeat it word for word. When you had this letter by Mr. Carpenter to get ready to come to court which later had no connection with the rebirth of your brain child and you are still employed by the Wright Aeronautical Corporation where they have hundreds and hundreds of spark plugs and motors of all kinds, why didn't you bring spark plugs from the Wright Aeronautical Corporation where you were employed, instead of going away over to the Teterboro Plant or Airport at Hasbrouck Heights A. Because——

Mr. Carpenter: Just a minute. I object to the question as improper. It contains two or three questions.

The Court: Before we could think of any reply—I think if you leave it to him to answer he has a suggestion of a mind.

The Witness: I wanted to see some of these spark plugs that were in flight. We don't have many of those up there in the laboratory.

Q. Then, you are not acquainted with spark plugs that have seen service, are you? A. Yes, indeed. I said we don't have them up there, but we can always get them. We have means to go and get them.

Q. For the Wright Company? A. Any type or size we wish.

Q. Why didn't you regard it as more convenient for you to get any type or size that you wished by reason of your connection with the Wright Company if you intended to bring spark plugs here instead of getting them from Teterboro? A. I will answer that question by saying I have thought of these plugs ever since the time of the last trial. Hardly a day has passed——

The Court: I assume you wanted to be set today when you talked about spark plugs?

The Witness: Yes, indeed, your Honor.

Q. You did not think it was necessary to be so terribly set? You knew you were going to meet me for cross-examination? That didn't bother you in the least? A. That is an honor I did not expect to have here.

The Court: We will recess now until tomorrow morning at ten a. m.

(Recess to 10 a. m. December 2nd, 1931.)

(After Recess, 10 A. M., December 2, 1931.)

ARTHUR CONWAY, resumes the stand.

Cross-examination (continued) by Mr. George:

Q. Now, Mr. Conway, I hope you have done me the honor to bring those spark plugs back with you today? A. Yes, indeed I have.

Q. Am I right in assuming that since last night you have not talked with anybody concerning this case? A. That I have not talked with anyone concerning the case?

Q. Yes. A. I talked with Mrs. Conway about it.

Q. That is a secret and privileged communication between yourself and your wife. I am not going to ask you anything about your conversations with your wife, but outside of your home, am I right in assuming you have not discussed this case with anybody? A. The only discussion I remember last night was Mr. Carpenter told me to be here at ten o'clock this morning.

Q. That was all he said? A. Yes, sir.

Q. Now, is the same thing true since the last trial, that you had not discussed this case with anybody—I mean anybody connected with the case, is that the fact? A. Absolutely none.

Q. You are sure? A. Positive.

Q. Now, when you finished giving your testimony in the last case how much did you receive for subpoena fee or whatever compensation was paid to you? A. I did not receive any fee.

Q. You did not receive any fee? Not even a subpoena fee? A. Not even a cigar.

Mr. Carpenter: We will try to rectify that before the day is over.

Q. It is indeed a depression when you cannot even get a cigar. I think I could get a cigar from Mr. Reed.

The Court: I suggest counsel rectify that.

Mr. Reed: It will be rectified.

Q. Now, Mr. Conway, so far as you are concerned, when you left the court room in Newark in the spring of this year, the matter was a closed incident to you, was it? A. Absolutely, except for the experience that I had obtained.

Q. What? A. With the exception of the experience I had learned from the trial.

Q. You knew how to be a good witness? A. Well, that might come under that heading, yes.

Q. But you did not know whether there would ever be another case arising out of that crash, did you? A. I did not.

Q. You did not know how many plaintiffs there were in that case, did you? A. No. I could not name anywhere near the proper name.

Q. You did not even know what the result of that trial was—don't tell us what it was if you do know—but do you know what the result was? A. I believe I have an idea.

Q. But you thought your interest and connection with the case was terminated? A. Absolutely.

Q. Now, so long as no one talked the matter over with you since last spring, and so long as the trial itself and the whole crash was a closed incident so far as any connection that you might have in it was concerned and so long as the only communication that you had from anybody was a letter from Mr. Carpenter, the attorney, to be in court, no other suggestion was made to you as to

what you would be called upon to testify when called, was it? A. No. I cannot say there was.

Q. Now, you are sure about that, are you? Nobody made any suggestion as to what you should testify to? Right? A. That is true.

Q. Now, let me see the spark plugs, please. A. Sure.

Q. By the way, Mr. Conway, were you present during the whole of the trial in Newark? A. I was the final witness for the defense on the last day of the trial.

Q. How many days were you in court? A. I was in court probably a half a day.

Q. That's all? A. That's all.

Q. Do you recall any of the other testimony that was given by other witnesses in that case? A. Right now I cannot.

Q. There were not any witnesses testifying in court—just a moment, please—there was not any witness on the stand during the half day period you were in court who had been discussing spark plugs, was there? A. The only testimony I remember was concerning the log or logging the engine record.

Q. But not specifically dealing with spark plugs, was there? A. No, sir.

Q. Now, tell us why you brought four spark plugs into court yesterday without anybody having suggested to you what you would be called upon to testify or without anyone suggesting spark plugs? Will you tell the Court and jury, please, why you brought four spark plugs, three of which have tags on them? A. Because my testimony at the previous trial concerned the spark plug gap and as a result of that testimony I thought it might be a good idea to have spark plugs with several different types of gap and bring them into this trial.

Q. So that all the testimony there was that you were connected with was concerned with just gaps? A. Finally they brought up the question of fouling.

Q. Yes. Anything else? A. That is all I know of.

Q. You are sure, aren't you? A. I can't think of anything else right now.

Q. Well, think hard. I regard it as important. Anything else? A. No. Right now I can't think of anything else but fouling of spark plugs and spark plug gaps causing preignition.

Q. As a matter of fact, that is all your testimony was directed to in the last trial, isn't that true? A. I believe that is true.

Q. Why did you bring the spark plug in with the cracked porcelain today? A. To show to what extent a plug can be damaged and still function properly.

Q. How did you know there was any suggestion of a damaged plug from the medium of a damaged porcelain? A. I did not consider that there was any.

Q. Then why did you deem it necessary to crack a plug or bring in one that had a cracked porcelain? A. I can assure you I did not crack the porcelain.

Q. Why did you bring in one or go to the trouble of fishing one out that was cracked?

The Witness: I think I answered that question.

The Court: What is your answer?

The Witness: I testified that the damage— If you could damage a plug and have a wide gap in the plug and at the same time have it still function, it would cer-

tainly prove that plug was capable of firing in J-5 engines.

Q. Are these others all in good shape? A. None of them are in good shape.

Q. If they were screwed into a motor would they hold tight? A. The chances are they would with a solid gasket.

Q. You mean you don't know whether they would hold in good and tight or not? A. That depends on the condition of the threads in the engine.

Q. Assuming that the threads in the engine are good, would they hold tight? A. They would.

Q. Then the threads in these plugs are all right if they would hold tight? A. You are mentioning in the engine.

Q. You did not hear me say anything about the engine or threads in the cylinder. I asked you if the threads on these plugs are all right? A. I think they are.

The Court: What difference does it make? I don't think the jury care either. Those plugs were not in this engine, were they? This engine that was in the wreck?

The Witness: Sir?

The Court: These were not in this wreck.

The Witness: No, sir, they were not.

The Court: Then, don't let us bother.

Q. If the threads were bad on these plugs they would be damaged, wouldn't they? A. Yes.

Q. I mean the plug generally would be damaged? A. Yes.

Q. Then you did not go to the trouble of bringing in plugs that had every kind of damage, did you? A. No.

Q. Just the kind of damage limited to what? A. The electrical function of the plug.

Q. The gap and the plug. If a plug were lost in a motor it would affect its efficiency, wouldn't it? A. Absolutely.

Q. So that if the threads were worn and the plug were lost that would affect the efficiency, wouldn't it? A. Indeed it would.

Mr. George: That is all.

Re-direct examination by Mr. Carpenter:

Q. Did you test those plugs to see whether they would operate? Those four you brought here—those four different sizes, including the cracked one? A. Yes. Those plugs were tested on a spark plug tester in a compression chamber having eighty-five pounds a square inch. That means the air pressure between the gaps or, rather, in the gap of the electrode consisted of eighty-five pounds to the square inch.

Q. How does that compare with the Wright J-5 in operation? A. It comes right into the list with the average compression pressure you are getting in a J-5 cylinder.

Q. What did your test show when you so tested those four spark plugs? A. The result was that the plugs functioned properly with a continuous spark across the electrodes under a pressure of eighty-five pounds per square inch.

Q. By the way, did you so test that one that had the cracked porcelain? A. That had just as severe a test as the others.

Q. And did they function? A. Functioned? Absolutely.

Q. Those plugs you got out of the hangar of Teterboro? A. Yes.

Q. You did not pick them up by pre-arrangement? A. They were picked up at random out of a box of several different types or kinds of plugs.

Q. Have you any idea what they came out of? A. I have not the slightest idea except they were J-5 spark plugs.

Q. That hangar out there, whose hangar is that? A. It belongs to Wright Aeronautical Corporation.

Q. That is what I mean. Did you have any old plugs lying around your factory in Paterson? A. Our general manager has a fixed rule he does not allow anything around the plant to litter the plant up, such as old equipment and when we sent an engine to Teterboro to be tested, the spark plugs that go with that engine stay at Teterboro unless we call for them.

Q. To get specimens of one spark plug you have to go to Teterboro to get them? A. Teterboro, yes.

Juror Number Eight: You testified yesterday spark plugs twenty to thirty-five thousandths should work in a normal manner. We are not interested in whether it should work. Will it work?

The Witness: It will, yes.

Juror Number Eight: It was testified yesterday—two witnesses said that the spark plug with twenty to twenty-five when it leaves the factory is the normal gauge. Will it leave the factory at twenty-five to thirty-five thousandths?

The Witness: It will leave under the instruction book specifications twenty to twenty-five.

Juror Number Eight: If the normal gauge is twenty to twenty-five thousandths,

will it leave the factory at twenty-five to thirty-five?

The Witness: It will not.

Juror Number Eight: Why?

The Witness: Because there are limitations which you must hold in specifying different parts of the machine.

Juror Number Eight: I am not talking about the engines. I am talking about the spark plug gauge twenty-five to thirty-five thousandths. Why don't it leave the factory at that gauge?

The Witness: The spark plug comes under the engine specifications and it is the best limitation as to gap.

Juror Number Eight: I am talking about spark plugs. You are talking about engines. The normal gauge is twenty to twenty-five. It should leave the factory that way?

The Witness: That's right.

Juror Number Eight? Why doesn't it leave at twenty-five to thirty-five? There must be some reason why they don't leave them out at that gauge.

The Witness: Probably they uphold factory recommendations and hold those limitations. The spark plug manufacturer does not care to have his gap opened up to thirty-five thousandths of an inch.

Juror Number Eight? A. Why not?

The Witness: That is just their own manner of handling their specifications and their limits.

Juror Number Eight: There must be some manner to it when they don't leave them out with such a gap like that, thirty-

five thousandths. You say it will work in the normal manner?

The Witness: You see, they simply test the spark plugs. We have the double advantage of testing the spark plug and testing it in the engine.

Juror Number Eight: It is testified they don't leave it out unless it is twenty to twenty-five thousandths.

The Witness: I might answer that question in this manner: several times I have come across new plugs that have been just shipped in from the factory and the gaps in those plugs have been sometimes outside of the limits recommended by that factory and we have had to change them ourselves, but we cannot say to a man "set that plug anywheres from twenty to thirty-five or anywhere from twenty to sixty." You must hold to a fixed limit.

Juror Number Three: It is not a question of the spark plug manufacturer. It is a question of the Wright Aeronautical in their engine what you specify, calling for twenty to twenty-five thousandths. If the manufacturer sent it over with fifty they would adjust it at twenty-five at your factory?

The Witness: They would adjust it.

Juror Number Three: What I want to know is why you ship out twenty to twenty-five, not twenty-five to thirty-five.

The Witness: Simply because it is the recommendation of the spark plug manufacturer.

Juror Number Three: It is not the recommendation of the spark plug manufac-

turer, it is the specification of the Wright Aeronautical Corporation that we want to know.

The Witness: We simply follow out their recommendations.

Juror Number Three: Do they make the engine, the spark plug manufacturers?

The Witness: No. They don't. The Wright makes it.

Juror Number Three: Wright specifies the gap.

The Witness: Wright specifies the gap.

Juror Number Three: When the engine leaves the factory?

The Witness: Yes.

Juror Number Three: That is what is in it, twenty to twenty-five?

The Witness: Yes.

Juror Number Three: Why isn't it twenty-five to thirty-five?

The Witness: Because between the engineering department of the Wright Aeronautical Corporation and the engineering department of the spark plug manufacturer, they both work hand in hand and they find which would be the normal or the practical gap for that particular type of engine.

Juror Number Three: That is why it is twenty to twenty-five.

The Witness: That is the reason the limits are set at twenty to twenty-five. If the manufacturer sets his limits from twenty to thirty-five or twenty to forty, he probably would not be able to sell the plug. There is nobody would build a plug that would work under those conditions.

Juror Number Three: Don't they test it to find out which is the best?

The Witness: Yes, they test them under various gaps.

Juror Number Three: Is that what it is, twenty to twenty-five, because it is the best?

The Witness: Twenty to twenty-five would be the ideal gap.

Juror Number Three: It would not be so ideal up to thirty-five.

The Witness: It would up to thirty-five. it would function properly.

Juror Number Three: It might not.

The Witness: No. I would say it would in all cases.

Juror Number Eight: It would up to thirty-five?

The Witness: It would up to thirty-five.

Juror Number Three: But there is a chance it would not?

The Witness: I would not say there was a chance it would not, not in the particular engine we are dealing with.

Juror Number Three: But twenty to twenty-five is safe?

The Witness: Twenty to twenty-five is safe.

Juror Number Eight: Twenty to twenty-five is the ideal gap?

The Witness: Twenty to twenty-five is the ideal gap for that type of plug.

By Mr. Carpenter:

Q. Don't you know that when the spark plug is put in the engine at the ideal gap, that in the normal operation, from the first minute it starts to run, that starts an erosion of this spark plug?

Mr. George: I object to the question as leading.

The Court: Sustain the objection.

Mr. Carpenter: Perhaps I can bring out what I want in this way:

Q. In the operation of the engine through the firing in the plug, what develops? A. A new plug put into a green engine will burn off rapidly. After the gaps are set back into the limitation that burning off is at a far less rate than it would be with a new plug. That is just a characteristic of the plug.

Q. Now, then, when a new plug is put in an engine it is expected that it will wear in the manner you have described? A. Yes, indeed.

Q. Now, then, is that taken into calculation in fixing the gap for the plug when it is new? A. When the engine leaves the factory with the spark plugs if these same spark plugs have been used in that engine they will be brought within the limitations of twenty to twenty-five thousandths regardless of how many hours that engine has been running with those spark plugs.

Q. And don't you expect in the normal wearing of the engine—normal wearing of the plugs in the operation of the engine it will widen the gap through wear? A. Yes, it will. It is detrimental to continue forcing the center electrode and ground electrode of the plug because every time you move them you weaken the grain structure of the wire of the center electrode and also the grain structure of the ground electrode. It is far better to leave it alone even if the gap is outside the limitation and within the functioning field.

Q. Through how many hours of operation of an engine has your experience shown that spark plugs will function properly provided they are periodically tested and the gaps periodically ad-

justed? A. In our present day high compression engines which we are now dealing with——

Mr. George: I object to that.

Q. Take the J-5 engine. A. The J-5 engine after fifty hours of flying full throttle running, the gap should open up in the plug not less than seventy-five per cent. over its original setting.

Q. You don't get what I mean. Those engines, from the time they were put in the ship had been operated a total of two hundred and seventy-five hours in the plane. Assuming that the plane had had an inspection of plugs, had had inspection every twenty hours of operation, and that the mechanic at the time of that inspection had set the gap to twenty thousandths by the use of a wire, a twenty thousandths wire to get the proper clearance, how many hours in operation of those engines should those plugs function with that type of care? A. That would depend on the type of ship and the number of hours of flight, and whether or not the pilot was running down the throttle load or running the ship with wide open throttle.

Q. Assuming they are generally hopping flights on a tri-motor Ford plane? A. They should not run any less than fifty hours without adjustment.

Q. Fifty hours with what kind of throttle? A. That would be practically full throttle taking-off and then down to cruising speed, probably seventy-five per cent.—nine-tenths load during flight between airport and airport.

Q. My question is this: not how many hours without any testing at all, but assume the plugs had been examined and cleaned and the points set every twenty hours of flying, set to a clearance of twenty thousandths of an inch, how many hours of engine operation should such spark plugs when

given regular care, continue to operate? A. You mean you want to know the actual life of the spark plug?

Q. Yes, the actual life of the spark plug? A. The actual life of the spark plug—I don't believe I could answer that question as to the actual life.

Q. You mean you have not run tests? A. We have been running tests, continuous tests up into four and five hundred hours.

By Mr. George:

Q. Do you know what the guarantee is of the A.C. plug on that particular type of plug? A. No, I don't.

Q. Would it surprise you to know it is fifty hours? A. Fifty hours?

Q. Yes. A. I think that is very indefinite.

Q. I would like to suggest when we name fifty hours that is quite definite.

The Court: Mr. George, he doesn't know, so why speculate.

Q. Would a motor function with a gap of forty to forty-five? A. It would, except its starting.

Q. Would it function properly? A. It would not be considered proper when you could not start readily with a wide gap in the spark plug.

Q. Assuming you are already started with a forty to forty-five gap, would it function properly? A. Yes, it would.

Q. Do you remember your testimony in the other trial? You were asked the question——

Mr. Carpenter: What page, Mr. George?
Mr. George: 1732.

Q. (Quoting) Question: "All right, then you may answer." Answer: "An A.C. spark plug will not function properly with a J-5 engine"—then, Mr. Biro: "I object to that"—then you continued your answer, "An A.C. spark plug will not function properly in a J-5 engine with a gap less than ten one-thousandths of an inch between the center and ground electrode."

Mr. Carpenter: Where is that?

Mr. George: Going right over to the top of 1733.

Q. (Quoting) "It will not function properly with a gap greater than forty to forty-five thousandths between the center and ground electrode. The proper gap for an A.C. plug for the particular engine involved would be from twenty to thirty thousandths of an inch between the electrodes." Did you say that? A. That is correct.

Q. Is that true? A. That is true.

Mr. George: That is all.

By Mr. Carpenter:

Q. You said at the last trial also that over forty-five— A. I qualified that.

Q. —the engine goes slow in starting?

Mr. George: I object to the form of the question.

Mr. Carpenter: All right, I will withdraw it.

KENNETH M. LANE, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Reed:

Q. Mr. Lane, what is your name, your full name? A. Kenneth M. Lane.

Q. Where do you reside? A. Ridgewood, New Jersey.

Q. What is your profession? A. Consulting aeronautical engineer.

Q. How long have you been consulting aeronautical engineer? A. I have been a consulting aeronautical engineer for a year and a half.

Q. Will you speak a little louder so the last gentleman can hear what you say? A. I have been a consulting engineer for about a year and a half.

Q. Where did you get your technical training? A. Education started at the Massachusetts Institute of Technology, graduated with the Bachelor of Science degree, '17.

Q. Then, did you take up some work in connection with flying? A. You mean in connection with aeronautical engineering?

Q. Exactly. A. Yes. In November, 1917, I went into aeronautical engineering with the Signal Corps of the United States Army in the Experimental Engineering Division at McCook Field.

Q. How long were you with the United States Army as aeronautical engineer? A. For a little over three years until 1920 or '21.

Q. Without my firing questions at you, will you please tell us what your experience as an aeronautical engineer in the United States Army con-

sisted of, stations, and positions? A. Stationed all the time at McCook Field.

Q. Where is that? A. Dayton, Ohio.

Q. Go right along. Don't be too modest about it. A. The work was general. Stress analysis, performance computations, estimating and reduction of full flight test data, general problems and studies, and in the summer of 1918 I remained and took charge of the Static Test Department, testing planes that were built at McCook Field and were purchased by the Army for structural strength. In January, 1921, I left the Army and went with the Dayton Wright Company of Dayton, Ohio, as aeronautical structural engineer. They were designing and manufacturing aeroplanes mostly for the Army and Navy.

Q. And did you study and inspect and know all about motors, aeroplane motors from the ground up? A. At that time I was not particularly interested in the engine nor the power plant installation in particular. It was the design of the aeroplane as a whole.

Q. When did you go into the engine work? A. I left in March, 1923, when the Dayton Wright Company was closing up and went with the Wright Aeronautical Company in Paterson, New Jersey.

Q. Yes. A. Inasmuch as they were engaged in the manufacture of engines as well as aircraft I became more familiar with engines. For awhile, however, my work was in the aeroplane design. I became Chief Engineer of the aeroplane section of the Dayton Wright Company.

Q. Yes. A. I mean, of the Wright Aeronautical Corporation. When the Wright Aeronautical Company—then in the manufacture of aeroplanes—confined their activities to engines, I

stopped as Chief Aeroplane Engineer. The work was testing the engines in flight, cooperating in the design of the engines from the standpoint of its use in the aeroplane and aiding and assisting manufacturers of aeroplanes using the Wright engine, also cooperated on testing work with a number of pilots who were planning spectacular or record flights, starting with the early tests of the Wright Bellanca which was built in the final design and was under my supervision, then with Commander Davis and Lieutenant Worcester on their attempted New York to Paris flight and with Lindbergh in the preparation of his plane rendering tests which had been previously made out on the west coast. I did the repairing and preparing of his plane for the flight. Then with Commander Byrd, as he was at that time, supervising the fuel consumption tests of his plane prior to the flight. Later on I happened to be in London on other tests and the Wright Aeronautical Company cabled me to go over to Paris to see a young French pilot who had a plane with a Wright Whirlwind engine, in which the plane was to make a non-stop flight in the other direction, from Paris to New York. That was a lieutenant, I believe, in the French air service, Lieutenant Detreian.

Q. Then, in your long professional experience as an aeronautical engineer did you gain or acquire a knowledge as to fuel consumption of tri-motor Ford planes, and other aeroplanes? A. Yes, I did.

Q. Are you familiar with the tri-motor Ford of the type number 41? A. 4-AT, I believe you mean.

Q. 4-AT. A. Yes, I am familiar with the 4-AT. I have flown it a little.

Q. Are you familiar with the gas capacity of that plane? If you are not, I will tell you what it was. A. Perhaps you better tell me because the gas capacity of the Ford 4-AT varies with the tank arrangement they may provide for an individual customer.

Q. There was a separate individual tank on each end of a capacity of one hundred and ten gallons, and there was a middle tank known as the emergency tank, a capacity of twenty-five gallons, making a total capacity of two hundred and forty-five gallons. A. Check.

Q. What is the weight of aviation gasoline per gallon? A. Six pounds a gallon is domestic aviation gas.

Q. Then, what would be the weight of the full tanks of aviation gasoline as I have given them to you? A. About one thousand four hundred and seventy pounds.

Q. How much? A. One thousand four hundred and seventy. I think that is right. Two hundred and forty gallons would be fourteen hundred and forty. Yes, fourteen hundred and seventy.

Q. Fourteen hundred and seventy? A. That is right.

Q. Now, are you familiar with the consumption of gasoline in hopping trips where the flying speed is sixteen hundred or sixteen hundred and fifty revs. per minute? A. The engine speed?

Q. Not flying speed, engine speed is sixteen hundred revs. per minute. What amount of gas would be consumed in a trip of twenty minutes' operation on three motors? A. Yes, I am. Do you want it?

Q. Yes. What is that computation? How much of that gas would be consumed in one trip of twenty minutes? A. About twelve gallons.

Twenty minutes is one-third of an hour. One engine burns twelve gallons an hour at sixteen hundred or sixteen hundred and fifty. Three engines would burn three times that much. You got one-third of an hour, so you come right back to twelve gallons.

Q. Three engines would consume thirty-six gallons? A. In an hour, not twenty minutes. You come right back to one-third.

Q. That would be twelve gallons a trip? A. That is right.

The Court: Don't try to figure with these "M. I. T." fellows.

Mr. Reed: No, indeed. Not me.

Q. Now, Mr. Lane, assuming that the aeroplane was—that the tanks were filled at one o'clock on the 17th day of March, 1929, and that after the tanks were so filled there were eight trips—let us take seven trips—seven trips of approximately twenty minutes each. Can you tell me what the consumption of gas then would be on the three engines in the seven trips taken? A. Seven trips would be eighty-four gallons.

Q. Seven trips would be eighty-four gallons? A. That is right.

Q. All told? A. That is seven trips, no allowance for idling.

Q. I am going to give you that in a moment. I mean for three engines the fuel consumption would be eighty-four gallons? A. That is right.

Q. At six pounds a gallon, what would that be in reduction of weight from the time of the filling of the tank down to the time there has been trips made? A. Five hundred and four pounds.

Q. Assuming that the useful load——

Mr. George: Thirty-nine hundred and sixty-one useful.

Mr. Reed: That is the allowable.

Mr. George: No. That is the useful load according to the license.

The Witness: That cannot be the gross. The gross is more than that.

Mr. George: Thirty-nine hundred and sixty-one pounds useful load.

Q. Take this: assuming the loads as shown on that license—you spoke about idling time. Now, assuming there were hops from one until five o'clock. Outside of the seven trips of twenty minutes each, the aeroplane was idling. Will you compute and add to that or deduct from the total the amount of gas consumption during the idling time? A. The engine running all the time? Constant hopping?

Q. Well, it was idling when it was on the ground. A. That is about an hour and one-sixth idling time.

Q. How do you make it altogether? A. I have three and one-half hours all told. Two and one-third is flying time——

Q. Two and one-third is flying time? A. —means an hour and ten minutes idling time.

Q. How much? A. An hour and ten minutes.

Q. An hour and ten minutes idling? A. Yes.

Q. What would that consumption be in idling time? A. Occasional cleaning of the engine?

Q. Revving up the engine and starting? A. I would say four or five gallons.

Q. Five gallons? A. Yes.

Q. Then, that would make a total consumption in gallons of about five hundred and nine gallons, wouldn't it? A. No. It would make a total of

about anywhere from eighty-eight to ninety gallons. You have eighty-four gallons flight consumption plus about four or five or six gallons, possibly. I take the low figure. Four would be probably the lowest you could get away with idling an hour and one-sixth.

Q. All right. Say ninety gallons at six pounds a gallon would be? A. Five hundred and forty pounds.

Q. Five hundred and forty pounds. So that the weight of the plane would be reduced from the time of the first flight after the filling of the tanks by five hundred and forty pounds after seven flights? A. Other things being equal, yes. There is a reduction of weight of fuel of five hundred and forty pounds.

Q. There is a reduction of weight of fuel of five hundred and forty pounds? A. Yes, sir.

The Court: No. You have not added on the idling.

The Witness: Yes, you have about four to six gallons idling which brings it up to ninety total consumption in that three and one-half hour period.

The Court: You add five hundred and forty to——

The Witness: Five hundred and four, not five hundred and forty. Six times eighty-four is five hundred and four.

Q. From four to six for idling, making a total gas consumption of ninety gallons? A. That is right.

Q. Now, about the oil. What would be the consumption of oil assuming the tanks are not filled but are five gallons less than the capacity? A.

What is the capacity? What is the fillable capacity?

Q. Fifteen. A. That is the three tanks? About five gallons I think is the fillable capacity.

Q. They said they leave five gallon capacity for expansion. A. That sounds right. Fifteen gallon total capacity.

Q. There is five gallons allowable for expansion. A. You burn about a half a gallon—maybe a couple of quarts an engine in that time which would leave thirteen and a half gallons, a reduction of a gallon and a half or about eleven pounds.

Q. Then that would be about five hundred and fifty-one pounds difference in weight from the time of the first trip until the time after the completion of the seventh trip, is that right? A. That is right.

Q. Five hundred and fifty-one pounds.

The Court: Just a minute. Fifteen gallons would weigh how much?

The Witness: Fifteen gallons would weigh one hundred and nine pounds.

The Court: That would leave——

The Witness: This would leave thirteen and a half gallons. You burn about a gallon and a half for three engines.

Q. That would be thirteen and a half gallons? A. Fifteen you started with. He burned up a gallon and a half.

Q. That would leave thirteen and a half gallons, right? A. Right.

The Court: That would weigh how much?

The Witness: Thirteen and a half? About one hundred pounds. Seven and one-half pounds per gallon of oil.

Q. Assuming, if you please, that what equipment was on the plane on this particular hopping day, the equipment was removed and the weight of the equipment removed, tools, step-ladders and so on, amounted to between one hundred and one hundred and fifty pounds. Deducting one hundred and fifty pounds there is a difference in weight, if you please? A. Yes.

Q. Now, assuming on the trip we are going to inquire about there were fifteen persons on the plane, and, if you please, the average weight of the fifteen persons was one hundred and fifty pounds per person, have you computed that weight of the live load, I mean, of the passengers? A. Passengers?

Q. And crew. A. And crew. That is a total personnel—fifteen people one hundred and fifty pounds, is two thousand two hundred and fifty pounds total.

Q. Assuming the gasoline remaining in the plane and the weight of the oil and the passengers, what was the total useful load of that plane on that day at five o'clock after the completion of the seventh trip? A. I have it all figured out here.

Q. Give it to us. A. Except I have taken more conservative figures. I took a minimum gasoline consumption of eighty-eight gallons in order to avoid argument as to whether it burned four or six on idling time. I took the low figure. This weight will be a little higher than what you got with ninety gallons.

Q. In other words, the consumption of ninety gallons would reduce the weight about ten pounds? A. Twelve pounds. So, I have eighty-eight gallon consumption, subtracted from two hundred and forty-five gallon total capacity leaves one hun-

dred and fifty-seven gallons. That is, six pounds per gallon is nine hundred and forty-two pounds. Oil, fifteen pounds capacity—fifteen gallon capacity—I am sorry—one and one-half gallons consumption, leaving thirteen and one-half gallons at seven and one-half per gallon—one hundred and one pounds.

The Court: One hundred and one?

The Witness: Yes. Personnel fifteen at one hundred and fifty pounds each, twenty-two hundred and fifty pounds, total useful load.

The Court: What about the equipment, one hundred and fifty pounds?

The Witness: Not part of the useful load.

Q. That is not part of the useful load? A. Total useful load three thousand two hundred and ninety-three pounds. The weight empty, according to this license, is six thousand one hundred and sixty pounds. That includes equipment. If one hundred and fifty pounds of equipment had been removed, the actual weight empty at the start of that flight was six thousand nineteen pounds. If to that we add the useful load of three thousand two hundred and ninety-three, the gross weight at the start of that flight is nine thousand three hundred and twelve pounds.

Q. At the start of the flight after there had been taken seven trips after the loading of the gasoline? A. That is right.

The Court: How much?

The Witness: Nine thousand three hundred and twelve pounds.

Q. Then, Mr. Lane, if the allowable gross weight of this aeroplane as allowed by the Department of

Commerce regulation was ten thousand one hundred and thirty pounds, and if at the time of the last flight that the aeroplane flew on the 17th of March, 1929, your gross weight on that plane and fifteen people was nine thousand three hundred and twelve pounds, how much under the allowable gross weight was flown on that plane? A. Eight hundred and eighteen pounds margin.

Q. Then, do you say on these figures as given to you that the factor of safety as to weight below the allowable load was eight hundred and something? A. Eight hundred and eighteen.

The Court: Useful load how much? Thirty-two——

The Witness: Thirty-two ninety-three.

Q. You say there was a margin of safety under the allowable load allowed by the Department of Commerce of eight hundred and eighteen pounds? A. Right.

Q. On the last flight of this particular plane? A. That is right.

Q. Are you familiar with the spark plugs that were used on aeroplanes in March, 1929? A. Yes.

Q. What do you know about the use of A.C. spark plugs on J-5 engines? A. That is standard equipment on commercial engines.

Q. It has been testified here by a witness that the A.C. spark plug was not the proper type of plug for use on the J-5 engine—aeroplane engine. Was it? A. Yes. I am perfectly satisfied that it is the plug.

Mr. George: I ask that that be stricken out.

The Court: Strike it out.

The Witness: I mean it was.

Q. Do you know of engines using A.C. plugs? A. Yes, indeed.

Q. Tell us about some of them. A. Lindbergh had A.C's. on his hop across.

Mr. George: I ask that that be stricken out. It does not make any difference what another plane had. The question is what is the universal type.

The Court: He is merely fortifying his opinion, I suppose.

Q. Proceed, please. Do you know he had A.C's. with his engine? A. Certainly.

Q. How do you know it? A. I worked on the engine all the night getting it ready.

Q. What night? A. The night before he shoved off.

Q. For where? A. For Paris.

Q. He had J-5's on that engine?

The Court: No. He had A.C.'s—N.

The Witness: He had one J-5 engine.

Q. I mean, he had A.C. spark plugs? A. Yes, eighteen of them.

Q. What other planes have you worked on that you know about A.C. spark plugs being used? A. Brocke & Sleigh had J-5s. with A.C. plugs.

Q. Who were Brocke and Sleigh? Excuse my ignorance. A. They were a couple of fellows that made a flight as far as Japan. I believe they hopped across to England from Nova Scotia and then flew around the world.

Q. Across the Atlantic first? A. They jumped the Atlantic but did not jump the Pacific. They quit.

Mr. George: For what?

The Witness: They quit in Japan under considerable pressure from the backers to put that plane on the boat and sail.

Q. Who did that? A. The backers.

Q. How do you know Brocke and Sleigh used A.C. spark plugs on their engine? A. They were seen trying them out.

Q. Where? A. At the field, Teterboro.

Q. What field? A. Teterboro and Detroit. I did not do much work on that job at all, but one of the Wright service men was there. I was supervising or assisting in the work. We tried out a gap of thirty thousandths on an A.C. plug and it worked very nicely.

Q. What was that again? A. We tried out a gap of thirty thousandths on an A.C. plug and it worked very nicely.

Q. What gap did the A.C. plug on the J-5 engine, that Brocke and Sleigh plane that flew from America to Japan have? What gap was on that spark plug? A. I can't tell what happened to that gap after they left America.

Q. Oh, no. A. But, I can tell you they started with thirty thousandths.

Q. They started out with thirty thousandths of an inch gap on the spark plugs? A. Yes.

The Court: Is that considered a perfectly normal gap for that type of engine on ordinary flights?

The Witness: No, sir. Twenty to twenty-five is better because it gives you some allowance for burning off, increase in gap in use.

Q. Just what do you mean by that? A. Well, as you use the plug, as the plug fires, there is going

to be a gradual erosion of the terminals which means naturally an increase of gap, so you start with a low enough gap so that you will wind up without having to take it out every few minutes and get it back to the proper gap. You start with a low enough gap so that you will wind up with enough. After fifty hours or so you will wind up with a gap that is perfectly O.K.

Q. Then you say,—do you say then the gap with thirty thousandths of an inch on this A.C. plug is perfectly O.K. as a gap? A. Yes, indeed.

Q. Is there any question about it at all? A. No.

Q. What would you say if it was thirty-five? Someone was asked the question assuming it was a thirty-five gap, how would that function? A. Well, it might gallop idling.

Q. Idling? A. Idling on the gallop means occasionally there is one cylinder possibly firing a little better above than another would fire. The one that was just under the borderline would not fire. But, as soon as you open the throttle to speed above the eight hundred revs it will go o.k.

Q. You mean as you go up into speed and get your plane in the air your thirty-five thousandths of an inch operates normally? A. You would not have to get up in the air. The minute you open the engine up or take off and picked up over eight hundred to one thousand revs, which you do very quickly——

Q. Yes. A. —it would fire perfectly evenly.

Q. Would in your opinion a thirty thousandths —thirty-five thousandths of an inch gap, A.C. spark plug, cause preignition of that plug? A. I don't see it has anything to do with it at all.

Q. It has been testified here that the use of a thirty thousandths of an inch gap on A.C. spark plugs in an aeroplane motor, if the aeroplane was running at full power of eighteen hun-

dred revs per minute, then with such a gap of thirty-five thousandths the spark plug would burn out in ten minutes. What do you say as to that? A. It is untrue. It is wrong.

Q. It has been said here that a spark plug of thirty thousandths of an inch operated at full speed capacity of eighteen hundred revs per minute, that there would be a preignition and that it would require the engine to slow down operating at a thirty thousandths of an inch A.C. spark plug. What have you to say as to that? A. That is not correct.

Q. Would a slight crack in the porcelain of one spark plug have any effect on the operation of a motor in your opinion? A. That depends entirely on conditions. If your crack is filled with dirt or anything that is a good conductor, particularly in damp weather, you might get some leakage of current through the crack or through the dirt. If the crack was dry and clean it would make no difference.

Q. Is there some system of operating the spark plugs on each cylinder? A. Yes. There is a plug in front and rear. They are entirely separate. One set fires from one mag and the other set fires from the other mag.

Q. Even assuming there was a crack in one and the other was normal, would that cylinder operate? A. Yes, indeed. As a matter of fact, you could wipe out the entire front set and lose only about fifty revs.

Q. Just explain to me what do you mean by "the front set"? A. I mean the entire front set of plugs. One complete set of plugs firing from one mag. You could lose the mag or all of those plugs could go.

Q. We don't know what you mean by the picture you draw. You mean each motor has a front

set of plugs and back set of plugs? A. Yes. Each cylinder has a plug in the front and a plug in the back of each cylinder. Now, all the plugs in the front of each cylinder are hooked up to one mag and fire from that mag and all the rear plugs hooked up to the other mag and fire from that mag. If you lose the complete set there through loss of the magneto or if every one of those plugs in the front of the cylinder or back of the cylinder, the effect would be decreased about fifty r.p.m.'s. You do that every day in warming up the engine on taking out the engine before flight. The switch has, in addition to the "off" position in which both magnetos are grounded, a "R" and "L" position in which the right magneto is grounded or left magneto is grounded, and then "both" position which neither mag is grounded and both are firing. When you start a flight it is customary to open the throttle on both mags and switch on to the left mag to see that your engine is firing smoothly, which means every plug on the left mag is going. Then switch over to the right mag, cutting out the left, and then checking fire to see that your engine fires smoothly. Switch on to only one mag at a time and you will drop off—the r.p.m.'s on a full throttle will drop about fifty r.p.m.'s from what you should have with both mags on. Is that clear?

Q. Mr. Lane, are you familiar with the gliding angle of the tri-motor Ford 4-AT? A. I am familiar with the gliding of aeroplanes in general. I have never made any test to determining the gliding angle of the Ford, but I can estimate it from knowledge.

Q. From your engineering knowledge? A. From the characteristics of Ford aeroplanes.

Q. What do you say is the gliding angle of the Ford tri-motor? A. I would say the gliding angle

of the tri-motor Ford would be about seven and one-half to one. I think the figure of nine to one I heard quoted yesterday was a trifle optimistic. That is a very good value for a very clean fighting aeroplane.

Q. I don't hear you. A. I say, that the angle, which is the ratio of lift to resistance, of nine is a good value for a very clean fighting plane, but not for a tri-motor transport plane.

The Court: Omnibus?

The Witness: I don't think they like to have you drag in the "bus" part of it, but it is not a particularly clean ship and it won't show an angle of nine. I think seven and one-half is a very generous estimate.

Q. Mr. Lane, it has been testified here that this tri-motor Ford plane we are talking about had had—was purchased new in September, 1928, at the Stout Metal Aeroplane factory, brand new, after preparatory tests and that it had a life of actual flying time of two hundred and seventy hours. A. You mean that was the life of the plane?

Q. That was the total number of hours it had been flown, two hundred and seventy hours. It had been tested every twenty hours, in fact, the government's one hundred hour test had been made every twenty hours by the mechanic and his assistants in charge of the plane. Are you able to state whether or not in your opinion with a reasonable degree of certainty as an expert that that was—whether or not there were any requirements for major overhauls or taking down the engine—motors and taking it apart in that two hundred and seventy hours in use? A. Two hundred and seventy hours in days would be abso-

lutely no proof of necessity for major overhaul because I know of planes having gone six hundred hours with good care and careful use—going six hundred hours between overhauls.

Q. Would you say that it is good practice to use that plane and not have a major overhaul where you take down the engine and all its parts? A. Until after at least three hundred or three hundred and fifty hours. Three hundred hours is a good reasonable average. Surely any number of them run more than that. There are some may run less than that. Of course, it depends, as I say, entirely the use you have of the plane.

Q. Assuming normal use and continued care and compliance with the rules and regulations, was there any necessity for major overhaul or taking down the engine in two hundred and seventy hours use? A. No. Two hundred and seventy hours use would not indicate of itself any tearing down was necessary.

Mr. Reed: Your witness.

Cross-examination by Mr. George:

Q. May I ask you this question, Mr. Lane? If the plane is properly built, kept in proper condition, frequently inspected and carefully flown, can you say with reasonable certainty it will not crash? A. No, sir, I cannot.

Mr. Reed: I object to that question if the Court please.

The Court: Sustained.

Q. Mr. Lane, you supervised and projected the flight of Lieutenant Davis on a west to east course across the Atlantic, didn't you? A. Commander Davis.

Q. Commander Davis—excuse me. I did not want to deprive him of his full title. You supervised and consulted with him as an expert, did you not? A. I don't like the word expert.

Q. Neither do I from what I have heard. I am not one who is quite thoroughly versed in aeronautics and high compression engines that are parts of aeroplanes and so forth? A. I beg pardon? High compression?

Q. Yes. A. I would not subscribe to that thoroughly.

Q. You mean you are not very well versed? A. No. I mean the engines used were not high compression engines.

Q. What were they? A. They were standard J-5's, five to one.

Q. What kind of engines were in the plane that Commander Davis contemplated the Atlantic flight on? A. Standard J-5's.

Q. Similar to the ones in this case? A. Yes, similar to the ones in this case. Not high compression J-5's.

Q. But similar to the ones in this case? A. That is right.

Q. And you do regard yourself as very well versed—fairly grounded in knowledge of aeronautics, loading particularly? A. Right.

Q. You assisted Commander Davis as to loading factors and the amount of weight the plane would carry, didn't you? A. There is nothing at all about load factors.

Q. Do you recall testifying, then, in the trial in Newark—you did testify there—1127—"Did you assist them as to the load factors and the amount of weight that the plane could take and carry and so on?" Answer: "I did, for Davis." Is that true? A. That is right.

Q. You were mistaken a moment ago? A. I was mistaken then when I answered one part of his question. I should have qualified it by saying I did not have anything to do with load factors. I don't think Mr. Reed does know what a load factor is.

Mr. Reed: That was Mr. Biro's question.

The Witness: Well, Mr. Biro's question.

Q. I am asking you the question. A. I will be very glad to explain it to you. The load factor is ordinarily considered as a question of structural strength. I did not participate in anything regarding structural strength. However, it has no bearing. Go ahead.

Q. Whether it has a bearing or not, please be good enough to answer my question and not only part of the question. A moment ago, and before I referred to your testimony in the other trial, I asked you if you assisted and supervised the proposed flight of Commander Davis respecting loading and otherwise, and you said no, you did not. A. I beg your pardon. I said that I did not do anything with the load factor on the way you stated it to me, and you proceeded to bring the other question in. I will straighten it out for you if you wish and answer both parts of the question. I had nothing to do with the load factors on that, but I did advise him as to the load carrying capacity of the plane, fuel consumption, probable mileage which he could expect with the given amount of fuel which he had.

Q. And having consulted with Commander Davis and advising him as to your expert—pardon me—your thorough knowledge of the subject, including, of course, load factors, he took off. Then what happened? He crashed, didn't he?

Mr. Reed: I object whether he did or not.

The Witness: He did.

The Court: What difference does it make whether he crashed or not? Sustain the objection.

Mr. Reed: I move to strike out the answer.

The Court: Strike it out.

Q. Can you tell me, Mr. Lane, what motor you refer to that did six hundred hours without an overhaul? A. Yes, sir.

Q. Please give it to me. A. Pan-American Airways. Our engines.

Q. What? A. Engine or engines—I believe it was more than one. Three engines on one plane in Pan-American on which Mr. McKim was mechanic and maintenance engineer.

Q. Was what? A. McKim was maintenance man on those engines on the Pan-American plane which got six hundred hours.

Q. All right. Is that common? A. Is that common? No, sir. That is good care.

Q. I mean, that is very rare, isn't it, to find a motor that will travel six hundred hours without an overhaul? A. Without a major overhaul you are referring to?

Q. Just one more question. How about the fifty-thousandths gas in a plug? What would you think about the efficiency of a plug of that kind?

Mr. Reed: I object to that. That is not involved in any way.

The Court: Do you want it to test his knowledge?

Mr. George: Exactly. He has already testified as to the efficiency of spark plugs at varying degrees of gap.

The Court: If that is the purpose, why, go ahead. There is nothing in the case about fifty-thousandths.

The Witness: Fifty-thousandths?

Q. Yes. A. I never ran an engine with fifty-thousandths.

Q. You never have or never would? A. I never have. I don't know that I could get an engine started. I don't have enough physique.

Q. It has been testified to here yesterday, I believe, by the manufacturer of the A. C. plug that that particular plug would operate with a gap of fifty-thousandths of an inch. Do you subscribe to that opinion?

Mr. Reed: I object to the form of the question.

The Court: Sustained.

Q. What do you think about the efficiency of a plug with a gap of that size? A. Efficiency? What do you mean? What is efficiency?

Q. Well, let it be. Will the motor function properly with full power? A. At what r.p.m.'s? Make your question complete.

Q. What will be the action of a plug upon an engine with a gap of fifty-thousandths of an inch? You answer that. A. It will idle rough. You will probably have a hard time getting it started. It certainly would not idle.

Q. It would not start and it would not idle? A. Assuming it is driven off a magneto. If you have bad ignition it would not make much difference.

Re-direct examination by Mr. Reed:

Q. How would it operate once it had started and gotten out in the air, if it did get out? A. If

you had enough juice, enough current, voltage, which I believe you can get from a Santelli magneto, a very good magneto, I believe it will furnish enough voltage to fire fifty-thousandths, presuming that your engine was in good shape and your carbureters nicely adjusted. I mean, that is not a thing to be doing in standard practice. It is a stunt. I mean it could be done, but you would not recommend it as a general practice.

Q. Now, respecting Commander Davis and his trip. Did he go off acting on your advice or against your advice? A. Against my advice.

Mr. George: That is objected to.

The Court: I sustained the objection as to the result. What difference does it make?

Mr. Reed: We all heard it.

The Court: I sustained this objection inasmuch as I have sustained the objection to the other.

Q. Were you the advisor of Commander Byrd on his flight? A. I was not. I gave him advice, but at the final day, unfortunately——

Mr. George: You say "unfortunately?"

Q. Who are you referring to? A. Commander Davis.

Q. You did not hear my question. I was asking about Commander Byrd on one of his flights. Did you have something to do with that? A. On two of them. On his flight from New York to Paris I advised him only this: that if he took off with a certain amount of fuel——

Mr. George: I object.

The Court: Yes; never mind.
Mr. George: Never mind.

Q. What other flight did you advise on? A. I did not advise. I assisted in the installation of his engine on his South Pole flight.

Q. You assisted on that? A. I supervised the design of the power plant installation of cyclone engine.

Q. Have you also assisted Bernt Balchen? A. In tests. He does not need much assistance.

Q. That's true. Don't be too modest. Have you made tests with Balchen? A. Yes.

Q. Where? A. Detroit and Teterboro on that South Pole job.

Q. On the South Pole job you made tests with Balchen on that? A. Yes.

Q. Tests for what? A. Tested the functioning of that power plant, the load the ship was going to carry.

Q. I cannot hear you. A. I tested the function of the power plant, which, of course, was all Wright engines and tested the load that the plane would take off.

Q. Did that involve an engineering opinion as to the consumption of gasoline in making a check as to the load the plane would take off? A. It was not a very precise computation. We knew quite a bit by that time from previous tests with three J-5's so we were compelled to estimate fairly what the Cyclone would do. It is mostly a computation which I have on the basis of dynamometer tests rather than tests on the Cyclone.

Q. There were two J-5's and one Cyclone? A. Two J-5's and a Cyclone in the nose of the fuselage.

Q. What was the efficiency of the J-5 engine in 1929? A. Well, it was a very, very efficient engine. It had very good fuel consumption and very good reliability. I could say it had unquestionably the best reputation of any commercial engine at that time.

Q. And was the J-5 engine commonly used in the profession of aeronautics at that time? A. Yes, it was.

Q. And was the A. C. spark plug commonly used in the profession of aeronautics at that time? A. Yes, in the J-5 engine on the average it is universally used.

Q. On J-5 engines? A. That is right.

Q. That was the spark plug used? A. On commercial J-5's.

WILLIAM GREY, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. Mr. Grey, where do you live? A. New York City.

Q. What was your business March 17th, 1929? A. Pilot.

Q. Where were you that day? A. Newark Airport.

Q. Were you flying that day? A. Yes, sir.

Q. What type of ship did you fly that day? A. Curtiss Robin.

Q. That is a small ship, isn't it? A. Small ship.

Q. Whereabouts were you on the afternoon of that day about five o'clock when the Colonial tri-

motor Ford took off from that airport? A. In the office of the municipal hangar.

Q. Were you in any way connected with the City of Newark at that time? A. No, sir.

Q. Were you flying your own plane? A. No, sir, I was flying for a company.

Q. Was your plane used that day in carrying passengers? A. Yes, sir.

Q. Hopping flights? A. Yes, sir.

Q. How much on that day did you fly? A. Well, I had made about fourteen flights.

Q. You had made about fourteen flights with passengers yourself that day? A. Yes, sir.

Q. You said when this Ford tri-motor took off that was around five o'clock, you were in the municipal hangar? A. Yes, sir.

Q. Did you see that Ford tri-motor plane take off? A. I heard it taking off, heard it as I came by the windows where I was looking out.

Q. In which direction were you looking, Mr. Grey? A. Towards Newark.

Q. I wish you would tell this jury the course of that plane as it took off on that last flight. A. It took off normally and climbed and as far as I could see it made a normal turn to the right.

Q. How far from the airport did it go before it made a turn? A. It is pretty hard to judge. You are standing on the ground and the plane taking a normal flight, a normal take-off, it is hard to judge how far away it would be.

Q. Your best estimate or your best judgment of the distance. A. Well, three-quarters of a mile to a mile away.

Q. What sort of a course did the ship take from the airport out to that distance before it started to turn? I mean, was it a straight course.

Mr. George: You asked him what course it took. Let him say so.

The Witness: Absolutely a normal take-off. A take-off towards Newark in a normal flight.

Q. Towards Newark in what direction by the compass? A. Well, he is taking off on the northeast—southwest runway.

Mr. George: Taking off northeast on the southwest runway?

The Witness: No. I say northeast—southwest runway.

Q. Suppose you refer to the map. Point it out on the map, Mr. Grey. Here is route 25. This is Port Street. A. He was taking off on this runway here.

Q. That is called the northwest runway, described on the map, the northwest runway. A. The northwest runway.

Q. Northwest-southeast? A. Yes, northwest-southeast.

Q. I thought you were confused. If he took off on the other runway, northeast—southwest runway,—he would not go toward Newark, would he? A. No.

Q. You say he took off that way toward Newark on that northwest runway? You say he went out towards Newark? About how far? A. I should judge three-quarters of a mile.

Q. Then what sort of a turn did he make? A. A gradual right hand turn.

Q. Did you continue to watch the plane? A. No, I did not.

Q. When did you first hear the plane had come down? A. When I heard some noise from the outside, people saying the plane had come down.

The Court: Are you through with the map now, Mr. Carpenter?

Mr. Carpenter: Yes.

The Court: Let him come back, please.

(Witness resumes the stand.)

Q. Will you tell the jury approximately how high the plane was when it got off three-quarters of a mile to a mile? A. I should judge between five hundred and seven hundred feet.

Q. Did you make any attempt at that time to gauge the distance above the ground it was? A. No, sir.

Q. As the ship went past you you said you stopped and looked out the window of the hangar. Did you notice anything abnormal about the plane, its flight, or its engine? A. No, sir.

Q. Were any of the motors sputtering? A. No, sir.

Q. Did you see any clouds of smoke coming out from the exhaust of any of the engines? A. No, sir.

Cross-examination by Mr. George:

Q. I understood in the very first two or three answers that you made to Mr. Carpenter's questions you were asked did you see the plane in its take-off, and you said "I heard it," that you were in the office of the municipal hangar? A. Yes, sir.

Q. Is that right? A. Yes, sir.

Q. Now, there were several planes at the airport on that afternoon, weren't there? A. Yes, sir.

Q. And just what were you doing in the office? A. I had quit flying and was in the office.

Q. What were you doing in the office? A. Well, maybe getting warm. It was kind of cold that day.

Q. Was there a stove there? A. No. The hangar is heated. The office is heated.

Q. And were you seated? A. No, I was not.

Q. Standing up? A. Standing up.

Q. Were you talking with anyone? A. I was talking with the manager of the airport.

Q. Lieutenant Aldworth? A. Lieutenant Dick Aldworth.

Q. Talking about what? A. I don't remember just what we were talking about.

Q. You don't remember that? A. No, not specially. Nothing special.

Q. You have not talked this case over with anybody since the time of the crash, have you? A. I have not been in this country, so I couldn't.

Q. What was there about that take-off of all the take-offs that were had on that airport on that busy St. Patrick's day afternoon that you should be able to recall nearly three years later without having discussed the matter with a view of refreshing your recollection as to that particular take-off? What was there that day about the perfectly proper take-off, a normal take-off, that should make that incident so indelibly impressed on your mind that you can come here nearly three years later and tell us about it? Will you please tell the court and jury? A. Why, certainly.

Q. Please do. A. An accident that so many people were killed in and after working on that accident for a time—I worked on it trying to help out—don't you think it would be impressed on my mind?

Q. I agree, sir, that the accident itself would be impressed upon your mind. I take it what you mean is the state you saw after the crash, is that what you mean? A. Yes.

Q. But that had nothing to do with the take-off so far as you were concerned, had it? A. No, sir.

Q. What was there about the hum of the motor or the noise of the plane in its take-off while you were getting warm in that cold early evening in the office that should cause you to continue to follow the course of that plane from the take-off until it had gotten beyond three-quarters of a mile? What was there, if anything, so unusual about that part of the flight? A. Knowing the plane, knowing the company—I had designs of flying for the Colonial Company.

Q. You still have those designs, haven't you? A. I would like to, yes.

Q. That is the reason you are testifying in the manner in which you are, isn't that so? A. No, sir.

Re-direct examination by Mr. Carpenter:

Q. You testified two days later before the Mayor's hearing out in Newark, didn't you? A. Yes, sir.

Q. That is where we got your name—you were located through that.

Mr. George: I object.

The Court: Sustained as to the latter question.

Re-cross-examination by Mr. George:

Q. May I ask this one brief question? Why did you quit so early that day? A. I was through. Anybody that would make the flights I had been

making for two or three days sort of gets tired of flying.

Q. It was quite a windy day, too, wasn't it? Wasn't that the reason? A. There was a fair wind blowing.

Q. And quite dangerous for the small plane you were operating for that kind of hopping, isn't that so? A. With only a ninety horsepower motor.

By Mr. Carpenter:

Q. You only had ninety horsepower? A. I only had a ninety horsepower motor.

By Mr. George:

Q. You were not taking any chance of crashing? A. I don't worry about crashes.

Q. You don't. Do you fear your passengers might worry about crashes? A. No.

By Mr. Carpenter:

Q. You had taken fourteen trips with passengers that day? A. Yes, sir.

Q. What time was it that you quit flying, about? A. Well, I don't remember just exactly what time it was I did quit. It was only a short time before this accident happened.

Q. A short time before the accident. Did the wind bother you at all that day in your flying, either on the ground or in the air? A. In the air it bothered me a little bit because it was a very light plane I was flying.

Q. You mean she would bounce around when you were up in the air? A. She would bounce around, yes, sir.

GEORGE W. BRANSON, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. Mr. Branson, where do you live? A. I live in Atlanta, Georgia.

Q. What is your business? A. Air mail pilot.

Q. How many hours flying have you had? A. Approximately four thousand.

Q. About four thousand hours of flying? A. Yes.

Q. Have you had any army experience? A. I was in the Marine Corps.

Q. Marine Corps? A. Yes.

Q. In Europe? A. Sir?

Q. Were you in Europe during the war? A. Yes.

Q. What part of Europe were you in? A. France.

Q. What type of ship are you flying now? A. Mail.

Q. Have you ever had any experience with tri-motor planes? A. I have had experience on tri-motor and dual motor planes.

Q. Tri-motor, dual motor and single motor? A. Yes, sir.

Q. Have you ever flown a Ford tri-motor plane? A. Yes, sir.

Q. A Parker tri-motor plane? A. Yes, sir.

Q. How many hours have you had on tri-motor planes? Have you any idea? A. I could not state definitely how many.

Q. Were you at the Newark Airport on March 17th, 1929? A. Yes, sir.

Q. What were you doing there that day? A. I was carrying passengers.

Q. What type of ship? A. I had a Ryan monoplane.

Q. How many passengers did that ship carry? A. Four.

Q. Four with the pilot? A. Five counting the pilot.

Q. What sort of a day was it as to wind? A. Well, there was a wind blowing.

Mr. George: There was what?

The Witness: There was a wind blowing, but as well as I recall it did not have any effect on my flying of my ship.

Mr. George: I ask that that be stricken out, if the Court please, "did not have any effect on his ship".

The Court: It is an indication of what the wind was. Let it stand.

Q. What velocity do you judge the wind was that afternoon, Mr. Branson? A. Something around twenty miles an hour.

Q. That is the type of wind you determined it was from your own judgment? A. Yes, sir.

Q. How were flying conditions that afternoon? A. Good.

Q. Visibility? A. Good.

Q. Did you see this Ford tri-motor plane of the Colonial take off that afternoon about five o'clock? A. The take-off, yes, sir.

Q. Whereabouts were you in your ship? A. I was in the runway going to take off behind him.

Q. You were on the same runway? A. Yes, sir.

Q. Where did the ship take on its load of passengers? A. In front of the Municipal hangar.

Q. Where did the Ford take on its load of passengers? A. I think he took his load on approximately the same place I got mine.

Q. How far from the bull pen? A. I think they operated on one side of the bull pen, and I operated around the corner.

Q. Did you see that Ford ship taxi over to the southeast end of the runway and take off? A. I went down the runway behind him.

Q. How close behind him was your plane when he went down? A. I don't think I would be any nearer than sixty-five or seventy feet to him.

Q. Were you directly behind him as he taxied over there? A. I would not be directly behind. I would be off to his side to keep out of his propeller wash as much as possible.

Mr. George: Keep out of the what?

The Witness: To keep out of his propeller wash as much as possible.

Q. I don't know that we know what you mean by "propeller wash". A. When the propeller turns over it causes a lot of disturbed air and dirt to be blown back.

Q. You mean that the propeller would kick up the dirt? A. Yes, sir.

Q. As the plane taxied over the ground? A. Yes, sir.

Q. For that reason you kept off to one side of him? A. Yes, sir.

Q. To which side did you keep? A. Probably off to his right.

Q. What was the position of your plane at the time the Ford plane started to go along the runway to take off with reference to his plane? A. I would be turned around in position to take off too.

Q. You were turned around behind him? He was ahead of you? A. I would be, yes, sir.

Q. Now, then, did you see the Ford plane run along the runway and take off? A. I don't know

as I paid any particular attention to that. I was waiting until he got in the air and the air was clear for me to take off.

Q. Did you on that day do that? A. Of course, I did. I took off after he did.

Q. How far ahead of you was that Ford plane when you started to take off also? A. Well, he would be a thousand or fifteen hundred feet ahead of me, I imagine.

Q. What was the position of the Ford plane at the time you started to take off with reference— A. I cannot recall definitely but as well as I remember he was headed out off the end of the runway.

Q. When you started? A. Yes, sir.

Q. In other words, you waited for him to get a certain distance ahead of you and take off before you started up to take off? A. Yes, sir, him or anyone else.

Q. We are speaking only about him now, because there are just your two planes there. A. Yes.

Q. Now, did you observe the direction or the course that the Ford plane took off that took off ahead of you? A. Straight ahead.

Q. He went straight ahead? A. Yes, sir.

Q. What course did you take? A. I took the same course that he took.

Q. Did you observe how far that ship—the Ford ship went towards the City of Newark before it made any turn? A. No, sir.

Q. Whereabouts did you go when you turned? A. I did not go very far off the end of the runway.

Q. What did you do? A. I turned and headed for New York.

Q. Have you seen this aerial map before? A. Yes, sir.

Q. Can you tell with reference to this intersection of Route 25 whereabouts with reference to that you made your turn? A. Well, it was a pretty busy day. I did not go any further towards Newark than I had to. I turned just about the time I left the runway—at the end of the runway.

Q. By the time you got to the end of the runway you made a turn? A. Yes, sir.

Q. How high in the air were you? A. Three hundred or four hundred.

Q. When you made your turn to the right whereabouts was the Ford plane? A. He was going straight ahead.

Q. Straight ahead towards what? A. Towards Newark.

Q. At the time you turned to the right? A. Yes, sir.

Q. How far ahead of you was the Ford plane when you made your turn to the right? A. He must have been one thousand or fifteen hundred feet ahead of me.

Q. You turned to the right really behind the Ford—I mean, you were behind the Ford when he made the turn? A. Yes, sir. I was behind him.

Q. Whereabouts did you go after making this turn to the right shortly after leaving the airport? A. I went over to New York.

Q. Do you know whereabouts it was you crossed this highway which is Route number 25? A. About where that ramp is that leads into South Street that goes into Newark.

Q. This ramp here? A. Yes, sir.

Q. Is that the ramp you refer to? A. That is the ramp that goes up where this highway is elevated.

Q. Yes. This is the one—the center line that goes down to South Street? A. Yes, sir. Some-

where in between where the road makes that turn and where that ramp is I crossed that road.

Q. Somewhere in there you made your turn? A. Yes, sir.

Q. You went to what part of New York? A. I went over around the Statue of Liberty up around the Battery and back into the airport.

Q. On your way back did you notice anything? A. On my way back I saw that wreckage.

Q. Now, as that Ford plane went off the runway ahead of you and turned ahead of you, tell the jury whether you noticed anything not working right about that ship? A. I did not notice anything about it.

Q. Did you notice whether there were any clouds of black smoke coming out of any of the engines?

Mr. George: That is objected to. The witness has just said he did not notice anything about it.

The Court: That was the previous question. There is another question now.

Q. Did you notice any clouds of black smoke coming out of any of the engines? A. No, sir.

Q. If there had been would you have noticed it?

Mr. George: Objected to. Argumentative.

The Court: Sustained.

Q. Were you in position to have seen—if there had been any—black smoke coming out of the engines? A. Yes, sir. I think I would.

Q. From your training and experience would you have observed anything like that if it had taken place? A. It would be the policy of anybody flying behind him where they could see him, if he was in trouble, to give him all the right of way.

Q. Another thing I want to ask you: what did you notice, if anything, about the speed that was being maintained by that Ford as he left the runway and flew out ahead of you in comparison with the speed of your ship? A. I don't think I noticed any.

Q. What is that? A. I don't think I paid any particular attention to his speed.

Q. Could you tell us whether, if there had been anything the matter with any of the engines of the Ford, what the relative flying speed of your two ships were? A. If he had something the matter with his motor?

Q. Yes. A. I would probably have gained on him.

Q. Did you gain on him? A. I don't think so.

Q. What was the speed of your respective ships? A. About the same.

Q. About the same? A. Yes, sir.

Q. Did you notice whether or not you gained on him at all? A. No, sir. I did not notice whether I gained on him.

Q. What length trips were you taking with your ship? A. I used to take short flights over Newark. I used to take long trips over New York.

Q. Take this particular trip you made over New York. A. Approximately about the same trip he made.

Q. Now, with your experience flying and having flown a Ford tri-motor plane, I want to ask you this question: assuming now that Ford tri-motor plane went out over the outskirts of the City of Newark and assuming it made a wide, gradual turn, and then after it had made its turn and had reached an elevation of five or six hundred feet, first the left motor quit cold, then the center motor revved down to eight hundred revolutions a minute

and assuming that the wind was from the northwest going approximately thirty to thirty-five miles an hour and the plane headed down wind in an easterly direction at the time the two motors quit, what in your opinion as an aviator was the proper maneuver for a pilot to take——

Mr. George: Objected to.

Q. —assuming now around him were houses, buildings, railroad yards, and the elevated structure was ahead of him and that it was at Newark Airport in the condition in which that was in March, 1929.

Mr. George: Objected to on the ground the witness is not qualified to answer that question for the reason there is no proof he has ever flown a Ford tri-motor plane.

The Court: Overrule the objection. Go ahead.

Q. What was the proper maneuver for the pilot to make? A. I think he should go straight ahead, head for the open field.

Q. Will you tell the jury why? A. Well, if it were I and did not have much altitude and saw an open field ahead of me I would head for it rather than make a turn. You lose speed and altitude on a turn and you have not gained anything in distance. If you go straight ahead you can still keep up your control, you can see what is ahead of you and you have a chance to lose your altitude if you have to get in a short space.

Q. What is the danger in making a turn around into the wind when you are at low altitudes like that? A. Well, there is danger on making a turn, anyway, when you are near the ground if you have not got any power.

Q. Without power it is dangerous to make a turn when you are anywhere near the ground? A. Yes, sir.

Q. Either going with or against the wind? A. Well, an aeroplane in flight, does not make much difference whether it is going with the wind or not. An aeroplane will climb as fast down wind as it will up wind.

Q. With power? A. Yes, sir, that is, providing it is already flying.

Q. What is that? A. That is providing it is already flying.

Q. Providing it is already flying? A. Yes, sir.

Mr. Carpenter: Cross-examine.

Cross-examination by Mr. George:

Q. What is your name? A. Branson.

Q. Who do you work for now? A. Eastern Air Transport.

Q. Are they connected with the Colonial Airways? A. No, sir.

Q. Were they in 1929? A. No, sir.

Q. Did you work for the Colonial in 1929? A. No, sir.

Q. I understood you to say that you made a right hand turn just as you got off the end of the runway? A. Yes, sir.

Q. About how near were you—did you start to turn while you were still on the runway? A. No, sir.

Q. About how far beyond the end of the runway did you get? A. Three or four hundred feet.

The Court: Did you get out over that road there?

The Witness: Yes, sir.

Q. Just beyond the road? A. Yes, sir.

Q. Now, you made a right hand turn, didn't you? A. I made a right hand turn, yes, sir.

Q. How many turns did you make within the area of a couple of miles? A. How many turns did I make within the area of a couple of miles?

Q. Yes. A. One.

Q. Your first turn was to the right. Was it a sharp turn? A. Well, it was not a sharp turn, no.

Q. Well, you were headed over east on the completion of the turn, weren't you, towards New York? A. I turned enough to head for the Statue of Liberty.

Q. That is due east of the airport, isn't it? A. Yes, sir, approximately due east.

Q. So that according to the compass marking here you took off on this runway northwest? A. Yes, sir.

Q. Until you got to a point about here—this scale being two hundred feet to the inch? A. A little bit beyond the road.

Q. A little bit beyond the road. About two hundred feet beyond the road? A. Yes, sir.

Q. Then you made a turn due east, right?

Mr. Carpenter: Oh, no.

Mr. George: I protest against the conduct of Mr. Carpenter.

Mr. Carpenter: I apologize. I will kiss you if you like.

Mr. George: No. That is worse.

The Court: Leave out the osculation.

Mr. George: I always regarded him as an example of what a good lawyer is.

The Court: Keep right on. He is a good example.

Q. You turned due east towards New York? A. Yes, sir.

Q. That, of course, necessarily required a turn about one hundred and eighty? A. About one hundred and eighty.

Q. That is a sharp turn, isn't it? A. No. You can make a complete circle without making a sharp turn.

Q. I understand, but when you turn off—withdraw that. Now, in the progress of your flight over across the Pennsylvania and Lehigh Valley Railroad in here— A. Yes.

Q. Within this area you turned about here about this point where I have my finger? A. Yes.

Q. There is a mark there "I-1"—then you turned in this direction over these embankments of the Lehigh and Pennsylvania Railroads to go to New York? A. Yes, sir.

Q. And you were making the same kind of trip as Foote was making on that afternoon? A. Some of them were the same, some of them were not.

Q. I am speaking of the New York trip. A. Yes, sir.

Q. And that was the normal course to take, wasn't it? A. That was the course I took.

Q. That was the course he was taking in the New York trip? A. As a rule, he took that ship—took about that course.

Q. Beg pardon? A. That ship took about that course.

Q. I am talking about the ship under the control of the pilot, if you please. A. Yes, sir.

Q. When you reached this point off the runway when you made your turn, you were about four hundred feet up, weren't you? A. That is about it.

Q. If you had only gotten altitude of one hundred and fifty feet, would you have made a turn there? Would you see as well? A. I probably would.

Q. It would not be good policy, would it, at one hundred and fifty feet of the take-off? A. Why not?

Q. Don't ask me. I am asking you. Do you regard it as good piloting to take a plane of that size into a down wind? A. Are you talking about his plane or my plane?

The Court: His plane.

Q. I am talking about his plane. I mean, say it was only a hundred and fifty feet. I am asking you just as a matter of testing your knowledge of the subject. Would it have been good piloting to take that kind of plane with fifteen people in the plane, each averaging one hundred and fifty pounds, with that wind going against you and turning due east, northeast, at only one hundred fifty feet altitude? A. No.

Q. Bad piloting, wouldn't it? A. Yes.

Q. Now, then, according to your testimony Foote was going straight ahead off the runway, wasn't he? A. Yes, sir.

Q. And went about fifteen hundred feet beyond? A. I could not say how far he went.

Q. Well, he was beyond you and he kept going straight ahead and was still going straight ahead when you made that turn? A. Yes, sir.

Q. Then you turned east? A. Yes, sir.

Q. And no longer had you any interest in him? A. None at all.

Q. You don't know where he went, how high he was, or where he made his turns? A. Except he was ahead of me and was climbing the last I saw of him.

Q. That was the last you saw—the last you saw if I recall? A. That was the testimony.

Q. He was only fifteen hundred feet when you made your turn and he faded out of that picture, right? A. Yes.

Re-direct examination by Mr. Carpenter:

Q. About how high was this Ford—how high in the air was he when you made your turn to the right? A. I think he was as high as I was, probably a little bit higher.

Q. What kind of motor did you have in your ship? A. I had a Wright J-5.

Q. Now, you have given us, in answer to Mr. George—you have said when you got off the runway two hundred or three hundred feet you made a sharp turn which he indicates at right angles crossing at Route 25 close to the airport, whereas on direct examination you told me it was up here by South Street. A. I said I crossed it somewhere between where the road turned and that ramp.

Q. Suppose you come down and show us the course you took.

The Court: Be sure you understand the map first.

Mr. Carpenter: This map is 200 feet to the inch. This is north up here.

The Witness: I was over in this direction and made a turn somewhere in here—somewhere in here.

Q. In other words, you crossed somewhere in between approximately—midway between the railroad tracks and the intersection?

The Court: Turned, as he calls it, in front of the airport.

The Witness: Yes, sir.

Q. What sort of turn did you make? A. Gradual turn.

Q. Did you make any sharp right-angle turns? A. No.

Re-cross-examination by Mr. Coolahan:

Q. What do you estimate the velocity of the wind that day? A. Twenty miles an hour.

Q. That was about what it was? A. I think so.

By Mr. Carpenter:

Q. There are two things I meant to ask you. I was going to ask you if you know anything about the practical operation of a J-5 motor with spark plugs that have various gaps. What can you tell us about whether a spark plug—whether a Wright J-5 engine will function properly and efficiently, assuming the spark plugs have a gap as wide as thirty-five thousandths?

Mr. George: I object. He is not qualified to testify as an expert on spark plugs.

The Court: I think not.

Q. What experience have you had with the engine itself? A. I used to take care of my own engines out in Newark sometimes, then I had a pretty good mechanic used to take care of them too.

Q. Did you work with the mechanic? A. I have, quite frequently.

Q. Can you take down and put together one of those Wright J-5 engines? A. Yes, sir.

Q. Have you done it? A. Yes, sir.

The Court: You yourself?

The Witness: Yes, sir.

The Court: And with regard to spark plugs, what experience have you had with those?

The Witness: I used to be a mechanic in the Marine Corps. Along with my flying duties I ran a test—we tested J-5's, overhauled them in the motor shop, put them on the test block and tested them.

Q. Do you know what a J-5 engine will do with spark plugs—what spark plugs are proper for it? A. They run all right. Those spark plugs run all right.

Q. How about a J-5 engine with an A. C.—N spark plug with a gap of thirty thousandths of an inch? Will the engine run efficiently? A. Yes, sir.

Q. In actual operation yourself, what have you observed as to the efficiency of the engine with spark plugs—A. C. spark plugs, type N, that have even a wider gap? A. Yes, sir. You run into that frequently—thirty thousandths—thirty-five thousandths.

Q. You run into that frequently? A. More than that sometimes.

Q. What is the widest gap you have known an engine to run efficiently with, with an A. C. type N spark plug? A. They will run forty—as high as forty.

Q. You know that of your own knowledge? A. Yes, sir.

Q. You are flying the night mail now, aren't you? A. Yes, sir.

Q. Every day? A. Every night.

Q. Through all types of weather? A. Once in a while I get punched off.

Q. What do you mean? A. You get closed out some places.

The Court: Where do you fly?

The Witness: From Atlanta.

The Court: Every night?

The Witness: I make a trip every third night.

By Mr. George:

Q. Will the motor function properly—normally with fifty thousandths of an inch gap in a spark plug? A. After you get your motor up to cruising speed I don't believe you will be able to even tell it. I mean, you can't tell the spark plugs have got thirty-five or thirty thousandths gap by the way the motor runs.

Q. That is what I am asking you, Mr. Witness. I am assuming that this gap is fifty thousandths of an inch in the motor in the air. A. Yes, sir.

Q. Will it function normally, properly? A. Yes, sir.

Q. Sixty? A. I could not tell you about that.

Q. Why not? A. I don't believe I have seen them sixty thousandths.

Q. Have you ever seen them fifty-five thousandths? A. I don't think I have seen them as high as fifty.

Q. They run all right? A. Why, at cruising speed they will run all right.

Q. Would they idling too? A. No, not very well.

Q. They would idle somewhat, wouldn't they? A. The motor would not quit.

Q. It would not quit even in idling? A. No, sir.

Q. You could start the motor with fifty thousandths of an inch gap, couldn't you? A. I believe you could.

By Mr. Carpenter:

Q. How about idling? Would it idle quite so well? A. No. It would be very rough idling.

Q. Once you get her up to cruising speed— A. It would run all right.

Q. —would you notice it? A. I don't think you would, no, sir.

By Mr. George:

Q. I would like to ask one more question that I omitted. Suppose you were flying a plane and got away off here in the place where Mr. Carpenter indicated Foote had gotten with his plane at at altitude of six hundred or seven hundred feet and one of your out-motors went dead and the other revved down and you were going down wind then and had a load of fourteen passengers and pilot, and you saw the terrain ahead of you—with which you are acquainted, of course,—the terrain being railroad tracks here, the highway here, and then this long stretch of open field, marsh or swamp or whatever you want to call it, and when you are away off here where Mr. Carpenter indicated Foote was making the turn and the motor went dead out and the second motor revved down and you were losing altitude, what do I understand you to say would be the course? To go straight ahead and make for the field, is that right? A. Yes, sir.

Q. When you say "the field" I take it you mean this long space in here, is that right? A. Yes, sir.

Q. Behind the highway and the railroad tracks?

Mr. Carpenter: That is the dump there. Tell him what that is.

Mr. George: I am asking him and he knows.

The Court: If you knew it as of that time.
The Witness: Yes, sir.

Q. Knowing the terrain, this long stretch from the highway over to the railroad track—thirty-two hundred feet, according to the scale, more than a half a mile—and you were away off here, you would make for this stretch in between here? A. That would be about the best place you could head for, the open space beyond the railroad tracks. There is a space beyond that railroad track.

Q. But, if you were away off here where Mr. Carpenter indicated and then found you were losing altitude in going down wind, by the time you would get to this highway you would know pretty much whether there is a chance of reviving the power and getting altitude again, wouldn't you, knowing the plane, of course? A. Yes.

Q. In other words, then, when you got to the highway in such a situation and losing altitude all the way from this point over here, you would, by the time you arrived at the highway, become pretty well convinced you could not get altitude any more, wouldn't you? A. Yes.

Q. That being so, your object would be, then, for good piloting to land in the field, is that right? A. Yes, sir.

Q. Between the highway and the railroad? A. If I did not have enough altitude to make beyond that railroad—that marsh——

Q. If the slightest doubt arose in your mind whether you would be able to clear the railroad, what then would be your judgment? To land in the field here or in this territory in here? A. If I could not make the other field I would have to put it there.

Q. If you had some doubt as to whether you could clear the railroad, would you then bring your plane down in this open space? A. Yes.

Q. You would do that rather than take a chance of crashing into the trains? A. Why, of course.

By Mr. Carpenter:

Q. Do you know, Mr. Branson, this? Do you know what is in that area to which Mr. George pointed? In other words, did you know when you answered him that between this elevated highway and this railroad there was first a dump and fires burning? A. There was a dump with many holes in it and many big holes.

Q. Would it be possible to land in it? A. No. It would not be possible to make a safe landing in that field, I don't think.

Q. Where, with reference to this Central Railroad, would it be possible to put a ship down with any hope of saving the ship and passengers in that area where the burning dump is and the marsh and the creek and the west side of the railroad? A. Immediately on the right hand side of that railroad track there is a field—or used to be a field there—that you could land a ship in.

Q. How about west of that railroad? A. It is a dump. I am not sure of the country there.

Q. Could you land a ship in that? A. I don't believe you could. For one reason, that ramp that leads up to South Street is pretty high. I don't believe you would be able to get the ship down on the ground across that ramp and get it down on the ground. It is a pretty short distance there.

Q. And, with the wind at your tail and the ship going down wind do you think you could get it in that area between that elevated highway and the railroad? A. I don't believe you could get it in that dumping place.

By Mr. George:

Q. If there were doubt as to which would be preferable down wind in this dump, as you described it, under the circumstances, or crashing into a railroad train with fourteen passengers aboard, which would you have taken if you were presented with such a situation or emergency there? Into the dump or railroad tracks? A. If I was positive—if I was not absolutely positive I could not get past that railroad track?

Q. No, if there was doubt as to whether you could clear the railroad track, wouldn't it have been better judgment so long as you have to have a forced landing to land in the dumps, rather than against a train? A. If there is a chance of getting over the train I would take that chance.

Q. Yes, if there was a chance, but if there is doubt you could get over, what would be the course of a good pilot? Bring it into the dump, isn't that so? A. That question is very hard to answer, because every case like that is a different case.

Q. I am talking about the case I have just given you. A. I think I would shoot for that field—at the field on the right hand side of the railroad tracks.

Victor E. Bertrandias, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Reed:

Q. Mr. Bertrandias, what is your profession? A. Aviator.

Q. How long have you been in aviation? A. Since 1915.

Q. Before you were a flier did you have some experience on motors and engines? A. I was a mechanic for Art Smith in 1915 at the World's Fair at San Francisco.

Q. And where did your experience as a mechanic with Art Smith take you, as a mechanic on engines? A. 1915 we were at the World's Fair. We later went to the Orient, toured the Orient in 1916.

Q. You and Art Smith went to the Orient by plane? A. Yes, sir.

Q. You acted as mechanic on that tour? A. Yes, sir.

Q. Thereafter did you come back and join the army? A. Yes, sir. I joined the army at the outbreak of the war.

Q. Before that had you had flying experience? A. Just before the outbreak of the war I had taken some flying instructions from Christensen in San Miguel.

Q. How long were you in the United States Army, Mr. Bertrandias? A. I was in the United States Army for twelve years.

Q. Beginning what date? A. About May 17th, 1917, and I returned on the 17th of September, 1929.

Q. What was your office at the time you returned? A. I was western district manager in charge of aeroplane inspection, and then flying at the Douglas Aircraft, Santa Monica and the Bowen Aircraft at Seattle, Washington.

Q. Were you overseas in your flying experience—aeronautical experience during the war? A. Yes, sir.

Q. How long were you overseas? A. I was overseas until 1919—the early part of 1920.

Q. Altogether how many years? A. About four years.

Q. Were you stationed overseas in the Aeronautical Division? A. I was attached to the first aviation instruction center at Paris.

Q. In what capacity were you there? A. I went there to take instructions on engines, and after I left there I went to the Isidon where I was attached to the 94th Aero Squadron.

Q. What did you do during the time you were attached to the 94th Aero Squadron? A. Due to my experience previous to the war at the factory I was made master signal electrician for the Squadron, in charge of equipment.

Q. Where else did you go abroad during the war and after? A. Well——

Q. In the service of your army? A. I was in the squadron which was known as the Rickenbacker Squadron until May 14th when I was commissioned as a first lieutenant and then I went from there to various places still carrying on engineering duties until after the war.

Q. And were you in the Army of Occupation? A. Yes, sir. Then I went to Aarondon, Germany, that is right outside of Coblentz—we went there with contingent "A" which was there after all the other aircraft units had been sent home.

Q. Have you been flying since? A. Yes, sir.

Q. What fields are you connected with here? A. Carston Field, Florida.

Q. What fields were you connected with during your service in the United States Army? A. Kelly Field, Texas; Mitchel Field, Long Island; Langley, Virginia; McCook Field, Dayton Ohio; Wright Field, Dayton, Ohio; and Clover, Santa Monica, which was my last station.

Q. During that time were you flying all kinds of aeroplanes? A. I have flown all commercial types—commercial types. During that period I

was on a six months' leave I operated a commercial air line.

Q. At one time during your army service did you hold the world's record for flying? A. I did, sir.

Q. What was that? A. That was a record made at Langley Field.

Q. Have you also, in your experience, flown the largest aeroplane ever built in this country? A. I have flown the largest aeroplane in this country, the F-32, built by Fokker.

Q. How many passengers have you carried in the F-32? A. Thirty passengers besides crew.

Q. Have you taken up thirty passengers in that aeroplane a number of times? A. Yes, sir. I made a flight from Teterboro to Los Angeles with the first F-32, and during the different stops we took up people that were invited guests of the company then taking over the aeroplane.

Q. Are you a test pilot with one of the Aeroplane Companies? A. Yes, sir, for the General Aviation Manufacturing Company.

Q. You are chief test pilot for the General Aviation Manufacturing Company? A. Yes.

Q. Are you, in the course of your technical engineering experience—professional experience—familiar with the tri-motor Ford plane? A. I am familiar only by the fact that I have flown the aeroplane several times during my duties at Wright Field, Dayton, Ohio,—I change that, please—I mean McCook Field, Dayton, Ohio.

Q. Are you also familiar with J-5 engines? A. Yes, sir.

Q. Are you familiar with A. C. spark plugs— A. Familiar through——

Q. —as used in 1929? A. No, sir. Not as used in 1929, but as I used them on a similar type en-

gine in 1926 when I operated the Philadelphia Rapid Transit Air Service.

Q. Have you had occasion to use them in aeroplanes since then from time to time? A. From time to time, but I cannot specify any particular time.

Q. Will you please state what was the gap of the A. C. spark plug as of the time you used them? A. Well, I used to set the gap somewhere between twenty and twenty-five-thousandths.

Q. From your experience and knowledge as an engineer, are you able to state whether or not a gap of thirty-thousandths would in any way affect the efficiency of the cylinder of the engine? A. Of which engine, please?

Q. Of any engine, left or right? A. No. I doubt if a thirty-thousandths would have any effect on the efficiency.

Q. Would the use of a thirty-thousandths gap cause a preignition of the spark plug? A. No, sir.

Q. Would the use of a thirty-thousandths gap cause a burning out of a spark plug in ten minutes' flight at high altitude? A. No, sir.

Q. Assuming that the spark plug was entirely burned out,—one spark plug—would that affect the efficiency of your engine? A. The percentage would be so little that you would never know it because you could still cut out one spark plug and your engine would function just the same.

Q. Assuming one or two—or, say, all on one side were cut out, would that make any difference? A. One complete set of spark plugs could cut out. In most engines is what we call a dual ignition.

Q. Explain that, dual ignition. A. Dual ignition is simply explained. One set of plugs is hooked to one magneto, and the other set with

the opposite magneto. If one magneto cuts dead on you while flying, you still proceed and it would probably cut your r.p.m.'s down maybe fifty or seventy-five r.p.m.'s, maybe one hundred, uppermost, on your engine, but you would still have the required flying power that you would use cruising or whatever the condition might be.

Q. What is the purpose or what is the effect of the revving up of the motors before you start a flight? What effect does that have? A. Of revving up the motors?

Q. Yes. A. To clean out the engine and see that your temperatures are proper and you get the proper r.p.m.'s on your engine before you take off.

Q. You say it would clean out the engine? You mean, if there was any carbon in the engine? A. I am assuming your question is I am preparing for a take-off, is that it?

Q. Yes, and you rev up your motors. A. You don't rev up your engines until you have got the proper temperature on your engine to start with, you know.

Q. Yes. A. Then, when you rev up you see if you have your proper r.p.m.'s, then you check your magneto, both ignition switches for each mag to see each mag is functioning, and after the proper temperatures you are prepared to take off.

Q. Assuming the motor took off and when it was up in the air after the take-off, about fifty or seventy-five feet, black smoke was seen to come from one or more of the engines, would that indicate anything wrong with those engines? A. Not particularly. There might be a mixture—the gasoline mixture might cause a little black smoke or there might have been a little residue where the engine had not been properly cleaned out.

Q. Residue of carbon? A. Yes, sir, carbon or oil and it might just incidentally backfire; it might be just a question of a sticking valve for the moment. That might do that.

Q. Could it come from cleaning out the cylinder as the motor gets in the air? A. Cleaning out the engine? Not one cylinder, you probably would not see it. It might be if the engine is a little dirty. There might be a little water which is in your gas at that time—a mixture condition—which might throw out a little black smoke.

Q. That would not indicate any difficulty in the flying capacity of your ship, would it? A. Not in my experience. I have had them do that a good many times and clean themselves out.

Q. A sputtering motor just after the take-off, does that indicate any difficulty in your motor? A. Not particularly, again. I could say it was maybe formed by condensation in the carbureter, water in the gasoline, something like that, might cause a little sputtering of the engine.

Q. By the way, during your experience at the Langley Field, did you have anything to do with the investigation of accidents,—causes of accidents? A. It was one of my duties there. I was accident investigating officer.

Q. What are the duties of an accident investigating officer?

Mr. George: That is objected to as immaterial.

The Court: What did you do?

Q. What did you do? A. Investigated crashes in case anything happened. All officers had many assignments. In my duties as engineering officer there I had charge of accident investigation.

Q. Assuming on a day that the wind at five o'clock was given at Hadley Field at thirty miles

an hour at the tower, and at a place of three hundred and fifty feet or four hundred feet in a building above the ground within the sweep of the wind coming across the river it was given at thirty-three to thirty-nine miles during the hour between four and five; assuming that the aeroplane carried fifteen persons— A. Carried how many, sir?

Q. Fifteen persons altogether, having some eight hundred odd pounds less than the allowable gross load of ten thousand one hundred and thirty allowable by the Department of Commerce; assuming that that plane took off, northwest wind blowing, took off into the wind; assuming that that plane taking off about here came out in this direction for about two or three thousand feet, and reached an altitude of five or six hundred feet and made a wide gradual turn until it got over here over the built-up section of South Street in Newark, and it was then it made a wide turn of about one hundred and eighty degrees and was headed toward New York; assuming after the completion of the turn the plane was then seven or eight hundred feet altitude, the left motor quit and an attempt was made by the pilot to revive the left motor and very soon after the center motor revved down to eight hundred revolutions a minute, and the pilot was then headed in this direction toward New York, in your opinion as an aviator are you able to say with a reasonable degree of certainty what was the proper maneuver for that pilot to pursue in that emergency when he was at that low height? A. That was the Ford plane you are speaking of? Ford tri-motor?

Q. Ford 4-AT plane. I might add after he has made the turn the wind was on his tail. A. He was eight hundred pounds less than the gross weight of the plane you are speaking of?

Q. Eight hundred and eighteen pounds. A. At five hundred feet?

Q. Five hundred or six hundred feet.

Mr. George: Seven hundred was the original question.

The Witness: What is the distance from the field there on the map to his point of turn?

Q. The place indicated is in pencil here, here and here. This map is 200 feet to each inch. The distance from here to here is thirty-one hundred feet and the motor stopped up in this section and here are high buildings—at this point are high buildings in Newark—Broad Street over this way here; there are dumps here; a large swamp here, swampy and rough and irregular ground. A. To the right there—what is the ground condition there?

Q. Swamp and meadows here. Here is a field full of people and automobiles.

Mr. George: There is no such proof as that.

Q. Here is the airport from which he started on a holiday with many people and automobiles. Over here is green field without any dump in it at all. Here is the railroad track and this field here has dumps and irregular and also burning refuse. A. My opinion is, from my experience in flying big ships with that number of people in as a load and with only one engine really functioning, I would have tried to land straight ahead by using my single engine to help me glide straight ahead.

Q. Would that be good piloting? A. Well, I think that is why I am here. I have had several

things happen of that nature. I would say it is good piloting.

Q. Are you a member of the Caterpillar Club? A. I am.

Mr. George: I object. He might belong to the White and Red Club, that does not make any difference.

The Court: Yes.

Mr. Reed: You don't seem to know about the Caterpillar Club.

Mr. George: No. I don't. I don't like caterpillars.

Q. What is the Caterpillar Club in aviation? A. Members who have been forced to jump out of aeroplanes to save their lives.

Q. By parachuting? A. By parachuting, yes, sir.

Mr. George: Do I understand counsel wants to qualify him as an expert jumper now?

The Court: Yes.

Q. Assuming, if you please, another state of facts as testified by certain witnesses for the plaintiff: assuming when the plane took off and got over about two hundred feet beyound this intersection at an altitude of about one hundred and fifty feet that the pilot of the plane made a sharp turn to the right which carried him over about in here, and after making this sharp turn the plane began to climb and climbed up to a higher altitude of some three hundred or three hundred and fifty feet, would such sharp turn after its completion—the plane had proceeded along on an even keel flying to a higher altitude, would that sharp turn at one hundred and fifty feet have made

any difference or cause any stopping of the motors in the time of its flight? A. I would not say the maneuver would have any effect on the stoppage of the plane.

Q. Inquiry has been made whether or not a plane can be turned to the right at a distance of one hundred to one hundred and fifty feet from the ground. If the plane is properly flown, if all the motors are functioning properly, can a plane of this type be—or any type be sharply turned at a sharp turn, at an altitude of one hundred or one hundred and fifty feet? A. It can be done, yes, sir.

Q. Do you frequently see it done in certain instances? A. Well, the only time you see a turn like that might be at some exhibit or air races, but on the field there might be a condition out there that forces a pilot to turn. It is only something unforeseen that would make a man do that.

Q. In air races how close to the ground do the fliers turn their planes? A. The racing type planes——

> Mr. George: Objected to unless all of the factors are included in the question, character of plane, load, velocity of wind.
>
> The Court: It is his witness, not yours. He has a right to assume his own set of facts.

Q. How low do you say they make a turn? A. I have seen them make turns as low as one hundred feet.

Q. Any less than that sometimes? A. Well, not much.

Q. Well, assume the turn is already completed at an altitude of one hundred and fifty feet and the ship is climbing again, has that past turn any

effect at all on the aeroplane after you have once got back on your even keel and are flying again? A. As soon as you are back on an even keel I would say you were not affected by anything you had done so far as the mechanics of the aeroplane or engine is concerned.

Q. Will you tell us, Mr. Bertrandis, why you go straight ahead when your engines fail and you only have that altitude of five hundred to seven hundred feet and the wind is from thirty-three to thirty-nine miles an hour on your tail and you are headed towards New York, given this turn here with that place on your left, these railroad tracks and dumps on your right? A. Regardless of what was there, with the load that I would have in the plane of that type, and really having no power and having a wind that would have some effect on the aeroplane without power, in making any kind of a turn on any altitude or any character of turn, you would run the hazard of falling off into a spin. By maneuvering for a turn you have this general pulling, and the momentum or force longitudinally is much less than going off vertically. Then you would be sure to crash. You are sure to injure yourself or the aeroplane, but there is some possibility because you still maintain your level flight and your lift and you try to bring it down at the stall speed of the aeroplane. In those conditions in cutting over in a bank you get much more trouble than going straight.

Q. You say longitudinal force is not as dangerous as vertical force? A. I would much rather slide than drop.

Q. You say to attempt with your motors failing, to make a right-about turn into the wind it would have a tendency to cause the plane to drop vertically in a spiral spin? A. I don't say it would

be the cause, but there are so many factors that would enter into a man flying a big ship like that and with the wind condition and with the hazards just the same off over there as it is on the other side, I would still go straight ahead whether there were houses there or not.

Q. In your opinion are you able to say with a fair, reasonable degree of certainty, the maneuver of the pilot in this case who did go straight ahead when his engine failed, was a proper flying maneuver on his part under the conditions on this day, with his load, when his engines failed up here? He flew his plane straight ahead. Was that a proper flying maneuver in your opinion? A. In my opinion I think he did the right thing in going straight ahead.

Cross-examination by Mr. George:

Q. Suppose, sir, instead of having made a turn and going up towards this built-up section of Newark in this northwest direction, instead of the motors failing after the completion of a one hundred and eighty degree arc turn, the motor failed before he started to turn and he was then seven hundred feet in the air against the wind, the airport back here, and then his power failed, what course would you recommend under those circumstances? A. Seven hundred feet in the air?

Mr. Reed: I submit there is no testimony on that.

The Court: Sustained.

Mr. George: This is cross-examination for the purpose of obtaining what would be the proper maneuver of the pilot under the circumstances.

The Court: Sustained, anyhow.

Q. It has been testified here that the glide ratio of the tri-motor Ford 4-AT plane is nine to one under normal conditions, and the ratio would be increased by reason of wind conditions, or one motor functioning, which would increase the glide, and it has been testified to under the condition of a wind ranging about thirty to thirty-three, or, about thirty miles an hour with the wind on the tail with that kind of plane the glide ratio would approximate eleven to one. Do you disagree with that estimate? A. I certainly do.

Q. You do? A. Yes, sir.

Q. Do you disagree with the estimate of nine to one under normal conditions? A. Yes, sir.

Q. Do you disagree with five to one? A. No. Just about.

Q. Just about five to one? A. Yes, sir.

Q. Are you acquainted with the factory engineering specifications of the 4-AT plane? A. No, sir.

Q. You take an arbitarary stand without regarding the engineering specifications? A. My experience with testing flight generally shows specifications are a little bit off the actual performance.

Q. You will admit, however, that the glide ratio as ordinarily specified by engineers considers only the most normal and favorable conditions? A. Generally favorable, yes, sir.

Q. All motors dead and no wind? A. Beg pardon?

Q. All motors dead and no wind? A. No wind, yes, sir.

Q. On the tail or head, so that it is just a case of gliding down five feet for every foot of drop, is that right? Suppose the plane had gained an altitude which would have been sufficient under nor-

mal conditions to have made a turn and then to have taken advantage of the normal glide ratio, would you not then have believed that it would have been proper piloting under the conditions to make a turn back to the airport? A. At what altitude?

Q. The proper altitude. A. What is the proper altitude?

Q. Let us assume it is an altitude that takes into consideration the distance from the airport. A. I would never make a turn under those conditions under one thousand feet.

Q. Would a one thousand foot altitude with no wind at all and no motors functioning, be sufficient to bring the plane back to the airport?

Mr. Reed: I object. That is not based on the facts.

The Court: Sustained.

Q. Now, then, assuming that the airport were five thousand feet from the point at which the motors go dead and the wind is on the nose. If the pilot had made a sharp turn, taking into consideration the five to one ratio, one thousand foot altitude, five thousand feet from the airport, with the added advantage of the wind then being on the tail on the turn, plus one motor functioning, could he make the airport? A. It would be about——

Mr. Reed: Which motor?

Mr. George: Any one.

Mr. Reed: No. The right motor is only functioning.

The Witness: Still at this height?

The Court: He said one thousand feet.

The Witness: One thousand feet?

Q. Yes, five thousand feet from the airport, wind on the tail, and one motor, the wind by the way being at least thirty mile an hour velocity.

Mr. Reed: I object unless he states which motor it is.

The Court: It doesn't make any difference.

The Witness: I am still all built up in front, houses and everything, is that the condition?

Q. Yes. A. I have one full motor revving up?
Q. Right? A. I would not make the turn back.

The Court: Did it make any difference which motor it was?

The Witness: Yes, it would.

The Court: Supposing it was the right motor?

The Witness: I certainly would not turn on the outboard. The center engine I might take a chance, but I would not take a chance with the outboard engine.

Q. With that glide ratio he would easily be able to make the airport under those circumstances? A. You don't always have those ideal conditions.

Q. I am assuming those conditions exist. Could the airport be made under those circumstances? A. Not having been in that predicament I could not tell you.

Q. Then you don't know? A. No, sir.

Q. Now, let me ask you one question or two more. Suppose you were about to take off and you found that two of the motors were revving up to between eighteen hundred and two thousand, that is, the center and the right motor—

this is just an illustration—and the left motor revved up to no more than fifteen or sixteen hundred and immediately before the take-off on the revving up the one motor which was not revving beyond fifteen or sixteen was sputtering. Would you take off or would you consider it good piloting to take off with a load of fourteen persons in that kind of plane with those conditions?

Mr. Reed: Your Honor, I object.
The Court: Sustained.

Q. Would you consider it good piloting with a 4-AT plane upon the take-off going about three to four hundred feet beyond this point, or maybe five or six hundred feet at the most beyond the end of the runway, making a sharp turn to the right at an altitude of one hundred or one hundred and fifty feet? A. No, sir.

Q. Bad piloting? A. Not unless there was some condition forcing that.

Q. Assuming that there is no reason so far as the land ahead is concerned, assuming this is all level marsh—and the pilot with fifteen persons averaging one hundred and fifty pounds, going into a wind of between thirty-three and thirty-nine miles velocity, and making a turn at one hundred to one hundred and fifty feet altitude sharply. Would you consider that good piloting? A. It depends on what you call a turn. I can still turn and I often a few degrees veer off my turn the minute I take off without any bad piloting. You are speaking of a turn and bank?

Q. Watch the course of my pointer here. Would you consider it good piloting to make a turn in this fashion going into a thirty-three to thirty-nine mile wind, that size of plane, and reaching a point just a little beyonnd the intersection, and

then make a turn this way up in this direction, a sharp turn—would you consider a turn at that point at that place—an altitude of between one hundred and one hundred and fifty feet—good piloting? A. That turn made right there?

The Court: Indicating a turn in——

Q. —"I-1". Would you consider that good piloting? A. Mr. George, to get this clear, you are trying to get me to make a statement. I would like to know the angle of the turn you are referring to on that map.

Q. Thirty degree turn. A. Thirty degree turn?

Q. Yes. A. A turn would be all right, but not a bank. I can still climb off a climbing turn.

Q. I meant to say a thirty degree bank. A. Now, that is different.

Q. All right. We will get to understand each other. Would you consider that good piloting? A. I would consider it bad judgment.

Q. Oh, because of the factor of danger? A. The fact that there were passengers in the ship, yes, sir.

Q. And then let me ask you again—this is by way of illustration—we are not saying to you now this is what happened—I am merely trying to test how much you know about the subject—the same plane having made that turn under those conditions which I have described which you have already said now is bad judgment, going in the same course now up to a point about here——

The Court: Indicating what?

Mr. George: Indicating "I-2" on the survey map.

Q. —then making an equally sharp bank at an altitude of three hundred and fifty feet, a sharp

turn due east across there with fourteen passengers besides the pilot, would you consider that good piloting?

Mr. Reed: Give him the altitude.

Q. Three hundred and fifty feet. A. Three hundred and fifty feet?

Q. Yes. A. Well, everything functioning all right, I would not criticize a man particularly when making a bank on that angle.

The Court: Would it be good piloting in your judgment?

The Witness: Yes, it would be.

Q. Good piloting? A. Yes, sir.

Q. Would you take fourteen passengers on that type of plane with your knowledge and skill in the operation of planes, and make a sharp turn down wind on this second point, a sharp turn to the right at three hundred and fifty feet altitude? would you do it? A. Down wind?

Q. Yes.

Mr. Carpenter: How about the engines? What is the condition of the engines?

Mr. George: Let us assume they are functioning.

The Witness: Everything functioning all right?

Q. Yes, and you make a sharp turn at this point over the railroad tracks at an altitude of only three hundred and fifty feet with fourteen passengers averaging one hundred and fifty pounds each, a sharp turn to the right down wind. Would you do it? A. Sir, I don't think your explanation of a sharp turn is quite clear.

Q. Sharp bank. A. All right. Sharp bank. In making that turn it would not require a sharp bank. That is only a ninety degree turn.

Q. Well, I am asking the question. A. I want to give you my definition of the turn at ninety degrees so you won't get my statement as a pilot wrong. At ninety degrees it would not require a sharp turn, therefore I would say it was still good piloting.

Q. Now, taking the course as I have described it up to this point, and then going across in this direction due east—now, you can call that whatever kind of bank you like or whatever kind of turn you like—would you make that kind of turn or bank with fourteen passengers in that plane with the wind on your tail at three hundred and fifty feet altitude? Would you do it? A. I don't think I would make a habit of doing it unless there was some reason for doing it.

Q. And if there is no reason you would never do it, would you? A. I doubt it.

Q. Because of the danger? A. Not because of the danger. Particularly, it would be the circumstances in which I was flying.

Q. Well, you being a good pilot, you said you are, you would not do that because to do that would be bad piloting, wouldn't it? A. Just as ordinary flying I would say it would be bad judgment, not bad piloting.

Mr. George: All right. That is all.

Re-direct examination by Mr. Reed:

Q. Assuming that your turns are made and you are clear of your turns and you are straightened out towards New York at an altitude of five or six hundred feet, and that thereafter after you

are straightened out, headed in a straight line, you have completed all your turns, will you please tell me whether or not the sharp turns they are talking about would have any effect on the ship? A. No, sir.

Q. Can you tell me whether or not so far as anything functioning on that ship is concerned when the plane is off again and straightened out in a straight line, whether or not those sharp turns being made were just past events. A. That is answered by: you are already straightened out, so nothing happened on the turn.

Q. Would any turn being made have any effect on stopping the engines? A. If it did it would certainly be poor design in aeroplanes.

Q. As aeroplanes are designed, would such a turn have any effect on the stoppage of the engines? A. On aeroplanes that have approved designs and tested as legitimately built, I would say no.

Q. You yourself have flown fifteen passengers or more in all kinds of weather conditions? A. I have, sir.

Q. And in winds of thirty, thirty-three or thirty-nine miles an hour and at high altitude and low altitude? A. I have, in Albuquerque, in an F-32. I have made similar flights with thirty passengers.

Q. Thirty passengers? A. Yes.

Q. What is the altitude there above the sea level? A. Somewhere between five thousand and fifty-two hundred feet above sea level, I believe.

Q. Is it more difficult to fly with many passengers in high altitudes of five thousand feet or over than it is down near the ground or sea level? A. I would say yes, sir.

Q. How about the wind velocity in your flight? What wind velocity have you experienced in fly-

ing planes, fifteen people and over? A. On a particular flight I have in mind—only that velocity at the time was around thirty to thirty-five miles an hour on the ground—but I have not averaged anything like that——

Q. On that particular flight with the wind velocity thirty to thirty-five miles an hour, how many passengers did you carry in your plane? A. Thirty.

Q. Thirty? A. Yes, sir.

Q. Does that include crew? A. No, sir. Thirty-two with the crew.

Q. Thirty-two persons on that plane flying at a wind velocity of thirty-five miles an hour? A. Yes, sir.

The Court: At this second turn which has been indicated on this map at an altitude of three hundred and fifty feet, you say, of course, naturally so, it probably would have no effect on the engine in making that turn, whether it was a sharp bank or medium bank. But, would it have any effect—the altitude of three hundred and fifty feet—on the maneuverability if the plane subsequently became disabled?

The Witness: If the aeroplane——

The Court: Shortly after making that the plane became disabled, would the fact a turn had been made at three hundred and fifty feet and straightened out have any effect upon the maneuverability of the plane?

The Witness: Well, if there was some residue in the gas tank—some flakes or something that might accidentally have stopped up the gas line—you might have to run on and continue with the amount of gas in the line until that particular point was

reached, and then something happen. That is quite possible.

Q. Assuming the gas tanks were filled at one o'clock that day and had only been run for two and one-third hours. A. I am only assuming the possibility of some material—I didn't mean the amount of gas—I am assuming this is with gasoline in the aeroplane. My statements have been with gasoline in the aeroplane, and the pilot at the wheel and the aeroplane intact. I am only mentioning this change. Your Honor asked me in making a turn the force in that turn might have disarranged some particular thing, which is something nobody could ever tell about.

Q. You mean dirt in the gasoline? A. I mean dirt in the gasoline.

The Court: I think you misconceive my whole purpose of the question. The question was whether you would have more maneuverability or a better chance if you were up one thousand feet than at three hundred and fifty feet after making the turn and straightening out.

The Witness: One thousand feet you would have had a better chance.

Q. You would have a better chance to make a landing—more room to make a landing? A. It just gives you that much more room to work.

The Court: You would not consider it bad piloting, however, to make a turn under the conditions indicated at three hundred and fifty feet altitude, everything functioning?

The Witness: No, sir.

LOU FOOTE, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Reed:

Q. What is your name? A. Lou Foote.

Q. Where do you live, Mr. Foote? A. I live at Albany, New York.

Q. What is your position there? A. I am airways engineer and pilot.

Q. By whom are you employed? A. American Airways, Incorporated.

Q. Were you the pilot of the aeroplane that had the accident on the 17th day of March, 1929? A. I was.

Q. How old are you at the present time? A. Thirty-four.

Q. Where were you raised?

Mr. George: I object to that as immaterial.

The Court: Sustained.

Q. Where did you first start your flying and your experience as an engine mechanic—aeroplane motor engine mechanic? Where did you begin to become associated with aeroplane engines—motors of aeroplanes? A. I started in the army in 1918.

Q. Where? A. San Diego, California.

Q. At San Diego, California? A. Yes, sir.

Q. And when you entered the army you volunteered at that time? A. Yes, sir.

Q. What position did you take? A. What was my status?

Q. Yes. What did you do first? A. I enlisted as a mechanic in the army.

Q. Now, tell us what experience you had in the army. A. I went in as a mechanic and later was put on flying status. I learned to fly, and came out of the army after about six months duration after the war and went back into business for myself.

Q. You went back into business? A. Yes, sir.

Q. In what business? A. Garage business.

Q. Thereafter, when did you take up flying again? How soon? A. 1923.

Q. What did you do? A. I operated a school—a flying school of my own.

Q. Were you the teacher? A. Yes, sir.

Q. In nineteen twenty what? A. '23.

Q. Where? A. Turlock, California.

Q. Were you flying then? A. Yes, sir.

Q. When did you first fly? Was that before you went in the army, during the time you were in the army during the war? A. I first flew in the army.

Q. Then in 1923 when you opened this school, what planes did you fly? A. Jennies and Tommies and Morscots.

Q. How long were you in the business of teaching flying and flying at that particular point in California? A. I was in the business from 1923 until 1928.

Q. Did you have any particular airport during that time or prior to that time? A. Yes, sir.

Q. What airport did you have? A. I had an airport at Turlock, another one at Mersed.

Q. Did you ever have any airport at one point? A. Yes, at Turlock.

Q. At Turlock? A. Yes, sir.

Q. Did you in that time become familiar with aeroplane motors? A. Well, I had already become familiar with aeroplane motors.

Q. At some time did you obtain a license as an aeroplane motor mechanic? A. Yes, I did.

Q. Tell us when? When were you licensed by the government as an aeroplane motor mechanic, if you were? A. The latter part of 1927, I believe, the first part of 1928.

The Court: We will recess until 1:45, gentlemen. I am cutting the recess short fifteen minutes in order that we may devote that fifteen minutes to this case to hurry it along.

(Recess until 1:45 P. M.)

(After Recess, 1:45 P. M.)

Lou Foote resumes the stand.

Direct examination (continued):

By Mr. Reed:

Q. You were first licensed as an aeroplane mechanic by the United States Government? A. Yes, sir.

Q. Did you have that license as an aeroplane mechanic at the time of the accident in March, 1929? A. Yes, I did.

Q. Did you also some time before March 17th, 1929, have a transport pilot's license issued to you by the government of the United States? A. Yes, sir, at the same time as the mechanic's license.

Q. At the same time? A. Yes, sir.

Q. And before you had your license issued to you by the government, did you have a letter of

authority issued to you by the United States Government? A. Yes, sir, I did.

Q. Is that the method they adopted before the licenses were issued? A. Yes. That was before the licenses came out, they issued a letter of authority.

Q. So, you first got a letter of authority to fly all kinds and types of aeroplanes? A. Yes, sir.

Q. In what year? A. That was May, 1928, I believe, my best recollection.

Q. Then, after they got around to you, did you get your transport pilot's license in that same year? A. That is the license I mean.

Q. Before that you had your letter of authority from the government? A. Yes, sir.

Q. Prior to your getting these licenses, had you been flying aeroplanes for some months? A. Yes, I had been flying since 1923—and since 1918 during the army, but there was a period from 1919 to 1923 I did not do any flying.

Q. But, you were flying in 1919. 1919 you were flying, then you were flying continuously from 1923, were you? A. Yes, sir.

Q. Was it your means of livelihood? A. Yes, sir.

Q. Flying from 1923 on? A. Yes, sir.

Q. What kind of aeroplanes did you fly during those months? A. Most every type.

The Court: You are still flying?
The Witness: Yes, still flying.

Q. When did you begin to fly tri-motor planes? A. My first tri-motor experience was in—around the first of August, 1928.

Q. Where? August 1, 1928, where? A. In Chicago, Illinois.

Q. What line did you fly tri-motor planes for at that time? A. I worked for the Grey Goose Air Line that operated out of Chicago.

Q. Where did they operate from and to where? A. On charter trips in and around Chicago and short hops over the city.

Q. Were you on those planes as pilot or co-pilot on tri-motor planes? A. I was on either as pilot or co-pilot.

Q. And in that capacity did you have occasions to fly the planes at times? A. Yes, I did.

Q. Will you please tell us whether or not those tri-motor planes which you flew in the employ of the Grey Goose Line—whether or not you carried passengers? A. Yes.

Q. And what else? A. That is all.

Q. Did you carry mail? A. No, no mail.

Q. Carrying passengers. How many passengers? Did you carry full loads of passengers on the planes operating around Chicago? A. Yes, sir.

Q. And from the Grey Goose Line where you carried passengers on tri-motor planes, what organizations were you connected with? A. National Air Transport. That is a mail line that runs between Chicago and New York, New York and Kansas City and Dallas, Texas.

Q. Because of your employment by the National Air Transport Company, did you have occasion to fly tri-motor Ford planes? A. Yes.

Q. Will you please tell us whether or not passengers were taken on those tri-motor Ford planes on the occasion you flew them for them? A. Yes.

Q. What else did you fly for the National Air Transport? A. Mail.

Q. And whereabouts to and from where? A. Between Chicago and Kansas City.

Q. Sometimes did you have both mail and passengers on tri-motor planes you flew? A. Not on tri-motor planes. Just the passengers on tri-motor planes.

Q. Passengers on tri-motor planes. Mail planes were single motor? A. Yes.

Q. Now, after your experience flying tri-motor Ford planes for the Grey Goose and the National Air Transport, where did you go from there? A. I went to the Ford Airport at Dearborn, Michigan.

Q. Had they a system there of instruction for pilots on their Ford tri-motor planes? A. Yes, they have.

Q. When you got into their plant what did you do? I mean, what did you do? Stay and work and so forth? A. They have a very extensive course, consisting of rebuilding of planes that have been sold, and building of new airplanes and flying on their own lines between Dearborn and Chicago and between Dearborn and Buffalo, carrying freight, and their own company officers and taking a regular course of flying tri-motors both night and day and the maneuvering of such.

Q. And when you went to the Ford Company at Dearborn, Detroit, how many hours altogether approximately had you had in flying all types of aeroplanes at the time you went to the Ford Company? A. When I went to the Ford Company?

Q. Yes. A. I believe around nineteen hundred hours—nineteen hundred and fifty.

Q. Eighteen hundred, nineteen hundred, nineteen hundred and fifty? How many hours approximately had you had when you went to the Ford Company on flying tri-motor planes? A. When I went to the Ford Company?

Q. When you went to the Ford Company? A. About ten hours in all.

Q. And then when you went to the Ford Company did you go right into the machine shop to study the motors and all that sort of thing? A. I went in the factory first building the aeroplane.

Q. Tell us about it. Studying what? A. In building actual tri-motor aeroplanes.

Q. You saw it built? A. I helped to build it.

Q. Yes. All right. A. We were transferred from each department and at the same time flying about three days a week on the line.

Q. What kind of aeroplanes? A. Tri-motors.

Q. Tri-motors—4-AT's? A. 4-AT's, yes, sir.

Q. J-5 engines? A. J-5 engines.

Q. And A.C. spark plugs? A. Yes.

Q. When you flew the tri-motor planes two or three days a week in connection with your course there of study, did you have occasion in addition to the freight that was carried to fly also passengers at times in tri-motor planes? A. Yes, at times their company officials went through.

Q. Although you were taking a course as a student, did you also receive some compensation? A. Yes.

Q. So, you were being paid to become a student pilot, a pilot of their tri-motor planes? A. Yes.

Q. How long were you at the Ford plant in making this study and receiving compensation in this course to equip you as a pilot and acquainted professionally with their motors and planes and flying? A. From November 1928 until March 1929.

Q. What is that? A. November 1928 until March 1929.

Q. What kind of weather did you fly in in that period of experience at the Ford plant? A. All kinds of weather.

Q. Did you fly in windy weather? A. Yes.

Q. Cold weather? A. I flew all kinds of winter weather—general winter weather along the Canadian border and the Canadian side of the lake where you have a great many blizzards and rough area.

Q. Did you fly their tri-motor planes in snow storms and rough weather? A. Yes, sir.

Q. Carrying freight and passengers? A. Yes.

Q. Who was your instructor? During that time who was your test pilot? A. Mr. Manning was our chief pilot—Leroy Manning and Mr. McGee was the assistant pilot.

Q. And in the course of your instruction from those test pilots, Manning and McGee, did you make maneuvers with the plane? A. Yes, sir.

Q. Did you operate it on one or two or three motors? A. Yes. We had to do that. We had to learn to manage and maneuver with one motor, two motors, and three motors, and also had to cut all three motors and come into a landing, making what is called—you might call it a dead stick landing.

Q. Did you also receive instructions as to making turns and things of that sort? A. Yes.

Q. Were you there, Mr. Foote, continuously from the fall of 1928 down to the middle of March, 1929? A. Yes, I was.

Q. Attending strictly to your duties and your work and instruction during all of that time?

Mr. George: I think the witness should be permitted to say.

The Court: Let him answer this one and we will be through with that line.

The Witness: Yes, sir.

Q. Was there an occasion when someone came out from New York or Newark in connection with

getting some pilots for their Colonial planes around about the middle of March, 1929? A. Yes.

Q. Do you remember the name of the man who came out there? A. Mr. R. W. Mackay.

Q. He is not living now, I understand? A. No, he was killed, I believe.

Q. All you pilots out there at the plant, were you all put under the survey of Mr. Mackay and asked to go up and go through maneuvers for him? A. Yes. He stayed around the plant two or three days and observed our flying ability.

Q. Did he observe your taking off and making landings? A. Yes.

Q. How many pilots were there from whom he made his selection? Do you remember how many there were about at that time? A. Well, that particular time I don't remember exactly, but I think there were possibly sixteen to twenty.

Q. Finally did Mr. Mackay make a selection of you and one other to come as pilots of the Colonial to Newark? A. Yes, he did.

Q. Were you engaged then after that inspection by Mr. Mackay in his observation, engaged to come in the employment of the Colonial Western Airways? A. Yes.

Q. Did you come to Newark? A. Yes, I did.

Q. When did you arrive at New York or at Newark? A. I arrived at Newark on a Saturday afternoon.

Q. When you arrived on Saturday afternoon what did you do? A. What did I do at the airport?

Q. Yes. I want to know what observation, if any, you made around the terrain or landing of the airport on that Saturday? A. I drove out to the airport in an automobile.

Q. Yes. Did you go over the viaduct?

Mr. George: May I ask the witness be permitted to tell his story?

The Court: Give us the whole picture of what you did.

Q. How did you go there? A. I drove out to the airport in an automobile and I observed the airport as I had not seen it before. I went back to the hotel and called the operations manager, who was Mr. Rowland at that time in New York City, and he requested me to come over.

Mr. George: I object to the conversation.

The Court: As a result of that talk, what did you do?

The Witness: Went over to the Colonial Office in New York City.

Q. Now, then, I want to know what—when you drove to the airport I want to know if you went over the viaduct route number 25 or how you went there? A. I went over the viaduct twice and drove back to Newark, left the car there and went over on the subway.

Q. Now, then, when you were at that airport on that Saturday did you get out of your automobile? A. Yes. I got out of the automobile and I walked around.

Q. Did you observe the landing and take-off place on the airport? A. Yes. I noticed where it was.

Q. Did you drive somewheres along the airport?

Mr. George: Just a minute. I think the Court will agree I have been rather patient about the form of these questions.

The Court: Tell him what you did there while you were at the airport with refer-

ence to either driving or walking or observing.

The Witness: I naturally wanted to see what the airport looked like and I drove out in front of the city hangar and down the road along where the new American Airways hangar is and National Air Transport hangar and turned around and observed all I could from the car and came back into Newark.

Q. Now, then, did you report then at the New York Office? A. Yes, I did.

Q. And were you examined there? A. Yes.

Q. As to your qualifications by some officer of the company? A. Yes.

Q. By whom? A. By Mr. Rowland.

Q. Is he a flier? A. Yes.

Q. After that examination by Mr. Rowland, the flier, at the New York office, then were you finally and definitely instructed to report for duty? A. Yes. He told me to report the following morning for duty.

Q. What time did you report the next morning? A. I think about ten-thirty or eleven o'clock.

Q. What did you do first before going up in the air on that day in the plane? What did you do then from ten-thirty o'clock that morning? A. I observed the field, the ships and the hangar, took things into consideration in general around the place out there.

Q. How did you go? A. Pardon?

Q. How did you go out there? A. I drove out in my car.

Q. Then, after you had been around there for an hour or so, how long was it before you finally went up in a plane? A. Possibly thirty minutes.

Thirty minutes or maybe an hour. I don't remember.

Q. Who did you go up with the first flight that day? A. I went up with Mr. Wonsey.

Q. Was that the other pilot that had come from the Dearborn people? A. Yes, sir.

Q. Do you know whether he had already been up with someone in that same plane before he went up with you? A. Yes, sir, he had been up—maybe he was up when I got there. I am not sure, but he had been up.

Q. When you went up with Wonsey who piloted the ship? A. Wonsey.

Q. With passengers or without? A. With passengers.

Q. What kind of a plane was it? A. Tri-motor Ford, 4-AT.

Q. Was it of the same type or model and design as the tri-motor Ford planes that you had been studying and watching built out at Dearborn? A. Exactly.

Q. Was it the type of plane you were then thoroughly familiar with? A. Yes.

Q. Any difference in the mechanism of it at all? A. None at all.

Q. Where did you sit when you went up with Mr. Wonsey? A. Sat in the right hand side in the cockpit.

Q. Where did he sit? A. On the left hand side.

Q. Where did you go? A. Went over New York City, made a regular trip over there, a sightseeing trip.

Q. Do you remember when he got up in the air which way he turned? A. Turned right.

Q. About how long a trip was it? A. Twenty to twenty-five minutes.

Q. Can you tell us whether or not it was a full load of passengers? A. No. I don't remember.

We had a load of passengers, but I don't remember if every seat was filled or not.

Q. And as you went off on this flight did you observe the terrain on that trip about the Newark Airport? A. Yes, I did.

Q. Have you by reason of your training and experience become accustomed to observe the terrain of an airport? A. Certainly. Yes, I was.

Q. What is the custom of an expert pilot in observing the terrain? What does the terrain mean to him? A. Well, you always observe the terrain in case of a forced landing to see a place where you can sit down.

Q. And did you do that? A. Yes, I did.

Q. Now, after your first flight in this—withdraw that. Will you please tell us whether you observed the operation of the motors on the trimotor plane at that trip with Wonsey? A. Yes, sir.

Q. Will you tell the court and jury how they were functioning? A. Perfectly.

Q. Was there on that trip any sputtering of the motors or any missing at all? A. No, sir.

Q. As you went over New York, what height was it over the city? A. I believe around two thousand feet, possibly twenty-five hundred.

Q. And was there anything jumpy or irregular in any way about the performance of your engines on that trip on that aeroplane? A. No, there was not.

Q. With whom did you take your next trip? A. The next trip I took with Mr. Weatherdon.

Q. Tell us whether there were any passengers taken on that trip? A. Yes.

Q. Tell us the performance of the motors and engines on the first trip that you had with Weatherdon. A. The motors and ship functioned perfectly.

Q. Was there any sputtering and missing of any of the motors? A. No.

Q. Was any black smoke coming from any engine? A. No, not that I could see.

Q. Did you observe as to the regularity of the revolutions per minute of the engines as indicated on the tachometer? A. Yes.

Q. What were they? A. About 1650 cruising—cruised at about 1600 or 1650.

Q. Were the motors synchronized? A. Absolutely.

Q. What did Weatherdon do in relation to you? What did he instruct you or say to you, if anything, on his first trip with you? A. Weatherdon took the ship off and gave the ship to me after we had got well away from the airport. Then he pointed out different places to land and showed me the course they were flying over New York City over the Pennsylvania Hotel or Pennsylvania Station, and over the Statue of Liberty. I flew the ship on a complete trip and came back and he landed.

Q. And did you, when he showed these various places and points on the route and points to land, did you yourself personally observe the terrain? A. As best I could, yes. Certainly. I always do.

Q. How many trips altogether did Weatherdon make with you in that same plane, approximately? A. I think he made three trips to my observation.

Q. During any of those trips was there anything abnormal or irregular in any way about the performance of those motors? A. No. The ship seemed to perform perfectly and the motors were no different than any other J-5 motor.

Q. Was there anything to indicate any sputtering or missing of any motor? A. No.

Q. Was there any indication of any smoke from any motor? A. No, not that I noticed.

Mr. George: What was that last?
The Witness: Not that I noticed.

Q. Was there anything different—unusual about the performance of that ship on those trips? A. Not a thing.

Q. At the first trip—on the second trip with Weatherdon who controlled the ship? Who operated it? A. On the second trip?

Q. Yes. A. I took off on the second trip and flew most of the trip, I believe. He might have flown part of it. I don't remember, but I believe he flew part of the trip.

Q. And when you were not flying what did you do as you flew along on those trips and Weatherdon gave you those instructions and information? A. Just observing the country and city, the terrain.

Q. On the trip with Weatherdon how did the ship climb—at what altitude did it climb as it went over New York? A. It got to two thousand feet before he went over the City of New York.

Q. Where did he go over New York City in this same plane? Where did he go? Whereabouts over New York? What part of New York? A. Over Pennsylvania Station and made a circle over the Battery and over the Statue of Liberty and back to the airport. It is pretty general, the course.

Q. In that course did that include a flight over tall buildings in New York City? A. Yes.

Q. Tell us whether or not passengers were carried on each one of those trips you made with Weatherdon? A. Yes.

Q. When Weatherdon took off with you on the trip you made with Weatherdon and got off the

runway and in the air, what sort of a turn was it—left or right hand turn that was made? A. Made a right hand turn—veered to the left a little to get into the wind. The wind was a little bit cross.

Q. Veered to get directly into the wind, then you got to an altitude and made your turn to the right? A. Yes, sir.

Q. Now, after those four trips you had first with Lieutenant Wonsey, then the three trips with Captain Weatherdon, did you have a fairly good idea of the terrain over which you were flying on those trips? A. Yes, I did.

Q. And after that did you begin to take the plane up yourself without the companionship of Captain Weatherdon? A. Yes.

Q. Before we get to this—on the second and third trips with Weatherdon—who took off and landed then? A. On the second and third?

Q. Yes. Who made the take-offs and landings? A. I did.

Q. Was there a wind that day? You said something about northwest. A. Yes, there was a wind.

Q. What kind of a wind was it? A. Fairly strong wind.

Q. Can you tell whether or not it was a steady wind? A. At times it was steady, yes. At times it was a little gusty.

Q. Was it such a wind that in any way made it dangerous to make this flight at all? A. No.

Q. Then you proceeded to take the plane yourself, did you? A. Yes, sir.

Q. Carrying passengers? A. Yes, sir.

Q. That afternoon? A. Yes.

Q. How many flights did you make with passengers in the tri-motor Ford plane before the last flight?

The Court: Alone?

Mr. Reed: Did your Honor say something?

The Court: Alone.

Mr. Reed: Alone?

The Witness: I believe it was four.

Q. And each one of those flights were made with passengers, were they? A. Yes.

Q. Approximately full loads, would you say? A. Some of them were and some of them were not.

Q. And during those four flights how did the motors perform? A. All right.

Q. How was the ship as to airworthiness? A. Good.

Q. How was the ship as to climbing on those four trips? A. All right.

Q. Where did you go on the four trips that you went alone with loads of passengers? A. About the same course that I had made with Wonsey and Weatherdon over New York City and over the Pennsylvania Hotel, over the Battery, around the Statue of Liberty and back to the airport.

Q. To what height did you fly that trip? A. About two thousand feet.

Q. At any time was there any sputtering or irregularity of any motor at all? A. No, sir.

Q. Will you please tell us whether or not your ship performed and climbed and revved and took off in a normal way? A. Perfectly normal.

Q. Was there any indication to you of anything irregular or out of order about that ship or its motors on that day? A. No, sir.

Q. During those four trips you were alone, the three trips with Captain Weatherdon and the one trip with Mr. Wonsey— A. No, sir, not until we had——

Q. We will get to that in a moment—were you after those eight trips familiar with the movement and operation of that ship? A. Absolutely, before that.

Q. You had been familiar for a long time before with that type of ship, had you not? A. Yes, sir.

Q. Now, will you tell us, please, on the final or last trip in your own way, Mr. Foote, if you please—did you take off alone on the final trip with passengers? A. Yes, I did.

Q. Was it a full load? A. Yes.

Q. Was there someone sitting in the cockpit besides you at the time? A. Yes, sir.

Q. Before you started your ship, what did you do, if anything, with regard to revving up the motors? A. You mean before I taxied out to take off?

Q. That is exactly what I mean. Tell the jury. A. Well, I had come down on the trip previous to that about five or ten minutes, I guess, long enough for him to load in passengers and I burned out my motors and turned around and went around and took off.

Q. Tell the jury what you mean by "burning out the motors". A. I mean I revved them up so as to clear them out—clean them out; know by my instruments that the motor was revving up properly; see that it was the right temperature and went down to the end of the runway and took off.

Q. And did they rev up normally and properly before your last flight as you were on the ground? A. Absolutely or I would not have taken off.

Q. And then during that ten minute interval between your last flight and this flight, you say the passengers were put in the plane? A. Yes, sir.

Q. And then having revved them up or burned out the carbon in the motors, as you say, then

what was done? A. Taxied down to the end of the runway and took off.

Q. Describe your take-off, if you please, at that time. Were your motors performing normally? A. Just the same as before.

Q. Were they revving up properly? A. Yes, they were.

Q. Had there been any time during your handling of that ship when there was any difficulty with the left motor down to that moment? A. No, sir.

Q. Had there been any time, Mr. Foote, when there was a period of time when the tachometer only showed one motor up to twelve hundred and the other motor went up to sixteen or eighteen hundred? A. That is ridiculous. I would not take off.

Q. Was there any such time as that while you were handling that ship or while Weatherdon was handling it with you or while Wonsey was handling it with you? A. Absolutely not.

Q. Now, then, you taxied down and you took off. Describe your flight, your take-off in your own way to this jury. A. I took off in the same direction. Everything was normal except I don't think the ship got off the ground quite as soon on that last trip as it did before.

Q. How much of a difference was there? A. Possibly fifty or seventy-five feet, maybe, due to the wind.

Q. You mean you had to go along the ground fifty or seventy-five feet before she raised in the air? A. Yes, sir.

Q. That is what you mean? A. It might have been me, I don't know. You can hold a ship on the ground longer. I might have held on the ground longer, but it did not seem like I got off the ground just as soon.

Q. Did you run along fifty——

Mr. George: May I ask the Court to ask Mr. Reed not to lead.

The Court: Let him explain it.

Q. What do you mean by that? That you did not get off the ground in feet? A. It took a little more distance to get off the ground.

Q. And the distance you said, was fifty or seventy-five feet? A. The distance I said was fifty or seventy-five feet.

Q. Referring to the ground? A. Yes, sir.

Q. Then did it get off? A. Yes, sir.

Q. Did it go up in the air? A. Got off, got off practically the same as before.

Q. How were the motors functioning? A. Good.

Q. How was the ship performing? A. Good.

Q. How were your revs on your ship? A. The revs were good. I always open my two outboard motors first on taking off to make sure, and glance at both tachometers on the outboard motors to make sure the outboards are turning up their maximum r.p.m.'s.

Q. When you got in the air how were they working? A. Fine.

Q. Where did you go? A. Headed out west—northwest direction, veered into the wind as soon as I got over the highway, went out about, I should say, a mile and a half to approximately six hundred feet.

Q. Right there when you say you veered into the wind, on that day was that runway directly, squarely, right into the wind? Was it? A. Well, the wind was a little cross on the runway so, to correct my drift, I just veered into the wind.

Q. How much? Much or slightly? A. I don't know. Very slightly.

Q. In which direction did you veer? A. To the left. The wind was about in a west—northwest direction, as I remember, that day.

Q. Then when you veered it slightly into the wind to the left then how were you headed as to the wind? A. West—northwest.

Q. Were you headed directly into the wind? A. Yes.

Q. Then you say you went out how far before anything in the way of a turn? A. It was well over the industrial section of Newark. I would say about a mile and a half beyond the railroads.

Q. Then what did you do, Mr. Foote? A. Well, I brought my throttles back and synchronized my motors.

Q. Did you synchronize them? Were they synchronized? A. I probably had not had time to synchronize them entirely, but I had brought them back so that the motor was not turning up its maximum speed, and made my turn.

Q. Describe the turn you made on this trip. A. A right hand turn.

Juror Number Five: Nothing unusual? You did other times too, didn't you?

The Witness: Nothing unusual; just the same kind of a turn I had been making, a long sweeping turn, a gradual turn, you might say, a shallow bank, just straightened out on my turn and headed towards New York City, and right then my left motor quit cold.

Q. Where was it with reference to the turn? While you were making the turn, before the turn or after the turn? A. After I had made the turn and straightened out.

Q. After you say you had made the turn and straightened out. Where were you going? In what direction then when the motor quit? A. East.

Q. Towards where? A. Towards New York City.

Q. Towards New York City. Was that the first indication, then, of trouble, after the completion of this wide sweeping turn that you say you made? A. Yes, sir.

Q. By straightened out you mean you were then going in a straight line? Is that what you mean by that? A. Yes, in a narrow line towards New York City.

Q. Now, tell the jury what happened. Having completed the wide sweeping turn there was something you said about the motor. What did happen? A. Well, the left motor quit cold just as if somebody shut off the switch or as if the motor was starved for gas, there was not anything there. I immediately opened up the remaining two motors again and the center motor started to lose r.p.m.'s—revved down. I could shove the throttle wide open on the center motor and it would quit and go lower. I pulled it back to about two-thirds back and it would start running again and by juggling the throttle back and forth I could keep the center motor turning about eight hundred and the right motor seemed perfectly all right, it revved up wide open about eighteen hundred. So, I continued on in that direction. I looked around for a place to set down. There was not any place there, nothing but factories and buildings and wires and concrete viaduct there. It was too far away from the airport to go back into the airport and I noticed this place out ahead of me in a straight line of flying.

Q. What place? Describe it. A. It is on the map there. The place out east of the airport, I believe, it is. I believe the direction is east there. So, I headed for that space.

Q. What did it look like, this space? A. It just looked like a big open meadow swamp at that time. I don't know whether it is a swamp now or not. The stuff I had to go over looked bad. I could not—I would not attempt to land an aeroplane in there.

Q. What was in there? A. Well, it looked just like dumps of brick, concrete and garbage and it was all burning and smoking up there. The first thing that I thought of was fire. I did not want to try to set down in there, I don't know whether I could have gotten down there or not. I might have tried to side slip and go down in there, but it did not look good. The best thing looked good to me was this open space out ahead of me, so, I just headed for that space, and that is all I remember, except wires. I remember some wires up in front of me. That is the last thing I remember. I woke up in the hospital.

Q. Can you take a pointer and indicate the course of the flight on this photographic map, Mr. Foote? A. I believe I can.

Q. The scale of this map, Mr. Foote, is 200 feet for each inch, on this map. Each inch represents 200 feet. This is north here.

The Court: Keep your voice up, because Mr. Coloe, the stenographer, has to hear you. Keep your voice up so we can all hear you.

Q. This old runway does not show on this photographic map. A. As I remember it this runway

here was about in this direction, am I right on that, on this map?

Mr. George: I am sure Mr. Reed will answer the question if permitted.

The Court: No. You state what you recollect.

The Witness: As I remember this old runway came through about at this angle. I believe our wind that day was in this angle coming right off in here a little cross. At any rate, I took off and got in the air. I would say this is the city hangar. I got off just about here. I should say, took off right across here. As soon as I was well in the air I veered a little bit off into the wind so as to keep directly into the wind, went right out in here in this direction. Over here is where the buildings are.

Mr. Reed: Indicating the left side of the photographic map.

The Witness: Made a wide turn in here. After I had completed my turn about in this place here, this one motor, the left motor would not clear out.

Mr. George: May I ask the witness to make a mark there?

The Court: Where this motor went out make a mark.

Mr. Reed: I don't want to put it on the map.

The Court: Put your pointer there as showing where that is.

The Witness: Yes, approximately. I can't tell. This map should be larger.

Mr. George: May I put a mark there for cross-examination, "F"? That is where the motor went dead, is that what you said?

The Witness: That is approximately. It might have been right in here. I don't know.

The Court: Either there or beyond? There or about three inches off the map?

The Witness: Off in here I would say.

The Court: Go on, Mr. Foote.

The Witness: Then the center motor revved down just immediately after. I shoved the throttle wide open and tried to revive the left motor. The center motor was dead and from this point here I knew I could not get back in the airport. There was not anything looked good to me outside of this space right over here.

The Court: Indicating a point to the east of the railroad track, to the east of where the plane came down, the Central Railroad track.

The Witness: Just about east—northeast.

Q. Well, then, as you were in that emergency and the left motor went dead and the center motor revved down to what revolutions? A. About eight hundred.

Q. —eight hundred revolutions, was there any power gained by your center motor? Any power in eight hundred revolutions? A. Not enough power to do much good. It might help me glide a little bit.

Q. Then you had your right motor going at the full revolutions, full power? A. Yes. I had in order to keep the ship—I could not keep it on a level keel any more because I had to put the power down—the wing down that the motor was on.

Q. What did you do then in your maneuvering to keep on an even longitudinal keel? A. I put the wing down on the right side—power down.

Q. What did you do with the rudder, if anything? A. I held the right rudder.

Q. Then how did you maneuver your ship and where? What course did the ship take after that? A. I came down right across this viaduct in this space here. Probably in here, right here.

Q. Will you please indicate, Mr. Foote, on the map where this burning refuse was and bricks and all that sort of thing? A. Right in here, just on the other side of the viaduct. I remember crossing this viaduct. I remember this viaduct very distinctly and the burning bricks and garbage and everything burning in here. Here is where the fires were, right in here. I would not say here, I would say right in here.

Mr. Reed: Indicating the area between the viaduct of route 25 and the Central Railroad tracks.

The Witness: Yes, if this is Route 25.

(The witness thereupon resumed the stand.)

The Court: Now, when the left motor stopped and shortly thereafter the middle motor revved down, did you do anything or make any observations with reference to the mechanism of the plane to ascertain whether there was something you could do that would rev them up again?

A. Yes, I did. I looked at the altitude adjustments to see if they were all right.

The Court: Aside from that did you do anything?

The Witness: Only tried to revive it with the throttles. My gasoline was all right. The shut-off cocks are right up here in back of me.

The Court: Did you do anything with reference to your gasoline cocks?

The Witness: No. I did not do anything to them because they were all right.

The Court: How did you know that to be so?

The Witness: Because they were all right when I left. I glanced up at each one of them.

The Court: As you left you did?

The Witness: Yes, sir.

The Court: Well, did you observe them after you got in difficulties, that is what I want to know.

The Witness: No.

The Court: What prompted you to say that the engine stopped before as though something had happened or there had been a stoppage of gasoline?

The Witness: It acted that way. Acted just exactly like——

The Court: Did you take any steps to ascertain whether that was the thing that made it act that way?

The Witness: I thought it was the altitude adjustments. I checked those because they would do it. The altitude adjustments were to come down at low altitude and they would starve the motor for gas.

The Court: Aside from that altitude adjustment was there any reason, if that was all right—remember this——

The Witness: Yes.

The Court: Was there any reason to suppose that there was any stoppage of anything back of you or in connection with the tank that would feed one motor and not allow the others to be fed?

The Witness: No, sir. Absolutely not.

Q. Did you have plenty of gas or did you not? A. Yes. The ship had been gassed about—well, it was gassed after the trip with Wonsey.

Q. That is about——

Mr. George: I object. I think——

The Court: Go on.

Q. What time of the day was it the tanks had been filled with gas to your knowledge? A. I believe it was around one o'clock in the afternoon, maybe one thirty.

Q. What type of tanks were they on the plane? A. Three tanks. There is three aluminum tanks holding one hundred and ten gallons each, then there is a twenty-five gallon reserve in the center.

The Court: Just a minute. Now, leaving out of contemplation that instrument that you said you looked at to ascertain whether the gas feed was all right—I want to go back to this question because I want to have it cleared up in my mind and for the jury too.

Was that system, that instrument such if there had been any stoppage or any shortage of gas it would have affected the three motors rather than one or two?

The Witness: No, sir. There is equalizing valves in the line and you can feed all three motors from one tank.

The Court: And that is what was being done?

The Witness: No. They were being fed from two tanks.

Q. I think you have answered his Honor's question but I want you to make that very clear. What kind of a system do you call it? A. Gravity system.

Q. And the gravity system, how does that operate or work? A. By gravity. The gas is above the carbureters and runs down in the carbureters the same as in the old type automobile—the same as in the Ford—new type of Ford.

Q. And does the gravity system feed the whole three motors from the supply of gas? A. Yes, sir.

Q. Wherever it comes from? A. Yes, sir.

Q. So that if there was stoppage of gas in that gravity system will you tell us whether or not it will stop all three motors? A. No, it will not.

Q. Explain that. A. If they have a stoppage of gas—the screen in the carbureter had become clogged or foreign substance was in there, it would only stop that one motor.

Q. If it was in the screen of the carbureter?

The Court: That would be at the individual engine.

The Witness: If both tanks—both tanks stopped up at the same time you would starve the three motors.

Q. Suppose you had gas in both tanks—withdraw that.

Q. Assuming that the gas ran out of one tank for one reason or another, would the gas in the other tank equalize in the empty tank? A. Yes, they have equalizer valves on there that do that very thing.

The Court: Without manual manipulation?

The Witness: Yes, sir.

Q. I want you to explain that. A. You mean the mechanism of it?

Q. I mean how it comes they will equalize so that if for any reason the gas went out of one tank the gas would flow back into it from the other tanks and be the same amount of gas in each tank. A. Well, on the same principle as a gas regulator in the house so as to allow the same pressure at your gas stove all the time. There is a little equalizer there—it is about the size of two and one-half inches diameter made of brass and it equalizes the gas so you draw the same amount of gas—keep your tank level all the time, the same thing for each tank.

Mr. Reed (addressing jury): If you gentlemen wish to ask any questions on this technical matter I have not the slightest objection.

Juror Number Nine: I would like a little more explanation what the equalizer does.

Q. Will you tell us again fully—more fully how that equalizer affects the feed, how it works out?

Juror Number Nine: Not how. What does it look like? What is inside of it?

The Witness: I cannot draw a diagram.

The Court: He has got the point he is going to tell you.

The Witness: The equalizer—there are two tanks. If the ship—we will say, for instance, if you were flying in a three hundred and sixty degree circle; that is, in degrees a three hundred and sixty circle is with the one tank up high, the other one low, you might use all the gas out of the lower tank, see? This equalizer keeps the same amount of gas so that the gas from the

upper tank will run into the lower tank so that the lower tank would not run dry.

Juror Number Nine: What is inside of it? Has it a diaphragm in it?

The Witness: No. There is a brass valve in there. I don't think they use a diaphragm. It is a long time since I had one apart; in fact, since 1929. I believe it is a brass valve with a spring in there, as I remember, but the kind you are thinking of is the gas regulator, the kind with a piece of leather in there. It is not that. It has a metallic valve in this equalizer.

Juror Number Eight: You say if one tank is completely empty, you say it will equalize from the other tank?

The Witness: Yes, sir.

Juror Number Eight: How long will it take it to equalize?

The Witness: Right away. Right away it starts equalizing.

Juror Number Eight: How big is the valve?

The Witness: I think it is about one-half inch copper line, that is the outside diameter, and it tapers down to where it runs into the carbureter to three-eighths.

Juror Number Eight: What is the size it runs from one tank to the other? What is the inside measurement? Do you know that?

The Court: What he wants to know is how long it takes before it starts to fill.

The Witness: I think—I won't say for sure—I believe it is a half inch.

Juror Number Eight: It will equalize right away as soon as one tank is empty?

The Witness: Yes.

Juror Number Eight: Take no time?

The Witness: It works right now, Johnny-on-the-spot.

Juror Number Eight: You mean to say would be in the other tank at the same time?

The Witness: No. The pressure, as the ship is rocking from one side to the other, it starts using it immediately just as the pressure is going through over the line from one tank to the other.

Juror Number Three: Like a ship with ballast?

The Witness: Yes, sir.

Q. Assuming you only used one tank altogether, and the other tanks were not used at all, assuming you only used one tank, would that tank feed the whole three motors? A. Yes, sir.

The Court: That is what we want to know. You understand that question, do you? One of the jurymen has asked a question which would indicate he had some doubts in his mind. When you were on a bank and everything had gone out and you had maintained that bank for some time and you come all the way around here, you would drain that one on the top dry, assuming they were only one-third full?

The Witness: Yes, sir, also assuming that your valves are operating right so you are drawing from both tanks.

The Court: Now, you are asked whether, continuing that around with that type of bank, whether the lower tank, then being full, would still continue to feed all three motors? That is what we want to know.

The Witness: Yes. It would absolutely. You could not get it up straight so it would not run out of there because the tank is up in the wing.

The Court: You have not got it yet. Supposing you hit something and knocked off the right tank entirely, knocked off the emergency tank, you have got the left. Will that still feed all three motors?

The Witness: Yes, sir.

Q. These planes that loop the loop, don't the motors keep running even upside down? A. That is altogether different there.

The Court: You don't get it yet. Supposing that stopcock shuts them off entirely, they can't get a drop of gas from the other tank. You say still all three motors will function from one tank? That answers it; yes or no.

Q. What is the answer?

The Witness: Yes, sir.

Juror Number Five: Was it equipped with a battery for extra juice?

The Witness: Battery? You mean for light?

Juror Number Five: No. For the ignition.

The Witness: No. Santella magnetos.

Q. That Ford aeroplane is equipped with batteries to aid the magneto? A. Not to aid the magneto. They do with some motors. The Liberty motor has a battery ignition the same as a car.

Q. It is not customary on tri-motor Fords to have an auxiliary battery equipment? A. No.

Q. On the others there is some mechanical reason for them, is there not? A. Well, I don't know. A magneto delivers the best juice.

Q. Is a magneto efficient in all conditions? A. Absolutely.

Q. You told us that the left motor—one of the things that might have happened, it might be starved for gas. How did the center motor appear to act to you? A. The center motor really acted as though it were starved for gas more than the left motor. The left motor quit cold. The left motor could have been the ignition or it could be gas, too, but the center motor is the one that acted as if it was starved for gas, because when you would open the throttle wide open it would quit cold. There would not be anything there.

The Court: Just a minute. You eliminated in your mind the gas tank situation. You say "starved for gas". That gets it down to the carbureter then, don't it?

The Witness: Yes, sir.

The Court: So far as the carbureter is concerned, you don't know whether it was functioning properly or not, do you?

The Witness: They were functioning all right as far as running up until this time.

The Court: At that time?

The Witness: No. I didn't know at that time.

The Court: In other words, you don't know whether there was something in there that prevented the gas from going in the carbureter?

The Witness: They did not backfire. Usually the symptoms of a motor that is starved for gas or getting a partial amount of gas through the needle valve will backfire.

The Court: Sputter?

The Witness: Yes. And this motor did not backfire, the center motor did not backfire at all and the outboard motor just quit cold. There was not anything there, just as if you took a sledge hammer and knocked it off the wing. That is the way it acted. There was not a particle of life there, and never was any life up until the time of the crash.

Q. Before that it had been what? A. Perfect. Everything was just as perfect as could be. Revving up, temperature was all right, everything.

Juror Number Five: There could not be anything else but one or two things, either the juice or the gas?

The Witness: I don't see how it could. I don't know.

Juror Number Five: It is surely one of them two. It could not have been anything else.

The Witness: I can never tell you. I will never tell you.

Q. You really don't know? A. I don't know any more about it than you do yourself. Just one of those things—you drive down the highway in your car and she quits for some unknown reason, and there she is. You go over a bank and crack up.

Q. You cannot drive to the side of the road when you are up in the air when that happens? A. Not very well.

Q. There you were and you did not know what it was, did you? A. No, sir.

Q. With all your skill and all your years of training? A. Skill would not do any good in that predicament anyway.

Q. What? A. Skill would not do any good in that predicament anyway.

Q. With that predicament, with that dilemma and in that emergency, did you do your best to land that plane? A. I sure did. I thought—the worst of it was—I had done all right. I thought I had. I did not know anybody was even hurt in the ship.

Q. You were knocked out? A. Yes, I was knocked out.

The Court: What did you do? Drop over the wire or hit the car first?

The Witness: I must have hit the car first. I don't remember seeing the cars ahead of me. I remember seeing a lot of wires.

The Court: You remember seeing the wire running along that railroad there?

The Witness: I remember seeing a whole lot of wires, right in front of me. They are still in my mind. I can still remember that.

The Court: Just before you went out?

The Witness: I can still see those wires.

The Court: Did you have a sense of the crash or did you miss that?

The Witness: No. I missed that. I missed that part of the crash. I remember seeing the viaduct. The viaduct is about the last thing I can really recall, and the dump.

The Court: Just give us the picture just before you went out, the last thing.

The Witness: I can remember this smoke and stuff coming up out of the dump and

this rough space down here to land and then I can remember wires.

The Court: Is that the last thing you remember?

The Witness: That is the last thing I remember.

Q. You woke up where? A. In the hospital.

Q. What was the matter with you when you woke up? A. Oh, I had plenty.

Juror Number Five: If you had not hit the wires, would you have made a safe landing? What was it? Grass on the other side of the railroad?

The Witness: Yes. I imagine it was swamp grass.

The Court: Salt meadow grass.

Q. Was it your belief when you made that maneuver and made your glide and went straight ahead you were going to make that meadow? A. I was sure I was making that meadow. I had a feeling I would crack up because I was almost down wind and that's bad.

Q. You did not have the power to climb? A. No.

Q. With your motors gone? A. I should say not. I tried to put the motor on and put the wing down. The torque was so great I could not hardly keep in control down wind that way. I had so much speed I knew when I landed I would crack up. There was no question about that.

Q. Even knowing that, did you keep right at your controls maneuvering that ship right up until the time you were knocked out? A. Absolutely.

Q. Did anyone in any way interfere with your maneuvering of that ship? A. No, sir. Parsons was sitting up there besides me. He never moved and never touched a thing.

Mr. George: Who? Parsons?

The Witness: Parsons, yes, sir.

Q. It has been said here, Mr. Foote, by someone—some laymen who were down on the ground that after you made this take-off when you got just about here, just beyond that triangle at an altitude of one hundred and fifty feet your plane made a sharp turn to the right here going off in this direction about parallel with route 25. A. Absolutely not. He is in error because there was never any such turn made. I never turned until I got past the railroad. Whoever said that is totally in error.

Q. Don't tell us what they are, Mr. Foote. He was very mild about it. Had you at any time on that day—at the time of the last flight or any other flight—made a sharp turn to the right angle, right at an altitude of 150 feet? A. Absolutely not. I don't do that kind of flying with a ship that large.

Q. I think it has also been testified by one or two witnesses that after that turn in this vicinity you went along here—using this map, I believe it was—and over here, somewheres in this point up there at an altitude of 300 or 350 feet you made another right angle sharp turn. Did you? A. Absolutely not.

Q. Did you make any such maneuver on that last flight at all? A. I showed you exactly the line of flight and that is exactly what I did.

The Court: Now, after you had straightened out on this arc and after you had

noticed the engine going dead, did you make any sudden drops or was it a gradual decline?

The Witness: A gradual decline. I started to lose altitude right away immediately.

The Court: Did you make any sudden drops—perceptible drops——

The Witness: No. They were not. The gusty air might have made the ship——

The Court: I am not through—in mechanical flight?

The Witness: No. I did not maneuver the ship that way if that is what you mean.

Q. After you had completed this wide arc and you were over here at this point before your left engine quit and you were straightened out, what was the height of your aeroplane at that time, before the left engine quit and the center motor revved down? What was the height of your plane then? A. Approximately six hundred feet.

The Court: Now, was that at the peak of your highest altitude?

The Witness: Yes.

The Court: Six hundred?

The Witness: Yes, that's about as high as I got on that trip.

Q. What was your altitude as you made this arc, sweeping turn—wide sweeping turn? What was the altitude? A. It was a gradual climb up until I had reached six hundred feet.

Q. When you started your arc, how high were you when you made the wide sweeping arc out here a mile and a half? What was your height

there? A. I was climbing all the time around there until I got to six hundred feet.

The Court: The reason I am interrupting you, Mr. Reed, is because this evidence is in: Now, in that same course as you were out directly over the airport before you started to make any turn, did you notice any laboring of the motors?

The Witness: No, sir.

The Court: Did you notice any stickiness or heaviness of the ship different than it had been on any other trip?

The Witness: No. The motors were all right. All three of them were just o. k.

The Court: All pulling?

The Witness: I checked the r. p. m.'s and when I brought my throttles back to synchronize my motors, the r. p. m. was all right.

The Court: They all synchronized, did they?

The Witness: I don't remember if I got them totally synchronized or not. If the wind is a little bit rough it is hard to get your motors synchronized right away until you get straightened out, but I brought them back so as not to turn full throttle, a little better than a cruising speed. I was still in the climb.

Cross-examination by Mr. George:

Q. You are connected now with the American Airways? A. Yes, sir.

Q. Practically the same organization as the Colonial? A. Yes, sir, it is the Colonial Division of the American Airways.

Q. I understand you to be a pilot now? A. Yes, sir.

Q. A licensed pilot? A. Yes, sir. Number 2202.

Q. I did not ask you the number. I will come to that in a moment. Licensed to fly commercial planes? A. Yes, sir. Would you like to see my license? I have it here.

Q. Wait a minute. You will have lots of time to answer my questions, Mr. Foote. Is it a fact on February 5, 1931—isn't it a fact that on February 5, 1931, your transport pilot's license number 2202 was on September 19, 1929, by the Department of Commerce, Aeronautics Branch, revoked for incompetency in operation of aircraft at Newark, New Jersey?

Mr. Reed: I object to that as irrelevant.

The Court: Sustained.

Q. Was your license revoked?

Mr. Reed: The same question. Same objection.

The Court: Sustained.

Q. But you are not flying now, are you? A. Yes, sir, I am.

Q. For whom? A. American Airways.

Q. Commercial plane? A. Yes, sir.

Q. Taking up passengers? A. Yes.

Mr. Reed: I object to that as immaterial and irrelevant, if the court please.

The Court: Let it stand inasmuch as he has said "yes". But, don't pursue it. Let us get down to this accident, we have enough bother right there.

Q. Mr. Foote, you came in from Dearborn, Michigan, to take up your job at the Newark Airport for the Colonial, right? A. Yes, sir.

The Court: Just a minute. I think that inasmuch as we are more or less of a happy family here, the jury might want to know something about revocation of licenses and so on. The reason the court sustained that objection is there is a well-founded reason for the law. That has not got anything to do with this case. You are trying the competency of this pilot, not taking what somebody else has done. I want that to go along with the sustaining of the objection. It is well recognized in law.

Q. You came in to take up your job as pilot for the Colonial Western Airways? A. Yes, sir.

Q. There had been some talk about after breaking you in for a month or so you would be given a job on flights upon a new route to be opened about a month after the time of the accident by the Colonial running between Boston and New York?

Mr. Reed: I object to the talk. He himself objected to the conversation.

The Court: Sustain the objection to the question in that form. That is not substantive evidence.

Q. What were you employed to do?

The Court: Very good.

The Witness: Fly a tri-motor aeroplane.

Q. Where? A. For the Colonial.

Q. Where? A. New York to Boston.

Q. When you started your job at the Newark Airport you were not flying New York to Boston, were you? A. The line had not started. I could not fly it.

Q. Exactly. You were breaking in then at Newark Airport for that purpose, weren't you? A. Yes, sir.

Q. And that line was opened about a month later, wasn't it, between New York and Boston? A. Two weeks, I believe.

Q. Now, did you come in from Dearborn by automobile or train or aeroplane? A. By automobile.

Q. You drove all the way? A. Yes, sir.

Q. When did you leave Dearborn? A. The 13th of March, I think.

Q. How many miles is Dearborn from Newark Airport? A. I don't remember.

Q. About how many? A. I would say about 750 miles, maybe more than that.

Q. Beg pardon? A. Maybe slightly over that.

Q. You started from Dearborn about what time of the day? A. Early in the morning—no, it was at night, I guess.

Q. Started at night?

Mr. Reed: We object.

The Witness: I believe it was in the evening—afternoon.

Q. How long did it take you—withdraw that. Did you drive continuously? A. No.

Q. Stopped off where? The first stop? A. The first stop was at Chatham, Ontario, Canada.

Q. How long did you stay there? A. Just slept over night, continued on in the morning to Buffalo and from Buffalo to——

Q. Left Buffalo when?

Mr. Reed: Let him finish.

The Witness: Arrived at Buffalo about that next night.

Q. On the 14th or 15th? A. On the 14th.

Q. You arrived at Buffalo on the night of the 14th? A. Went through Buffalo.

Q. Where did you stay during the night of the 14th? A. I don't remember.

Q. Some— A. Some small place.

Q. Some little place along the road? A. Yes, sir.

Q. Left on the morning of the 15th, did you, after your night's rest? A. Yes, sir.

Q. And then what was your next stop after that? A. I don't remember the name of the town, some small town, town in the mountains there.

Q. What mountains? A. I think it was down in Pennsylvania over in the corner of Pennsylvania, going through there. The White Mountains, I think it was, if I remember correctly.

Q. White Rock? A. No, White Mountains.

The Court: You are thinking of something else.

Mr. George: May I ask that be expunged from the record.

The Court: It will be. It has been.

Q. How many miles did you do of driving on your last day before arriving on the day of arrival? A. I think it was over seventy or eighty miles.

Q. You did more than two hundred and fifty miles of driving a day for three days, didn't you? A. I don't know how far it was. It is 530 to Cleveland by air from Albany. I don't think it is over eight hundred miles.

Q. You were traveling three days, weren't you? You left on the evening of the 13th and arrived here on the afternoon of the 16th, isn't that so? A. I guess that's about right.

New Jersey State Library

Q. So you did more than two hundred and fifty miles in each of the twenty-four hours, didn't you? A. No, because the last day I know was almost—I could have come into Newark that very night but we stayed in—stayed over—I stayed over—I don't know where it was—some little town in Pennsylvania there. I could have come through that night if I wanted to. I did not do it.

Q. You were quite tired, that was the reason, wasn't it? A. No. The fog got bad. I was not tired but the fog was so bad I could not see.

Q. What time did you arrive at Newark Airport? A. In the afternoon some time. I don't remember. It was shortly after noon, I believe.

Q. Was it a clear day? A. Yes, fairly clear, I think.

Q. Not entirely clear, was it?

Mr. Reed: You are talking of Saturday, now?

Mr. George: Yes, Saturday, at the time of his arrival.

The Witness: Yes, I believe it was. It might have been a little hazy, but it was a good day. The sun was out, so it could not have been very bad.

Q. Then you drove up to the airport in your automobile, right? A. Yes, sir.

Q. Were you alone in your car? A. No, sir.

Q. Who was with you? A. I had my wife with me.

Q. Whom? A. I had my wife with me.

Q. You had your wife with you? A. Yes, sir.

Q. When you drove up to the airport did you get out of your car? A. Yes, I think I did. I got out and looked around.

Q. You are not sure, are you? A. Yes, I am sure.

Q. Now, you are sure you got out of your car? A. I got out of the car and looked around.

Q. Did you talk with anyone at the airport? A. No.

Q. Not a soul? A. No.

Q. How far did you walk from your car? A. I don't know.

Q. Well, about from where you are to juror number six? A. I would say I walked maybe a couple of hundred feet down across the edge of the field there and back.

Q. Then you walked back to your car? A. Yes, sir.

Q. Then drove over to New York? A. No, no. I came back to Newark and I went over to New York on the subway.

Q. With your wife? A. No. I went over alone.

Q. And where did you leave your wife?

Mr. Reed: I object to that as immaterial where he left his wife when he went over to New York.

Mr. George: I will withdraw it for the present. I will meet that situation later.

Q. You left your car in Newark, didn't you? A. Yes, sir.

Q. And went over to the Colonial offices and signed up? A. Yes, sir.

Q. And then did not come back to the airport until the next day, is that right? A. No, no. I came back that following afternoon.

Q. That is what I am talking about, the next day. You arrived on the 16th, didn't you? March 16th? A. I came back to Newark on the 16th.

Q. What? A. Came back to Newark on the 16th.

Q. When did you arrive at the airport the first time? A. On the sixteenth.

Q. Then you got out of your car and walked about one hundred feet and came back to your car?

Mr. Reed: He says a couple of hundred feet.

Mr. George: He also said one hundred too.

The Court: Whatever it was.

Q. Got back into your car, drove to Newark, left your car there, went to New York and came back to Newark, is that right? A. Right.

Q. Now, when did you come back to the airport again? A. The next morning.

Q. Yes. That is what I am trying to find out. What time? A. Ten thirty or eleven, I think.

Q. Ten thirty or eleven? A. Approximately. I don't know exactly the time.

Q. Then after arriving at the airport about eleven o'clock, you say, on Sunday, the day of the crash— A. I believe it was a little before eleven. Ten or eleven.

Q. —did you stop in the office of the hangar or of the municipal airport offices or bull pen or whatever else it was where you talked with someone connected with the Colonial? A. Yes.

Q. Where did you go? Into what place? What office? A. In the hangar.

Q. The Colonial hangar? A. The city hangar.

Q. The city hangar. You talked with Lieutenant Aldworth there? A. No. I don't believe he was on the field.

Q. What? A. I did not see him.

Q. Did you talk with anyone in the hangar? A. Yes.

Q. Whom? A. I don't recall their names, somebody connected with the airport.

Q. Then you went out on the field and finally saw somebody connected with the Colonial Company? A. Yes.

Q. Where did you change clothes from ordinary street wear to flying wear? A. You don't have to change clothes to fly a tri-motor ship.

Q. Did you do so, though? I did not ask you whether you had to? A. No.

Q. You brought your equipment with you? A. I did not have any, don't use any.

Q. Did not use any goggles or anything of that sort? A. Why should you?

Q. Don't ask me. I have never been in a plane. I don't know what the inside looks like. I assure you it will be a long time before I do learn about the inside of a plane? A. I would not be too sure about it.

Q. I am sure unless I am kidnapped.

Mr. Reed: You are not going to take a chance?

Mr. George: I have heard too much.

The Court: You promised me this noon you would go up with Mr. Brown.

Mr. George: Under certain conditions.

Mr. Reed: I will go up with Mr. Foote.

Mr. George: You can do so.

Q. Now, Mr. Foote, you went out on the field, and did you finally see Lieutenant Aldworth? A. No. I never did see him.

Q. But you had gotten in the 4-AT? A. No. I don't believe—I don't think he was around that day.

Q. Did you see Captain Weatherdon? A. Yes.

Q. He was chief pilot, wasn't he? A. Yes, sir.

Q. He gave you the instructions? A. Yes, sir.

Q. He told you what to do in the handling of this plane? A. Yes, sir.

Q. He told you to go off for at least one thousand feet before making a turn, didn't he? A. I don't remember that.

Q. You would not deny he told you that, will you? A. What do you mean? One thousand feet?

The Court: Beyond the runway.

Q. Straight ahead. This way (indicating), not up this way. A. I don't remember any conversation of that kind.

Q. You won't deny he said that to you, will you? A. I would not say he did either.

Q. You would not say he did not? A. No.

Q. Isn't it true also that he told you before making the turn towards New York to make a left turn—rather, when you make the turn to make a left turn? A. No.

Q. Didn't he also tell you to make an altitude of at least one thousand feet before making a turn in either direction? A. Absolutely not. It is ridiculous.

Q. I am going to ask you to please be good enough to step down so we can better understand each other, just for a moment, anyway. Is this point where you marked "F"—I marked with your permission the point at which the motor went dead—the left motor went dead—or, as you suggested, it might have been about here? A. About here.

Q. Let me see, so we will have no misunderstanding about it. I want you to state where it was. A. (Witness indicates.)

Q. About four inches off the very edge of the map, is that right, and at about that longitude, right? A. Right.

Q. Then, the way the map is now, it is granted it is right in there? Right about here?

Mr. Reed. His indication before was three inches off the map.

Mr. George: He is indicating now. I am not going to allow in your testimony.

Mr. Reed: I might join in.

Q. This is about the point where your motor went dead? A. About the point where I turned. I turned around on that side. I got well on my way (indicating).

Q. Tell us approximately where your motor went dead, where you noticed it for the first time. A. I say it went dead right here.

Q. Was that the place of the first—the point—rather the location of your plane when you first learned that there was something wrong? A. Yes.

Q. Now, then, will you resume your seat for a while?

(Witness returns to stand.)

Q. Now, Mr. Foote, when you took off on your last flight you had thirteen passengers or fourteen? A. Fourteen.

Q. Those fourteen included Parsons, a man named Parsons? A. Yes, sir.

Q. Isn't that so? A. Yes, sir.

Q. Fifteen people in the plane altogether, including yourself? A. Right.

Q. Parsons sat in the cockpit, didn't he? A. Yes, sir.

Q. He was not a passenger, was he? A. Yes.

Q. A passenger who paid fare? A. I don't know. I could not say as to that. I could not say as to that, whether he paid or not.

Q. Did you know Parsons before you went up with him that day? A. No, I never met him.

Q. But don't you know he was not a passenger for fare?

Mr. Reed: He has answered it.

The Witness: No. I can't say if he was or not.

Q. But he did sit in the cockpit? A. Yes, sir.

Q. And aren't you acquainted with the regulations of the Department of Commerce which prohibit any person from sitting in the cockpit of a commercial plane who is without a pilot's license?

Mr. Reed: I object, if the Court please. He first has to show there is any such regulation as that.

The Court: Sustain the objection.

Mr. George: I asked if he knows.

The Court: Sustain the objection.

Q. Was Parsons a licensed pilot to your knowledge? A. The only thing I know, Mr. Weatherdon brought him in there and he, I believe, had done some flying. I don't know what kind of a license he had or for sure if he had a license. He told me it was all right for him to go along and Weatherdon was my boss.

Q. And right or wrong, license or no license, being your boss, you obeyed instructions?

Mr. Reed: I object to the form of the question.

Mr. George: It is his own statement.

The Court: You took him along?

Q. Isn't that so? A. Yes, I took him along.

Q. How much time did you spend at the airport—withdraw that. How much time did you spend in the hangar Sunday morning a few minutes before eleven o'clock on the morning of March 17th in the municipal hangar? How long were you inside there? A. I couldn't say. I don't remember.

Q. Well, five, ten, twenty or thirty minutes? A. I was not in there very long.

Q. How many minutes? A. I can't say.

Q. Well, was it an hour? A. It was not an hour.

Q. Half an hour? A. I don't know.

Q. Give us an estimate as near as you can remember.

The Court: If you can.

The Witness: I would not say it was over ten or fifteen minutes.

Q. How much time did you spend on the field after coming out of the hangar before getting into the plane? A. Not very long.

Q. Ten minutes? A. I could not say. I went up as soon as the ship came in. I don't know how long that was.

Q. When you came out on the field she was coming in? A. No. I think it was over New York at that time.

Q. About fifteen or twenty minutes? A. Yes.

Q. You were talking with Captain Weatherdon outside of the hangar during that period of time, weren't you? A. Captain Weatherdon was in the Ford, I believe.

Q. Oh, yes. Who were you talking with outside? Aldworth? A. I don't remember seeing him.

Q. Somebody, were you talking with someone? A. Yes. I talked with several around there.

Q. Standing there waiting for the number 41 ship to come in, is that right, the 4-AT? A. Yes. I was not well acquainted there. I don't remember who I was talking to at that time.

Q. Aside from the identity of the person to whom you talked, you were talking with somebody and standing there waiting for this ship to come in, isn't that so? A. I was standing observing the airport.

Q. While standing in that one place you were making the observation? A. Walking around, around the hangar and the airport.

Q. Now, how many trips did you make in the plane, this fatal plane, before you finally took over the controls yourself? A. I believe it was five.

Q. Five? A. I believe so.

Q. You mean then you had not touched the controls at all until the plane had made five trips with you in it? A. No. That is not what I mean.

Q. All right. A. That is not what I said.

Q. Tell us. What do you mean? A. I mean just what I told you. Ask that question again. I will tell you.

Q. How many trips did you make in the plane before you finally took full control of the plane by handling the controls? A. I said I think it was five. When there was not anyone else in the ship but me as pilot, is that what you mean?

Q. Well, let us see. Maybe—I think we are both at cross purposes. You went up in the plane with Wonsey, didn't you? A. Yes, sir.

Q. He was the man with whom you first sat in that plane before being pilot, isn't that so? A. Yes, sir. I went with Wonsey. I will tell you how, to get this straight. I handled the controls

of the plane in every trip except the trip with Wonsey.

Q. So that you handled the controls entirely? A. No, no.

Q. Didn't you take the controls on your second trip? A. Yes.

Q. And handled the plane entirely from that time on? A. No.

Q. What do you mean when you say "no"? Who else handled it? A. Partially.

Q. You mean while the flight was in progress you divided the control of the operation of the plane? A. Exactly.

Q. First one would take it then another would take it? A. Exactly.

Q. One would take off and another would land? A. Yes.

Q. And while the ship was going over the Statue of Liberty or over the Woolworth Building or wherever it was going, you were participating in the control at that time? A. Yes.

The Court: You said "Parsons."

The Witness: No. I said "partially."

Q. That is a fact, then, is it? A. Yes, sir.

Q. And were passengers in the plane? A. Yes.

Q. Why? A. Why not?

Q. Don't ask me. I don't know. I am trying to find out from you. A. It does not make any difference.

Q. I am a struggling lawyer, not an aviator. A. We were both pilots, we both knew how to fly.

Q. If you both knew how to fly, why was it necessary to transfer control in the progress of a flight, especially a short flight of fifteen or twenty minutes? A. So I could fly that ship. I had not flown that ship before.

Q. And it was because of your unfamiliarity with the ship that you were being broken in gradually, is that it? A. No. Not absolutely. To give me a chance to look over the terrain and the country and also the course.

Q. As well as to learn how to handle that ship? A. I knew how to handle that ship. That is all I had been flying for the last seven months.

Q. Then, if you did not have to handle the controls for the purpose of learning how to handle the ship, why didn't you devote all of your time to studying—that most important part of hopping —studying the terrain and not the controls?

Mr. Reed: I object to that.

The Court: Sustained.

Q. Did you satisfy yourself on one hop of a short period you had mastered by observation that whole terrain and that you could sit down under normal circumstances?

Mr. Reed: I object to that.

The Court: Sustained.

Q. And the only observations that you made of the terrain were those you made on the one hundred foot walk from your automobile while your wife sat in the car at the time that you took these trips with Wonsey or Weatherdon or both?

Mr. Reed: I object to that. That is not the testimony.

The Court: Overruled. This is cross-examination.

Q. Is that the fact? A. Yes.

Q. Those were the only observations you made? A. From flying with Weatherdon and Wonsey and

driving out with my car to the airport were the only observations I made.

Q. Mr. Foote, you have described the terrain in here where I am pointing east of the viaduct at about South Street, or southwest of South Street, down in here somewhere, somewhere in this whole area in which the crash took place as dumps; some smoke, and so forth, right? A. Yes.

Q. That is just about where the crash took place, over here against one of the gondolas loaded with sand? Now, what is the terrain in all of this area that I am describing here east of the highway and bounded on the south by Port Street, all in here. What is that terrain like? What was it at that time? A. Rough ground and some swamp.

Q. But nothing burning, no dump, is that right? A. I don't remember. I was not over that part of it at that time. I was away back over the center.

Q. Here is your airport in here. You want to tell the Court and jury that getting out of your car right in this vicinity of the airport and walking one hundred feet and making observations—I take it you looked all around, didn't you? A. (No answer.)

Q. Didn't you? A. I looked around the airport, yes.

Q. Only the airport? A. Mostly.

Q. Didn't you look beyond the road to see what else there was beyond the road? A. I suppose I did, but I don't remember exactly.

Q. But you remember the terrain right in this point and you remember the terrain away over here, don't you? A. Yes, because I was flying over there.

Q. That is all level land, substantially level, south and southwest of the Pennsylvania Railroad here, isn't it, all along the airport there and down

below the airport away down here? That is all level and marshy land? A. Not then, not then; absolutely not.

Q. What is it? A. That is all marsh and mud and holes and everything else. That has been all hydrauliced in there since then.

Q. How? A. It has been hydrauliced in there. Half of the airport has been built since 1929.

Q. Was it mountainous? Was it built up with skyscrapers? Or, was it reasonably level? I am not talking about whether it was dry or wet, hard or soft. Wasn't this whole area down here substantially level? A. No.

Q. Was it mountainous? A. No. Gullies and refuse.

Q. Gullies how deep? A. About—I would not say. I never measured them.

Q. You cannot tell whether they were three inches deep or three feet deep, can you? A. Yes.

Q. Will you tell us that? A. I suppose they were around from three to six feet, maybe ten feet.

Q. All of that by observation walking one hundred feet from your car and otherwise by taking off of these runways and getting up into the air, that is the way you were to study this land down here, say, a half a mile from the airport? A. That is the only way to study it.

Q. And you could judge in that way that the depth of the gullies was over three to six feet, is that right? A. Yes.

Q. Now, then, the land on the west of route 25 that is bounded on the south and the east by route 25, what is the character of the land in this section? A. Mostly swamp and marsh land.

Q. Holey? A. No. It was not very holey in there. It is mostly swamp and marsh land.

Q. Substantially level? A. I think it is, approximately.

Q. And for quite a distance from the highway and from the airport, isn't that so? A. No, not very far.

Q. How many feet, approximately, from the highway or from the airport? A. Measure it. You got the rule there.

Q. I know I have. I am holding it in my kit waiting to hear what you are going to say. A. I don't know.

Q. Can you give us an estimate? A. No.

Q. Would you say it is one thousand feet? A. I don't know. Put the rule on it and I will tell you.

Q. I am going to in a moment. But you made observations of the terrain before engaging in the piloting of a plane carrying human beings for hire?

Mr. Reed: I object to that. It is pure summation in the question. It is all just jury stuff.

The Court: Sustained.

Q. You made observations as a pilot to carry passengers in a plane, didn't you, on short trips, isn't that the fact? A. Yes, sir.

Q. Observations of the terrain, right? A. Yes, sir.

Q. And answering Mr. Reed in his direct examination when he asked you why did you make the observation which takes in the looking over the ground, was that in the event or necessity of knowing where to sit down, is that right? A. I made the best possible observation that could be made under those conditions.

Mr. Reed: Let him finish.

Mr. George: I will let him finish, don't you worry about that, Mr. Reed.

Mr. Reed: You don't. That's the trouble.

Q. Yet, you can't tell us what the distance is west—northwest from the highway just about this point and the character of this land? A. No. I don't know what the condition is there.

Q. Would you deny it is two miles?

Mr. Carpenter: Where? What is?

The Witness: I don't know. I can't tell you how far that is.

Q. Will you deny it is about two miles? A. I won't deny anything.

Q. What? A. I won't deny it, no.

Q. Now, when, in the course of your making observations and partially controlling the aeroplane on those—I think five or how many hops there were before the last and fatal crash—how many landings had you made of that plane? A. You mean of that particular ship?

Q. Oh, yes. That is the only one I am talking about now. A. I don't know. I think it was around three, I believe. I am not sure, but I think it was three.

Q. And one of those landings was short of the airport, wasn't it? A. Short of the airport?

Q. Short of the runway or wherever you are supposed to land? A. No.

Q. Didn't you get stuck in the mud? A. Stuck in the mud?

Q. Yes. A. Absolutely not.

Q. And didn't you have— A. I was in the ship when it got stuck in the mud. I was in the pilot's cockpit with Wonsey when it got stuck in the mud.

Q. Now, who landed the plane on the landing immediately before the last take-off on that plane? You did, didn't you? A. When?

Q. The very last landing prior to its last take-off? A. I did.

Q. And didn't you drop in the mud and didn't you have to have the plane towed out by a tractor? A. No, sir.

Q. Well, did the plane have to be towed—was the plane towed out by a tractor on any one of the rides that you had? A. Yes.

Q. Why? A. Because——

Mr. Reed: I object to why, if the Court please.

Mr. Carpenter: Let him explain.

Mr. George: Now I have counsel quarreling.

The Court: Go ahead.

The Witness: The trip up with Wonsey we taxied down the runway and the ground out there had just been hydrauliced in. It was pretty soft in places after the rain and in taxiing down to take-off why the—I think it was the right wheel went down over a soft place there and we were stuck, so the tractor came out and pulled us out.

The Court: But you were not at the controls then?

The Witness: No, I was not at the controls. I was at the controls, but that was the trip I was up with Wonsey. We both had the controls.

Q. Both handling the ship at the one time? A. No.

Q. What do you mean by "both at the controls?" A. Well, the control was in front of him and it was in front of me.

Q. Well, who was working it? A. Wonsey was actually manipulating the ship at that time.

Q. Now, at the time you made one trip—the very first trip even—as a co-pilot with Wonsey at the control, you determined the ship was air-worthy, didn't you? A. Yes.

Q. That was the very first time you had ever seen that ship in your life, isn't that so? A. Yes. I believe it was. I might have seen it before.

Q. Is there any doubt about it? A. I might have seen it at the factory.

Q. I mean as far as flying is concerned? A. Yes, sir.

Q. The first time you had ever seen it in your life? A. Yes, sir.

Q. And you had been in it only a few minutes when you decided it was air-worthy? A. Yes, sir.

Q. And you had not even up to that time maneuvered the ship or tried it out to determine its air-worthiness, had you? A. You can determine the air-worthiness by action of the controls and the wires and so forth around the ship. The ship looked like it was air-worthy. It was clean. It looked like it was kept in shape. That is all. I had not flown it yet. The ship looked and appeared as if it was air-worthy.

Q. You determined that the first few minutes you were in the plane? A. Yes. After Wonsey took off I did, I determined it was air-worthy.

Q. And did you make any detailed inspection of the fuel system or the ignition system of this plane before you took the controls? A. What do you mean by detailed inspection?

Q. Just exactly that. A. It has only the three switches, the master switch and the two gas throttles.

Q. Did you make any inspection of the fuel system? A. Only the shut-off valve.

Q. What inspection did you make of that? A. Just examined them and turned them on. They felt all right. They worked all right. They dropped into the notch where they belonged.

Q. Merely looked it over and it looked all right?

Mr. Reed: I object. He has not said that.

Q. Is that the effect of what you say?

Mr. Reed: That is not the effect at all.

Mr. George: I am asking this witness if that is what it means.

The Court: All right. Answer it.

The Witness: I looked over the instruments and the gasoline shut-off valves.

The Court: Did you manipulate them to see whether or not they would function properly and all that sort of thing?

The Witness: Before I got into the ship?

The Court: Any time.

The Witness: Yes. When I took the ship myself, yes, I did.

Q. Then you assumed the responsibility of the ship, didn't you?

Mr. Reed: I object to the form of the question.

The Court (To witness): I think that is what you wanted to tell.

Q. Before you undertook that responsibility did you drain the gasoline to see if it was clean? A. No.

Q. Why not? A. It was not my business to do that.

Q. You relied upon somebody else having done that? A. Yes, sir.

Q. And you took it for granted, of course, that somebody else did do that? A. Yes, sir.

Q. And were willing to let it go at that?

Mr. Reed: I object to the form of the question.

The Court: Yes. Is it the practice for the pilot in charge of that ship to take care of the mechanics of a ship? You were just there to fly, weren't you?

The Witness: Yes. The mechanics had serviced the ship in the morning, as I understood. The ship had been flying and naturally I would not have any occasion. If the ship had been standing for a week or two, or even a day, why, then, I would have to make an inspection, a daily inspection, and check all that, but I was not supposed to do that.

Q. Not at all? A. No, sir.

Q. You had nothing to do with the inspection? A. Not that ship. They had mechanics hired and the mechanics had already made that inspection.

Q. Now, before taking off, of course, you burned out the motors? That is the common practice, isn't it? A. Yes, sir.

Q. That is, revved them up to see what the r.p.m. capacity, to see that they are functioning normally?

Mr. Reed: You put it wrong.

Mr. George: Just a minute. You have no right to characterize my question, "You have put it wrong." If you don't like it, object, and Judge Ackerson will determine that.

Mr. Reed: I object. He did not say he burned out the motors.

The Court: That is the language he used, isn't that so?

The Witness: Yes, sir.

Q. When we speak of burning out the motors, and revving them up—burning them out means getting them up to the proper temperature for flying, revving them up to see that they will make the proper capacity r.p.m.'s, right? A. Yes.

Q. Now, if one of the motors by indication through the tachometer did not rev up to within 400 r.p.m.'s with the other two, you would not start off, would you? A. I should say not.

Q. That would be an indication your motor is not giving the power it should, right? A. Right.

Q. And an indication that something may happen in the air, isn't that so? A. Certainly.

Q. And you would put a greater strain on the other two motors for pulling around that port motor that is laboring? A. I doubt if you would get off the ground.

Q. You would not even get off the ground? A. I don't think so.

Q. Suppose you revved up, Mr. Foote, two thousand r.p.m.'s on two motors and the other one revved up to sixteen hundred, do you mean to tell the Court and jury you won't get off the ground? A. Two thousand? They don't rev up that.

Q. I am assuming they did.

The Court: Make believe they did.

The Witness: Yes, you could get off but there would not be—it would be very poor judgment to try to take off unless all three motors were revving up.

Q. The reason being it diminishes the safety factor and increases the danger factor, right? A.

If the two outboard motors were turning up the same r.p.m.'s and the center motor, say, was only turning up twelve hundred, why, that would be perfectly safe to take off.

Q. But not quite as safe as if all three were revving up to the same r.p.m.'s? A. There is a safety factor if you knew that motor was going to turn that much it would be just as safe as all three, but having one outboard motor turn more than the other outboard motor, it would be dangerous.

Q. Because you have a double strain on the whole plane, because you have to equalize it by the ailerons and rudder? A. You have to take care of your control.

Q. Yes, because there is a greater pull on one side of the plane than on the other? A. Right.

Q. So that if the motors were revving in that manner two thousand each on the burning out, that is, the center and right motor, for instance—this is merely an illustration, Mr. Foote—and the left motor fifteen to sixteen hundred, you would not take off, would you? A. No, sir.

Mr. Reed: I object on the ground there is no evidence during that part of the day when Foote was there anything of that kind happened at all.

The Court: Sustain the objection. Strike out the answer. That is not the testimony.

Mr. George: Mr. Shaw testified——

The Court: He said that two of them went to eighteen and the other was sixteen.

Mr. Reed: Two thousand. Also, he said, your Honor, that was at eleven thirty in the morning before he made any trip at all, not at any time while Foote was flying that plane in the afternoon. He said the first trip that day. He said it was from half

past eleven until twelve o'clock, something like that.

The Court: Go ahead.

Mr. George: Has your Honor ruled?

The Court: I have ruled, go ahead.

Q. Suppose the outboard motor and the right and center motor were revving to eighteen hundred and the left motor was revving fifteen to sixteen hundred, would you take off?

Mr. Reed: I object.

The Court: Strike out fifteen hundred and leave in sixteen hundred. Answer the question.

Q. You would take off? A. No, sir.

Mr. Reed: He is making him his own expert.

The Court: He is an expert. All right.

Mr. Reed: He is making him his own witness.

Q. Your answer is "no", you would not take off? A. Yes, sir.

Q. Because of the factor of danger? A. Yes, sir.

Q. As you were burning out your motors immediately before the take-off and just about starting or before actually getting started on the take-off, if one motor were sputtering as distinguished or counter-distinguished from the other two motors, would you take off under those conditions? A. Absolutely not.

Q. Because of the factor of danger? A. Yes, sir.

Q. If you had noticed on the flight immediately preceding the last flight that the motor were sput-

tering—one motor—any motor of those three were sputtering and there was an emission of black clouds of smoke intermittently, would that have been sufficient to induce you to make a minute examination or inspection of the motor before taking her out again? A. Absolutely, yes, sir.

Q. Because that is an indication that there is something wrong with your motor? A. Yes, sir.

Q. And it would therefore be dangerous to go up? A. Yes, sir.

Q. Under those conditions, right? A. Absolutely.

Q. Now, let me ask you another question, so long as Mr. Reed has qualified you as an expert. Would you make a sharp turn in this wind as you found it to exist on that day, taking off on the southwest runway, would you make a sharp turn, with fourteen persons, at an altitude of one hundred and fifty feet? A. No, sir.

Q. Dangerous? A. It would be ridiculous unless there was an emergency arose where it had to be done.

Q. And if there were no emergency arising which made such a maneuver necessary, you say it would be ridiculous because it would be extremely dangerous? A. Certainly.

Q. And by the same token, am I right in saying that assuming that same kind of a sharp turn following the course I am indicating on the survey map, making the first sharp turn at an altitude of one hundred and fifty feet at the point "I-1" and proceeding northeast up on this side of South Street beyond "I-2," and making a sharp turn there easterly at an altitude of three hundred and fifty feet—you would not do that there, would you, with fourteen persons aboard, down wind, too? A. You would be safe enough in doing it at three

hundred and fifty feet all right, but I don't believe I would do it. I would continue, unless it was such that it had to be done. It could be done easily without any danger.

Q. Without any danger? A. Yes, without any danger.

Q. A sharp turn with fourteen passengers, with the plane into a down wind at three hundred and fifty feet? A sharp turn? A. Well, I don't know what you mean by "a sharp turn."

Q. A turn exactly as I have indicated here going up to this point and then a sharp bank, turn, due east. A. Not a banked turn. I would not do that, a steep bank.

Q. That would be dangerous, wouldn't it? A. Well, it would not be dangerous. It can be done without danger at all, but I would not do it.

Q. Why wouldn't you do it? A. Why, because the passengers don't like that kind of flying as a rule.

Q. It is bad piloting to do anything like that, isn't it, generally? A. You could not call it bad piloting. It could be done if the emergency was there that it needed to be done. It would be all right to do it.

Q. Isn't that the very reason it would be bad piloting, because you have not enough altitude to meet an emergency if one should arise at such an altitude? Isn't that the very reason it would be bad policy?

Mr. Reed: I object to that as argumentative.

The Court: Furthermore, he has not said that would be bad piloting. He said he would not do it.

Q. Is that the reason you would not do it? A. I would not do it unless the emergency arose and I had to do it.

Q. Isn't the reason you would not do it because you would not hardly have enough altitude at three hundred and fifty feet to sit down safely in the event of an emergency arising? A. It all depends on where you could sit down. If there was a field right underneath you it would be all right.

Q. If it is not, it would be better piloting to get —your plane up there, that kind of turn—before making a sharp bank sufficient in altitude to be able to meet such a situation, isn't that so? A. I don't quite get that question.

Q. What was your altitude when you first made the turn? A. Approximately six hundred feet.

Q. What is that? A. Approximately six hundred feet.

Q. You made no effort to turn at all until you had reached an altitude of six hundred feet? A. Outside of veering into the wind.

Q. What? A. Outside of just getting into the wind.

Q. But, I mean turn to the right? A. No.

Q. Not until you reached six hundred feet. You remember testifying out before Major Copsey under oath in Newark? A. No.

Q. You don't remember that? A. No.

Q. Didn't you testify before Major Copsey in the Mayor's inquiry or investigation of this crash? A. In the grand jury?

Q. No, no. At the hospital. A. They say he was up there but I don't remember. I was knocked out at the time.

Q. You remember talking to Captain Weatherdon there, don't you? A. Yes. He was up to see me a few days afterwards.

Q. And Mr. Brown was there, too, when you were talking with Captain Weatherdon, wasn't he? A. I don't think Mr. Brown was ever up there. I don't remember him.

Q. You don't remember? A. No.

Q. Isn't it a fact you testified in the Mayor's inquiry in Newark: "Do you remember how high you were approximately when you made this turn?"

Mr. Reed: I object, because it does not appear he testified in Newark at the Mayor's inquiry at all.

The Court: Sustain the objection. That is just what he says, he don't remember, so there is no use asking him.

Q. You say you have no recollection of testifying in Newark? A. No, sir, I don't.

Q. None at all? A. No, sir.

Q. Nowhere at all? A. Other than the grand jury.

Q. You remember testifying there? A. Yes.

Q. Do you remember talking to Captain Weatherdon while you were in the hospital? A. I believe Captain Weatherdon was up to see me once while I was in the hospital.

Q. Was that the only time you saw Captain Weatherdon at the hospital? A. I believe it was. I don't remember seeing him.

Q. And do you remember a stenographer taking down your statements concerning your knowledge of the happening of the fatal accident? A. No, sir.

Q. You don't remember that at all? A. No, sir.

Q. Do you remember talking to Parsons in the hospital? A. No. I never seen Parsons.

Q. How? A. I never seen Parsons after that.

Q. Do you remember talking to Major Copsey? A. No.

Q. About the accident? A. He was—it seems like he was up there a week or so after the accident, I am not sure. I won't say for sure. I think he was up there to see me a week or two after the accident.

Q. And did he ask you what you knew about the accident? A. No. He did not hardly talk about the accident. He wanted to know how I was getting along.

Q. And did he come alone? A. No. I believe he brought Mr. Aldworth with him.

Q. Yes. Anyone else? A. I only remember the two. Those days are kind of hazy.

Q. Do you remember Mr. Donegan, the stenographer, being there? A. Mrs. Donegan?

Q. Mr. Donegan? A. No, I don't.

Q. Do you remember while you were propped up in bed, and Major Copsey was asking questions, Mr. Donegan, the stenographer, was writing down the questions and your answers? A. No. I don't. I don't remember anything of that.

Q. You don't remember it at all? A. No, sir. They told me afterward that happened the same night of the crash and they told me someone was in there, but I don't remember a thing about it.

Q. I am not talking about the night of the crash. I am talking about later on when you were getting along all right and were propped up in bed.

Mr. Reed: What date, if you please? What date are you talking about?

Mr. George: The 19th of March, 1929.

Mr. Reed: What time?

Mr. George: Three o'clock in the afternoon. It might have been five minutes after

three. The hour appointed was three o'clock. It might have been five minutes after three.

Mr. Reed: It would be less than forty-eight hours after the crash?

Mr. George: Mathematically correct.

The Witness: No, I don't remember.

Q. You don't remember? A. In fact, they said somebody was in there.

Mr. Reed: Not what anybody said afterward.

Juror Number Seven: Was Mr. Foote unconscious for the two days you were in the hospital?

The Witness: Off and on, yes.

Juror Number Seven: You say you don't remember how long you were unconscious, but you remember things?

The Witness: I think it was about a week before I distinctly——

Juror Number Seven: You told me the second day. Could you tell me what was the matter with you? Do you know what happened to you?

Mr. Carpenter: What were your injuries?

The Witness: I had a fractured skull, a broken right ankle, broken leg, broken arm. I don't know whether it was a dislocated hip, but the hip was not broken, but it might as well be broken.

Juror Number Seven: When they took the X-ray of the fractured skull, what did they do? Bring the man down or did you go upstairs?

The Witness: I don't know.

Juror Number Seven: Nobody told you in the hospital of anything, did they?

The Witness: No. I didn't know there was even anyone hurt in the crash until after a week.

Juror Number Seven: If you were as bad as that I did not think they would leave anybody see you. I think I got a little experience with the subject of fractured skulls and broken legs.

The Witness: This left ear—the skull is broken in here, right below the left ear. I was dazed—it seemed like I was in a daze all the time. I would kind of come to and then I would go out again, come to and go out again, that is all.

Mr. Reed: Did you suffer any pain?

The Witness: Not much. I did not seem to.

Mr. George: Just a minute.

Q. On the 19th you do remember Captain Weatherdon stopping in to see you, don't you? A. Well, I don't know. I don't remember Captain Weatherdon. I remember he was out there but I can't say when it was.

The Court: Just to get this clear in view of anything else that may come up later; so far as any conversations that you may have had with anybody there relative to this accident for a week after the accident, your statement now is you don't remember any such conversations regarding the accident?

The Witness: No, I don't.

The Court: And that if questions and answers were asked you now you could not say whether you made the answers or not?

The Witness: No, sir.

The Court: Or whether the questions were asked you or not? Is that your position?

The Witness: Yes, sir.

Q. Now, you testified, Mr. Foote, that on the last trip—on the last take-off—your words were "she did not get off the ground as soon as the last take-off." What did you mean by that? A. Well, like I told you before. It seemed like the ship took a little more time to get off.

Q. Now, did you apply the same methods of take-off on the last trip as you did on the others? A. Practically. Sometimes you will take a ship off—you will hold it on the ground longer depending on the wind, or it might be depending on your runway. If you are in a soft spot you would not get the ship up quite as soon, shove it up as high.

Q. But on this occasion the wind was practically the same as it was on the preceding hop, wasn't it? A. You mean in the same direction?

Q. Yes, same direction and same velocity. A. Well, I don't know. The wind was probably changing. It was getting towards evening. Usually the wind changes toward evening.

Q. You mean it got stronger? A. Changes in velocity. It usually gets weaker.

Q. What was the case here? Was it the same or did it change, and if it changed, stronger or weaker? A. Well, I can't say as to that.

Q. Then you are not prepared to say that there was any change in the wind, are you? A. No, I could not say.

Q. Between the last take-off and the next preceding take-off? A. No. I can't say there was any particular change in it.

Q. But she did not get off the ground as soon as on the last hop, is that right? A. It just seemed that way.

Q. Well, there was something to indicate to you that she did not get off as well, wasn't there? A. It seemed like I took a little more space—fifty or seventy-five feet. I possibly might have not gone down as far on the runway as I had been. That would have been the same thing. That would make me get off that much further up.

Q. How many passengers did you have on the next to the last hop? A. That I don't know.

Q. Did you have a full load? A. That I could not say.

Q. Did you have a full load on the last hop—the last take-off? A. Yes. I had a full load.

Q. There were some pretty big husky men in that party, weren't there?

Mr. Reed: I object unless he knows.

Mr. George: Of course.

The Court: From your own observation.

The Witness: Yes, the men looked like they were—they were all men. I could not say. They all had overcoats on. It was a cold day. It is pretty hard to tell just by looking at the people how much they weigh.

Q. What is the meaning of the word "prop"? A. Propeller.

Q. Do you remember being asked this question in the last trial—685—Question: "After you made this one hundred eighty degree turn, when you turned to your right, will you tell us what you next experienced, if anything? A. Well, shortly after I straightened out my turn, the left motor quit, quit cold, just dead; there wasn't anything there. The prop did not stop turning;

and then I immediately tried to revive and worked my mixtures to see if I could make it go, and also opened up my remaining two motors; and just at that point my center motor started to rev down, just like it was starved for gas; and by working the control back and forth on the center motor, I could get about 800 revs out of its—revolutions per minute." Do you remember saying that? A. Yes.

Q. Was that true? A. Yes.

Q. All right. Now, the next question, you continue in your statement: "And I looked around for a place to land, and there wasn't anything." Is that right? A. Yes.

Q. Did you say that? A. Yes.

Q. (Quoting) "There wasn't anything but factories and railroads and buildings and everything around me, and I had already turned to the right, and was almost down wind, and I realized that fact," is that correct so far? A. Yes, correct.

Mr. Reed: Finish that answer.

Q. (Quoting) "But out ahead of me was an open field which seemed like it was all right"; do you remember saying that?

Mr. Reed: Won't you finish the answer?

Mr. George: I am asking this question. If you have any objection please make it in a formal manner.

Mr. Reed: I object.

The Court: If that is not the full question or the full answer I will have to sustain the objection because the witness is entitled to the full question and answer.

Q. (Quoting) "I realize that fact, but out ahead of me was an open field which seemed like it was

all right; so I headed for this field, and, going across the concrete viaduct down there, I know I had the feeling that I was fairly close, and I did not know whether I would be able to reach the field or not; but by running my motors, right remaining motors, as fast as I could, until I was about to lose control of the ship on account of the torque, I managed to straighten out the glide, and the last thing I remember was trying to zoom over wires, and I woke up in the hospital." Did you say that? A. That is right.

Q. Now, if that statement is true there, what did you mean when you told the Court and jury this afternoon that this place, as you looked it over, when you found your motor had stopped and the center one had revved down that this would not have been a good place to land in, bricks, concrete, and fires and dumps, and so forth?

Mr. Carpenter: I object to the question.

The Court: He may straighten it out.

(Mr. George pointing to a certain point on the map.)

Mr. George: Down between Route 25 and the Central Railroad.

The Court: Do you understand the question?

The Witness: I did not say anything. Yes, that is what happened.

(Question repeated by the stenographer as follows: "Now, if that statement is true there, what did you mean when you told the Court and jury this afternoon that this place, as you looked it over, when you found your motor had stopped and the center one had revved down that this would not have been a good place to land in, brick, concrete, and fires and dumps, and so forth?")

A. That is what the other answer is.

Q. The other answer was you saw a field ahead and it looked like a good place for you to land? A. Yes, I did.

The Court: That is what he says yet.

Mr. George: This afternoon, if I am correct about this, if I am not he will straighten me out——

The Court: He will.

Q. You say this afternoon that this would not have been a good place to land because of the bricks and concrete. A. It was not. On the other side of the railroad is a place—is the best place to land.

Q. You mean here? How about this section between the highway and the river? A. Rotten.

Q. Rotten? A. No good.

Q. You don't describe that as rotten, just across the highway? A. I believe you will find some place in there——

The Court: We will recess now until tomorrow morning, gentlemen. I am going to ask you tomorrow to be in your seats at nine thirty. We will resume the trial at nine thirty. That applies to all witnesses, too, because I wish to gain that time tomorrow. Nine thirty tomorrow morning, not ten o'clock.

(Recess until 9:30 p. m., December 3, 1931.)

(After Recess, 9:30 A. M., December 3, 1931.)

(Appearances same as before.)

Lou Foote resumes the stand.

Cross-examination (continued) by Mr. George:

Q. You know Mr. Brown, don't you? A. Mr. Brown, yes, sir.

Q. Yes. He was the pilot of a sister ship of the 4-AT number 41 that you were piloting. A. Yes, I understand that.

Q. Isn't it a fact shortly after the crash in the St. Francis Hospital in Newark you told Mr. Brown that when you——

Mr. Reed: I object, if the Court please, upon the same grounds made yesterday.

The Court: It is a perfectly proper question. I assume he is laying a foundation because otherwise it would be objected to unless he had an opportunity to answer the question.

Mr. Reed: May we have the date?

Q. The evening of the crash, two or three hours after the crash in St. Francis Hospital—St. James Hospital, didn't you say to Mr. Brown your left motor stopped, or, to use his language as nearly as I can recall it "my left motor went dead and I shut off the right motor to keep her from swinging?" A. No, sir.

Q. You did not say that? A. No, sir.

Mr. Reed: Ask whether he remembers anything about any conversation at all on that night.

Mr. George: Please permit me to frame my questions.

Q. You are sure you did not say that to him? A. Yes, sir. I am sure.

Q. Do you remember what you did say to him? A. I don't remember seeing him at all.

Q. Do you remember seeing Captain Weatherdon? A. No, sir.

Q. Didn't you testify you saw Captain Weatherdon there?

Mr. Reed: No, he did not.

Mr. George: That is not a proper form of a question.

Mr. Reed: I object.

The Court: He did not say he saw him at that time, but he did say, however, he saw him subsequently to that, although he doesn't recall having made any statements to him.

Q. How many times did you see Captain Weatherdon at the hospital? A. Once, I believe.

The Court: When was that, as near as you can recall?

The Witness: It seems to me like it was a week or a week and a half after the accident.

The Court: Under those conditions—not related to this question at all—but, if you did have your left motor stopped and your center motor revved down, but your right motor going properly, if you shut that right motor off it would have the effect of making a drop, wouldn't it?

The Witness: Yes.

The Court: It would give you a dip?

The Witness: Not exactly a dip. I would lose altitude much faster because being I am

down wind and with a full load, why, I would lose altitude quite fast.

Q. What did your motors show as to r.p.m.'s on the take-off? A. On the take-off?

Q. Yes. A. About the same as cruising. About sixteen hundred and fifty, I believe, sixteen hundred to sixteen hundred and fifty.

Q. Over sixteen hundred, though? A. Well, they gradually—as you take off why they pick up a little bit.

Q. Isn't it a fact you stated to Major Copsey on March 19, 1929 that on the take-off the motors showed around fifteen hundred and fifty?

Mr. Reed: I respectfully object, if the Court please, upon the ground he testified yesterday that he had no recollection of any interview at all, of saying anything at that time when he was laying there.

The Court: That is true, but I am going to allow this in order that there may be no question about the proper ground work being laid for any future contradictions by having the exact question which they probably asked and put to this witness. That is the only purpose. He has already said, as you have said, he has no recollection, but only for this purpose in order that there may be no doubt, and I assume that is your purpose. I think I am entitled to ask, you are going to try to show a statement?

Mr. George: Yes. A sworn statement, in fact.

Mr. Reed: My thought on that is it would not be a contradiction. Foote says "I have no recollection."

The Court: Oh, that is true, but I cannot shut out the possibility of evidence being allowed that would show he did have a recollection, consciousness, and all that sort of thing.

Mr. George: May I respectfully submit even as to that aspect of it——

The Court: Of course, if there would be no objection, I can see no reason for having it now since the witness says he does not have any recollection, but I don't want to be put in the position to call him back for that purpose.

Mr. George: We, perhaps——

The Court: Never mind. That is enough.

Mr. George: In the interest of saving time, your Honor, there are quite a number of pages concerning which I would like to examine this witness for the purpose principally of laying a foundation for rebuttal evidence or contradiction of this witness as to testimony he has already given.

The Court: Now I get your point. I understand Mr. Reed may now indicate whether he wishes—or, whether he will concede so far as this witness is concerned, he has no recollection of having given any such statement.

Mr. Reed: I will concede that on anything of this kind that was asked him on that same night of the accident which he just referred to, two or three hours after this terrible crash—within, even, forty-eight hours after this crash—he would answer he has no recollection of any questions being put to him, that he has no recollection, even, of the interview.

Mr. George: And that will apply to everything contained——

The Court: That would be evidential.

Mr. Reed: Yes.

The Court: And, having properly proven, or at least brought out the question as to whether or not he did have sufficient consciousness to have a possible recollection.

Mr. George: That is it.

Mr. Reed: Without in any way waiving the objection, that would not be a contradiction as to what he says now as to the occurrence of the accident, and also anything he did say is no evidence of the fact.

The Court: Of course, the jury must remember anything that might be brought out in that nature is no proof of any act of negligence, only offered to show possibly what he says now may be wrong, that is all.

Mr. Reed: Anything claimed to be said would not be evidence of the fact in that alleged accident.

The Court: I so told the jury. What Mr. Reed has said now is correct.

Q. Mr. Foote, just one or two questions now. When your motor stopped and you found yourself in the situation that you have already described, the left motor going dead, and the center motor revving down as though she was starved for gas, I think that was your language—wasn't it? A. Yes, sir.

Q. —which way did you look? A. I looked every way, right and left, and I looked directly behind me, and I looked to the left and right.

Q. But, inasmuch as you were proceeding due east at the time your motors stopped, you having

already completed the arc of your turn— A. Yes, sir.

Q. —looking to the right you were able to see the airport, weren't you? A. Yes, sir.

Q. You were able to see the built-up section of Newark, away off in the west? A. Yes, sir.

Q. Or, in the north, rather. Of course, you would be able to see New York? A. Yes, sir.

Q. Making a sharp turn, about how much area in city blocks would be necessary to traverse in area, of course, to make a sharp turn? A. You mean if one was to go up and make a vertical bank?

Q. Yes. A. With a larger ship you could make a vertical bank around, I would say, inside of possibly—inside of three hundred feet.

Q. Could you do it in two blocks? Three hundred feet, that is less than the average city block. A. If you got plenty of speed up already and got her on her wing you could do it.

Q. In other words, you could make a good sharp turn, almost a vertical bank? A. You mean if a person really wanted to do that?

Q. Yes, that is right. In other words, you are going straight ahead, normal flying speed, and you want to throw her in a vertical bank for a sharp right turn. A. Not with normal flying speed. You would have to dive the ship and get an awful lot of speed in order to hold it.

Q. Assuming, then, the speed that would be necessary to make a sharp vertical bank, that could be done in a radius of three hundred feet, couldn't it? A. No.

Q. How many? A. If you are going—it would all depend on weather conditions. If the air was rough, it would depend on the load in your ship, and, of course, the aeroplane.

Q. Yes. Now, assuming, then, that the average wind velocity was between thirty-three and thirty-nine miles and you were going into the wind and at an altitude of six hundred feet and with the kind of ship and the kind of load you had on that day in question, in how short a space could you have made a vertical bank? A. I would not make a vertical bank with a ship full of passengers, if that is what you mean.

Q. With safety, what is the shortest or smallest area in which you could have made a turn with reasonable safety.

Mr. Reed: Are you assuming now with passengers or without passengers?

Mr. George: With this same load and same wind and same plane and same altitude and same pilot.

Q. In other words, within an area of how many blocks could such a turn be made? A. It all depends on how sharp you want to make it.

Q. The shortest turn with safety? A. With your motors wide open and diving the ship?

Q. Everything functioning beautifully, the same ship, the same load, the same wind, the same pilot, the same altitude, the same visibility, the same speed. What is the shortest area in city blocks that you could make a turn? A. I don't think you could keep within a circle of less than three hundred feet in that size ship.

Q. Could it be made with safety, of course, within five hundred feet? A. Yes, I think it could.

Q. That, of course, at three hundred feet, would be considered rather a sharp turn, considering the load you had? A. Oh, absolutely. You have to dive the ship to do it, too, if you were going to make a three hundred and sixty degree turn.

The Court: This room is just fifty feet. Now, three hundred feet would be six times the length of this room?

The Witness: A Ford ship is seventy or eighty feet long.

The Court: I am not criticizing your judgment. I am just giving you something to base your judgment on.

The Witness: The wind span is about seventy-four feet.

The Court: That would take up more than this room.

The Witness: Yes.

Q. Now, Mr. Foote, do you recall being asked this question by the Court in the Newark Trial——

Mr. Reed: What page?

Mr. George: 693.

Q. (Quoting) Question: "Now, just indicate again where you say it was." Answer: "I know that I passed these railroad tracks (indicating), because they seemed to be under me, and everything was going fine then, but it did not seem like I was climbing quite as much as I should, and so I thought I better not go any farther over the City of Newark, and I had better make my turn. Everything seemed to be all right. There didn't seem to be any trouble, but I just wasn't climbing. I thought possibly, you know, the motor, with the heavier than I had the previous time—." Question: "Were you watching your tachometer?" Answer: "Well, yes, but I had already synchronized my motors down to, well, turning up practically the maximum speed, but I had synchronized my motors." Question: "All of them were turning over at the maximum speed?" Answer:

"Yes, but I had synchronized them." Do you remember saying that? A. Yes.

Q. Then, as you were proceeding straight towards Newark you did find, even before your motor went dead, that there was something wrong, didn't you? A. Well, it did not seem on that trip as if I was climbing quite as fast as I did on previous trips.

Q. That indicated to you something was wrong somewhere? A. No, not anything wrong, because the motors were functioning perfectly.

Q. But you were not climbing as you should have climbed, as you said, isn't that so? A. No, I would not say that.

Q. Didn't you also say you did not take off—leave the ground as she did on other hops? A. I did take a little more space on the ground.

Q. And after that didn't the difficulty—or, rather, the requirement for taking more space on the take-off, and the fact she did not climb as she did before, didn't that indicate to you that there was something wrong? A. No. The motors were turning up perfectly. That is the only thing I would have anything to base an indication of trouble on.

Q. Now, when you noticed as you were going over the railroad tracks which I indicated and you then noticed that she was not climbing as she should, and had then decided, as you stated to the Court and jury in the other trial in Newark "I had better make my turn and not go over into Newark any farther," why didn't you then, when you noticed that, make your turn here (indicating) while you were over the railroad track, make the turn to wherever you intended to go rather than proceed on to Newark, as you testified yesterday, up to this point marked by the thumb

tack? A. I had already passed the tracks and reached that point.

Q. But in the trial in Newark you testified you noticed that she was not climbing while you were over the railroad tracks— A. I noticed——

Q. —and that you had then concluded you had better turn. Why didn't you then turn? A. I noticed I had not reached the altitude, I don't think, I had on some of the previous trips, and when I arrived over Newark there I thought that I better turn because I did not want to go over Newark with too low an altitude, over the center of the city.

Q. You were asked—699, bottom of page—at the trial in Newark "Have you any knowledge as to what caused that engine to stop?"—I take it that means the left motor——

Mr. Reed: I take it that it does.

Q. (Quoting) Answer: "Why, it acted like carburetion on the center motor."

Mr. Reed: I guess you asked him about the center.

Mr. George: No, no. Oh, yes.

Q. (Quoting) Question: "How about the left motor?" Answer: "Well, the left motor could have been most anything." Question: "What was it, do you know?" Answer: "It could have been ignition; it could have been carburetion, or it could be slip timing, or most anything. It just quit cold, just as if you would cut the switch." Did you so testify? A. Yes, sir.

Mr. Reed: Will you read the next question and answer?

Mr. George: No. Not unless the Court directs me to.

Mr. Reed: I will do it myself.

Q. Did you at any time lose control of the motor of your plane while in flight? A. Of the aeroplane?

Q. Yes. A. No.

Q. From the time you took off until you could no longer remember? A. No. I never lost control.

Q. Do you remember testifying—687——

Mr. Reed: Six hundred what?

Q. 687. (Quoting) Question: "How about your altitude as these motors quit?" "What happened there from your altitude that you had of five or six hundred feet?" Answer: "Well, I started losing altitude mighty fast, and I had to almost put the ship into a gradual dive, in order to maintain my flying speed and in order to regain control; and I held my wing down to help to overcome the torque, because I only had the one motor." Did you so testify? A. Yes, that is right.

Q. Then you were—you had lost control; hadn't you? A. Not lost. It has to keep in control.

Q. Beg pardon? A. I had not lost control. I would have lost control if I would have held the ship in that particular position without putting the wing down because I would not have been able to hold it.

Q. You used the language: "—in order to maintain my flying speed and in order to regain control—" A. It means to keep the control of the ship.

Q. You did not say "maintain control," you said, "regain control," didn't you?

Mr. Reed: I object to that as immaterial.

The Witness: If the ship had got out of

control I would not have reached as far as I did.

Q. Isn't it a fact because you lost control you landed where you did? A. Absolutely not.

Q. And if you had never lost control and even if you had gotten away out here where you marked yourself, and having completed your turn and you went off the map and came around and completed your turn, and you were facing east on the way when your motor had been straightened out—your plane, rather, then your motor stopped dead, if you had not lost control and lost your head, why didn't you—and having looked to the right, as you said you did, why didn't you make the airport, which was just as near as the place where you landed and crashed? A. In the first place, I never lost my head or never lost control.

Q. Why didn't you make the airport, then?

Mr. Reed: I object.

The Court: Did you finish?

The Witness: Yes, that is all.

The Court: Go on, finish it.

The Witness: I started to land in the best possible place that—the only place that seemed possible at that time.

Q. You won't dispute my statement, will you, Mr. Foote, that the distance between the place of the failure of your motor and the airport is the same as the distance between the airport and the place of the crash? A. No. If you put a ruler on the map and measure it it is all right. I won't dispute it.

Q. It looks about the same to you? A. It looks about the same, yes.

Q. From this point, the end of your runway, and here is the place of your crash, doesn't that make a pretty nearly perfect "L" in dimension? A. Yes.

Mr. George: I think that is all, Mr. Foote.

Re-direct examination by Mr. Reed:

Q. Mr. Foote, you told us that when your motors quit up here that you deemed the maneuver to go straight ahead, that you did go over to this field you saw here, is that right? A. Yes.

Q. Had you attempted to turn to the right instead of going straight ahead—had you attempted to come over in this area, if you please, how would the wind have struck your aeroplane? A. The wind would have been directly on my tail. The other way it was cross. It was not directly on my tail, and, another thing, the condition I was in there with the right motor turning up wide open, I could not make a turn to the right on account of the torque. I was holding almost all the rudder in order to put the ship in control and putting the wing down. It was impossible—it would have been impossible to make a right turn even to go into that field there on the other side of the railroad.

The Court: Because the pull was on your right wing?

The Witness: Yes.

Q. Then the pull on your plane was fully to the right all the time? A. If I tried to turn right I would have turned in a spin. There is no question about it.

Q. That means a crash? A. Yes, sir.

Q. What is a spin? A. A tail spin.

Q. Yes. What does it look like? A. When the ship gets out of control and noses down and the tail revolves around the center of gravity of the ship. You can't come out of that unless you have an awful lot of altitude, especially if you have a heavy load.

The Court: If you gave away on the side that is getting the power, that would increase the momentum with which the ship would come around and start the spin?

The Witness: Yes. By putting that right wing down you can overcome a good deal of your torque, and by holding your rudder you can hold your flight in a straight line. Here is another thing takes place when you do that: you decrease the surface of your wings because when you turn your wings edgewise, if it is seventy-four feet across here, when you turn it up on the side, it may not be only sixty feet there. You are losing altitude much faster, you are decreasing your glide angle. Your gliding angle may only be three or four to one.

Q. Is that the reason why you could not come over to the right and go back to the airport? A. Yes. I could not have done it. I could not have made the right turn, and coming down a left turn would have taken me in the City of Newark. Newark Airport was full of cars. Even if I had been close I would have hesitated very much in having tried to go back in the airport, because of the holiday it was full of people and cars and a down-wind landing on that runway would have been just suicide.

Q. You mean a lot of people were there for Sunday and the holiday, observing the maneuver

of the ship? A. Yes. Cars were parked inside there at that time.

Q. Whereabouts? A. Right in that "L."

Q. Down in here, you mean? A. No. Down farther on this side of the road. Right there.

Q. Cars and people were there on the holiday, on the Sunday, watching the maneuvers, is that it? A. Yes, sir.

Q. And to have gone back with a crippled ship would have been dangerous to the people that were on the ground? A. If I had been on the other side of the runway it would be a different thing altogether because there wasn't any people there.

Q. Then, having gone on the way the right motor was pushing the ship to the right, then there would be no place for an emergency landing? A. You mean if I had turned left?

Q. I meant to say left. A. Then you were right in the industrial center. There wasn't any chance there at all.

Q. So, by using your rudder you attempted to overcome the torque of the right motor and then went straight ahead for the green field, you say? A. That looked the best possible chance out of that predicament.

Q. You were asked if you said this yesterday, and right immediately following I ask you if these questions were asked you and if you gave these answers: Question: "When you were in the predicament of your left motor going dead, and not being able to revive it, and the center motor down to eight hundred revs, did you make some observation of the terrain beneath you?" Answer: "Yes, sir." Question: "What did you see?" Answer: "I looked around—I glanced around and tried to pick out the best possible place to swing down." Question: "What was there at that place

below you?'' ''What did you see, if anything?'' Answer: ''All I seen was railroad yards and this concrete viaduct and wires, and stuff, burning dumps; and when I seen the smoke from the burning dump, I immediately thought of fire—I was more or less scared of fire anyhow, and I thought if I could just make that field it would be all right; I would probably crack up the ship, but I didn't think anybody would be hurt.''

Mr. George: Objected to as improper redirect examination.

The Court: It is merely continuing.

Q. (Quoting) Question: ''What did you do, if anything, to counteract the torque that was caused by the one motor remaining running with power?'' Answer: ''I shoved down the right rudder, applied the right rudder.'' Is that the testimony you gave?

Mr. George: Objected to as improper redirect examination:

The Witness: That is right.

Q. Right immediately following what was said this morning and just a little while ago when I asked Mr. George to continue, were these questions asked and did you give these answers: ''Did you cut the switch?'' Answer: ''I did not.'' Question: ''Was the switch cut by anybody at all?'' Answer: ''No, sir; not to my knowledge.'' Question: ''On either one?'' Answer: ''No, sir.'' Question: ''So are you able to say, then, of any knowledge that you have, as to what it was that caused that motor to quit cold that way?''—objection by Mr. Biro—Answer: ''No, I have not; and, as I said before, it might have been ignition or carburetion. I have

no way of telling. If a motor stopped that way and stopped dead and cold, it could be almost anything. It is more apt to be ignition than anything else.'' Did you give those answers? A. Yes, sir.

Q. You don't know what it was that caused those motors to stop on that day, do you? A. No, sir, I don't.

Mr. Reed: Just one or two questions more, Mr. George.

Q. When you were at the Ford plant taking this course of instruction in flying tri-motor Ford planes, did you make any tests on turns and other maneuvers with this same tri-motor 4-AT Ford ship? A. The same type, yes.

Q. Yes, the same type. Did you go through tests, then, on emergency landings? A. Yes, we did. We had to practice it.

Q. What did you do in those tests and practices with reference to motors and turning them off and so forth? What tests did you make? What tests did you go through in that course of instruction? A. Well, we would take them up and fly them on different combinations, motor combinations.

Q. What does that mean? A. Go up a couple of thousand feet and fly on two motors, and fly on the center motor and the outboard motor, shut off the other motor—would not shut the switch off, just let it idle so it did not have any power, then we would shut off the center motor and fly on the outboard motor, then we would shut off the center and outboard motor and hold the ship level. Of course, we would lose altitude on flying for—lose maybe one thousand feet or five hundred feet with one motor on only.

Q. Then, did you make tests on emergency landings? I mean, cutting them all out and letting her go? A. Yes. We would have to make a dead stick landing and land on the one runway there at the mooring mast. We would have to make a circle around the mooring mast, cut the motor and come in and land on the concrete runway at the Dearborn plant.

Q. So, you had been all through practice of that type and character before you came to Newark? A. We also had to come there three times a week at nine o'clock at night and take a night flight without flood lights, using only the landing light of the ship.

Q. What are flood lights? A. To light up the whole landing.

Q. The field would be dark? A. Yes, the field would be dark and we would use only the landing light on the ship. They would load the ship up with full load—empty first, then they would load it with shot of one hundred and seventy pounds each in each seat.

Q. In each seat in the cabin? A. And in the cockpit also, so it would be the same as a full load of people, and just the same as if you had an assistant pilot with you.

Q. And then take the tests? A. We would have—we took first our tests ordinary, then empty and loaded, then we took our night flying empty and loaded. It was not so bad because we had a fairly definite airport. We didn't have any cross country.

The Court: I noticed they put weights in. They did not send any people up?

Q. They had something alongside of you, didn't they? A. There wasn't any passengers. There

weren't there possible. They used some weights they used for testing, such as they test out each new ship they put out. Each ship does not weigh the same pounds. They test each ship with one hundred and seventy pounds in the cabin. It is made of bee-bee shot and tied up in a sack.

The Court: That's all right. I am wondering if they told me—with a spotlight and told me to land on the ground what I would do.

The Witness: It is not so bad.

Q. You also spoke about taking some of the officials of the company on night trips to Buffalo or some place?

Mr. George: That is objected to.

The Court: He did say that.

Mr. George: Why go over it again?

Mr. Reed: I think it is perfectly advisable.

Q. Did some of the officials frequently fly with you on trips on the tri-motor Ford plane? A. Yes, sir.

Q. With freight? A. Yes, sir.

Q. What kind of freight? A. Mostly automobile parts.

Q. And after you had finished your course of instruction, having had the tri-motor ship to fly at Chicago, the National Air Transport, and the Grey Goose, how many total hours of flight did you have when you came to Newark? A. Approximately one hundred and ten hours.

Q. On a tri-motor Ford 4-AT? A. Yes, sir.

Re-cross-examination by Mr. George:

Q. On a tri-motor Ford? Didn't you tell the Court and jury you only had ten hours on a tri-motor Ford? A. That was before I went with the Dearborn.

Q. With what? A. That was before I went to the Ford, with the Grey Goose.

Q. Just one more question, Mr. Foote, and I am through. So long as you were afraid of fire and saw the fire, even when you were away back here at least thirty-six hundred feet, why did you head for the fire when you knew then before you made the turn, before your motor stopped, that she was not climbing, and then when your motor stopped, one of them dead, and the other one revved down, and you were fast losing altitude, why did you continue straight ahead to head for that which you feared so much—fire? A. I did not head for the fire. I thought I would make that field.

Q. You took a chance? A. No, I was so sure of it, just as sure as I am sitting here I would make that field.

Q. You found you were mistaken, didn't you? A. (No answer.)

Q. Didn't you?

Mr. Reed: After he woke up in the hospital.

Mr. George: I think that is unfair.

Q. You were sure you could make it, weren't you? A. I did the best I could.

Q. That is not an answer to my question. Is that correct, your statement, a moment ago, you were sure you could make it? A. I was sure, yes.

Q. When you said "make it," you mean make this field over here, over the railroad tracks and over the high tension wires? A. Right.

Q. Then you found you were mistaken? A. Right.

By Mr. Reed:

Q. You did not come in contact with any fires at all. You cleared them? A. Yes.

By Mr. George:

Q. But you smacked the car loaded with sand, didn't you? There is no doubt about that, is there? A. No. There is no doubt about that.

Q. It was a low gondola car, too, wasn't it? A. I don't remember seeing the cars even.

Q. You have sufficient knowledge of the transaction to know it was a low gondola loaded with sand and the fuselage carrying these fourteen persons crashed against that? You know that to be a fact? A. Yes, I know that is the fact.

Q. And that is only a few feet from the ground? A. No. It must have been, possibly fifteen feet above the ground.

By Mr. Reed:

Q. The track is on the embankment, though, isn't it? A. (No answer.)

Mr. Reed: I will prove that by somebody else.

Juror Number Three: Is there a law or rule of the Department of Commerce or Colonial Airways or the Airport that required the pilot to keep a log of the ship?

The Witness: Yes.

Juror Number Three: Is there one that requires the mechanic to keep a log of the ship?

The Witness: Yes.

Juror Number Three: When did you make entries in that log?

The Witness: After each flight.

Juror Number Three: After each flight did you note the number of passengers that are in each flight, that is, when you take-off, if you had ten passengers in, when the flight is over and whatever time you are supposed to put the entry there about pounds, ten passengers, and the end of the flight, whether it was eventful or uneventful?

The Witness: No.

Mr. Reed: We have a log here, if you want it.

Juror Number Three: Would that log show whether or not the mechanic had made the regular inspection he was supposed to do under the Department of Commerce laws?

The Witness: The morning of the——

Juror Number Three: At any time.

The Witness: Not before each flight, no. It would not show that. It would show the daily inspection.

Juror Number Three: Would it show the twenty hour inspection?

The Witness: It should show the twenty hour.

Juror Number Three: And the one hundred hour?

The Witness: I don't know about the Department of Commerce on that.

Juror Number Three: Whoever might require the rule the log should be kept that way?

The Witness: Yes. It is requested that you keep a log that way.

Juror Number Three: Is there a rule you must keep it?

The Witness: Yes. You must keep a——

Juror Number Three: When you came to the airport that day did you look at that log of the mechanic?

The Witness: What? The mechanic's log?

Juror Number Three: The mechanic's log that was in the plane.

The Witness: No. I did not, because Mr. Weatherdon was chief pilot. He took care of that.

Juror Number Three: I know. The log was in the plane. You had not seen that plane. It was a green ship to you.

The Witness: No. I had not seen that.

Juror Number Three: Did you look at the log of the pilot or of the mechanic?

The Witness: No. Mr. Weatherdon was chief pilot. I did not see the log of the ship at all. In fact he made—the chief pilot made out the log for the flight.

Juror Number Three: After each flight?

The Witness: No. After each day. It would not be made——

Juror Number Three: So you would know at the end of the day how many passengers you carried that day?

The Witness: The number of passengers I don't believe is signified in that log.

Juror Number Three: The kind of flight?

The Witness: Just as long as the plane carried the number—the weight required—there would not be anything noted in there as to the number of passengers even if you carried three passengers or fourteen passengers.

Juror Number Three: About the mechanics. Would you look at the mechanic's log?

The Witness: The mechanic signs—before you can take off and before you get a clearance the mechanic signs. It is not the Department of Commerce, it is just a company rule.

Juror Number Three: Not now. Then, back in 1929.

The Witness: There wasn't any clearance then. Clearance only came on, I would say, six months ago.

Juror Number Three: You would look at his log before you took a flight?

The Witness: Yes.

Juror Number Three: You mean at any time?

The Witness: Now you would, yes.

Juror Number Three: Before that.

The Witness: No.

Juror Number Three: You would not look at the log?

The Witness: No.

Juror Number Three: The log did not mean anything at that time?

The Witness: Yes. It meant something. It kept the hours of the ship. The chief pilot has to take care of the ship. It was his ship. I would not have anything to do with the log of that ship because the ship had been serviced that morning and flew over here from Miller Field and he told me to go ahead and fly the ship the balance of the day.

Juror Number Three: You would not look at the log or anything if those instruc-

tions had been made, this being a green ship to you?

The Witness: No.

The Court: I might supplement that by saying whether logs were kept or not, would have no bearing here. It would only go to show what was done with the plane. The fact they did or did not would not be any negligence.

Juror Number Three: If those inspections had not been made he might not have gone up.

The Court: That might be.

Juror Number Eight: You say it was his ship?

The Witness: It belonged to the company. It was a company ship.

Juror Number Eight: Then you were not the chief? He was.

The Witness: No. He was chief pilot of the ship.

Juror Number Eight: It was his ship when you were in there?

The Witness: His ship?

Juror Number Eight: Yes. It was not his ship when you took it out?

Juror Number Three: In other words, you had charge of it?

The Witness: Yes. When I was in the ship alone I was in charge of the ship.

Juror Number Eight: It was not his ship then?

The Witness: No.

Juror Number Eight: You were in charge of the ship?

The Witness: No.

Juror Number Eight: What did you mean, "I only remember crossing the viaduct and the next thing I saw was this mass of wires"?

The Witness: That's the last thing I remember after crossing the viaduct and the dump. I remember these strings of wires. That's the last thing I remember.

Juror Number Eight: You don't remember anything after you crossed the viaduct?

The Witness: I remember the dump. I don't remember the train or gondolas that I hit. I remember seeing the box cars down there. I remember seeing this field and I remember seeing the wires out in front of me, that is all.

By Mr. Reed:

Q. When you say you remember seeing the dump, what did you see in the dump? A. Fire burning and bricks.

Q. Then as you got over the road you know you saw these wires in front of you? A. Yes. That is the last thing I remember seeing.

Mr. Reed: That is all.

Juror Number Five: Did you take it for granted, without looking at the log, it is in A-1 condition if the chief pilot said so, without looking at the log?

The Witness: If the chief pilot is flying a ship right today I would not attempt to look at the log, if I went down here to take one of the ships to Boston right now.

Juror Number Five: If you went to the chief pilot and he said it was o.k. you would not bother looking?

The Witness: Absolutely not. I would not question his opinion.

By Mr. George:

Q. You would well rely on somebody else's say-so it was all right?

Mr. Reed: I object to that question.
The Court: Sustained.

By Mr. Reed:

Q. But, after having been up in the ship these three times with Weatherdon and once with Wonsey and the three prior trips of yours, were you satisfied so far as that ship performed and the motors performed as it appeared as you completed your last flight before the last flight, everything was in operative condition and the motors were working regularly or properly? A. Certainly, or I would not have taken off at all.

Q. And was there anything in any of the prior trips at all to indicate any irregularity or any lack of proper inspection of that ship? A. No, sir.

Q. The proper keeping of any of the motors or parts? A. No, sir. There was not.

By Mr. George:

Q. Would you be good enough to step down here just once?

(Witness goes to blackboard.)

Q. Will you be good enough to take my pencil, Mr. Foote, and trace the course of your ship—the whole course of your plane on its last flight from the take-off to the last spot you can remember being in the plane? This is the same scale, Mr. Foote, as the other map. This is an engineer's

map, and that is the photographic map. The same scale, two hundred feet to the inch. This is the northwest runway. Now, you just pilot that pencil in the same direction in which you piloted your ship on its last journey.

Mr. Reed: I want to object to that because he did that twice yesterday. He is now asked again to repeat the course the ship took on her last flight.

The Court: Sustain the objection.

Q. Will you please make a mark on this survey map showing the course of your flight on the last trip?

Mr. Reed: I object.

The Court: Sustain the objection. There has got to be an end to things. You must think of those things when it is your turn to talk. It is not your turn to talk.

Mahlen W. Parsons, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. What is your profession, Mr. Parsons? A. Civil engineer.

Q. You are the city engineer of the City of Newark, aren't you? A. I am the engineer in charge of the Port work.

Q. Engineer in charge of the Port work? A. Airport.

Q. Airport for the City of Newark? Are you familiar with the condition of the Newark Air-

port as it existed on the 17th of March, 1929? A. Yes. I am quite familiar with the physical conditions.

Q. That is what I mean, the physical conditions. I wish you would tell this court and jury—you can come over and use the map if you want to describe it—there are some things in particular I want to ask you—you can use any one of these maps you please, each drawn to the scale of two hundred feet to an inch on the map. This map was taken—this photographic map was taken on November 7, 1930. Now, I wish you would tell us first what, on the 17th of March, 1929, was the character of the terrain between Route 25 and the Central Railroad directly to the east, directing your attention particularly to that portion thereof just north of the Lehigh Valley tracks. A. The area in here had been used and was being used as a city dump.

Q. The part you describe now was extending how far from the east of Route 25? A. Well, at that particular time—the dump extended practically from Stockton Street on down towards the Central Railroad.

Q. What I want to know is, how far did that dump extend toward the Central Railroad? In other words, what was the distance between the easterly edge of that dump and the Central Railroad at that time? A. I should say about eight hundred feet.

Q. From the edge of the dump to the Central Railroad. Now, just tell the jury what was the condition of the terrain? What was it between the edge of that dump and the Central Railroad at that time? A. Well, it was meadow there. There is a creek that is shown on here, was on the ground, of course, at that time.

Q. Just describe that creek to the jury. How wide was it? A. Well, the creek was known as Pierson's Creek and in that particular vicinity it was probably an average of eight feet wide.

Q. And how deep was it? A. I should judge about three feet at low water and possibly eight feet at high water.

Q. And did it have banks? A. Well, probably levees on each side of it.

Q. How high were the levees? A. I should say about two and a half feet.

Q. Does that extend all the way through this area from the Lehigh Valley tracks north as far as you could see on this map? A. Yes. It terminates at Heller & Merz Blue Works. It is really an outlet sewer for the section.

Q. What was the character of the land on either side of that creek? A. Meadow land.

Q. Now, could you walk over it with ease? A. No.

Q. Take east of the Central Railroad track, over beyond there and north of the Lehigh Valley tracks. What was its character? A. That is an extensive meadowland in there, along natural creeks—quite a number of mosquitoes, put in there for drainage purposes.

Q. As to the character, was it flat or full of dumps? A. That is comparatively flat and just meadow grass.

Q. What is the character of the terrain south of the Lehigh Valley tracks between Port Street on the south and Route 25 on the west and the Central Railroad on the east? What is the character of that in there? What was it at that time? A. Well, at that time this particular area was practically—the same as it is today—that is, virgin meadow land.

Q. You now refer to the part between Pierson's Creek and the Central Railroad? A. I now refer to the part between Pierson's Creek and the Central Railroad. Some of the area between the pumping station, the city pumping station, this way in here, was more or less meadow land.

The Court: That is commonly known as salt meadow.

The Witness: Salt meadow, with sage grass. At one time, even now, subject to the ebb and flow of the tide. It is now more or less subject to the ebb and flow of the tide. In the spring tide a good portion of it is inundated.

The Court: Even now?

The Witness: Yes.

Q. That is the portion between Pierson's Creek east of this viaduct? A. In 1917 or '18 the Pennsylvania Railroad had started developing a classification yard in there. The development was never completed and there were few of the tracks were ever laid. This area in here.

Q. To the southwest? A. This ground comes up considerably at this point. There is quite a hill I should say possibly thirty feet above the average elevation of the meadow—twenty-five feet.

Q. That is in the northwest section? A. Between the pumping station and the viaduct. This area was used partially as a dump. It was very irregular, with filled in portions along Port Street and portions by Bay Avenue.

Q. You are speaking of the part south of the pumping station? A. That's right.

Q. How about the area to the west of the viaduct and south of the Pennsylvania Railroad? In that whole area what was that territory? A. That

would be territory with salt meadow land, with numerous creeks in it, some of them natural and some of them placed by mosquitoes.

Q. Taking the area west of the viaduct and north of the Pennsylvania railroad tracks, what was that in there? A. That was partially industrial sites and as one would go over here farther west it goes into a residential section. That, today, is substantially the same as it was then.

Q. Is there any place in that whole area off of the airport—I am speaking now of any place in this entire area west of Route 25 and north of the Pennsylvania Railroad Tracks and also in that portion east of Route 25 and north of the railroad tracks—where it was level where a ship could be put down. I am speaking of an airship.

Mr. Coolahan: Just a minute. If your Honor please, I object to that. This gentleman is not a pilot.

The Court: He is not speaking technically. He is speaking now if any object coming from the skies could be set down.

The Witness: My answer to that is: the ground, generally speaking, was comparatively level, could walk on it, but in my opinion it would not stand the impact of a landing ship.

Q. What was the character of the dump? A. Well, like most dumps, refuse material except for the road.

Q. Refuse in there? A. Leveled off with a tractor.

Q. Were fires burning on it? A. I would not say there were fires burning that day. There are fires burning on the dump.

Q. Now, take this area to the south. What is that line that goes diagonally from Port Street to Route 25, at about the point where it reaches the Pennsylvania Railroad—crosses the Pennsylvania Railroad? A. That block was formerly known as Bay Avenue, extended from South Street diagonally across Port Street. After the completion of the highway this portion of Bay Avenue was abandoned, the grade of the highway being on the viaduct.

Q. On March 17th, 1929, were there any telegraph poles along there and wires? A. I don't recall.

Q. Now, how about these wires that are referred to along the east side of the Central Railroad tracks? There are two lines shown on the map—on the surveyor's map—one is marked "high tension wires" and the other "telegraph wires." Are you familiar with those on March 17, 1929? A. Not in that location.

Q. You can't tell us how high they were? A. No.

Q. How about the embankment? Do you know whether the railroad tracks were graded with the meadow or whether they were on an embankment? A. I know, briefly, the elevation of the Central Railroad is placed at nine and a half, and the meadow land is about five. Therefore, it is four and a half feet difference.

Q. How about the section between the Central Railroad and Route 25? A. The Lehigh Valley started to raise their yard there and built this overpass as shown on the map. I should judge this bridge to the overpass is probably eighteen feet high.

Q. That is over the Central Railroad? A. Over the Central Railroad and about the same height

on this side, and then it gradually runs down grade until some point down here it meets the old level.

Q. That is somewhere west of the viaduct? A. Yes.

Mr. Carpenter: You may cross-examine.

Mr. George: No cross-examination.

Rae D. Wonsey, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Reed:

Q. What is your profession? A. I am assistant general operation manager.

Q. Of what concern? A. The Colonial Division of the American Airways.

Q. Will you speak a little louder, Captain, so this gentleman can hear you? How long have you been in aviation?

Mr. George: If your Honor please, in the interest of saving time, I understand that Mr. Wonsey is a flier. In the interest of saving time I will concede he is an expert flier.

The Court: All right.

Q. I just want to get the length of time you have been flying. When did you start? In the war or some time since then? A. I joined the army on May 10, 1917, in the aviation section.

Q. Where were you flying in the army? A. I flew at Gershner Field, Louisiana, and Rockwell Field in California.

Q. Were you a flier or instructor on flying or what? A. I became a flier. I became an instructor.

Q. You did? A. Yes, sir.

Q. What officer were you? A. I was a second lieutenant.

Q. And you have been flying ever since, substantially? A. No. I purchased a ship of my own after the war was over and flew it for a year and a half. Then I was out of aviation for six years. I came back again in about, I think it was, 1927 or '28.

Q. In the course of time did you take a course of instruction in operating—flying tri-motor Ford planes—at the Dearborn plant of the Ford Company? A. I did.

Q. Were you the flier whose name was mentioned as having been chosen together with Lou Foote at the Dearborn plant in September, 1928, by a representative, Captain Mackay, of the Colonial Western Airways? A. I believe I was.

Q. How many hours of flying tri-motor Ford planes have you now? A. Oh, about three thousand.

Q. Three thousand on Tri-motor Fords? A. Yes, sir.

Q. Did you arrive at the Colonial plant—at the Newark Airport on the 17th of March, or thereabouts, 1929? A. I arrived on the 14th—the 13th or 14th of March.

Q. And when did you first fly the particular tri-motor Ford that was involved in the accident we are talking about? A. On the Sunday of the accident.

Q. About what time, Lieutenant, did you take-off that day with someone else? A. As I remember it it was about noon or very close to noon—twelve thirty, probably.

Q. At that time who was at the controls? A. I think I was at the controls myself on the first flight.

Q. And who accompanied you on that flight? A. Captain Weatherdon.

Q. Now, before taking off on that first flight that you made with Capitain Weatherdon, will you tell us whether or not the motors were revved up on that morning? A. Yes, sir.

Q. Now, remembering the day of the accident, are not the events of that day impressed on your memory? I mean, of the accident? A. Fairly so. Not in every detail.

Q. How did the motors rev up prior to the first flight on that morning? A. They were normal.

Q. It has been testified here by a gentleman who says he was on that first flight, that when he was in the cabin he noticed that one motor revved up to sixteen hundred—fifteen or sixteen hundred, and he says the other motor—the other side motor revved up in the neighborhood of two thousand. A. That is ridiculous.

Q. Is it possible for a man in the cabin to see those three motors simultaneously as to how they rev up? A. No, sir.

Q. Would there be some obstruction preventing him from seeing the center motor at all? A. There would. The door of the cockpit.

Q. Is the door closed as you go off sitting in there and operating? A. Ordinarily it is closed.

Q. The door from the cabin to the cockpit is closed? That would prevent him from seeing the tachometer of the center motor? A. Yes, sir.

Q. Could a person see at the same time from a seat in the cabin the tachometer on the right or left? A. He would have to stretch his neck. If he was sitting on the right side it would be difficult

for him to see the left one. He would have to stretch out of the seat quite a ways.

Q. On that trip there about noon on that day what approximately did the motors rev up to? A. Sixteen hundred.

Q. What is the basis and your reason for saying that statement that only one revved up to sixteen and the other revved up to two thousand "that is ridiculous"? What is the reason for that statement? A. Because J-5 motors were not set up to rev up two thousand on the ground.

Q. They were not set to do that? A. No, sir.

Q. Were those motors set to do it at all? A. No, sir.

Q. On your first admission to the plane on that morning, how did it act before you took off as you sat in the cockpit with Captain Weatherdon? How did it appear to you? A. It acted normal.

Q. What? A. It was normal.

Q. And then, describe the take-off on the first flight that you were in, on that first flight that morning that day with Captain Weatherdon, just generally. A. We followed the normal procedure, taxied down the end of the runway and revved up the motors to full throttle separately and note the temperature and the oil pressure and the r.p.m.'s on the tachometer of each motor and then we headed into the wind down the runway and gun all three motors simultaneously and take off—a normal take-off.

Q. Where did you go? A. We flew straight ahead until almost to the edge of Newark.

Q. I didn't hear that. A. Almost to the edge of Newark in, I would say, a north or northwest direction, made a gradual right turn just over the edge of the buildings and then headed towards New York.

Q. What altitude would you say the ship made as it flew over New York, approximately? A. We didn't—we always tried to have at least three thousand feet over the City of New York.

Q. When you go over the very high buildings? A. Yes, sir.

Q. How did that ship then operate on that day, on that flight, the very first flight? A. It acted normally.

Q. Were you able to tell as an expert flier whether or not the ship was air-worthy? A. It seemed air-worthy as far as I could see.

Q. And whether or not the motors were performing normally and regularly? A. They were, yes, sir.

Q. And whether or not the ship functioned properly, perfectly as you observed it? A. There was nothing out of the way I could notice.

Q. And whether or not the motors were performing normally and regularly? A. They were, yes, sir.

Q. And whether or not the ship functioned properly, perfectly in every way as you observed it? A. There was nothing out of the way I could notice.

Q. And were there passengers in that flight—in that very first flight? A. Yes, sir.

Q. And thereafter did you make another flight in that ship? A. I did.

Q. Who was with you—before I get to the second flight, if you please—when you went up on that first flight with Weatherdon, did you—was anything pointed out to you, anything said to you about terrain or anything of that kind that you did not know? A. Yes, sir.

Q. What did he say to you? A. Mr. Weatherdon pointed out the various rivers and tracts—open places that were possible landing places.

Q. And as you flew over Newark airport in this vicinity, were you able to observe the terrain in that immediate locality? A. Yes, sir.

Q. And did you? A. Yes, sir.

Q. Then, the next trip, who did you make it with? A. I made the second trip with Mr. Foote, as I recall.

Q. And who operated the plane? A. I operated the plane.

Q. Did you make the landing that day on that trip? A. Yes, sir.

Q. Did you make the take-off? A. Yes.

Q. And you flew the ship over New York? A. Yes, sir.

Q. Foote alongside of you? A. Yes, sir.

Q. With passengers? A. Yes, sir.

Q. Was there approximately a full load, could you tell? A. I don't recall how many passengers there were in the ship, probably six or eight, something like that.

Q. That first trip? A. Yes, sir.

Q. By the way, was there at some time some gas put into this ship? A. The gas was put into the ship after the completion of the second trip.

Q. What did you do with Foote when you got him up in this plane, if anything? A. I did approximately the same as Mr. Weatherdon did with me. I pointed out the various places of interest, and so forth.

Q. Showing him the terrain as you made the trip? A. Yes, sir.

Q. And on that trip you made with Mr. Foote how did the motors operate? A. Normally.

Q. How did the ship perform? A. Normally.

Q. Was there anything unusual or out of order about it at all? A. I did not notice.

Q. Did you notice when you got up in the air any sputtering or missing of the motor? A. No, sir.

Q. Or any black smoke coming from the motor on any of those trips? A. No, sir.

Q. By the way, on the trip you made with Foote did anything occur at the landing that you made coming in that day? A. Nothing on the landing.

Q. Was there any time when you had the plane when it was—got sunk in some mud? A. It was taxiing out toward the end of the runway.

Q. That was on the take-off? A. Before the take-off.

Q. Merely on the taxiing over the runway? A. Yes, sir.

Q. What was that occurrence? A. Another ship was coming in to land, and in order to give him as much room as possible, I pulled over as near to the side of the runway as I could and they had put some fresh cinders in. It looked like the runway. It was soft underneath. The right wheel went into the mud and we had to get aid.

Q. By "aid," you mean— A. I don't know whether they pulled us out or we were able to get ourselves out.

Q. Had there been some rain a day or two before? A. It was naturally soft, when they put fresh cinders on. They were not thick enough to hold the weight of the ship.

Q. When the gas was put in that day please tell us whether or not they were filled? A. I don't recall whether they were filled or not. I left the ship at the time they instructed them to fill the ship.

Q. Where are the stopcocks on the tank? A. There are three of them and they are directly on the rear wall of the cockpit.

Q. Are they easy of access? A. As easy as any place you could find in the ship.

Q. Any difficulty about turning the stopcocks at all? A. No, sir.

Q. Did you make any more trips in the ship than those two that day? A. No, sir.

Q. Did you have occasion from time to time to see the ship in flight after your two trips? A. I did on two occasions.

Q. In two occasions before the last flight? A. No, sir.

Q. One occasion before the last flight? A. I saw the landing prior to the last flight, and the take-off of the last flight.

Q. You saw the landing prior to the last flight? How was that landing? A. Normal.

Q. And then you saw the take-off on the last flight? A. Yes, sir.

Q. Describe that take-off and how far you saw the ship go before your attention was attracted to something else. A. The take-off was normal in every way. Nothing about it to attract anyone's attention. I observed it as it passed me, I should judge, fifteen feet in the air and I followed its flight for about several hundred feet further along the direction it was flying in, which was parallel to the length of the runway until it was approximately fifty or seventy-five feet in the air, then I turned around and began talking with Mr. Weatherdon.

Q. Then, at the time it had gotten off the runway and had gone fifty or seventy-five feet in the air how was that ship functioning? A. Normally, as far as I could observe.

Q. Could you hear the motor as it passed you and got up fifty or seventy-five feet in the air? A. Yes, sir.

Q. How was it? How was the motor going? A. Motors were functioning normally.

Q. Was there in that take-off as you observed it to that height any sputtering or missing of those motors at all? A. No, sir.

Q. Was there any black smoke coming from the motors or from the engines? A. I didn't see any.

Q. Who were you with? A. Captain Weatherdon.

Q. Did you see that ship again after that first few feet on the take-off and it went off normally into the air? Did you see the ship again? A. I did.

Q. Where was it at the time you saw it the second time, and how high was it? A. I would estimate its height at from five hundred to seven hundred and fifty feet above the ground and it appeared in line with the viaduct. I was unable to see whether it was east of the viaduct or directly over it.

The Court: How high had it gotten?

The Witness: From five to seven hundred and fifty feet, I would estimate.

Q. And with everything apparently functioning normal when you first saw it then? A. No, sir.

Q. What was happening? A. The ship was in a climbing attitude and was losing altitude.

Q. Then did you observe it from that point on? A. I did.

Q. Tell us about his descent. A. It kept on in a straight direction, the wings being parallel to the ground and gradually lost altitude, regardless of the fact that the nose of the ship was not in a gliding attitude. In other words, the ship was level and still it lost altitude, which indicated it had—it was flying without power, without sufficient power to keep it in level flight.

Q. Without sufficient power. You could not tell which motors were not functioning from the distance you were away? A. No, sir.

Q. How far away was the ship at the time when you first saw it the second time? A. I have some difficulty in judging that distance. I believe it was in the neighborhood of a mile.

Q. And did you follow it finally until it glided out of sight? A. Yes, sir.

Q. Is there something that obstructed your view at the last? A. As I recall it, yes. I did not actually see it at the ground. There was something in between me and the ground. It passed out of sight.

Q. Do you remember what it was? A. No. I don't remember.

Q. Did you go over to the wreck afterwards? A. I did.

Q. Were you able to approach the wreck itself? A. Yes, sir.

Q. Did you render some assistance? A. No, sir.

Q. Well, at all times that you were in that ship and operating it and at all times you saw it before the time when you saw it in the air at the distance a mile away losing altitude, had you observed anything irregular or unusual about that ship at all? A. No, sir.

Q. And you had had the experience of studying motors and the equipment and building of that ship out at Dearborn, had you not? A. Yes, sir.

Q. You knew it from the ground up as to type? A. I was supposed to know it.

Q. I would like to ask you as a pilot—you piloted the ship after Weatherdon turned it over to you on that second trip—did you before taking the ship out on that trip by any chance go over the log books in the ship? A. No, sir.

Q. Is that a part of the pilot's duty to take and go over the log book? A. It is on the first trip.

Q. On the first trip, that is, the man that takes it out the first trip for the day? A. Yes, sir.

Q. That was not you? A. No, sir.

Q. There was no duty or requirement upon you making that second trip to go over the log book or that sort of thing? A. No, sir.

Q. Was there any duty on Foote who made the later trip to go over the log books and see that they were right down to the beginning of the day? A. No, sir.

Cross-examination by Mr. George:

Q. Now, Captain, so that I won't be caught off guard as I probably was last time, you saw the whole flight, didn't you, from the time of the take-off until the ship faded out of sight? A. No, I did not.

Q. Did you see the course of the plane? A. Beg pardon?

Q. Did you see the course of the plane on the take-off? A. I saw it for about, I would estimate, five hundred feet from the end of the runway.

Q. Did you see it when it made the turn? A. No, I didn't.

Q. You only saw it for a trip of five hundred feet? A. Yes, as far as I observed it, yes.

Q. And you did not see it again after that in the air? A. Yes, I saw it.

Q. Where was it when it was in the air the second time that you saw it? A. It appeared to be in a line over the viaduct.

Q. For the five hundred feet of travel you saw the plane, you notice it was not climbing well, didn't you? A. No, I didn't.

Q. By the way, Captain, you are—you were in the employ of the Colonial at that time, weren't you? A. Yes, sir.

Q. You are now, too, aren't you? A. Yes, sir.

Q. You did not testify at the last trial, did you? A. No, sir.

Q. And March 17th, 1929, was your first day at that airport, too, wasn't it? A. No, sir. I was there the day before that.

Q. Was that the first day you had flown? A. The first day I flew off the airport, yes, sir.

Q. The first day you flew off the airport? A. A. That is the first day I flew off the Newark airport.

Q. And you testified in direct examination the ship seemed air-worthy as far as you could see? A. Yes, sir.

Q. Am I correct? Is that what you said? A. Yes, sir.

Q. But, you made no inspection? A. No, I didn't.

Q. You relied on what Captain Weatherdon said as to the ship? A. I did.

Q. And that was true as to every trip you made? I mean, you made no greater inspection—or, no inspection at all? A. No, sir.

Q. You were satisfied what Captain Weatherdon told you was all right so far as the air-worthiness of the ship, right? A. Outside of the inspection of the actual observing the function of the motors prior to the take-off.

Q. You examined no log or anything like that? A. No. I did not.

Q. At no time? A. No, sir.

Q. I think the requirement is, as you testified on direct, he should examine the mechanic's logs when he takes his first trip? A. On the first flight the ship makes during the day.

Q. You didn't do that, did you? A. No. I did not make the first flight.

Q. You were asked by Mr. Reed was there any black smoke. Your answer was "I did not see any." You won't deny that there was black smoke, will you? A. No. I won't deny there was any.

Re-direct examination by Mr. Reed:

Q. Will you deny that there was no black smoke during the time that you saw the ship in flight? A. I did not see any black smoke.

Q. If there was black smoke coming out of the motors at the time you were watching, you would have seen it? A. I think I would have.

Re-cross-examination by Mr. George:

Q. But you were not watching it after five hundred feet? A. No, I was not.

Q. So you don't know whether black smoke came out or not? A. After that point I don't know.

Q. Let me ask you this question, Captain: Supposing the motor or one of them was sputtering just before the take-off, would you have started off with a load of fifteen passengers in the plane?

Mr. Reed: I don't think there is any testimony as to that.

The Court: No. Sustained.

Q. Would you consider it good piloting for a pilot to take-off that particular plane with the load such as was in the plane that day if the motor was sputtering immediately before the take-off?

Mr. Reed: Same objection.

The Court: Sustained. He has not been asked as to that.

Mr. George: He was asked if it was sputtering, your Honor. He testified it was not. That is all.

DAVID L. WECKSTEIN, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. Whereabouts are you employed? A. City of Newark.

Q. In what position? A. Police Department.

Q. On the 17th of March, 1929, what were your duties? A. In the detective bureau.

Q. Where were you stationed? A. In the detective bureau.

Q. What was the first you heard of this accident suffered by the Colonial tri-motor Ford? A. By telephone call received at headquarters.

Q. About what time? A. Around five ten or five fifteen p. m. March 17th, 1929.

Q. What did you do? A. I immediately left headquarters and went to the scene of the accident.

Q. How quickly after the accident did you get there, if you know? A. The running time from headquarters to Port Newark and to the scene of the accident, it was about maybe ten minutes, within ten minutes.

Q. When you got there were there many people around the plane? A. There was.

Q. How many would you say were gathered around it? A. Well, approximately about one hundred people.

Q. One hundred. From the time you got there I wish you would tell this jury whether when you did get there a guard was posted over the plane? A. When I arrived there there was Captain Bolger and Lieutenant Weidman trying to give first aid to the persons that were injured and there was no other police officers there at the time, but a telephone call was sent in for reserves and they came soon and then a guard was placed around the machine.

Q. Was it part of your duty to make an investigation to ascertain, if you could, the cause of the accident? A. It was.

Q. In connection with that—how long was that guard, the police guard over the plane maintained? A. From the time of the accident to the time of its removal from the grounds of the Central Railroad.

Q. And who removed the engines from the Central Railroad? A. Why, I presume it was the—through the Colonial Company.

Mr. George: I ask that that be stricken out.

The Court: Only what you know, Officer. Strike it out.

Q. Did the police have anything to do with having the engines inspected? A. Yes.

Q. What? A. We had them sent to the Wright Aeronautical Corporation for an inspection.

Q. And between the time that the police got there until the time that they were sent to the Wright Corporation for examination, tell whether there was any police guard kept over those engines? A. There was.

Q. During what time? A. Twenty-four hours of the day.

Q. How many police officers were kept there day and night? A. That would be hard to tell, but there was police officers there every minute of the day, day and night.

Q. For what purpose? A. To keep persons away from the machines so as nobody would get near it and take anything from it to hinder our investigation.

Q. Do you know whether there were at any time any souvenir hunters around the plane when you got there? A. There was.

Q. Were any parts of the plane missing at the time you got there?

Mr. George: That is objected to unless this witness is competent to testify as to what all of the component parts of the plane were before the crash.

The Court: He may tell what was missing.

Q. If you know, what was missing? A. I don't know what was missing exactly, only for what we recovered outside of the grounds of the accident.

Q. Did you recover later some parts of the ship from various sources? A. We did.

Q. By going around you did get some parts of it? A. Yes, sir.

Q. What was done with those parts? Sent up to the Wright Company? A. They were. Well, I picked up a piece up in Bloomfield and it was brought to headquarters and then later turned over to the Colonial.

Q. Did you go to the Wright Engine Company? A. I did.

Q. Who did you interview there about those engines? A. Mr. Kennedy.

Q. Did you make an inspection of them with him? A. Just the part he showed me from one of the motors.

Q. He did show you some of the parts of the motors? A. Oh, yes.

Q. Are you a machinist or engine mechanic? A. No, sir.

The Court: Well, you saw the part that had been sent to the Wright Company out there at the plant, didn't you?

The Witness: I did. What parts of the motor was left, your Honor, at the scene of the accident we had removed.

The Court: Were they in the same condition as far as you could see as at the time you first arrived at the accident?

The Witness: They were all taken apart at the Wright Manufacturer.

The Court: When they were turned over, of course, when they were turned over to the Wright.

The Witness: Oh, they were the same way.

The Court: They had not been disturbed from the time you got there until they were handed over to the plant?

The Witness: No, sir.

Q. How did you go to the wreck from headquarters? How did you go to get there? A. Why, we went down Wilson and through Heller and Merz and over the field.

Q. That is not shown on the map, is it? A. It is on the Wilson Avenue side. I don't know whether it is there or not.

Q. Did you cross Pierson's Creek in order to get over there or did you come the other way?

The Court: That is the creek that runs to the west of the Central Railroad track.

The Witness: I don't remember whether I crossed the creek or not. I couldn't tell you.

Q. Come down here. Perhaps you can get a view of the locality and refresh your recollection about it. The map is two hundred feet to the inch. This is north. This is the Central Railroad—no, this is the Lehigh Valley Railroad. This is Route 25. This is South Street. This is Central Railroad. A. We came over Wilson Avenue—Wilson Avenue, I believe, is up in here. We came over Heller and Merz yard and came out in this direction right into the scene of the accident and that was the first I knew that we could go by the railroad track.

Q. You pointed that you came down east of this black line which is shown here and came back of the Central Railroad? A. That is right.

Cross-examination by Mr. George:

Q. Did you accompany the motors or parts from the scene of the accident to Paterson? I mean, stay right with them? A. Oh, no.

Q. You don't know exactly when the motors arrived at the Wright plant of your own knowledge, do you? A. Will you refer to the report there?

Q. I am asking about your own personal knowledge. Do you know exactly when the motors arrived at the Wright factory? A. The day, you mean?

Q. Yes. A. I might have that in my report I have with me.

Q. Did you accompany the motors to the plant? A. No, I did not.

Q. Then you don't know when they arrived, do you? A. Oh, no.

Q. You don't know what happened from the time the motors left the place of the crash and their arrival at the Wright plant, do you? A. No, I don't.

Q. You are a police officer, aren't you? A. Right.

Q. And had no connection other than a police investigation of this accident? A. That is right.

By Mr. Carpenter:

Q. By the way, when you got there first did you notice any odor of gas? A. Odor of gas? Well, there was gas around the accident, yes.

Q. What else did you notice about it? A. Well, the position of the plane—position of the fuselage, the damage that was done to the gondola and the motors lying out there on the railroad track.

Q. On the other side of the gondola? A. Yes.

Q. Did you notice any oil? A. There was oil there.

Q. Where was that? A. Right around the accident on to the sand.

Q. Did you throw any sand or dirt on the gas or oil? A. I did not.

By Mr. George:

Q. Is that all you noticed when you arrived at the scene of the accident? A. The bodies, of course.

Q. I wondered if you overlooked that? A. No.

CLAYTON H. HOPKINS, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. You are a Newark City policeman, aren't you? A. Yes, sir.

Q. How long have you been on that force? A. Twelve years the first of March—eleven years. I am on my eleventh year.

Q. What is your rank now? A. I am a motorcycle policeman.

Q. What were you on the 17th of March, 1929? A. Motorcycle policeman.

Q. Do you remember whereabouts you were that afternoon about five o'clock—in the neighborhood of five o'clock? A. Yes, sir.

Q. Whereabouts were you? A. I was traveling east on South Street.

Q. Whereabouts on South Street—by the way, did you notice a Ford tri-motor plane that afternoon about that time? A. I did.

Q. At that time whereabouts on South Street were you when you first noticed that plane? A. Around Jefferson Street.

Q. Just whereabouts is Jefferson Street? How far west, rather, of the viaduct is Jefferson Street? A. Of Route 25 do you mean?

Q. The elevated Route 25? A. About five or six blocks.

Q. About five or six blocks west? A. Of Route 25.

Q. Is that Jefferson Street direction on this map? A. I can't tell you.

Q. But, at any rate, it is five or six blocks west? A. It may be seven blocks. Around five, six or seven blocks.

Q. Around five, six or seven blocks west of the elevated highway? A. Yes, sir.

Q. At that time you were on your motorcycle? A. Yes, sir.

Q. Going in which direction? A. Going east.

Q. And when you were at this place did you see this Ford tri-motor plane? A. I did.

Q. Just where was the Ford tri-motor plane at that time, if you can tell us? A. The plane was traveling in a—kind of in a direction of South Street turning east.

Q. Turning east? A. Yes, sir.

Q. From which direction was it coming, Officer? A. It was coming from the south.

Q. Turning east? A. Turning from the north to the east, coming from the south turning from the north to the east, northeasterly direction.

Q. About how high in the air was that plane? A. It was around five or six hundred feet—four, five or six hundred feet.

Q. Could you tell from your view of it at that time whether—how the plane was functioning? A. The plane seemed to be functioning all right at that time.

Q. As far as you could tell was it climbing or was it coming down? A. It was about on an even keel at that time.

Q. Did you at that time notice anything at all about that plane that was not normal? A. At that time I did not.

Q. Did you keep on going down east on South Street? A. I did.

Q. Did you have occasion again to look at the plane? A. Two or three times.

Q. And where was it? How far had you gone east on South Street before you noticed the plane the second time? A. In between the houses—as

it went in between the houses I noticed the plane going in an easterly direction, the same direction I was going.

Q. By the way, when you first noticed that plane how far was it south of you overhead? A. It was south of me.

Q. About how far south of you was it when you first saw it? A. Oh, when I first saw it? I imagine about—well, probably from a quarter to a half mile.

Q. South of you? A. Yes, sir.

Q. Now, then, when you saw it the second time and you said it was running parallel with you—is that right? A. Yes, sir.

Q. —how high in the air was it when you saw it the second time? A. Well, it had started—from the first time I saw it until the second time I saw it again in between the buildings it seemed to be slowly losing altitude.

Q. And did you notice anything about the sound of its motors at that time or couldn't you tell? A. No. You couldn't tell. It was too far off from me at that time.

Q. How far away from you was the plane when you first saw it the second time? A. Well, it was coming closer to South Street going practically the same direction I was going, going east.

Q. And coming over your head? A. Coming north to South Street.

Q. Coming north to South Street when you saw it the second time? A. Yes, sir.

Q. Then when you saw it the third time what did you notice about it? A. Well, the third time I saw it I was climbing the incline over the railroad track and the plane was at that time three or four hundred feet south or maybe more than that—maybe four hundred feet—three or four

hundred feet south and two hundred and fifty or three hundred feet high.

Q. South of what? A. Of South Street.

Q. South of South Street? A. Yes, sir.

Q. Was that about over the Pennsylvania Railroad track? A. Around about the Pennsylvania Railroad track.

Q. That is about where my finger is?

Mr. George: Let him do it.

Q. Suppose you come down here, Officer, and tell us. Then, point out the directions. I want the jury to see it. This arrow is pointing north. This is Route 25. This is the airport. This is South Street here. This is the Pennsylvania Railroad. This is the Lehigh Valley and that is the spur of the Pennsylvania Railroad and this is South Street. A. Well, taking this as Jefferson—I don't know whether it is or not—around in here is about where I first saw the plane. The plane was coming in a northeasterly direction, coming like this, kind of facing me. As it came in here it turned to an easterly direction and then alongside of—seemed to be alongside of—south of me two hundred and fifty or three hundred feet south of South Street. This is the incline here.

Q. That is over the railroad tracks? A. That is over the railroad tracks. I was going up that incline. I noticed the plane—the motor nearest to me wasn't turning around. I knew the plane from the high altitude here going down—it was on its way to New York with passengers, and it was losing its altitude.

Q. When it passed over this spur of the Pennsylvania Railroad just south of South Street, how high would you say it was then? A. Over here?

Q. Yes. A. Possibly three hundred feet high.

Q. Now, did you observe the course it continued to take? A. Yes, sir. I followed the plane all the way—followed the plane all the way across here. This is Route 25. All the way across here, about two or three hundred feet south of South Street over the route and came down in here. About as it got in here I was going down this little incline here and the road came between the plane and I, but as I got lower here I picked the plane up again here and watched it until it crashed.

Q. You say in here. What was that in there from the way you described it? At that time what was that? A. That was dumps.

Q. What about the condition of it? A. It was very rough. It was where the dumps—the dump trucks went—very rough, and there was one place in here it seems to me now as though this here has been built up or filled in because this did not come out so far at the time. It seemed to come out in here. Then there was about seven or eight feet drop there and nothing but bog.

Q. Where was the bog? Where did that extend from? A. The bog?

Q. Yes. A. The bog extended from about in here all the way across to the railroad track.

Q. Was there a creek in there that ran north and south—Pierson's creek? A. I did not notice no creek ran in here. I noticed all bog in there, because we tried to cross there. If there was a creek there we certainly would not have tried to cross the creek.

Q. Did you go across that bog? A. No, sir, we got stuck in the bog and had to go back.

Q. You got stuck? A. I went up a little ways and got out over my ankles and the fellow ahead of me was a little over his knees and he was stuck and couldn't get out. I didn't go any further

when I saw him stuck, so I walked to this higher ground and came over here to this elevated here. I think there is another railroad running here, and I followed all the way around here to the plane.

Q. Would you come around the railroad? Come around this part? A. I came around here. This is high ground here. Walked right around here.

The Court: Were you the first one to the scene?

The Witness: I was not. After I had come down here, as soon as I got out here is when I saw the plane when it crashed. I got a little excited. I was on my wheel. I did not know what to do. I thought I would tell the Air Corps about it. I came up about here, turned the wheel around. I says, "They know about it by this time," so I came on back—came back to here and down here there is an old road where they run the trucks out to the dump. I came out in here a little ways. I says, "What is the use of going out in there without notifying an ambulance or patrol wagon?" So, I returned here and got a telephone in here. I telephoned for the patrol, called the Lieutenant of the Third Precinct to send the patrol and ambulance, a tri-motor has gone down. I was sure it was full of passengers because it was on its way to New York. Then I returned with the wheel and got the wheel in about here where I couldn't run the wheel any further in this rough road, then I walked from there on down to the plane.

Q. That detail kept you from being the first one there? A. Yes. I would have been the first

one there if it had not been for telephoning and getting a little excited and running back and forth there.

Q. How high, Officer, would you say that plane was when it crossed over the elevated highway Route 25 while in the air? A. The elevated is about sixty or seventy-five feet. It seemed to be across over that elevated route—well, it crossed over it fifty or sixty feet I should say over that elevated.

Q. Now, you say from where you were—strike that out—is the position shown on this map where you say you were when you first saw the plane? A. In the position there?

Q. Yes. A. If that is Jefferson Street it is there. I don't know what street it is.

Q. Jefferson Street may be further west than that. A. Yes. It possibly could be further west.

Q. At any rate, when you first saw the plane it was down south of you? A. South.

Q. Curving around from the south toward the east—south, north, then east? A. That is right, coming towards me and turned as it came, turning to the east.

Q. What sort of a turn was that, Officer? Tell the jury. A. Why the turn seemed to be at that time—it seemed to be on an even keel, just a slow turn and turned to the east.

Q. Was it a slow, gradual turn or a sharp, quick turn? A. A slow, gradual turn.

Q. A slow, gradual turn? You saw it? A. Yes, sir.

Q. Then by the time you had gone a block or two on your motorcycle, you say this plane was coming around closer to you? A. Yes, coming closer to me.

Q. And as it came closer to you it was heading—working its direction around to what by the compass? A. It was to the east.

Q. Working around toward the east? A. Yes, sir.

Q. In that wide, gradual turn? A. Yes, sir.

Q. And then when you got here to the point where you looked at it the third time you were then going up this incline over the Pennsylvania spur? A. Yes, sir.

Q. Then you say the plane was south of you? How close to South Street? A. It was about—about around three hundred feet, I should say, around two hundred and fifty feet or three hundred feet.

Q. Around a city block away? A. About that, yes, sir.

Q. And up in the air? A. Yes, sir.

Q. And at that time did you have a clear, uninterrupted view of the plane? A. I did. At the first I did, but not on the second. I had a side view of the plane.

Q. The first time you had a clear, unobstructed view of the plane? A. A clear view of the plane.

Q. And you were able at that time to tell it was a normal flight? A. It seemed to be a normal flight at that time.

Q. And that it was in a wide turn coming around north and east? A. Yes, sir.

Q. And you were able to make an estimate of its height? A. Around four or five hundred feet high, I should say, possibly. It could have been higher. I was from a quarter to a half a mile away from it.

Q. And working its way up to where you were? A. Yes, sir.

Q. When you were going up this elevated portion of South Street over the railroad, at that time was the ship running parallel to South Street? A. Yes, sir.

Q. Before that, I gather from what you say it was in the turn and had not yet run parallel with South Street? A. That is it.

Q. By the way, Officer, will you tell us whether you could hear the motors the first time you saw the plane? A. Well, yes, you could hear the hum of the motors.

Q. The first time you saw the plane were you able to tell anything about the propellers? A. Well, they seemed—they all seemed to be all right at that particular time.

Q. Was it the first, second or third time or fourth time you noticed the left propeller was stopped? A. It was, I think, about the third time—as soon as I saw the plane losing its height—altitude—I knew there was something wrong. Then, I took real, particular attention to the plane and that was after I had seen it the first time.

Q. What was it you particularly noticed about that left propeller? A. The left propeller was just turning around.

Q. Just turning around? A. Yes, sir.

Q. Were you able to see the center propeller? A. No, sir.

Q. Nor the right propeller? A. No, sir.

Q. When you got over there to the wreck did you notice any odor? A. Yes, sir.

Q. What was the odor? A. The odor was gasoline and oil.

Q. And did you do anything to prevent a fire of the gasoline? A. Yes, sir.

Q. What? A. Throwed sand on.

Mr. Carpenter: That is all. Cross-examine.

Cross-examination by Mr. George:

Q. Officer Hopkins, you were on what street? Jefferson? A. Yes, sir. I was on South Street.

Q. At all times while the plane was coming north, rising? A. Yes, sir.

Q. Were you on a motorcycle? A. Yes, sir.

Q. Well, Officer Hopkins, just exactly where was the plane with respect to this map when you first saw it? A. It was about opposite Jefferson Street.

Q. I don't know where Jefferson Street is. A. Neither do I on the map.

Q. Oh, was it south of South Street? A. Yes, sir.

Q. When you first saw the plane how far south of South Street was it? A. About half—quarter to a half mile.

Q. Quarter to a half mile, and it was coming— A. In my direction.

Q. —in your direction towards—in a northeasterly direction? A. Northeasterly direction.

Q. Now, you saw him make a turn, didn't you? A. I saw it as it was in the turn. It was coming in a northerly direction and was making a turn.

Q. With respect to this map, then,—I mean it was coming practically in a straight line from the airport, wasn't it, going northeast like this? A. Well, I could not tell you that.

Q. I mean when you first saw it it was about at this point, wasn't it? A. It was about a quarter to a half mile to the south of South Street at Jefferson Street when I first saw it.

Q. And was making a turn over the railroad? A. No, no. Not there. It had already crossed

them tracks. It must have crossed them if it left the airport.

Q. When it completed its turn how near to South Street was it? What was the nearest to South Street after it had completed its turn and was leveled off for east? A. The nearest time it came to South Street was from two hundred and fifty to three hundred feet. That is my estimation of it.

Q. Do you remember testifying at the last trial —you were asked a question—"All the time that you saw it the plane was south of South Street?" —A. That is it.

Q. —Answer: "Yes, sir." Question: "At no time north of South Street?" Answer: "No, sir." A. That is it.

Q. Now, that plane had never gotten above that point, had it? A. No, sir.

Q. And you saw it as it was coming and making the turn? A. Yes, sir.

Q. And it had never gotten above that? Now, you are positive of that? A. Absolutely.

Q. And then you were asked: "At no time north of South Street?" Answer: "No, sir." Question: "How far did you say south of South Street?" Answer: "Four to five hundred feet the first time I saw it." Question: "At an altitude of five hundred feet, you said?" Answer: "And an altitude of about five hundred feet." By the Court:

"Question: I thought you said four or five hundred." Answer: "Four to five hundred feet the first time I saw it. I did not measure it. The second time I saw it was three to four hundred feet." In other words, the highest altitude was four to five hundred feet and the second time you saw

it was three hundred feet, that is right? A. That's about right.

Q. It had never been over five hundred feet to your knowledge? A. You mean in height?

Q. Altitude? A. Yes. I don't think so.

Q. You saw it while it was making the whole turn? A. That is it, yes, sir.

Q. And it was never up to seven hundred feet, was it? A. Well, I couldn't tell you. I did not measure it. I am just talking from my own observation.

Q. Your best estimate is it was not over five hundred feet? A. That is it.

Q. Now, just point on the map or tell me when to stop as to where the plane was about when you saw it the second time. A. In between them buildings you have gone by.

Q. Right here? A. Back a little bit further.

Q. Back here? A. Yes, in there.

Q. When you saw it the second time it had an altitude of three hundred feet, didn't it? A. It possibly could have been. It was losing altitude from the first time I saw it. Now, I just saw it at that time between the buildings.

Q. And what was the nearest the plane was to South Street in its easterly direction course? How far south of South Street? A. It was getting closer to South Street until it went across the route. That was about the closest it had been at any time.

Q. Say about where the pointer is? A. Yes, sir.

Q. That is the nearest it ever was to South Street? A. About two hundred and fifty to three hundred feet to South Street.

Q. Two hundred and fifty or three hundred feet south of South Street was the closest it ever got to South Street? A. Well, to my estimation.

Q. Yes, I am speaking of your estimation.

Mr. George: That is all.

Re-direct examination by Mr. Carpenter:

Q. I show you a map of the City of Newark, Port of Newark, and I want you to go down, if you will, to that photographic map and find on that the elevated highway route 25 and Jefferson Street and tell us how many blocks west of the elevated highway—how many blocks west of that you find Jefferson Street and tell us from your comparison of the two maps whether Jefferson is shown on that map or whether it is west of the border. Come down, because you can't compare the blocks right on the map. Tell us whether Jefferson Street is beyond the border line? A. These streets in here seem to be kind of cut off.

Q. Does the railroad crossing at South Street show on this city map? A. This railroad is shown on this map.

Q. Now, then, count the number of streets running west from that. What street is that first one? A. It shows a road in there.

Q. I mean this. A. Pulaski.

Q. The first one that goes off is Pulaski Street? A. Pulaski, but that is not the first one. There is one road at the bottom of that right here.

Q. Is that Pulaski Street right at the bottom—looking on the big map here—at the foot of the ramp? A. The ramp comes down. This possibly could be Pulaski.

Q. Look at the city map and compare it. A. Yes, I guess that is Pulaski Street.

Q. What is the next west? A. Van Buren.

Q. What is the next west? A. Adams.

Q. What is the next west? A. Jefferson.

Q. So Jefferson would be the next street west of the last one shown on this map?

Mr. George: That is objected to. There is nothing in evidence to show how many different streets there are and what their names are on this map.

The Court: And on the further ground it is leading. Sustained.

Q. Is your recollection refreshed from the city map so you recall now? A. Yes, sir.

Q. Do you recall now the location of Jefferson? A. Yes, sir.

The Court: Put your finger on it.

The Witness: Jefferson, I should think, would be about in here.

Q. It would be about in the middle of the white margin on the left side of the map? A. Yes, sir.

Q. Does that run north and south? A. North and south.

Q. Above and below South Street? A. Yes, sir.

Re-cross-examination by Mr. George:

Q. And, then, assuming you were standing at Jefferson Street here, right about here, where was the plane, put your finger there? Stand over on this side so the jury can see. Where was the plane when you first saw it? A. The plane was about in here.

Q. Which way was it heading? A. Towards me to the north and turning to the east.

Q. How many blocks south of you was the plane when it first started to turn?

Mr. Carpenter: When you first saw it.

Mr. George: Wait a minute.

Mr. Carpenter: I object to that question. He admits he didn't see it.

The Court: He said he saw the whole turn, Mr. Carpenter.

The Witness: From a quarter to a half mile, I should say, when I first saw the plane.

Q. Now, it was coming straight towards you, wasn't it? A. It was coming to me and it was in the turn.

Q. It was then making the turn? A. Yes, sir.

Q. Then it turned and completed its turn right about here, right about three hundred feet? A. Over here. In through there. And, as it went through here I saw it between the buildings. It came to here and got closer to South Street and crossed right over here.

Q. You say the plane was about here, a half mile in this direction, when you first saw it, is that right?

Mr. Carpenter: I object. He didn't say anything of that kind.

The Court: This is cross-examination. Go ahead.

Q. Never mind that map. Confine your attention to what my question is. You were standing about here. That is South Street? A. Yes, sir.

Q. Put your finger about where the plane was when you first saw it. A. In here.

Q. And you saw the whole turn then, didn't you? Is that right? A. Why, I saw part of the turn. The building—as soon as I got past the street intersection there, there is buildings along in there. I did not see it behind them buildings.

Q. And you saw the appearance of the plane approaching you, didn't you? A. Yes, sir.

Q. About here when you saw it for the first time? A. Yes, sir.

Q. Then it made the turn there? A. Yes, sir.

Mr. George: That is all.

By Mr. Carpenter:

Q. Did you see the plane when it left the airport? A. No, sir.

Q. Did you see its course from anywhere before the time you got your first glimpse of it? A. I don't get that.

Q. You didn't see what happened before you saw it down here on the marsh? A. Before that?

Q. Yes. A. No, I didn't.

By Mr. George:

Q. Just one more question. The plane never got up here, did it? A. No.

Q. Positive? A. Absolutely.

Q. Never got over these houses? A. No, sir.

Q. Never got to the left of this marsh where you were, did it? A. Not on that flight.

Q. Never got off the map, assuming this is two hundred feet to the inch, never got off the map? A. I don't know how much ground that map covers.

Q. Did it ever get away over here? A. Presuming this is Jefferson Street, he didn't.

Mr. Carpenter: Not within the time he saw it.

Q. Never got up as far as this mark here? Never got north of South Street? A. I never saw it north of South Street.

Q. Never got above two hundred or three hundred feet? A. That is what I testified.

Q. And you saw the whole turn as it came from the airport and making the turn, completing the turn, going along, away down to the crash, right? A. Right.

Q. No fires around there at that time, were there? A. Well, there was fires in there. There was smoke in there.

Q. There were not fires, were there? A. I didn't notice any.

Q. Just the smoldering smoke from the dump? A. Well, it was smoldering.

Q. But there weren't any fires you could see, flames?

Mr. Carpenter: How do you get smoke without fire?

Mr. George: I am asking this witness.

The Witness: I didn't see any.

Q. You saw them burning? A. I saw smoke.

Q. But no fire? A. I didn't notice fires.

Q. What counsel means is usually where there is smoke there is fire, but you don't always see the fire. A. That is an old saying.

Mr. Carpenter: Will you agree to that?

Mr. George: Yes, I do.

Thomas Youngman, for Defendant—Direct.

THOMAS YOUNGMAN, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. By whom are you employed? A. Wright Aeronautical Corporation.

Q. How long have you worked for them? A. Five years.

Q. What is your position? A. Truck driver.

Mr. George: What?

The Witness: Truck driver.

Q. Were you sent over to Port Newark to get the three engines that had been in the crash on March 17th, 1929? A. Yes, sir.

Q. Do you know what day you got there? A. Tuesday, the nineteenth.

Q. About what time? A. Oh, about nine thirty.

Q. About nine thirty in the morning? A. Yes, sir.

Q. Anybody with you? A. I was alone in the truck.

Q. And what did you get there? A. Three motors.

Q. Where did you get them from? A. From—by the railroad.

Q. Who delivered them to you? A. Why, our man was already there when I got there.

Q. In other words, were the police there also? A. Yes, sir.

Q. Guarding the engines? A. Yes, sir.

Q. And did your man help to lift them and put each motor in your truck? A. Yes, sir.

Q. Are you strong enough yourself to lift one of those motors? A. No, sir.

Q. You have to have help to do that? A. You have to.

Q. Did you drive that truck from that wreck over to the Wright Factory in Paterson? A. Yes, sir.

Q. What can you say about the condition of the motors when they were delivered in Paterson as to the condition at the time you got them? A. Same.

Q. Any change in them? A. No, sir.

Q. Any parts removed? A. No, sir.

Mr. Carpenter: Cross-examine.

Mr. George: No questions.

CHARLES LOMBARDI, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. You are receiving clerk for the Wright Aeronautical Corporation at Paterson, aren't you? A. Yes, sir.

Q. What did you have to do, if anything, with the three motors from the tri-motor Ford that was wrecked near Port Newark on March 17th, 1929? A. I was instructed by my employer to go down to the scene of the accident to get the three motors, that is, to assist the truck driver in placing the three motors on the truck and returning them to the factory.

Q. Did you do that? A. Yes, sir.

Q. You went down to the Central Railroad where the motors were? A. Yes, sir.

Q. Right away? A. Yes, sir.

Q. Who was guarding the motors at that time? A. A number of policemen there, and one man from the Colonial Airport and we had a representative from Wright's who had paper work concerning the removal of those motors—the authority—and they gave us the O.K. to put them on the truck.

Q. You had to get an O.K. from the police or policemen in charge in order to get the motors and put them on the truck? A. Yes, sir.

Q. Will you tell the jury whether you gathered the motors and all the parts of the motors that were on the ground? A. We got everything we could see.

Q. Everything you could find? A. We could find.

Q. And put it on the truck? A. All on the same truck.

Q. What was done then? A. Then we had to proceed to the police station in Newark. I don't know where it was because I am not familiar with the surroundings in Newark. Then this here representative of Wright's that had the paper work he had to go in there and get headquarters O.K. before we could proceed to Paterson, the plant.

Q. They even took you to police headquarters to make the necessary paper work there?

Mr. George: I object to this persistent leading examination of Mr. Carpenter.

The Court: Well, you went there. And, you delivered the parts over to Wright's, did you?

The Witness: Yes, sir.

Q. And was there any change in those parts from the time you got them until the time you delivered them?

The Witness: Nothing was touched from the scene of the accident until we got to the shop. Everything was intact.

The Court: They were just the same? Nobody handled or touched them except in loading and unloading?

The Witness: Yes, sir.

The Court: Were they delivered to Mr. Kennedy of that concern?

The Witness: Yes, sir.

Mr. Carpenter: That is all.

Mr. George: No cross-examination.

GEORGE HERBERT LAWTON, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. What is your business, Mr. Lawton? A. Aeroplane and engine mechanic.

Q. Whereabouts are you employed? A. Eastern Aeronautical, Newark, New Jersey.

Q. What? A. Eastern Aeronautical Corporation, Newark Airport.

Q. Eastern Aeronautical Corporation. Before that where did you work? A. At Miller Field, Staten Island.

Q. Were you working at Miller Field, Staten Island, in March, 1929? A. Yes, sir.

Q. Did you know the Ford tri-motor plane that was later cracked up in Newark? A. Yes, sir.

Q. Whereabouts was that plane kept in Miller Field? A. In the same hangar I was working in.

Q. Were you in the employ of the Colonial? A. No. I was in the employ of the New York National Guards.

Q. New York National Guard mechanic? State whether or not you were at Miller Field on the morning of March 17th before the ship left for Newark that day? A. I was not.

Q. During the week before were you at work in that hangar? A. Yes, sir.

Q. How much of the week were you there? How many days that week? A. That would be five days.

Q. Five days that week. Tell this jury whether you saw any work being done on that ship during that week in the matter of making repairs or overhauling—put it that way? A. As I remember it the weather was not so very good that week and there was quite a bit of time put on the plane by Adam Wtorkowski. He checked the motors and the aeroplane from what I could see of it.

Q. Did you actually see him at work checking those motors during that week? A. I did.

Q. How many of the days—those five days you were there—how many of those days did Wtorkowski work on the engines of that ship? A. Every day that the plane was in the hangar. I don't recall exactly, but I believe the plane went out probably once that week. I am not sure.

Q. That is just your recollection of it? A. Yes.

Q. You did not make any written notes of it? A. None at all.

Q. By the way, is it much of a job checking a motor—a one hundred hour inspection of a motor? A. Why, that depends upon how you make your checks before that.

Q. Well, in checking those J-5 engines in the Ford—did you know that Ford? A. Yes.

Q. Will you tell the jury in what condition that ship was kept and the engines, from your own observation? A. From my own observation I should judge that that ship was kept in A-1 condition.

Q. Why do you say that? You say from your observation. What did you observe? A. The motor seemed to be checked—looked over. As far as I could recall from the time it was away from the hangar and when it was returned, the plane was checked regular. I happened to know the mechanic that checked it for quite a while, so I know he does not let anything slip by.

Q. Is he a good mechanic? A. He was considered——

Mr. George: Just a minute. That is objected to.

The Court: Not what he was considered.

Q. Would you say he was a good mechanic or not?

Mr. George: That is objected to.

The Court: Sustained.

Q. Was he your boss at one time at Miller Field?

Mr. George: That is objected to as immaterial.

The Court: Overruled.

Q. Was he your boss at one time at Miller Field? A. I don't recall. There was a general mix-up of bosses at one time. He might have been a boss.

Q. Was he at one time head mechanic at Miller Field while you were there—or, weren't you there? A. I believe he was.

Q. I am only asking your own recollection and your own knowledge, not what you may have heard. Did you ever watch Wtorkowski check the motors of that ship or help him with it? A.

Quite often I loaned him ladders and a hand once in a while.

Q. You mean you would lend him a hand once in a while? A. Yes, sir.

Q. From what you saw, that is, your own examination of the way you saw him work, tell this jury in what condition those motors were kept and maintained from your observation. A. In A-1 condition.

Mr. Carpenter: Cross-examine.

Cross-examination by Mr. George:

Q. What were you doing at the airport during that period? A. I don't understand the question.

Q. Were you working at the airport? A. At what airport?

Q. Newark Airport? A. No. I was not working at Newark Airport at that time.

Q. What were you doing at Miller Field? A. I was aeroplane and engine mechanic.

Q. On what planes? A. Army planes.

Q. But not this plane in question? A. No.

Q. And where was the plane in question kept? A. In the hangar that the army planes were kept.

Q. The same hangar? A. Yes.

Mr. George: That is all.

HECTOR GHERZO, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Mr. George: I understand this witness' testimony will be the same as the preceding witnesses, as I read it here. I know he will testify to the same thing substantially. Let it be conceded—not conceding the truth of everything he says—but, conceded if he testifies it will be the same as the preceding witness.

Mr. Carpenter: I will take that offer except this.

By Mr. Carpenter:

Q. Are you a government aeroplane and engine mechanic? A. Yes, sir.

Q. How long have you been working for the government? A. I have been working there for five and a half years now.

Q. Working on army planes? A. Working on army planes, yes, sir.

Q. You knew Adam Wtorkowski? A. Yes, sir.

Q. Not related to him? A. No, sir.

Q. Was he a good mechanic? A. As far as I know he was fairly good.

Mr. Carpenter: You concede his testimony is the same as the other witness?

Mr. George: Yes, but not that he is a good mechanic, speaking of Wtorkowski.

Q. How old are you? A. Thirty-seven.

Juror Number Eight: Are you a citizen?

A. No. First papers. I am waiting for the final.

Juror Number Eight: Working for the government five years?

A. Yes. National Guard, see? When you get first paper it is enough to belong to the National Guard. That gives you a chance to work around anything that should be done there.

GEORGE WITTICH, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. You are a government aeroplane and engine mechanic, aren't you? A. I am.

Q. Working for the New York National Guard? A. Yes, sir.

Q. At the airport at Miller Field? A. Yes, sir.

Q. How long have you been in the government employ? A. Four years.

Q. Stationed where? A. Miller Field.

Mr. George: I concede the same thing. Why waste any time?

Q. You also saw Wtorkowski working on this plane during the week before March 7, 1929? A. I did.

Cross-examination by Mr. George:

Q. How many times did it go out of the hangar during that week, the period you saw the plane? A. How many times did the ship go out?

Q. Out of the hangar, yes. A. Prior to that date there was some bad weather and they were in for quite a while.

Q. For how long? Which? Days or weeks. A. No, I couldn't say just how long it was.

Q. Well, about how long. You saw it. A. I know there was at least four days.

Q. And during those four days Adam Wtorkowski worked on the plane, didn't he? A. He did.

Q. Eight hours a day every day? A. Every day.

Q. Even though it didn't go out he still worked on it eight hours every day? A. Yes.

Re-direct examination by Mr. Carpenter:

Q. Did you give him a hand, too? A. I did help him with certain things.

Mr. George: We will concede his testimony is the same as the second witness preceding and unless the jury want to ask any questions we will let it go.

Everett Daniells, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Reed:

Q. What is your trade and business? A. Electrician.

Q. How long have you been an electrician? A. About fifteen years.

Q. Who do you work for and what is your position? A. Foreman for the Greer Electrical Company.

Q. Do you know Adam Wtorkowski, the mechanic who worked on this tri-motor Ford 4-AT plane? A. Yes, I do.

Q. Did you from time to time see the mechanic working at the hangar on that certain plane? A. I did.

Q. Where? A. At Miller Field.

Q. How frequently did you see Wtorkowski working on the motors on the plane? A. Why, almost every time I went down there.

Q. How frequently did you go down to Miller Field? A. On the field once a week.

Q. And when did you see it last prior to the Sunday, the 17th of March down at Miller Field? A. On the 16th.

Q. What did you see about it on that day? A. When I arrived at Miller Field on the 16th he had the caps off the engines and was looking over the push rods and the springs on the valves and checking the clearance between the push rods and the rocker-arms.

Q. On that day did that plane make a flight—on Saturday? A. That afternoon, yes.

Q. Did you go with it on that day? A. I did.

Q. From where to where? A. From Miller Field to Newark Airport.

Q. You flew in the plane on Saturday? A. I did.

Q. Who operated it? A. Captain Weatherdon.

Q. How was the plane operating on Saturday, as you observed it? A. Apparently normal.

Q. You are an electrician. Did you observe the functioning of the motors on the plane? A. I did.

Q. How were they functioning that day, on Saturday? A. Normal.

Q. Now, did you go down to Miller Field on Sunday, March 17th? A. I did.

Q. Did you get there before the plane made its take-off at Miller Field? A. I did.

Q. Did you see something being done about the plane on that day before you started off? What did you observe? A. Before it started off I assisted Wtorkowski in starting the motors and watched him check them as to speed of the individual motors and general observation watching him looking over the different parts of the plane.

Q. You saw his morning check of the motors on the 17th of March, 1929? A. I did.

Q. And after Wtorkowski had gone through his checking procedure at the Miller Feld, what was done then to the plane? Where did it go? A. After it was warmed up it took off and came over to Newark Airport.

Q. Who was the pilot? A. Weatherdon.

Q. Who was in the plane besides you and Weatherdon—or, were you in the plane? A. I was.

Q. And someone else? A. Wtorkowski, Weatherdon and myself were in the plane.

Q. Somebody else? A. I am not sure whether there was anyone else.

Q. As the plane took off as it made the trip from Miller Field to Newark did you observe the performance of the motors on that trip on the 17th of March, 1929? A. I did.

Q. Can you tell us how the motors were functioning on that trip? A. Normally.

Q. Was there any irregularity or sputtering of any of the motors on your trip from Miller Field to Newark? A. No.

Q. Were you about the starting place of the trimotor Ford at the time of its first—before its first take-off there at Newark Airport? A. I was.

Q. Do you remember the first take-off? A. I do.

Q. Did you go on that first take-off trip at all? A. No, sir.

Q. Let me ask you just prior to the first take-off—in the fifteen or twenty minutes before—was there any general discussion between the mechanic or the occupants of the ship about any particular motor being irregular or out of order? A. No, there was not.

Q. Did you observe how the motors revved up? How it took off on that first trip? A. Not from the tachometer.

Q. But, otherwise, how did it perform and operate as you observed it? A. Normally.

Q. Did you go on any trip in the tri-motor Ford on the day of this accident? A. I did on the second.

Q. What trip did you go on? A. The second.

Q. Tell us about the trip. How did the ship take off? How did the motors act and so forth? A. It was apparently normal in all respects.

Q. Where did the ship go to on that trip? A. Flew over New York City.

Q. Who was the pilot? A. I don't know who was the pilot, but Foote and Wonsey were in the cockpit.

Q. Then, one of those? A. One of those.

Mr. George: Wait a minute. That is objected to as leading.

Q. You mean you don't know which man was——

Mr. George: That is objected to. It presupposes one of them was, when the witness testified he did not know who the pilot was, but Foote and Wonsey were in the cockpit. We don't know whether yet there was another——

The Court: Well, the plane could not be flown without a pilot.

The Witness: No, sir.

Q. Was there anybody other than Wonsey and Foote in the cockpit on that flight? A. No, sir.

Q. Did you fly over New York? A. I did.

Q. So one of them must have been operating that ship? A. Yes, sir.

Q. What kind of a flight did you have? A. Normal.

Q. On that flight did you observe in any way sputtering or missing of the motors on that trip? A. I did not.

Q. Were you there at the time that tri-motor made its last take-off? A. I was.

Q. Just where were you at that time? A. About half way between the bull pen and the boundary lights.

The Court: You mean the take-off on the fatal flight?

The Witness: Yes, sir.

Q. How far did you observe that take-off after he left the ground? A. It was just about abreast of me and about fifty feet in the air.

Q. From the time he left the ground until the time he got up fifty feet in the air was there any sputtering or missing of the motors? A. No, sir, there was not.

Q. Was there any smoke coming from any motors that you could see? A. Not that I could see.

Q. From the position where you were, how many motors could you see? A. Two.

Q. Did you later see that plane in flight after the time you saw it fifty feet in the air? A. Yes, sir.

Q. How far away in the distance was it when you saw it the second time? A. Approximately a mile or a mile and a half.

Q. And at that time what was it doing? A. It was in a gentle glide.

Q. Did you observe the glide from that point until the time you lost sight of it? A. I did.

Q. Describe the glide. A. It was just a gentle glide all the way through.

Q. And then did you go over to the scene immediately after the crash? A. I did.

Q. By the way, as the glide stretched out, was there some time when your view was cut off by the embankment? A. It was, by the railroad track embankment.

Q. Did you go over to render assistance such as you could immediately after? A. I did.

Cross-examination by Mr. George:

Q. By whom were you employed at that time? A. Indirectly by the Colonial people.

Mr. George: That is all.

Mr. Carpenter: If your Honor please, I have got two depositions I have not yet opened. I would like to have permission to read them. I have told our opponent what they are.

The Court: All right.

(Deposition of Harry W. McGee was thereupon read to the jury. Questions were read by Mr. Carpenter and answers by Mr. Reed.)

Deposition of Harry W. McGee, for Defendant—Direct.

"HARRY W. MCGEE, being called as a witness on behalf of the defendant, and being first duly sworn according to law by the special commissioner to testify the truth, the whole truth and nothing but the truth, testified as follows:

Direct examination by Mr. Reed:

Q. You are Harry W. McGee? A. I am.

Q. And you have just been sworn by the Commissioner to testify in these eight cases, have you? A. I have.

Q. Where do you live, Mr. McGee? A. Why, my temporary address now is 227 Hague Avenue, Detroit, Michigan.

Q. Did you formerly live in Columbus, Ohio? A. I did.

Q. What is your profession or work? A. Aviator.

Q. How long have you been an aviator? A. Since 1923.

Q. Where did you get your pilot's license? A. I don't quite understand your question.

Q. When did you become a flier? A. I have an Army rating and also a commercial rating. I received my training at Brooks and Kelly Fields, Texas.

Q. As an Army aviator? A. As an Army pilot.

Q. When? A. In 1923 and 1924.

Q. What rating? A. Airplane pilot.

Q. After that, what did you do? A. I barnstormed for a while after leaving the Army. Then I went back in the Army with the first Pursuit Group at Selfridge Field. That is at Mt. Clemons, Michigan. Then I came out again into commercial aviation and flew for a while. I can't give you the dates.

Q. And you have been flying then for how many years? A. Seven years.

Q. Were you in the year 1928 and 1929 employed by the Ford Motor Company, particularly in its subdivision, the Stout Metal Airplane Company? A. That is correct.

Q. For how long were you in the employ of the Stout Metal Airplane Company? A. In the neighborhood of two and a half years.

Q. Beginning when? A. I am unable to give the exact dates.

Q. Were you in their employ for a substantial period of time prior to the 15th day of November, 1928? A. I was. I can't give you the exact time I was there, the length of time.

Q. Approximately? A. I think it was between two and two and a half years. I would not be positive.

Q. How long before November 15th, 1928, approximately? A. I was in the employ of the Stout Metal Airplane Company about a year before November 15th, 1928.

Q. In what capacity were you serving the Ford Motor Company, or the subsidiary, the Stout Metal Airplane Company, in or about November, 1928? A. In the capacity of assistant test pilot and chief check pilot.

Q. What were your duties in your capacity as chief check pilot? A. The checking of pilots that were coming into the plant, and passing judgment upon whether they were competent to carry passengers and so forth and go out with planes.

Q. Did you know a pilot in the employ of the Ford Motor Company or its subsidiary, the Stout Metal Airplane Company, by the name of Lou Foote? A. I do.

Q. Did you have occasion in or about November, 1928, to flight test Pilot Lou Foote while you were performing your duties in the Stout Metal Airplane Company as a test pilot? A. I did on various occasions.

Q. Were you acquainted with the work that Foote did while in the employ of the Mord Motor Company? A. I was, yes.

Q. What work did he do, to your knowledge, from the time of his entry until the time he left? A. Well, it is the policy with the Ford Motor Company that all pilots that come in have to spend a certain amount of time in the plant. That is to get a knowledge of the 'plane, its construction and so forth.

Q. And was such period of study and time spent by Pilot Lou Foote in the plant of the Ford Motor Company or its subsidiary, the Stout Metal Airplane Company? A. Yes, he was spending his time there.

Q. And in the course of the training given by the Ford Motor Company, or its subsidiary, the Stout Metal Airplane Company, to its employees going through this course, was there also flying in connection with the shop work? A. Yes, there was.

Q. Did this pilot, Lou Foote, also take flying as well as the shop work while he was there? A. He did.

Q. Do you know of your own knowledge that Pilot Lou Foote flew planes during the period of time that he was in the employ of the company? A. I do.

Q. Did you see him? A. I did.

Q. Tell us please, the names of the planes or types of planes that he flew while employed by

the Stout Metal Airplane Company that you know of? A. 4 ATs, which is the tri-motored plane powered by Whirlwind motors commonly known as J-5s.

Q. And what else? A. That is the only one I can remember seeing him in. There is mention of a 5-AT, but I can't recall that.

Q. You are referring to a card which I hold in my hand, taken from the files of the Stout Metal Airplane Company, are you? A. Yes, sir.

Q. Does this card contain certain entries made by you in the course of your duties as a test pilot of the Stout Metal Airplane Company in relation to Pilot Lou Foote? A. That is not my handwriting. Those are entered by Mr. Manning.

Q. In the course of your duties, did you furnish the information that appears on that card as to the testing of Pilot Foote? A. I did, in written form to him directly, and he put them on the card after each individual flight. Each pilot had an individual record.

Q. Who is Mr. Manning? A. Mr. Manning is in charge of the airport here.

Q. Was he your superior? A. Immediate.

Q. And did you make the actual test flight of Pilot Foote? A. I did.

Q. Then did you transmit your report to Mr. Manning? A. In writing. He is operations manager.

Q. Then did he inscribe on that card correctly the report made by you? A. I presume he did, or through his instructions to someone else. I can't verify whether this is Mr. Manning's writing or not.

Q. Now, as to the contents, what it shows there, is it correct as you found? A. It is, with the ex-

ception that the night flying should be put back of 4-AT instead of 5-AT.

Q. What did you report after testing Lou Foote?

Mr. Biro: I object to that.

Mr. Reed: I will offer the card in evidence later.

Mr. Biro: I will object to that, too. It is not made by him.

Mr. Reed: I will withdraw that.

By Mr. Reed:

Q. Do you recall the date when you made your test flight?

Mr. Biro: I object to his using that. He has not made those entries. He has already seen it, but I object to his using that.

The Witness: That would not have any bearing on it whatsoever.

Mr. Biro: You do not know the point we are driving at. It is done at various periods of time.

By Mr. Reed:

Q. You made these tests at various periods of time during the course of your employment of Pilot Lou Foote? A. That is true.

Q. By the Ford Motor Company or its subsidiary, the Stout Metal Airplane Company? A. Yes.

Q. What did you report as to Pilot Foote's capacity after such tests? A. Well, I can't give you the exact wording, of course.

Q. In substance? A. A brief résumé of that would be that he was progressing along satisfactorily, and finally he was competent to solo.

Q. In what? A. In a 4-AT.

Q. Did that mean a tri-motored 4-AT plane? A. That is right.

Q. Was he competent to solo in a tri-motored 4-AT plane in night flying? A. He was.

Q. And did you so report? A. I did.

Q. Was he also competent to solo in a 5-AT? A. I do not recall him soloing in a 5-AT, but that could have slipped my memory very easily. I had many men to deal with, and not just one.

Q. In other words, you do not recall whether or not he was reported by you as to a 5-AT? A. No, that is a matter of record. You could find that out here, I am quite sure.

Q. Are there other test pilots who make the tests of the pilots besides yourself? A. No, there was not.

Q. You were the only one? A. At that time.

Q. Then if the record of the company shows that he was approved as a flying of a 5-AT, if kept in the regular order of business, that was due to a report by the test pilot?

Mr. Biro: I object to that."

The Court: Overruled.

"A. Now the only time that there was anyone else brought in would be if I was out on some sort of exhibition flying or promotion flying, or something of that nature; then perhaps one of the other pilots did it, but Manning would do that work, and he was the only one. I do not think that Foote, to the best of my knowledge, had ridden with anyone but me.

Q. What qualifications are required by the Stout Metal Airplane Company, the subsidiary of the Ford Motor Company, of which you were test pilot in November, 1928? That is, what qualifications do they have to have before they are accepted in this kind of work? A. Coming from the outside in?

Q. Yes.

Mr. Biro: I object to that. It is immaterial for anything in this case. It has no bearing on the case."

The Court: Overruled.

"By Mr. Reed:

Q. Did the Ford Motor Company require that an applicant for employment and study in this particular branch of the work, of flying, should have certain flying qualifications or licenses before starting such study or work?

Mr. Biro: I object to that.

A. They did.

Q. What were those requirements?

Mr. Biro: I object to that."

The Court: Overruled.

"A. Well, we looked up a man's past record very thoroughly. If there were any so-called black marks against him, we considered them very seriously.

Q. What are the requirements, as you just stated? A. At least 1000 hours. That is the plan we were trying to go on at that time.

Mr. Biro: I do not like to interrupt, but I would like to have the witness finish

along the lines he started when you interrupted him.

By Mr. Reed:

Q. When you say 1,000 hours, what do you mean, as a requirement? A. 1,000 hours of solo flying.

Q. That he shall have 1,000 solo hours? A. Solo, in our language, means to go alone.

Q. That he shall have flown alone 1,000 hours before entering the employment of this Stout Metal Airplane Company and taking its course and work? A. That is correct. I might add that we deviated occasionally from that form for the simple reason that men coming out of the Army were far more qualified than commercial pilots.

Q. Do you remember what solo hours Pilot Foote had? A. I do not. I know he passed the mark.

Q. State whether or not during the time that Pilot Foote was in the employment of the company he did his work regularly and completely? A. Yes, Mr. Foote carried on his routine work in the shop very well, and also his flying work.

Q. Did you fly with him at times? A. I did.

Q. How frequently? A. It was our plan to get them in the air at least twice a week. Sometimes we fall short of that, but that was the average, I would say.

Q. When you went in the air with Pilot Foote, did he pilot the plane and you sit in the side seat? A. That is right. If there were any corrections to be made, I would do the best I could to show him what I knew.

Q. Had you been a pilot of a tri-motored 4-AT for a long period of time before taking over Pilot

Foote for training and further instruction? A. I would say in the neighborhood of a year and a half.

Q. About how many solo hours had you had at that time, Mr. McGee? A. I can't say.

Q. Approximately? A. I can't say that. Six or seven hundred hours, to the best of my recollection. That is a guess.

Q. By your answer, you mean to the best of your recollection you had had six or seven hundred hours solo flying in a tri-motored Ford plane at the time you flight tested Pilot Lou Foote? A. That is right.

Mr. Reed: That is all.

Cross-examination by Mr. Biro:

Q. How old are you, Mr. McGee? A. 27.

Q. And you have flown for the past seven years? A. That is right.

Q. How many pilots did you have under you, under your supervision? To be more specific, during the time you have testified about Foote's connection with this company? A. From eight to fifteen pilots.

Q. The 4-AT tri-motored plane is a plane carrying how many passengers, exclusive of the pilots? A. Thirteen.

Q. And with the pilots? A. Fifteen.

Q. Can you approximate about how many times you had occasion to flight test with Lou Foote? A. No, I cannot. That is a matter of record.

Q. You testified before that you tried to go up with each of your pilots twice a week? A. Yes.

Q. Do you remember if you had done this with Foote? A. Yes. I do not think he was slighted any more than any of the rest of them.

Q. Did you carry out that plan twice a week with each pilot? A. Not week after week, no.

Q. What other plane besides a 4-AT did Foote pilot while here? A. I don't know.

Q. You mean there were no other planes that he flew here? A. Yes. One day, I can recall this, I was going up for a test flight and Foote happened to be on the line in a 5-AT.

Mr. Reed: Explain what that is.

A. That is a tri-motored plane with three Wasp motors on it. Each motor has a rating of 410 brake horsepower.

Q. How many passengers? A. Fourteen.

Q. And two pilots making sixteen? A. Yes, sir.

Q. And the difference between a 4-AT and a 5-AT is one passenger? A. That is right.

Q. Then those are the only two types of planes that you knew of that Lou Foote flew, that is, a 4-AT and a 5-AT? A. While he was here.

Q. You never saw him fly anything else? A. No.

Q. Had you ever seen him take up any passengers to the capacity of the plane? A. No, we were not carrying passengers.

Q. All you were interested in was his preliminary training? A. We allow for loads.

Q. I suppose you mean you weight it down? A. To the weight of the passengers.

Q. You put in loads? A. Sand-bags and so forth.

Q. Corresponding to the weight of the passengers? A. That is right.

Q. Were your test flights with the plane weighted that way? A. You see, we had planes, one would be flying light, and the other plane would fly with a load.

Q. What would be the proportion of flying weighted? A. I can't recall what the pay load of the 4-AT is at the present time. I was corresponding to the pay load of the plane.

Q. What were Lou Foote's duties? What would he do during the time he was in this employ? A. Why, from the time he came in here and was hired, he went in the shop to work in there and gain a knowledge of the plane, the mechanical end of it, the construction and so forth. During that time, when his turn came, he was brought out and sent on flights.

Q. Did he have any specific duties to perform or just go out and make test flights, or what was the nature of his employment? A. No, he had nothing to do with testing. In other words, he was taking instruction while in the employment of the company, in the shop.

Q. Let me understand you. He did work in the shop like any other workman? A. Yes.

Q. On airplane or airplane parts? A. Parts; that could cover a multitude of sins.

Q. And in addition to that, there were times when he would take an airplane up in the air? A. Not solo.

Q. Not solo; that is somebody or you would be with him all the time? A. I would be with him. Not necessarily. On some of the runs like from Dearborn to Buffalo or Dearborn to Chicago, he went with some of the other pilots.

Q. Another pilot, but not an instructor? A. No. That was just experience for him, but he was entitled to so much flying, which he received during those periods.

Deposition of Harry W. McGee, for Defendant—Re-direct.

By Mr. Reed:

Q. Under the plan of this work of the Ford Company in reference to these pilots? A. Yes. You see, there was cross-country training and also the inner details of flying.

Q. What do you mean by cross-country flying? A. Dearborn to Buffalo or Dearborn to Chicago. Those would be cross-country flights.

By Mr. Biro:

Q. Now, can you tell us how many hours of actual flying he had on a 4-AT while he was in this employ, of your own knowledge? A. I would not begin to make a statement.

Q. While he was in your employ, did he have any accidents? A. No.

Q. Is there anything about Foote's work here which would cause you to remember him any more than any other pilot? A. None, whatsoever.

Mr. Biro: That is all.

Re-direct examination by Mr. Reed:

Q. I show you this card designated "Pilot's record" from the files of the Stout Metal Airplane Company, and ask you if on this card appears a date of entry and a date when he left the Stout Metal Airplane Company? Just say yes or no.

Mr. Biro: I object.

A. I do not know, to be honest about it.

Q. You do not know? A. I cannot recall when he came here.

Q. I didn't ask you about that. Does it appear on the card? A. Yes, it does.

Mr. Reed: Now, then, I ask that the card be marked for identification and I produce a photostatic copy of the card, hand it to Mr. Biro, and ask him to kindly compare the original with the photostatic copy and see if it conforms.

Let it appear on the record that the photostatic copies have been examined by the plaintiff's counsel.

Mr. Biro: I examined them.

Mr. Reed: Does counsel for the plaintiff find them to be true and correct copies of the original card? Will you concede that?

Mr. Biro: No, I would rather not.

Mr. Reed: I ask that the Commissioner mark as an exhibit for identification photostatic copies of the original card herewith submitted by counsel for the defendants from the files of the company.

(The card referred to was thereupon marked by the Commissioner Defendants' Exhibit No. 'A' for identification, July 31st, 1930. Genevieve A. Byrne, Commissioner.)

Mr. Reed: Counsel for the plaintiffs refuses to certify that the photostatic copy of the card which purports to be a record of the company is a true copy of the original card. Counsel for the defendant therefore requests the Commissioner to examine the photostatic copy and to certify on the photostatic copy whether or not it is a true copy of the original card.

Mr. Biro: I object to that.

(Whereupon counsel for the defendant and the Commissioner compared the photostatic copies with the card marked Defendant's Exhibit 'A' for identification.)

Mr. Reed: That is all."

Mr. Carpenter: I would like to offer the card, Exhibit Number A, referred to in the deposition, in evidence.

Mr. Coolahan: No objection.

(Card above referred to in deposition as Exhibit A received and marked in evidence, D-3.)

(Deposition of William B. Mayo was thereupon read to the jury. Questions on direct examination by Mr. Carpenter. Answers by Mr. Reed. Cross-examination read by Mr. Coolahan.)

"WILLIAM B. MAYO, being called as a witness on behalf of the said defendant, and being first duly sworn according to law by the Special Commissioner to testify the truth, the whole truth and nothing but the truth, testified as follows:

Direct examination by Mr. Reed:

Q. What is your full name and your position? A. William B. Mayo, vice-president of the Stout Metal Airplane Company.

Q. And is the Stout Metal Airplane Company a subdivision of the Ford Motor Company? A. It is.

Q. And how long have you been connected with the Ford Motor Company, or the Stout Metal Airplane Company, approximately? A. With the Stout Metal Airplane Company ever since it was formed, and the Ford Motor Company since 1913.

Q. Are you an engineer by profession? A. I was not a graduate engineer.

Q. A practical engineer? A. Yes.

Q. Are you familiar with the types of airplanes manufactured by your company known as the tri-motored Ford planes? A. Yes, sir.

Q. Did your company, the Stout Metal Airplane Company, sell to the Colonial Western Airways, Incorporated, on or about the 13th day of September, 1928, a tri-motored airplane? A. We did.

Q. What was the type of that tri-motored plane sold to the Colonial Western Airways?

Mr. Biro: Is all this testimony to be given from Mr. Mayo's personal information or from records of the company? If it is from records, I object.

By Mr. Reed:

Q. Are you able to state of your own knowledge as to the sale to the Colonial Western Airways of this tri-motored Ford plane in September, 1928? A. I am.

Q. State first then the type and character and style of the plane sold to the Colonial Airways, from your own knowledge, without referring to any record? A. What we call a 4-AT type.

Q. How many passengers was the 4-AT type built to carry, in addition to two in the cockpit? A. Thirteen.

Q. Thirteen what? A. Passengers.

Q. Was the airplane which you built and sold to the Colonial Western Airways built then to carry fifteen persons? A. Yes, sir.

Q. Two in the cockpit and thirteen in the passenger cabin? A. Yes, sir.

Q. Have you in your possession a diagram or drawing which will show the particular type of this 4-AT plane, as to the carrying capacity, the number of passengers? A. Yes, sir.

Q. Will you produce it? A. This is a diagram or floor plan."

Mr. Carpenter: I offer that in evidence.

(No objection noted by Mr. Coolahan.)

(Defendant's Exhibit "B" referred to in depositions, received and marked D-4 in evidence.)

"Q. What does it show? A. It shows ten seats and the side bench.

Q. And the side bench? A. Or longitudinal seat.

Q. The longitudinal seat is built to carry how many passengers? A. Sometimes built to carry three and sometimes four.

Q. On the drawing which you have in your hand, how many was the longitudinal seat built to carry? A. This one was three.

Q. In other words, there are how many seats in the cabin? A. Ten on this one.

Q. Ten, and the longitudinal bench to carry three additional? A. Three additional.

Q. Then is there a partition or doorway and wall which separates the passenger cabin from the cockpit? A. Yes, sir.

Q. Does the pilot and the other employee or associate sit in the cockpit separate from the passengers? A. Yes, sir.

Q. And was this the standard type of cabin and floor plan of your 4-AT tri-motored plane which you built in September, 1928? A. Well, it is standard for size. The seating arrangements were changed to suit the customer.

Mr. Reed: I offer the diagram in evidence.

Mr. Biro: I object on the ground that it does not show that that is an exact model of the plane sold."

The Court: It has been marked now. In other words, the objection may be considered as withdrawn in view of the fact that it has already been marked.

"(The blueprint was marked Defendants' Exhibit B, July 31st, 1930, Genevieve A. Byrne, Commissioner.)

By Mr. Reed:

Q. Have you a further blueprint of the floor plan showing the exact seating arrangement of the 4-AT tri-motored Ford plane actually sold and delivered to the Colonial Western Airways in September, 1928? A. I have.

Q. State whether or not there was any change in the seating arrangement in the plane actually delivered. A. There was one less chair and a longer bench.

Q. How many passengers?

Mr. Biro: Just a moment. One less chair?

A. One less chair, but a longer bench or longitudinal seat.

By Mr. Reed:

Q. How many passengers are the longitudinal seat or bench built to carry? A. Four.

Q. How many passengers were the individual seats built for? A. Nine.

Q. And in addition to that, are there also seats for someone in the cockpit? A. The pilot and a mechanic.

Q. Two seats in the cockpit? A. Yes.

Q. Then there is a floor plan which you now have in your hand showing a seating capacity of a certain number of persons in the plane all told? A. Thirteen, plus the crew.

Q. Altogether, how many persons? A. Fifteen.

Q. I notice that the blueprint which you have now referred to does not portray the cockpit where the crew sits, is that correct? A. That is correct.

Q. This floor plan merely shows the seats for passengers? A. It shows the cabin area and the seats contained in it.

Q. So that the two men in the cockpit sat forward for this floor plan showing the nine seats and the longitudinal seat for four? A. Yes, sir.

Q. Was there a partition or wall or door separating the passenger cabin from the cockpit? A. There was.

Q. In this plane? A. Yes, sir.

Q. Where were the controls in this plane located? A. In the cockpit.

Q. Was the place where the controls were located in the cockpit separate and apart from the place where the passengers were seated? A. They were, yes.

Q. This side view, what does that represent, the side where the bench is? A. That is a side elevation of the cabin, the right-hand side.

Q. The right-hand side is where the lounge or longitudinal bench is located? A. Yes, sir.

Q. And was the longitudinal lounge or bench adequate for the seating of four persons? A. I think so.

Q. In the tri-motored plane sold to the Colonial? A. Yes, sir.

Q. Can you describe the tri-motored plane as to its carrying capacity, as to its weight bearing capacity? A. Well, it is built to carry a gross load of 10,130 pounds.

Q. Does the plane have the capacity to carry a load above 10,130 pounds? A. It does, if you decrease its factor of safety.

Q. Did the plane which the Stout Metal Airplane Company sold to the Colonial Airways have a factor of safety over and above 10,130 pounds? A. Yes.

Q. What do you mean, Mr. Mayo, by a factor of safety? A. Well, the plane is designed with a certain factor of safety so as to take care of overloading the structure from an accidental overloading of the ship.

Q. Then what do you have in mind when you design a plane to carry an additional amount of weight over and above the actual stated carrying capacity?

Mr. Biro: I object. It is not shown that he designed it. He has not testified that he designed this plane.

Mr. Reed: That question is withdrawn.

Deposition of William B. Mayo, for Defendant—Direct.

By Mr. Reed:

Q. Are you familiar with the design of this tri-motored Ford airplane? A. Yes, sir.

Q. Are you an engineer and designer yourself? A. Yes, sir.

Q. Have you been following the profession of designing engineer of airplanes for a number of years? A. Well, for the last five anyway.

Q. And are you familiar with the design and carrying capacity of this particular tri-motored type of plane, type 4-AT? A. Yes.

Q. Then in designing the plane, what did the designers have in mind when they added to the weight bearing capacity of 10,130 pounds an additional factor of safety?

Mr. Biro: That is objected to.''

The Court: Sustained.

''And what was the actual factor of safety in the particular tri-motored 4-AT plane which your company sold to the Colonial Airways? A. Designed with a factor of 4.8.

Mr. Biro: What was that answer?

A. Designed with a safety factor of 4.8 per cent.

By Mr. Reed:

Q. Will you just explain how you arrive at the number of pounds as the additional factor of safety over and above the carrying load of that plane, giving 10,130 as the carrying load? A. Well, you add the factor of safety to it.

Q. How do you get the factor of safety in pounds? A. By multiplying the load by the factor.

Q. Therefore you say as a designing engineer that the factor of safety of this particular plane sold to the Colonial Western Airways by your Company is arrived at by multiplying 10,130 by 4.8? A. Yes.

Q. Can you tell us, Mr. Mayo, yourself, without my doing it, what that factor of safety then was on this particular plane, approximately? A. Well, the real factor of safety is a good deal in the judgment of the designer.

Q. In your judgment, therefore, what was the factor of safety of this plane? A. In my judgment the plane could very safely carry a couple of thousand pounds more than its rated load.

Q. And do you give that answer, in your opinion, as an expert, with a reasonable degree of certainty? A. I do.

Q. Answer yes or no. A. Yes.

Q. What are the reasons that you have by which you estimate this factor of safety? A. Well, planes have been loaded and flown with that additional load.

Q. Have planes been loaded and flown on your field at Dearborn, to your knowledge, with an additional load over the carrying capacity of 10,130 pounds of two thousand or more additional pounds? A. Yes, sir.

Q. The same type of plane? A. Yes, sir.

Q. Without accident or any untoward incident? A. Yes, sir.

Q. And that additional load over and above the carrying load is what the manufacturer calls the factor of safety? A. Yes.

Q. That is what you mean by the words "factor of safety"? A. Yes, sir.

Q. Therefore, you are able to state whether or not, in your opinion, this particular airplane sold to the Colonial Airways in September, 1928, had a safe carrying capacity of 12,130 pounds? A. Without failure of parts, yes.

Q. And also had a safe carrying capacity within that carrying load and factor of safety of fifteen persons in the plane? A. Yes, sir.

Q. And this plane sold to the Colonial was built to carry these fifteen persons? A. Yes, sir.

Q. And delivered to them for that purpose? A. Yes, sir.

Mr. Reed: I offer in evidence this blueprint of the seating arrangement of the passenger cabin of the special form or design showing nine passenger seats and allowing for four on the longitudinal bench as an exhibit on behalf of the defendant."

The Court: Let it be marked.

(Exhibit "C" for identification referred to in deposition received and marked D-5.)

"By Mr. Biro:

Q. Was this blueprint made especially for this particular ship sent to the Colonial Western Airways? A. I believe it was.

Q. Or was it a general design? A. This was made for the Colonial, but we may have made the same or similar ones for others.

Q. The only reason you know that is because the record shows that? You do not know that of your own personal knowledge? A. No, sir.

By Mr. Reed:

Q. I see this blueprint bears your signature, Mr. Mayo? A. Yes, sir.

Q. I also note that it states on it 'Seating arrangement special' in brack 'Colonial' on the blueprint? A. Yes, sir, we made this particular blueprint for the Colonial.

Mr. Reed: I offer this in evidence and ask to have it marked by the Commissioner as Defendant's Exhibit C.

Mr. Biro: Note the objection.

(The blueprint was thereupon marked Defendant's Exhibit C, July 31st, 1930. Genevieve A. Byrne, Commissioner.)

By Mr. Reed:

Q. Are you familiar with the method of keeping records in your company? A. Quite so.

Q. And are you in general charge of the officers or employees who keep such records? A. Yes, sir.

Q. And was this blueprint, Defendant's Exhibit C, produced from the records of the Stout Metal Airplane Company? A. Well, it was made under my orders. It was made.

Q. And produced by the Stout Metal Airplane Company? A. Yes, sir.

Q. I now show you a certain card reading 'Pilot's record, name, Lou Foote,' and I ask you if this is a certain pilot's record card from the office records of your company, the Stout Metal Airplane Company? A. It is.

Q. And has that card been kept in the files of the company in the regular order of business, to your knowledge? A. Yes, sir.

Q. And has it been in the files ever since it was made down to now? A. Yes, sir.

Q. What is this card? What do you call it? A. Well, it is our record of the pilot.

Q. First, does it contain the statement made by him as to his qualifications upon entering the service of the Stout Metal Airplane Company? A. Yes, sir, it is the history of his experience.

Q. Does that give you the date when he entered the service of the Stout Metal Airplane Company? A. It does.

Q. And when he left? A. Yes, sir.

Q. Are you able to give these dates without reference to the official record of your company?

Mr. Biro: I object to that question.

Mr. Reed: I asked him if he is.

Mr. Biro: But he is referring to the records while you are asking it.

By Mr. Reed:

Q. Are you able, without referring to the records, to give the dates? A. No, sir.

Q. Then will you please refer to your official records of the Stout Metal Airplane Company and tell us when Pilot Lou Foote filed his application to your company?

Mr. Biro: I object to any questions on the record, the same not being made by the witness.

A. September 10th, 1928.

Q. When did he enter the employ of the company? A. November 15th.

Mr. Biro: The same objection to all questions.

Q. When did he leave? A. March 11th, 1929.

Deposition of William B. Mayo, for Defendant—Direct.

Q. What is the nature of the employment that Lou Foote entered upon with the Stout Metal Airplane Company on the 15th of November, 1928?

Mr. Biro: Objected to upon the ground that it does not show the specific work, and it is immaterial and irrelevant to this case."

The Court: Overruled.

"A. He came into our employment to take a course of training in the shops and of course of training in flying our tri-motored ships.

By Mr. Reed:

Q. And in such course of training do the pilots have opportunities and are they required to fly the tri-motored ships? A. They are.

Q. What requirement is imposed by the Stout Metal Airplane Company before receiving flyers into this service?

Mr. Biro: I object to that."

The Court: Overruled.

"A. They require that they have their transport license for at least 500 hours flying service.

Q. Is that requirement adhered to? A. Yes, sir.

Mr. Biro: The same objection.

By Mr. Reed:

Q. What is meant by a transport license? What does that mean? A. Well, it means a license to fly the passenger carrying type of ship.

Q. That he has the qualifications to fly a transport passenger type of ship? A. Yes, sir.

Q. And did he ever fly a transport passenger type of ship, to-wit, a tri-motored Ford plane, during his course of work in your company?

Mr. Biro: I object to that.

A. He did.

By Mr. Biro:

Q. You have no personal knowledge, have you, Mr. Mayo? A. Yes.

Q. Of that particular fact? A. Why, yes. I know he flew the ship.

Q. Did you see him yourself? A. No.

By Mr. Reed:

Q. Now tell us the basis for your knowledge. A. Everybody that we take in in the course of training has to fly them, and he went in and took his part with the rest of them. I did not actually watch him get in a ship and fly it.

Q. Do you find upon your official records any data or record that he was approved as competent to fly a 4-AT by a duly authorized official of the Stout Metal Airplane Company?

Mr. Biro: I object to that as immaterial.

A. Yes, he acquired his mark 'A.B.' on flying a 4-AT ship, which is the type Colonial bought, both for day and night flying.

Q. I show you these photostatic copies of pilot record of Lou Foote. Will you examine them, please, and tell us whether or not they are correct photostatic copies made from the original pilot

record of Lou Foote, of any official record of your company? A. They are, yes.

Q. There are eleven photostatic copies here, are there not, of your original card? A. Yes, sir.

Q. And are they correctly transcribed according to the photostatic method of taking photostatic copies? A. Yes, sir.

Q. And have these photostatic copies been made in the office of the Stout Metal Airplane Company today at my request? A. Yes, sir.

Mr. Biro: That is objected to.

Mr. Reed: I offer in evidence the original pilot record of Lou Foote referred to by the witness in his last testimony and ask to have it marked Defendants' Exhibit A. I also request the Commissioner to affix to the depositions in this case one photostatic copy of the original card. Counsel for the defendant requests the Court to accept in lieu of the original card in each case the photostatic copy of the same which has just been identified and verified by the witness.

Mr. Biro: The same objection applies here that I interposed before to the introduction of the photostatic copies.

(The photostatic copies were thereupon marked 'Defendants' Exhibit A, July 31st, 1930, Genevieve A. Bryne, Commissioner.')

Mr. Reed: Your witness.

Cross-examination by Mr. Biro:

Q. Mr. Mayo, you are not a graduate engineer, are you? A. No, sir.

Q. How many years have you been designing airplanes? A. Well, I have only been connected with the design of them for the last five years.

Q. Have you during those five years designed any 4-AT type of airplanes? A. I directed all designs.

Q. Are you a pilot? A. I am not a licensed pilot.

Q. Do you fly airplanes? A. Yes, sir.

Q. Have you ever flown a type 4-AT? A. Yes, sir.

Q. Mr. Mayo, when you say that you have added a factor of 4.8 per cent safety to the construction of your planes, will you describe just how in the construction of the plane that is accomplished? A. Well, I think it would be better, if you are going to ask Mr. Hicks to testify, to let him explain it, because he actually did it with his own hands.

Q. But you designed it with the safety factor. I will change that question. How is the additional safety factor accomplished, or how was the additional safety factor accomplished in the particular plane you sold to the Colonial Western Airways? A. By adding enough material so that it will give you more strength than the figured load.

Q. But as far as you know personally you do not know whether that was done with the Colonial Western Airways plane or not? A. Yes, sir.

Q. You saw it done? A. I know the plane is identical. It is a standard model.

Q. I say whatever you know about that has been told to you or shown to you by records? Isn't that true? You did not see it actually yourself with your own eyes? A. You mean the building of that particular ship?

Q. Yes. A. I presume I looked at it a good many times during the time it was being built.

Q. Is there anything by which you can tell that that particular ship had that 4.8 per cent added

safety factor? A. I know it was not changed from the standard type, so it must be the same.

Q. Isn't it true, Mr. Mayo, that as far as you know, outside of these records, you do not know anything in particular about that very ship which was sold to the Colonial Western Airways? A. I know I saw it many times in its building, and I also know it is just the same as our standard ships are.

Q. Did you examine it before it left to know whether it had been done; that your directions had been carried out? A. I did not examine it minutely, but I have every reason to believe that it is just the same as any other ship.

Q. It was specially designed, you say, to accommodate the passengers in a different position? A. I did not say it was specially designed. There was a change in the seating arrangement. That is all.

Q. Did you see if that was done yourself personally, or was just the report handed to you? A. That was the report handed to me.

Q. Then you did not see the ship or have occasion to examine it before it left to be delivered to the Colonial Western Airways? A. I think very likely I was in it before it was delivered.

Q. You do not know that now, do you? A. I am quite sure of it.

Q. Did you fly in it before it was delivered? A. I think I did.

Q. Do you know? A. Not positively.

By Mr. Reed:

Q. You mean by that that you are answering to the best of your recollection? A. Yes, sir.

By Mr. Biro:

Q. Do you make it a practice to fly in all the ships you sell, the tri-motored ships? A. Not all, but very nearly so.

Q. There is no special event to connect this particular ship with your flight? A. Not that I remember of now.

Q. It is just your thought and your belief that you flew in this ship? A. Yes, sir.

Q. Now when you say that it had a safe carrying capacity of fifteen passengers, how much weight did you allow to each passenger? A. Anything within the total gross load.

Q. Therefore, if two or three extra heavy persons got into that plane, the number of passengers would necessarily have to be cut down in order to come within that safety factor?

Mr. Reed: I object to that as argumentative and not proper in form."

The Court: Sustained.

"Q. Did you ever fly with Lou Foote? A. No, sir.

Q. Did you ever see him fly a 4-AT? A. No, sir.

Q. Outside of the pilot record before you, you know nothing about his ability in flying a 4-AT ship? A. Only from his history and information given to me by our own employees.

Q. From the time this ship was delivered some time in September, 1928, if I remember correctly, from that time on to the present time you have never seen that ship, have you? A. No, sir.

Q. As far as you know it was never back to the factory for anything? A. No, sir.

Mr. Biro: That's all.

Mr. Reed: That is all."

Deposition of Harold A. Hicks, for Defendant—Direct.

(Deposition of Harold A. Hicks was thereupon read to the jury. Direct examination questions by Mr. Carpenter. Answers by Mr. Reed. Cross-examination questions by Mr. Coolahan.)

"Harold A. Hicks, being called as a witness on behalf of the said defendants, and being first duly sworn according to law by the Special Commissioner to testify the truth, the whole truth and nothing but the truth, testified as follows:

Direct examination by Mr. Reed:

Q. What is your name and where do you reside? A. Harold A. Hicks, 14377 Abington Road, Detroit.

Q. What is your profession? A. Aircraft engineer.

Q. Are you a C.E.? A. No, I am a B.M.E. and an M.S.E.

Q. That is you are a Bachelor? A. Bachelor of Mechanical Engineering and Master of Science in Engineering.

Q. Where did you obtain your degrees? A. The University of Michigan.

Q. How long have you been a Bachelor of Mechanical Engineering? A. Fourteen years.

Q. How long have you been a Master? A. Thirteen years.

Q. After your study of engineering at Michigan University, what experience have you had in your profession? A. Well, I became an instructor in machine design, principally in stress analysis. Then I was employed as an aeronautical mechanical engineer by the United States Army in connection with the design and development of the DH-4 airplane, the Bristol Fighter and the Liberty Motor.

Q. In what years were you in the employ of the Army? A. From 1917 to May, 1919.

Deposition of Harold A. Hicks, for Defendant—Direct.

Q. What was your title or office? A. Aeronautical mechanical engineer.

Q. Officer or captain? A. No, I was a civilian employee.

Q. After that employment what has been your experience? A. I came to the Ford Motor Company.

Q. In what year? A. In 1919.

Q. In what capacity? A. A designing engineer.

Q. Designing? In particular, what? A. On high-powered engines, railway car, that is the gasoline-propelled railway car, and lightweight air-cooled engines, numerous speed boats, and large high-powered marine engines, the revamping of several Liberty motors to meet the speed-boat requirements, and I had charge of the development of the Model A engine, and in charge of the road test work on the car, the Model A car. Then I have been in charge of aeronautical engineering since, in the Ford Motor Company since August 15, 1925.

Q. And while in charge of the aeronautical engineering for the Ford Motor Company, what has been your line of work and experience? A. It has been supervising the tests and designing of the planes which we have manufactured, designed for experimental purposes.

Q. Have you in that case had experience with the passenger carrying tri-motored Ford planes? A. Yes.

Q. And are you familiar with the Ford tri-motored plane known as the Model 4-AT? A. Yes.

Q. What has been your experience with the tri-motored Ford airplane model 4-AT? A. That is the first commercial tri-motored airplane which we have manufactured for sale. I supervised the design of it.

Q. Is that a plane with a carrying capacity of a certain number of passengers as it is built and sold by the Ford Motor Company? A. Yes, we produce a plane with that seating capacity.

Q. What seating capacity? How many altogether? A. A total of fifteen, including the crew.

Q. Are you familiar with the particular Ford tri-motored airplane model 4-AT which was sold to and delivered to the Colonial Airways in September, 1928? A. Yes.

Q. Do you recall the serial number of that plane, the type of the plane? A. It was the 4-AT model between serial numbers 15 and 53, inclusive. That is with us a design type.

Q. And was that Ford tri-motored airplane of that model and design built in accordance with any requirements of the Department of Commerce? A. It was.

Q. What, in effect, were the load factors of that type of construction at that time on the tri-motored Ford plane? Can you tell it without refreshing your recollection? A. Approximately 4.8 for high incidence and approximately 3.3 low incidence.

Q. What was the gross weight, live weight of the approved type of airplane which you speak of as Model 4-AT tri-motored Ford? A. 10,130 pounds.

Q. And in addition to that gross live weight, will you please state whether or not this plane was built or designed to carry an additional weight as a factor of safety? A. The plane was built in accordance with the Department of Commerce load factors which are considered conservative.

Q. How are load factors designed to take into consideration any maneuvers or movements of the

plane in flight? A. The basic load in an airplane is the weight of that airplane, taking into consideration the resulting loads caused by inertia of the structure in accelerated flight. That load is multiplied by a factor known as the load factor, which was previously given. That factor is a factor based on judgment. The Department of Commerce have said 4.8.

Q. Then in accordance with the regulations of the Department and in accordance with the experience of the Ford Company, what factor of safety do you give by your construction and design to tri-motored Ford airplane Model 4-AT?

Mr. Biro: I object to that on the ground that the regulations of the Department have not been given, they have not been shown to be within this man's knowledge, or they have not been set forth.

Mr. Reed: I will reframe the question.

By Mr. Reed:

Q. Having in mind your last answer, what factor of safety is built into the Model 4-AT trimotored plane over and above the gross load of 10,130 pounds? A. A factor of safety is something that is difficult to explain, due to the fact that the plane in its load factor has already had built into it a factor of safety.

Q. What was the factor of safety built by the Ford Motor Company into airplane type model 4-AT which was sold by it to the Colonial Airways? A. In my opinion that factor was approximately 2.

Q. Approximately what? A. 2, just 2.

Q. Then in pounds, approximately how many pounds was there as a factor of safety over and above the gross load of 10,130 pounds in this particular plane, in your opinion, with a reasonable degree of certainty? A. I have seen a plane take off——

Mr. Biro: I object to that. That is not responsive.

By Mr. Reed:

Q. In your opinion, therefore, from what you know and your experience and what you saw and everything, what additional factor of safety in pounds was there over and above the 10,130 in this type of plane? A. At least 800 pounds.

Q. Have you observed, in your experience in the Ford Motor Company, a greater weight taken up by this form of tri-motored Ford plane than 10,130 pounds?

Mr. Biro: I object to that on the ground that it is immaterial and irrelevant in this particular case, unless the circumstances were explained and so on.

Q. Answer yes or no first. A. Yes.

Q. And was this done for the purpose of testing the carrying power of this Model 4-AT tri-motored Ford plane? A. Yes.

Mr. Biro: I object to that also.

By Mr. Reed:

Q. Was the plane of the same type, the same model, as the plane sold by the Ford Motor Company or by the Stout Airplane Company to the Colonial? A. It was.

Q. The same type? A. 4-AT, fifteen.

Q. Just the same in all respects? A. Yes.

Q. What were the circumstances of this test? Describe fully what you personally observed and know of your own knowledge as to the power to carry up a weight over and above a gross load of 10,130 pounds in this type of plane?

Mr. Biro: I object again on the ground that it has not been proven, while the type is the same, whether it had the same hours of running of the motor and so on. It has not been shown that the two planes were similar in all respects except the model. I object on that ground."

The Court: It is overruled.

"Mr. Reed: Proceed with your answer.

A. The plane was loaded to 12,900 pounds as shown by actual check in weighing the equipment that was placed in the plane. The total load was 12,900 pounds. With Bennett and Balchen in the plane, the plane took off at the Ford Airport and carried its load very well. I timed it on the take-off at 22 seconds, quite remarkable.

Q. How high did it go? A. It was at least 200 feet above the edge of the field. The take-off was made from the furthest extremity. It was 200 feet in the air as it crossed the boundary of the field, approximately 3,500 feet away from the starting point.

Q. Did it go higher? A. It flew from here to Reindeer Lake for test purposes.

Q. How many miles away is that? A. It stopped for gas at Minneapolis, but the flight from here to Minneapolis was made in one hop.

Q. How many miles away is Minneapolis? A. Approximately 500 miles.

Q. Carrying this load? A. Carrying this load.

Q. Are you familiar with other carrying loads of planes of this tri-motored model 4-AT type on other occasions?

Mr. Biro: I object to that also on the same grounds.

Q. Yes or no, first. A. Yes. The flight from Cuba to Panama with an approximate load of 13,000 pounds. This plane, however, had J-6 engines instead of J-5 engines. The weight of the engines being the same and the power of the engines being greater would have a tendency to increase the maneuverability of the plane, and therefore increase the strength requirements, and lower the relative strength.

Q. Did the plane that was flown to Minneapolis with the load described have the same type engines and same size engines as the plane in question which you sold to the Colonial Airways? A. Exactly. The plane was made from the same drawings and the same jigs and fixtures.

Q. The same mechanical parts? A. The same mechanical parts.

Q. And the same carrying capacity in the cabin to take thirteen passengers and two men in the cockpit? A. The cabin dimensions were the same.

Q. Will you please state whether or not the load factors as a general rule are designed to take into consideration any maneuvers which the plane may be subjected to? A. They are.

Q. What does the load factor of 4.8 mean with reference to this type of plane? A. It means that

the plane is designed to withstand a static load of 4.8 times the static gross load of the plane.

Q. Will you please state whether or not the type of plane sold to the Colonial Airways by your company was designed to carry a static load of 4.8 times 10,130? A. It was.

Q. And in your opinion, based upon your experience, with a reasonable degree of certainty, was this plane able to carry such a static load?

Mr. Biro: I object to that on the ground that he did not know the condition that the plane was in at the time of this flight at Newark, New Jersey."

The Court: The answer is "yes".

"A. Yes.

By Mr. Reed:

Q. Mr. Hicks, assuming that this plane of the type 4-AT tri-motored Ford plane manufactured by your company in this approved design was regularly used in transport service from in or about September, 1928, down to and including the 17th day of March, 1929, without accidents and carrying passengers regularly in hopping and in transporting service, are you able to state whether or not, provided the parts were duly inspected from time to time, the carrying capacity of that plane would remain approximately the same?

Mr. Biro: I object to that.

A. It would.

Q. And would the static carrying capacity remain the same? A. It would.

Q. In your opinion, with a reasonable degree of certainty? A. Based upon tests on other planes, it certainly would.

Q. Are you familiar with tests that have been made by your organization as to the life and durability of these mechanical parts of this plane in regular normal transport service? A. Yes.

Q. What is, in your opinion, the reasonable life of durability of the Tri-motored Ford plane model 4-AT in regular transport service duly maintained by the mechanics and kept in working condition?

Mr. Biro: I object to that."
The Court: Overruled.

"A. At least 2,500 hours.
Q. Is that a minimum? A. No."

(Recess until 2 P. M.)

(After Recess, 2 P. M.)

(Reading of deposition of Harold A. Hicks was thereupon continued.)

Direct examination (continued) by Mr. Reed:

"Q. When you say 'at least', I say is that the minimum? A. We have operated a plane here carrying approximately such a gross load for a period of 2,500 hours. We design for a life of at least five years.

Q. The life of the plane? A. The life of the plane at least five years.

Q. That includes the parts? A. That includes the parts.

Q. And are these planes, built in accordance with this design and model, built to carry a customary load of thirteen passengers and two in the cockpit? A. Yes.

Q. Or a total of fifteen persons? A. Yes.

Q. And is it, in your opinion, with a reasonable degree of certainty, reasonable and proper to carry fifteen persons in these planes in transport service? A. Yes.

Q. And when you estimate that they will carry fifteen persons in transport service, do you have in mind that the passengers so carried will carry any additional baggage other than their wearing apparel? A. Yes, we provide baggage space.

Q. And is it estimated that each passenger in a transport plane will carry a certain amount of baggage for their personal needs in their transportation? A. Yes.

Q. Is that factor considered in estimating and building these planes to carry this load? A. Yes.

Q. Will you please state, Mr. Hicks, whether or not you are familiar with the tests made by test pilots of the men working in the company known as transport pilots? A. Yes.

Q. Please state what that is. A. The first test before the plane is finally trimmed is the initial test flight. You are talking now about the process of manufacture of the plane? A. Yes. Not with regard to the particular pilot.

Q. First as to the plane. A. The plane is first of all rigidly inspected. It is not only inspected, but each detail portion of it is inspected during its process in fabrication. We make drawings of each part. There can be no difference in planes. That detailed part is inspected during the course of fabrication. There is an inspector to see that

the drawings are rigidly adhered to. When the plane is finally completed, the plane is given a final inspection. This is before the trim is placed in it, and all the structural members are complete. Then the plane is taken for what we call a trial hop. During that time the pilot observes the action of the controls. He observes the installation in the way of pipes, as to whether there are any leaky pipes or any loose connections any place. Then he comes down and makes his report. That report with us is generally very brief. The trim is then put into the plane and the final test is made. He tests the plane to see whether the engines are up to power, whether the oil temperatures are sufficiently low, whether the engines are up to their proper oil pressure, whether the propellers are set correctly, whether certain engines develop roughness due to propellers which are slightly unbalanced, and maybe the propeller inspector has not quite caught it with his static means of detection. The flying characteristics of the plane are checked up as to its directional control, whether it controls laterally, directionally and longitudinally. Then he makes out his report. If there is anything that needs to be done, that is certainly done before it leaves the Ford Motor Company.

Q. And is that your custom and practice in the case of each plane after it has been completely built and equipped before delivery to the customer? A. Yes.

Q. And are you able to say from your position as engineer in the department of the company that that is done in each case? A. I receive the pilot's report.

Q. And therefore was this plane, the 4-AT trimotored Ford sold by the Ford Motor Company,

or by the Stout Metal Airplane Company, to the Colonial Western Airways Company, so tested and passed upon? A. It was.

Q. By your company? A. Yes, sir.

Mr. Biro: By your company?

Mr. Reed: And its employees.

By Mr. Reed:

Q. And are you familiar now with the work done by these pilots who come in as transport pilots for training and instruction in the factory and in flying? A. I am not. They do not come under my jurisdiction, and I have very little contact with the ordinary transport pilots.

Q. Your duty is chiefly with reference to the appliances and the planes and its parts, and its carrying capacity, and other features? A. Yes. I make flights with our test pilots, but not the pilots that are employed in the Ford Motor Company.

Q. That is you have a separate group of test pilots to test these planes? A. Exactly.

Q. They do not come under the group of the other young pilots who come in to receive special instruction? A. They do not.

Q. And therefore was each and every plane of this type so inspected by these special pilots under your supervision and inspection?

Mr. Biro: I object to that.

A. Yes.

Mr. Reed: Your witness.

Deposition of Harold A. Hicks, for Defendant—Cross.

Cross-examination by Mr. Biro:

Q. Mr. Hicks, do you remember the particular plane in question which was sold to the Colonial Western Airways in September, 1928? A. I do not remember that plane at this date in particular.

Q. Do you know the number of the license which it bore? A. No. The licenses are not affixed in my division.

Q. There is nothing in particular which would draw your attention to that plane in question, is there? A. No.

Q. What you testified to here was the procedure of your department and yourself in general, isn't that true? A. Yes.

Q. Therefore you assume and presume that the same care was given to this plane as any other plane?

Mr. Reed: I object to the form of the question.

A. There could be no possible exception to this plane.

By Mr. Biro:

Q. In other words, there could be no possible error committed? A. If I could only explain to you the rigidity with which we hold those boys down to the drawings. Do you know they can't miss a rivet over one-sixteenth of an inch?

Q. Then you do not know whether or not you were in this plane yourself, do you? A. I go in every plane before it is turned out.

Q. Every single plane that is sold? A. Every single plane that is sold. I look it over.

Q. I mean fly it? A. No, but neither do our inspectors inspect it particularly in the flight. It is the pilot and the mechanic who are virtually the flight inspectors.

Q. Then about that, you have no personal knowledge, have you?

Mr. Reed: About what?

Mr. Biro: About the flight and the inspection.

A. I was not in the plane during the flight.

By Mr. Biro:

Q. Therefore as to the flight inspections you yourself have no personal knowledge? A. I was not present during them.

Q. Especially on this ship which was sold to the Colonial Airways? A. No, I was not in that plane in flight.

Q. You stated before that in your opinion the factor of safety over and above 10,130 pounds is at least 800 pounds? A. Yes.

Q. Would you say a plane flying 2,000 pounds above the 10,130 pounds would be just as safe in the air as it would be with 800 pounds less? A. It might be.

Q. Depending upon what? A. Depending on the way it was flown.

Q. Exactly. Therefore all these things that you have testified to with reference to the factors of safety and so forth can only hold good when the flight of the plane is carried on in accordance with the highest of standards and your statements are based upon that assumption?

Mr. Reed: I object to the form of the question.

A. I will say no. I gave you an 800 pound overload, because it is our policy not to work to just a gross load of 10,130 pounds, because it would be impossible with thicknesses of metal and sizes of rivets to work exactly to a zero margin of safety. In our design we work to approximately a positive margin of safety of 8 per cent over the Department of Commerce requirements.

Q. Now, then, is it not a fact that all these factors of safety are predicated upon excellent flying?

Mr. Reed: I object to the form of the question, it being argumentative, and upon the further ground that it calls for a conclusion, and it does not appear what "excellent flying" in the mind of the examiner means.

A. The load factors are designed to permit of forces being placed upon the airplane in the most violent maneuvers. I could explain that by an example.

Q. Please confine it to the one in question, the 4-AT. A. Our 4-AT airplane, when I was in the airplane, has been dived to a speed of 165 miles an hour, and pulled out of this dive with all possible force that the pilot could exert. This is considered a supreme test; in my sight this 4-AT airplane has been looped five consecutive times.

Q. Are all these stunts, if I may call them "stunts" with a full load?

Mr. Reed: I object to the form of the question.

A. They are not done with a full load.

Q. Now, isn't it a fact that the safety of this particular plane as well as any other airplane depends on the way it is piloted?

Mr. Reed: I object to the form of the question.

A. The pilot, yes. The pilot may control the forces which are incident upon the plane.

Q. The same as with an automobile, no matter how well it is built, if it is not driven properly, it can have a crash, isn't that true? A. Yes, you could run it up against a building.

Q. That is why I say, therefore, the safety of it depends chiefly on the way it is piloted?

Mr. Reed: I object upon the ground that it is incompetent, irrelevant and immaterial, not proper in form, and also upon the further ground that it does not appear that Mr. Hicks is a pilot as yet.

By Mr. Biro:

Q. As an expert engineer, wouldn't that be your opinion? A. It is.

Q. That is elementary, isn't it? A. It is.

Q. Do you fly yourself? Are you a pilot? A. I can handle the control. I am not a licensed pilot.

Q. But you do fly, as my opponent has pointed out to me in the examination of Mr. Mayo, you do not have to have a pilot's license to fly around within any state. But you do fly planes? A. I do fly planes.

Q. 4-AT's? A. 4-AT's and 5-AT's.

Q. Isn't it true, Mr. Hicks, that the efficiency of the plane further depends upon the condition of

its motors, primarily so? A. The motor is the prime mover.

Q. Therefore all the answers you have given in your direct examination with reference to the efficiency and operation of the plane depend upon the condition of the motor at any particular time, isn't that true? A. Yes.

Q. Therefore, regardless of all the other factors in that particular plane with regard to its having been built under the most rigid supervision and examination and all that, that would go practically for naught if the engine of that particular plane on that particular flight was not in the proper condition when it was attempted to be flown? A. Well, just what do you mean by 'the proper condition'?

Q. Suppose, for example, the motor has too much carbon in it or had some other condition which should not obtain at the time that the flight was attempted, the efficiency of the plane would be greatly lowered, wouldn't it? A. Well, the performance of the plane naturally depends upon the horsepower which is put out by the engines.

Q. And using the same illustration, for example, if the cylinders in that particular motor contained an unusual amount of carbon at the time of that particular flight, the efficiency of that plane would be greatly lessened, wouldn't it? A. They have to get pretty bad, and no reasonable ground crew would ever pass them. It is customary to rib a motor well at regular periods every five hours or ten hours, or maybe before every flight.

Q. You are speaking of the customary procedure in this plant? A. No, all over.

Q. You do not know what they do in Newark, New Jersey, do you, in regard to what their cus-

tom is in going over motors in airplanes? A. No, I do not, but it is second nature to the pilot.

Q. It is possible to err, isn't it? A. I can't say.

Mr. Reed: I object to that as incompetent, irrelevant and immaterial and improper in form.

By Mr. Biro:

Q. In your opinion as an engineer, after how many hours of flight would a motor require overhauling or scraping of carbon and so on?

Mr. Reed: I object to the form of the question:

A. We overhauled our J-5 engines——

Q. Please be responsive. In your opinion, after how many hours of flight would it be required for safety?

Mr. Reed: I object to the form of the question, and upon the further ground that it is irrelevant and that the witness is not a pilot.

Mr. Biro: I am talking about the engine now. He does not have to be a pilot.

A. 350 to 400 hours, based upon our experience. We find that we have had some engines run through 450 hours without showing any great loss of power. The Ford Motor Company, on our own engines here, overhaul them about every 250 hours, but as a general rule operators let them go considerably longer than that.

By Mr. Biro:

Q. After how many hours would you say they would reach the danger point with reference to the accumulation of carbon?

Mr. Reed: I object to the form of the question, and also as incompetent, irrelevant and immaterial.

A. In regard to the accumulation of carbon, well, on that I might say 600 hours.

By Mr. Biro:

Q. In your opinion, how much carbon is necessary to be accumulated on the cylinder before the operation of that becomes dangerous in flight? A. We have had no experience on that. It depends to a certain extent upon the richness of the mixture, and we have never had any excessive formation of carbon that would prevent the passage of heat to the cylinder walls and cause overheating and failure of an engine.

Q. And that is because you have overhauled your engines or scraped the carbon between periods of 250 hours? A. 250 hours, and we have seen motors in here up to 450, and they were in pretty good shape.

Q. You do not know how many hours of flight this particular plane had up to about March 17th, 1929? A. No.

Q. Neither do you know the condition of this plane or its motor on March 17th, 1929? A. No.

Q. As an engineer, isn't it true that regardless of how well the plane is built or what materials are put into it, or upon what scientific principles it is constructed, the real safety depends upon and lies in the manner of its flying, isn't that true?

Mr. Reed: I object to that question in form and upon the ground that it is argumentative, and incompetent, irrelevant and immaterial.

Mr. Biro: I am asking his opinion as an engineer.

A. Not necessarily.

By Mr. Biro:

Q. Will you explain that, please? A. The Department of Commerce load factors are designed for all types of ships. They include stick and wire, steel tube, subject to deterioration. With the all-metal type of construction, which has been found necessary in railway coaches, in buildings, and in bridges, we build into that plane an exactness that is impossible in any other construction. An evidence of that is the way in which the Ford plane has performed and has gone through long periods without any great service cost.

Q. But isn't it true that all this efficiency of which you speak is largely, if not almost altogether, dependent upon the manner of flying that ship? A. You speak of efficiency. We will say top speed. All a man has got to do in that job is push the throttles wide open and if he lets go of the control, the job will go straight. He will get his top speed. Of course, he can do a lot of things. That is why we put controls on the job. But as I say, the Ford plane will virtually fly itself under proper throttle action.

Q. Therefore the efficiency depends upon normal flying, doesn't it? A. No. You can't change an air foil by flight, particularly, that is the wing; you can't change the air foil by flight, unless you

run into a tree. You can't deform that metal wing. You can't change the relative location of the units.

Q. In your opinion, aren't there differences in the manner of flying? A. There are differences in the manner of flying, just the same as there are differences in human beings in driving an automobile perhaps, but I am saying that the efficiency of that plane does not depend upon the pilot, unless he wrecks it.

Q. Does the safety of it depend upon the pilot?

Mr. Reed: I object to the form of the question as argumentative.

A. We do not believe that a Ford plane can be broken by a pilot in flight.

Q. What do you suppose the crashes are caused by? A. We have never had a single crash yet which the Department of Commerce has described as a structural failure.

Q. If they are not caused by structural failure, what are they caused by, in your opinion as an expert?

Mr. Reed: I object.

A. They have been ascribed to poor weather.

Q. Suppose the weather is clear, sunshine, a normal day, and still a crash happens in which fourteen people are killed, what would you ascribe that to?

Mr. Reed: I object to that as incompetent, irrelevant and immaterial, and upon the ground that the question is not within the province of the witness, even as an expert, and upon the ground that it is purely speculative and argumentative.

Mr. Biro: It is hypothetical.

A. There are insufficient facts for me to form an opinion.

By Mr. Biro:

Q. Assuming that one of your Ford planes, trimotored 4-AT, flies with fifteen persons in it on a normal afternoon, reaching an altitude between 300 and 500 feet and suddenly crashes to earth. If not caused by a structural defect, what could it be caused by?

Mr. Reed: I object to the form of the question as speculative, problematical, incompetent, irrelevant and immaterial, and not proper in form.

A. I have not sufficient knowledge of the facts to really decide.

By Mr. Biro:

Q. Based upon the facts I gave you, what do you think it could be caused by?

Mr. Reed: I object to the speculative form of the question, upon the ground also that this question is the same as the preceding question to which the witness says he has not sufficient facts to give an expert opinion.

By Mr. Biro:

Q. You say it is not caused by structural defects. What is it caused by?

Mr. Reed: That is the same question, and the same objection is made upon the same grounds.

A. It is not possible for me to hit upon the cause of that accident.

By Mr. Biro:

Q. In your opinion, I am asking you. A. I really do not know. There could be a variety of things too numerous to even mention.

Q. Mention a few.

Mr. Reed: I object to it as incompetent, irrelevant and immaterial, too speculative and problematical, and improper in form.

By Mr. Biro:

Q. If it is not a structural defect, what causes it, under those facts I have given you?

Mr. Reed: I make the same objection.

A. Well, the plane might have lost its propulsive force.

Q. By reason of what?

Mr. Reed: I object upon the ground it is too speculative, improper in form, not sufficient facts in the question upon which the witness may base an answer.

A. There are a variety of things which would cause a power plant to fail, and in case of a failure of a power plant to operate on our airport over here, we look for a number of things, many things. It depends upon the symptoms that you

see there. Your decision depends upon it. Now, if an eye-witness were standing by and he could tell whether it was ignition or whether it was carburetion, or whether it was gas, or there might have been a plugging in the lines. There are so many things it is really foolish to conjecture what happened.

Q. Suppose it was ignition.

Mr. Reed: I object to the form of the question, incompetent, irrelevant and immaterial, and improper to assume anything of the kind.

Mr. Biro: I have not asked the question yet.

Q. (Continuing.) Assuming it was ignition, what would the failure of the ignition be caused by?

Mr. Reed: I object to it upon the same grounds just stated.

A. The ignition system is quite complex, as you know. It could be caused by defects in the system.

By Mr. Biro:

Q. If it were perfect the moment it left the field, is it natural or reasonable to expect it to get out of commission while in flight? A. It would be exceptional.

Q. And if it did get out of commission in flight, wouldn't it show that there was something wrong or probably wrong at the time that it left the ground?

Mr. Reed: I object to it as speculative, problematical, not sufficient facts upon which to base any expert opinion.

A. It might and it might not. When a crash occurs, such as occurred in the Little Fleet over here, we go over there and look at the wreck. It was difficult to tell what happened to that job, and it was mostly intact. You have got to take it all apart.

Q. In your opinion as an engineer, and also in flying a plane, is it or is it not true that the human element is the one that causes most of the crashes?

Mr. Reed: I object to it as incompetent, irrelevant and immaterial, upon the ground that what causes most of the crashes has no bearing whatever on this case in question.

A. I do not know.

Q. But you did say before in your testimony that on account of the rigid tests and the way these planes are built, and the safety factor put into them, that you could not wreck them unless you intentionally ran them into something, or words to that effect?

Mr. Reed: I object to the form of the question, incompetent, irrelevant and immaterial, problematical, speculative, and no proper foundation laid.

A. That is the only way you can destroy their aero-dynamic efficiency.

By Mr. Biro:

Q. Therefore wouldn't you now say that when the crash does come that it is the human element?

Mr. Reed: I object to it on the same grounds, not proper in form and no facts

upon which to give an expert opinion as to the case in question, or as to any other case.

A. Before you were questioning the aero-dynamic efficiency of the plane.

By Mr. Biro:

Q. When I ask what, in your opinion, as an expert, outside of the human element could cause the crash, first you said you did not know whether it was the human element. A. I did not know whether it was the human element or not that caused that specific crash.

Q. Your estimate of the life and durability of planes, as testified before, is based upon what kind of flying? A. Normal transport flying.

Q. And also it is predicated upon the assumption that the motors are getting proper care, naturally? A. Yes.

Q. In your opinion, how often do the motors on this 4-AT type have to be overhauled, with reference to the cleaning of carbon and general overhauling? A. Well, I believe I answered that before.

Q. Will you answer this, please? A. We clean them every 250 hours. I have seen some very good motors come down at 350 to 400.

Q. How often does the oil have to be changed?

Mr. Reed: What do you mean when you say you have seen some very good motors come down at 350 to 400 hours?

A. I have seen motors torn apart that have had from 350 to 400 hours and still be in good condition, that is, running condition. I refer now to the J-5 engines.

By Mr. Biro:

Q. Which was not the engine on this 4-AT? A. Which was the engine on this 4-AT, the J-5 engine.

Mr. Reed: Built by the Ford Motor Company?

A. No, by the Wright Aeronautical Company.

Mr. Reed: Is that a good engine?

A. It proved very satisfactory in our service.

By Mr. Biro:

Q. How often must the oil be changed? A. The Wright book recommends fifteen hours. The Ford Motor Company practice on J-5 engines was each twenty-five hours.

Mr. Reed: May I ask a question?
Mr. Biro: Sure.

By Mr. Reed:

Q. Is the J-5 Wright engine the engine that Lindbergh used in flying from the United States to Paris? A. I believe it is.

Mr. Reed: It was?

A. Yes.

By Mr. Biro:

Q. You are not sure of that? A. It came out at that time. I am positive of it. I saw that particular engine in that particular plane in the Smithsonian Institute.

Mr. Biro: That is all.
Mr. Reed: Thank you, Mr. Hicks."

EDWARD WEATHERDON, recalled as a witness on behalf of the defendant.

Direct examination by Mr. Reed:

Q. Mr. Weatherdon, are you familiar with the log book that was kept by the mechanic on your plane? A. Yes, sir.

Q. And where did he keep it? A. He used to keep it on the hat rack on the back of the ship.

Q. What did he enter in that book?

Mr. George: Objected to.

(Addressing Mr. Reed.) What did he usually enter or what was entered in that book?

Q. What was usually entered? What was the purpose of that particular log book? A. His own personal knowledge. He entered all the things he did to the ship, when he serviced it, when he checked the motors, when he changed the oil and all items of a similar nature.

Q. Did you at any time ever see that log book of the engine mechanic, of his check, detailed check after the occurrence of that accident? A. No, sir.

Q. Did you ever see it after that? A. No, sir.

Q. Will you tell us whether or not you observed the checking of the plane on the morning of the 17th of March, 1929? A. Yes, sir. I was at the field when he checked it.

Q. What did you see him doing? What did he do? A. He looked all over the controls, checked the motors, and then turned the ship over to me.

Q. You saw that on the very day of the accident? A. Yes, sir.

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Q. Did you see him on Saturday, the sixteenth, doing that kind of work on the ship? A. I saw him pretty near every morning before we flew.

Q. Personally observed him doing it. And during the week preceding do you remember what you saw him doing? A. He gave the ship a general check. I remember it was raining. It rained for quite a while before. I don't remember off hand how long, but I know three or four days before the 17th it was raining and he was working on it steadily, checking the ship over completely.

Q. He made an overhaul during this rainy period of two or three days? A. I don't know what work he did, but he worked on the ship.

Q. You observed that? A. Yes.

Q. Something has been asked as to whether or not you kept a record of the number of passengers on each identical flight in a day. Do you keep it that way or not? A. No. We keep the total for the day.

Q. Did you separately and distinctly from the log book that Wtorkowski kept of the checking of the plane—did you personally keep a plane log book showing the hours of flight and where? A. Yes, sir. I kept the plane log book and my own personal log book which I made up every night.

Q. Is that this log book (handing witness book)? A. Yes, sir.

Q. Does that book that I show you—is that called the log book of the plane? A. This is the plane log book.

Q. That does not relate to the mechanics? A. No.

Q. Do you keep a record of the passengers flown? A. Oh, yes.

Q. I mean the total number? A. The daily total number.

New Jersey State Library

Q. For instance, can you tell us whether any passengers were flown on Saturday, the 16th, by refreshing your recollection? A. I will have to look up and see.

Mr. George: It is conceded that there were passengers at other times in this plane.

Q. Were there? A. Yes, sir. Seventy.

Q. Can you tell us how many passengers were taken on the day of the 17th of March, 1929? A. 114.

Q. Can you tell us—was this log book with the plane on various flights when it went to places other than the Newark Airport? A. Yes, sir.

Q. Is that the history of that plane from the time you got it in Detroit right down to the 17th of March? A. Yes, sir.

Q. Kept personally by you? A. Yes, sir.

Q. Entered up regularly? A. Yes, sir.

The Court: There are two logs required to be kept, one by the mechanic and one by the pilot under the regulations?

The Witness: The mechanic could have kept this if he wanted to.

The Court: But, two logs, anyhow?

The Witness: Yes, plane and engine.

The Court: Two types of information?

The Witness: That is right.

The Court: One with respect to repairs to the engine, condition of the engine, parts put in the engine, and repairs made to the engines?

The Witness: That is right.

Q. That is primarily to be kept by the mechanic, is that so?

The Witness: Yes, sir.

The Court: Then, there is a flight book or navigation book—I think they call it a log book, and that is kept by the pilot or mechanic or whoever is with the plane?

The Witness: That is right.

Mr. Reed: I offer it in evidence.

The Court: Let it be marked.

(Received and marked in evidence Exhibit D-6.)

Juror Number Three: That would not show the plane was overloaded from one flight to another, one flight you took ten and another twenty?

The Witness: That would not show. That shows the total number for the day.

By Mr. Reed:

Q. Did you have twenty on that day, the 17th of March?

The Court: The Court might say that there has not been a scintilla of evidence that there were in excess of fifteen people carried on this day and that the evidence is all uncontradicted on the subject that mere numbers has nothing to do with the safety of the plane. It is merely a question of whether the weight is proper or not, whether that weight is below or above what is stipulated in the license.

Mr. Reed: I told the witness to bring this book here because one of the gentlemen of the jury asked something about it.

Q. Was there a guard placed on the plane after the crash, Captain? A. Yes, sir.

Q. Did you go over there after the crash? A. Yes, sir.

Q. How long were you there? A. I don't remember offhand. A couple of hours.

Q. When you left did you leave someone there? A. Yes, I left Mr. Ackerman in charge.

The Court: Captain, you saw the plane after the crash and observed its conditions?

The Witness: Yes, sir.

The Court: Did you see it at or before the time it was moved from the scene of the accident to the Wright Aeronautical Works or whatever that may have been out there in Paterson? Did you see it again about that time?

The Witness: I saw it every day after that.

The Court: Was it approximately in the same condition at the time it was removed to the Wright plant as it was right after the crash?

The Witness: Just about, yes. As I remember one motor was across the railroad track and that part they took——

The Court: What I mean is this: there was nothing done mechanically so far as you knew or could see to those motors from the time after the crash until the time they were taken to this aeronautical hospital?

The Witness: No, sir.

Cross-examination by Mr. George:

Q. Are you able to say, Captain, that nothing had been done to those motors between the time of the crash and the actual delivery to the Wright Aeronautical Corporation? A. Not as far as I know.

Q. You don't know whether anything had been done to them or not? A. No, sir.

Re-direct examination by Mr. Reed:

Q. You saw them every day? A. I saw them laying on the ground there.

Q. They remained right there until they were taken to the Wright Aeronautical plant? A. That is my impression.

Q. You say when you left that day you left someone in charge. What is his name? A. Mr. Ackerman.

Q. After the crash you went to the hospital to see Mr. Foote, didn't you? A. Yes, sir.

Q. What time did you see him there? A. I don't know offhand. It was after dark, I know.

Q. About seven o'clock or seven thirty? A. Somewheres around there.

Q. Did you talk with him? A. I tried to talk with him. He was so groggy he couldn't understand what he was talking about. I mean he said things that did not mean anything.

Q. Do you remember what he said? A. I don't remember offhand now, no.

The Court: Who is this, Captain?

The Witness: Foote.

Q. Did you observe his physical condition after his injuries? A. Very badly battered up.

Q. What do you mean by that? A. I know what happened to him now. He had a fractured skull, eyes all black and blue, face all cut up, I only saw his face. The rest of his body was covered up.

Q. Was he delirious at that time?

Mr. George: That is leading, if the court please.

The Court: Overruled.

The Witness: I would say yes. He was in a very bad state. I mean, he did not know what he was talking about.

By Mr. George:

Q. You went to see him for the purpose of obtaining from him information upon which you could make a report of the accident, didn't you? A. I suppose you might say that, yes.

Q. You did make a report upon the basis of the information you got that night, didn't you? A. I think I put down on paper some place what he said.

Q. Some of the things he said? A. I think I did.

Q. When did you see him next, Captain? A day or two later? A. I don't remember. I think I saw him every day. I think I went to the hospital every day after that.

Q. Two days later did you talk with him? A. I guess I did.

Q. He was in better condition then to talk to, wasn't he? A. Not an awful lot.

Q. But some? A. Well, I mean I could not say on that, but to me I did not take anything he said seriously.

Q. Whether you took it seriously or not you understood what he was saying and wrote it down, didn't you? A. I only wrote it down the first night.

Q. He was not unconscious, however, was he? A. No, he started talking to you, then he would stop. You would ask him a question and he would

come on and tell you something else. I mean, he didn't go right on and have any sequence and tell you one thing after another.

Q. He was not in a state of sub-consciousness, was he? A. I don't know what you call sub-consciousness.

Q. Did you ever see a man get a sock on the jaw and get a long count of fourteen, as they do in Chicago, and they have to carry him out of the ring? I mean he is knocked out. Didn't you ever see a man knocked out? A. Not in the prize ring.

Q. Well, anywhere else, did you see a man on his back? A. I have seen men after accidents.

Q. Did you ever see a man who was knocked out and could not speak? A. Yes.

Q. Foote was not like that? A. He might just as well have been.

Q. He was not like that? A. He was next door to it.

By Mr. Reed:

Q. Was he coherent or incoherent? A. Very incoherent.

Mr. Reed: That is all.

By Mr. George:

Q. Just one question. But, you did use what little information you got from Foote a couple hours after the accident as the basis for your report, didn't you? A. As I remember I wrote down what he said.

Mr. George: That's all. All right.

GEORGE C. ACKERMAN, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Q. Mr. Ackerman, were you an employee of the Colonial on the day of the accident? A. Yes, sir.

Q. On March 17th, 1929? A. Yes, sir.

Q. After the occurrence of the accident, did you immediately go over to the scene of the accident? A. I did, sir.

Q. Who did you go over with, if you remember? A. Mr. Ingold.

Q. And when you got over there how long were you there at that scene that night? A. Why, I was there about fifteen minutes at that time when I first arrived there.

Q. Then did the police come? A. Why, some were there when I got there.

Q. And then when did you go there again that night? A. About, I would say, about eight thirty.

Q. When you got there were the police there guarding the wreck? A. Yes, sir.

Q. How long were you there from eight thirty on the night of the 17th of March, 1929? A. Until about nine thirty the following morning.

Q. You remained on guard all night long, did you? During the time you were on guard there during all the time, did the engines remain in the same condition without anyone attempting to repair or change them? A. No one touched anything while I was there.

Q. And who put you on guard? A. Why, Captain Weatherdon.

Q. And then who relieved you? A. Wtorkowski.

Q. About what time was it? A. About nine thirty the following morning.

Q. Wtorkowski arrived about nine thirty on the morning of the eighteenth? A. Yes, sir.

Q. Did you go out there again later on? A. No, sir.

Q. Were the police there? A. All night long there was four policemen with me guarding the accident.

Q. Did the police continue to guard it even after you went away? A. Oh, yes. There were several more.

Q. Guarding the wreck? A. Yes, sir.

Q. Then Wtorkowski relieved you and he took the station? A. Yes, sir.

Q. By the way, you were back also on the field? A. Yes.

Q. Did you see the last flight? A. Why, no, sir.

Q. I want to ask you this question: were there occasions when persons who purchased tickets were refused the ride or turned back and refunded their money? A. Yes, sir.

Q. How did that happen? A. They would be sold tickets. Tickets would be sold to them and they would go out to the ship and whoever had charge of the collecting of the tickets would find some fault and reject them. Whatever the case was, why they would send them back and would refund the money.

Q. Anyone sent back you would refund the money? A. Yes, sir.

Q. You remember occasions when tickets were sold to take a ride, and when the ride was not taken you refunded the money? A. Yes, sir.

Q. When you sold only five or six tickets the plane would not take off? A. It would not take off.

Q. That was not enough to make it worth while? A. Yes, sir.

Q. And on those occasions you refunded the money? A. Yes, sir.

Q. Did this plane run on any particular schedule at all? A. None whatsoever.

Q. Did it have any definite time of leaving? A. No, sir.

Mr. Carpenter: That is all.

Cross-examination by Mr. George:

Q. When those fourteen passengers who went to their death on that trip had gotten into the plane they were fully accepted?

Mr. Reed: I object to the form of the question.

The Court: Yes, sustained, as to the form of the question.

Q. Once those or any other passengers had gotten into a plane, this plane or any other plane under your jurisdiction, and had taken off, that of course, was conclusive that they were accepted as passengers, isn't that so? A. Yes, sir.

Q. So, there was no fault to find with any of the persons who went on the plane in this crash, was there? A. None whatsoever that I know of.

The Court: Just a minute. Persons walking up to your office to purchase tickets, you let them have the tickets whether or not the plane was likely to be loaded or not, didn't you, until you found out whether you could take them or not?

The Witness: We sold them many tickets many times. We had a line waiting for their ride.

The Court: Everybody that came up there and wanted to buy a ticket, you let them have a ticket?

The Witness: That is right.

The Court: You did not draw any line at the time of selling tickets?

The Witness: No. We were kept so busy it was hardly a chance to look a person over.

Mr. Reed: Who did draw the line?

Mr. George: Let me finish my cross-examination.

Mr. Reed: Go on.

Q. Mr. Ackerman, did you see some people refused? A. Yes, sir.

Q. You did. Page 593 in your testimony of the trial in Newark, at the bottom, you were asked this question: "Have you seen them refused?" Answer: "I haven't seen them refused. I would have them sent back to me." So you did not see them refused? A. I have not seen them refused, but I knew they were refused and they would come back and demand their money.

Q. You were mistaken a moment ago when you said you had seen them refused? A. No. I would never see them refused. I never seen them refused.

Q. When you testified just a moment ago that you had seen them refused, you were mistaken? A. I was.

Q. You are not certain, are you, not having seen them refused, that some of those persons who came back and asked for their money back, did not come back because they had changed their minds about going through with the ride?. You are not sure about that, are you? A. I would

question them to the effect just why they wanted their money back, and——

Q. Don't you know——

Mr. Reed: Let him finish.

Q. I am sorry. I thought you had finished. Go ahead. Tell your story? A. Of course, when they told me they did not care for a ride I would ask them just why and if they told me they wanted to ride, then I knew they were turned down for some particular reason at the ship.

Q. Did any of them tell you they were refused permission to go on the ship? A. Yes, sir.

Q. They did. Then, what I am trying to find out is whether all of the persons who came back for their money—withdraw that.

By Mr. Reed:

Q. I want to read you something that was not read by Mr. George. Did you give this answer in answer to this question at the other trial——

Mr. George: Where?

Mr. Reed: Page 593, bottom of the page, folio 30.

Q. (Quoting) Question: "Do you know whether or not everybody who bought tickets were taken on the plane?" Answer: "Why, there was a good many that was refused." Did you give that answer to that question? A. Yes, sir.

Q. Then, did you give this answer: Question: "What do you mean by that?" "What was sent back to you?" Answer: "They were refused at the ship and sent back to me to refund the money." Question: "And have you refunded their money?" Answer: "Yes, sir." A. Yes, sir.

The Court: Do you know whether the hopping flights were advertised, made known to the public you were holding hopping flights there?

The Witness: No, sir, not as newspaper ads or any publicity outside of what the newspaper reporters would write up.

Q. You had barkers there to bark out the flights?

The Witness: Yes, sir.

The Court: Was that practice continued every day, that is, in favorable weather?

The Witness: Yes, sir.

The Court: Day in and day out except when flying conditions were not sufficient?

The Witness: During the week when there was not enough to make it worth while we would not do it. Just on holidays, Saturday and Sundays and only then if there would be a crowd at the field we would use that practice.

The Court: If anybody came there enough to fill up the ship when you had not expected to go up, if they applied to you would you take them up if they paid their fare?

The Witness: Yes, sir.

By Mr. George:

Q. It was you who hired Ingold, wasn't it? A. Yes, sir.

Q. And you gave him instructions to persuade people to take a ride, didn't you? A. I told him to go out and get all he can, what my words were direct to him.

Q. Didn't you tell him to persuade people to take a ride? A. Never used them words.

Q. Are you sure? A. Positive.

Q. Do you recall testifying—page 593 again—"Did you give him any instructions as to what he should tell prospective passengers when he made sales of tickets?" Answer:——"

Mr. Reed: What folio is that?
Mr. George: 25 folio.

Q. (Quoting) "Did you give him"—Ingold—"any instructions as to what he should tell prospective passengers when he made sales of tickets"? Answer: "Not at all, outside of persuade them to take a ride." Did you make that statement under oath in court in Newark? A. If it is there I must have.

Q. Just a moment ago you said you never used that word. Were you mistaken about that also? A. Must have.

By Mr. Reed:

Q. By the way, when did you first employ Ingold? A. The day before the crash, the 16th of March.

Q. He has testified here he had been employed there for two or three months prior to this 17th of March. Was he? A. No, sir.

Q. You say you just employed him on the day before—that would be Saturday, the 16th of March? A. That is right.

Q. Did he work continuously for any continuous period of time after that? A. Why, after that—I believe it was four or five weeks before he showed up again.

Q. So that at the time of the crash he had only worked one day before? A. That is right.

ADAM WTORKOWSKI, recalled for the defendant.

Direct-examination by Mr. Reed:

Q. Mr. Wtorkowski, you have told us before about having your personal log book that you kept a record of checks on the engine out in the plane at the time of the crash. Do you remember? A. Yes.

Q. Did you make an effort—did you make an attempt after the crash to procure that log book—that engine log book you so kept right down to the 17th of March, 1929?

Mr. George: We have gone over this, if your Honor please, in the original examination of this witness. He said he had it home and he never saw it again after that.

The Court: I don't think we have had anything about any efforts made to locate it if it was out of his possession.

Q. The statement was made that you had it home at the time of the crash. Did you have it home at the time of the crash? A. No.

Q. Where was it? A. On the plane.

Q. When was the time you had it home? A. At the time I went home every night to finish out the report.

Q. When the plane was in flight where did you have that engine log book? A. In the plane on the shelf with the rest.

Q. Where was it at the time the plane crashed? A. Over on the left side of the plane on the fuselage.

Q. What did you do after the crash to try to get back that log book of yours—the log book of the engines? Tell the jury. A. I tried to look

for them and the policemen let me go to the fuselage. At the time they were removing a body from the crash, but about twenty minutes I had a chance to get close enough to the fuselage. I looked down on the floor of the cabin and also I looked up on the shelf and I know the log books were gone then. There was nothing left in the fuselage at all.

Q. Did you also lose something else at that time? A. I lost my overcoat. I seen the overcoat after the crash.

Q. Did they let you get it? A. No. I stepped up to get it. At the time the overcoat was lying alongside of a dead body and some of the ambulance officers asked me to let that remain with the body. He says, "You can get it at the police station tonight later on."

Q. Were you ever able to get your overcoat or ever able to find that log book you kept of the engines at all? A. No, sir, I did not.

Q. Did you ever get your overcoat back? A. No, sir, I did not.

Q. Now, did you relieve Mr. Ackerman in standing guard at the plane on the following day? Were you there on guard at some time on the following day after the accident? A. Yes, I relieved him some time in the morning.

Q. How long did you stay there that day? A. I stayed—just what time I don't remember—but somewheres late in the afternoon.

Q. All day long watching that plane? A. Yes, sir.

Q. And were you there on the next day? A. I was there the next day, too, yes.

Q. And were you there until finally the engines and motors were removed over to the Wright Aeronautical Company's plant? A. Yes, sir.

Q. Now, during all that time that the plane and the engines were there at the scene of the accident, will you please tell us whether or not the engines remained in the same condition without anyone interfering with them or doing anything to them? A. For all the time the engines were laying there after the crash? Once they were moved from the track into the side.

Q. Off the railroad track? A. Yes. That was done that evening, but after that they was not touched until they were loaded and taken away to the Wright Aeronautical Company.

Q. Nothing was done to them? They just stayed right there in the same condition all that time? A. Yes, sir.

Q. Were there also policemen there guarding the plane at that time? A. Yes, quite a few of them.

Q. In addition to your employees that were guarding it, the police of the City of Newark were guarding it? A. Yes, sir.

Q. Until they were removed to the Wright plant? A. Yes, sir.

Cross-examination by Mr. George:

Q. And did you make the entries in the mechanic's log book yourself? A. All the entries I did on the plane as inspections and repairs and changes and replacements I made in the plane log book, yes.

Q. Did you write them in yourself? A. Yes.

Q. Such as cylinders and carbureter in good condition, something like that you wrote? A. If they were in good condition I put down just what condition I found them in.

Q. Yes, so you would write "carbureters and cylinders in good condition?" That is right? A. Yes, sir.

Q. Let me see how you wrote "cylinders and carbureters in good condition"?

(Witness writes on paper.)

Q. Just put your name under that, please.

(Witness complies.)

Q. Do I understand you to say you have a government license as an aeroplane pilot—mechanic? A. Yes.

Mr. George: This is offered for identification.

Mr. Carpenter: Put it in evidence.

(Received and marked in evidence P-12.)

Charles S. Jones, called as a witness on behalf of the defendant, being sworn, was examined and testified as follows:

Direct examination by Mr. Carpenter:

Mr. George: In the interest of saving time, your Honor, I will admit the qualifications of Mr. Jones as being one of the well-known expert outstanding fliers in this country, if not the world.

The Court: That starts you off right.

Mr. George: That is what I think of "Casey" Jones as an expert.

By Mr. Reed:

Q. They call you "Casey" Jones, don't they? A. Yes, sir.

Q. But you have the name of Charles F. Jones? A. Yes, sir, Charles S. Jones.

Q. How many hours of flying time have you had? A. About five thousand.

Q. You were a pursuit flier over there in the line during the war in France, weren't you? A. Yes, sir.

Q. And you started before that, I understand? A. Yes, sir.

Q. You have been flying ever since? A. Yes, sir.

Q. Now, you are vice president of the Curtiss-Wright Flying Machine Company? A. Curtiss-Wright Corporation.

Q. And still flying? A. Yes.

Q. All types of aeroplanes? A. Yes.

Q. Passengers? A. Yes.

Q. And everything else? A. Yes. I have been flying different trips, yes. I don't carry passengers very much any more.

Q. Your transport pilot license is number— A. Thirteen.

Q. That has been a lucky number for you, Mr. Jones? A. Yes.

Q. Well, since you are qualified as one of the greatest pilots in the world, I won't ask you any further as to your qualifications. But, are you familiar with the tri-motor Ford plane 4-AT, J-5 engines? A. Yes.

Q. Can you describe the gravity fuel system of the plane? A. Yes.

Q. Tell us about it. A. The Ford has three tanks. One in each wing and one in the center which are connected with the three motors. Is that all you want?

Q. That's all. Will those tanks feed the motor of the plane at all angles? A. Yes.

Q. What is there about the equalizer— A. The performance of the equalizer system is to enable the gas to flow from the various tanks, from one tank to the other so that any motor can be fed from any tank and all motors from any tank, any or all.

Q. And then equalize themselves? A. Yes.

Q. You are the man that flew the first tri-motor Ford, aren't you? A. Well, I flew one of the early ones. I think the first or second Ford.

Q. That was thirteen too, I think they started with? A. I don't know.

Q. You don't know that. Are you familiar with the amount of gas that would be consumed in a tri-motor Ford in each engine say in an hour's flying? A. Yes. The J-5 motor burns about twelve gallons an hour, each motor. That would be thirty-six gallons an hour for three.

Q. Well, then, Mr. Jones, assuming that a plane had had—after all those tanks were filled—assuming that it had two and one-third hours of flight —hopping two and one-third hours with two tanks of one hundred and ten, each filled, and the emergency tank at twenty-five—what would be the gas consumption in two and one-third hours of flying A. About eighty-four gallons.

Q. That is less than one complete tank full, isn't it? A. Yes. It is less than a hundred and ten gallon tank.

Q. A one hundred and ten gallon tank—if only the gas from one tank had been used in that two and one-third hours you would still have how many gallons left in one tank without your using two of them? A. Twenty-six gallons.

Q. Assuming that there was an idling time of about an hour, what would be the added consumption of gas during the idling time? A. I should

judge each motor would burn about a gallon an hour idling.

Q. That would be about three gallons. If you only drew from one tank you would have left twenty-three gallons of gas, wouldn't you? A. That is right.

Q. And if they burned thirty-six gallons for the three motors in an hour, in only a trip of twenty minutes the gas consumption would be just twelve gallons, wouldn't it? A. That is right.

Q. So that you would even, after two and one-thirds hours use from one tank, you would have almost enough to make a twenty minute trip with that plane, would you not? A. Yes, you would have enough for about two trips more.

Q. What do you say about taking off a tri-motor Ford plane in a wind from thirty-three to thirty-nine miles an hour where you have taken off into the wind with a load of fifteen people and the total gross weight being about 816 pounds less than the gross allowable weight of ten thousand one hundred and thirty pounds on a tri-motor Ford? A. What would I say about it?

Q. Yes. Anything wrong with that? A. No.

The Court: Would that be an excessive weight in that wind?

The Witness: No. As a matter of fact, the more wind the easier the take-off.

Q. Going into the wind? A. That is right.

Q. And once you get up in the air does the wind of thirty-three to thirty-nine miles an hour make any difference? A. It makes no difference in the air.

Q. In a strong wind you get off quicker? A. That's right.

Q. That is, you climb quicker up into the air? A. That's right.

Q. What do you say about the factor of weight safety in a Ford tri-motor plane over and above the allowable gross load of ten thousand one hundred and thirty pounds mentioned in the specifications of the Department of Commerce? A. What do you mean?

Q. How much more weight can you take into those planes with safety over and above the ten thousand one hundred and thirty gross allowable load? A. By that do yon mean can you get off the ground with it?

Q. Yes, and fly? A. Yes, you could get off the ground with considerably more than the gross allowable load.

Q. Have you known of instances where that has been done? Where several hundred or even thousands of added poundage in a tri-motor Ford plane— A. I don't know that I could point out any particular instance I know of in that particular plane.

Q. When you say you can get off with considerably greater weight than the allowable load, what do you mean? A. Well, most planes will take off with a much bigger load, that is, if you give them plenty of room. In other words, we limit the load because of certain limitations in landing fields. In other words, if you had a great big long runway like a municipal field generally has, you could get off the ground with a much greater load, but if the field is small as some fields are, you might not be able to get off, but the plane is able to carry a good deal bigger load than the Department of Commerce would ever allow.

Q. In safety? A. In safety.

Q. And in flying and in sustaining flight? A. Yes, that is right.

Q. Now, are you familiar with the maneuverability of the Ford plane? A. Yes.

Q. Assuming that on the 17th day of March there was a wind of thirty miles an hour—and for your information I am going to ask you the same question also as to thirty-three to thirty-nine miles an hour—assuming that the plane was taken off by the pilot with a load of fifteen persons, the seating capacity built into that plane for that number of persons including the pilot and the man in the cockpit beside him, the seating capacity in the cabin being thirteen and the cockpit carrying two——

The Court: Averaging one hundred and fifty pounds.

Q. —nine thousand four hundred and two pounds minimum, and that pilot taking off went down his runway to this point here—the runway is not shown, but it is here—and when he got into the air he veered just a little, slightly, to head directly into the northwest wind and went out a distance of some three or four thousand feet and got up to an altitude of five or six hundred feet, then he made a gradual turn, which carried him over into this section here, and his turn was completed about this point, after the completion of his turn he was straightened out and headed for New York, which was off in this direction, at that time the left motor went cold—stopped and he attempted to revive it and could not, and that thereafter, shortly after that, while he was continuing in the same direction, the center motor revved down to eight hundred revolutions per minute, and the right motor kept on functioning

to the full degree—full power. Before this happened the pilot had synchronized his motors, everything operating normally and properly. When he was in that emergency he attempted to counteract by the use of his rudder the torque from his right motor, and he looked about him to observe the terrain. He found that on his left was the built-up portion of the City of Newark here. He found that on his right were lines of railroad tracks and that he had his right motor functioning fully and utilized that to go on an even keel, and he went in a straight line from this right here, which was the viaduct, gradually losing altitude, keeping his even keel, and gradually seeking an emergency landing, when he saw over here a green field that appeared clear of any obstructions, and clear of any fires, and he attempted to stretch his glide, keeping his right motor going and making that green field which he thought he could. Mr. Jones, in your opinion are you able to state with a reasonable degree of certainty, as an expert flier, whether or not that was a proper maneuver on the part of the pilot in that emergency? A. Yes, I think it was.

Q. Now, his altitude at the time that his left engine quit, he says, was about five or six hundred feet and then he began to lose altitude. Was that the proper thing for that man to do, in that situation with his load, go straight ahead? A. That is right. He should land straight ahead.

Q. Tell the reasons for your answer to the jury and to the Court, please. A. With a ship without —with one motor off and one motor not revving up, it would be impossible to fly the ship. In other words, it would be losing altitude and the danger in making a turn trying to get back into the airport under those conditions is the danger of stall-

ing the ship, that is, losing flying speed and the result is to lose the control which is followed by what is know as a tail-spin and so it is the common practice in case of motor failure, rather than take a chance—that is, if the ship is fairly low— rather than take a chance of making a turn and running the risk of losing the flying speed, it is considered good practice to land straight ahead.

Q. Assuming that on his left were those buildings and so forth, would you say that it would have been a good stunt for him to have made a left hand turn over here over these buildings while his engines were failing, try and turn about into the left, into the wind, with that low altitude of five or six hundred feet? A. I thought you said he had already made a turn?

Q. He had. A. You mean to make another turn?

The Court: Yes, yes. If he made the turn to the right would it have been then good piloting to turn to the left to come back into the wind?

The Witness: He should not have turned in any direction.

Q. He should have gone straight ahead and not turned to either right or left? A. When I say turn, I assume a turn of somewhere between ninety and a hundred and eighty degrees. He might vary his direction slightly one way or the other to hit an open spot to avoid, possibly, a building or something, but, normally, straight ahead.

Q. With your engines failing?

The Court: The question is primarily directed to that point as to whether or not it would be advantageous to make a turn at best to get back into the wind. The wind is on your tail.

The Witness: That means a 180 degree turn. I would say that was wrong. You should not do that.

Q. Why not? A. Because of the thing I just spoke of. The danger of losing flying speed and going into a spin at such low altitude.

Q. What is a spin at low altitude? What does that mean in maneuver? What happens to your tail when you are going into a spin? A. A tail-spin?

Q. Yes. Tell us who never seen one. A. In a tail-spin the tail is spinning around the nose. It results in loss of flying speed and when the speed is lost you have to fall a certain distance in order to take up sufficient distance to regain control. When I say stall I mean lose flying speed and the controls of the machine are dependent upon forward speed. When I say controls I mean ailerons and elevators are dependent on forward speed. When you lose that speed you have no more control. And the ship then goes into what we call a spin, and it is spinning because of the torque and it starts rolling around. Now, a ship must fall a certain distance in order to take up the speed again by gravity, but it is impossible to regain control. A spin in the air, there is nothing dangerous about it as long as you have plenty of altitude in which to gain control, but, near the ground if a spin occurs it may be you will hit the ground before you get it out. You head nose down with tremendous force. That is the danger of a spin near the ground.

Q. Mr. Jones, in the development of aeroplanes as they existed down to March 17, 1929, are you able to say whether or not in your opinion, with a reasonable degree of certainty, given good care,

regularly maintained inspections, in spite of everything done to keep up your ship, the ship is in proper condition,—even then occasional failures of motors occurred—a forced landing has become necessary at times?

Mr. George: Objected to.

The Court: Sustained in the form that it is put. Under the conditions that have been detailed to you in this hypothetical question, which you were asked to answer, can you give us an opinion as to the cause of the descent of that motor? In other words, what in your opinion would it be attributable to? If you can't answer it, why say so. If there is any reasonable hypothesis give it to us.

Q. Could you pick out a number of things that could happen to a ship in flying that had been performing normally right down until it got up in the air on that last flight where there had never been any major failures?

The Court: And, assuming the left motor stopped dead and the center motor revs down to eight hundred, but the other one keeps functioning properly, with the wind, and all those conditions that have been detailed——

The Witness: Why should the motors rev down, is that the question?

The Court: No. What would cause the plane to descend. I suppose that is the fundamental thing.

The Witness: The plane had to descend because——

The Court: You are right in asking that question. What would make the engine

slow down? I take it back. Go ahead. What would be the cause of that stoppage?

Q. What variety of causes would cause such a condition as that? Here is a plane going along all right, had been going along all right all day. All of a sudden this thing happened on the last flight up in the air. A. Well, of course, under the circumstances there are several things that might have happened. It might be gas stoppage or something like that.

The Court: Ignition?

The Witness: Ignition, it might be.

The Court: That is pretty near the limit?

The Witness: Valve trouble. I would say the chances are it might be either ignition or carburetion or something in the gas line would be a logical conclusion.

Q. Are there possibilities of something happening in that carburetion system, valve system, or ignition system, even with the best of care? A. Yes.

Q. If you are up in the air that could not be foreseen by the usual care and maintenance on your ship and your motors? A. Yes. Things can happen.

Juror Number Five: If the insulation on the wire, that burns, you understand what I mean, could possibly burn, and it rested against part of the motor, could that cause a short to stop the motor entirely?

The Witness: These motors have dual ignition.

Juror Number Five: That is why I asked. You know. I don't.

The Witness: The motors have dual ignition. That is, two spark plugs over the cylinder and two magnetos.

Juror Number Five: I mean the wires.

The Witness: It is almost—you could not tell. The whole thing is built right in together.

Juror Number Five: There is no wires loose on which the insulation could possibly burn to create a short?

The Witness: It might be possible, but the switch is on the dash.

Juror Number Five: I mean wires like you see in an automobile all pulled in together. Sometimes you will get a short.

The Witness: It could, but you have a dual system.

The Court: Right there. It would mean two groups of wires or two wires separated from each other?

The Witness: That's right.

The Court: Would each have to short circuit?

The Witness: If one should be shorted, there would be some loss of horsepower and you might lose revolutions, but not much.

Juror Number Five: And what would happen when the insulation went bad?

The Witness: It would depend on where it is. If it is the wire going into the cylinder you would not know it, probably, because that cylinder should still fire on the other spark plug.

Juror Number Five: What I wanted to ask is, is it possible that the insulation burned on one wire? Could it short circuit enough to stop the motor entirely?

The Witness: I don't think so.

Juror Number Eleven: I would like to know if the switch underneath would be dual control connected, is that fastened with a stud and nut underneath that hooks up the switch?

The Witness: You mean a switch on the dash?

Juror Number Eleven? A. Yes, sir.

The Witness: There again your system is still dual because you got a wire coming from each ignition system to that switch. Unless that whole switch went bad——

Juror Number Eleven: That's what I mean, the whole switch, main switch.

The Witness: The switch has got three points of contact on it. The switch in the "off" position, the switch "on" on each of the two ignition systems, that is to say, right and left—not talking about each motor, now—right and left magneto and one contact "both". So, unless the whole system got burned out of there you have still completed your circuit.

Juror Number Eleven: Does that switch work on a ground underneath there? What holds the switch back? That is what I would like to know. Suppose the switch right onto the dash had come loose?

The Witness: You probably got a ground then.

Juror Number Eleven: Yes. And, that same switch worked on that from the ground?

The Witness: I won't say it could not happen, but I have never known it to.

Juror Number Five: Suppose one of the plug caps gave probably by vibration?

Mr. Reed: Spark plug?

Juror Number Five: Yes, one of the caps and the wire to the rest of the motor. Would that short it enough?

The Witness: No. You would never know it unless you happened to turn on to that spark. You might get a little less——

Juror Number Five: You would get less?

The Witness: Yes, if you turned it on to that spark, but your cylinder is still firing on the other ignition system.

Juror Number Five: But that one would not do it.

The Witness: No, that one would not do it.

Juror Number Five: From one missing like that could that stall it?

The Witness: No.

Q. I want to ask you this just from the standpoint of a layman that don't know anything about it: suppose a spoonful of water got in the gasoline system, could that stop it? A. Well, it is pretty hard saying. Water would have certainly an effect on the function of the motor, naturally, if it got in the lines and got in the carbureters or got in the jets. Yes, water would affect it, might even stop it entirely.

The Court: Do you think, though, it would stop a flight of 3200 or 3300 feet if the pilot was endeavoring to get action out of it during that 3200 or 3300 feet? In other words, it would have to be a pretty large bunch of water. It would work out, wouldn't it, eventually?

The Witness: You could almost always tell water because it sputters up considerably.

The Court: Misses?

The Witness: Yes. It is one of those things you can't say can't happen, but it is sort of unusual.

Q. From your experience can you say whether an engine will stop with the best of care and best of inspection occasionally, without any cause being found, on occasion?

Mr. George: That is objected to. It goes in the realm of conjecture.

The Court: Oh, yes. Let us find out what the situation is.

The Witness: I think we can always find a reason for stoppage of motors if we have chance to examine them and go into them.

Q. You don't understand my question. Do you find from your experience that occasionally an engine will stop with the best of care and the best of inspection? A. Yes.

Q. How about some particle of dirt or dust, foreign matter that has crept in and gets in in the carbureter? A. It might stop the motor.

Juror Number Three: If any dirt went through that system wouldn't it clog your carbureter?

The Witness: That is what I say. It would stop in the carbureter. That is where it would probably stop, in the jet.

Juror Number Three: That would stop the motor?

The Witness: Yes.

Juror Number Three: Because you would not be getting any gas?

The Witness: Yes, sir.

Q. That would stop the motor? A. It might.

Juror Number Three: Would it need much dirt to do that?

The Witness: Yes. It would need quite a bit.

Juror Number Three: How much?

The Witness: Well, that is almost an impossible question.

Juror Number Three: How big is the jet in the carbureter that delivers gas to the cylinder?

The Witness: Well, I don't know. Maybe you have seen them. They are just little needle jets.

Juror Number Three: Like a needle?

The Witness: Yes, like a needle. It would not take very much. If you got it in just right it would not take very much dirt.

Mr. Reed: I think we have covered that subject. Have any jurymen further questions? I have another thought, but I am still open for any further questions.

Juror Number Eight: How about the generator?

The Witness: We run most of our generators by air. We put them outside in a solid frame, with a little propeller driven by air.

Juror Number Eight: Could it be possible by vibration—is that a solid connection or is it connected with a nut?

The Witness: We use the generator only to generate juice for the storage batteries which are used for starting and lighting. We don't run on battery. The ignition we run on a magneto.

Q. The plane is not built that way? A. No. We have a different system of ignition.

Q. It appears in this particular accident that we are inquiring into the pilot, Mr. Foote, visited the airport on Saturday and made some visual observations of the property and of the airport, and on the day of the accident he came there at about eleven or half-past eleven o'clock in the morning, looked around the airport, made some observations, and then around half-past twelve or one o'clock he took a flight in the aeroplane and received instructions on that flight as to the terrain, emergency landing places, going over the same route that is later followed on the final trip, in fact, the route that took him over to this section here and off on to New York, over to New York, and back again by way of the Statue of Liberty, and that this pilot then made some seven flights over that same general course, and receiving on two of those flights instructions from the pilot beside him as to this terrain, places of landing, places of interest, parks, and so forth, and he made the observations—the observations of a pilot who had been a pilot for ten years or more. Now, will you please tell us whether or not, in your opinion as an expert, that was adequate knowledge of the terrain for a person to fly a trimotor Ford ship with passengers, after those numerous flights with the opportunity for observation and instructions from his co-pilots as to the terrain and landing places? A. Yes. I think that was plenty adequate.

Q. What is the custom of the trade—if I may put it that way—as to pilots going off with planes and passengers frequently to unknown ports and making landings? A. Why, I think that a pilot automatically sizes up the conditions around the field.

Q. By reason of his training and experience? A. From his training and experience, and if he was taken over this terrain in this series of flights, well, certainly, that is adequate training to do that sort of thing.

Q. And, in your opinion, is a young man of thirty-four, who has been flying aeroplanes since the War—he was in the service of his country in the aeroplane service after the War—he had his own airport, that he instructed pilots in flying, that he flew all kinds of aeroplanes from Jennies up, that he was employed for a period of time at Chicago by the Grey Goose Air Line flying only loads of passengers in tri-motor Fords for a period of five or six years, that he also flew for the National Air Transport at Chicago with passengers and freight, and going from Chicago to other points, and then thereafter he had some ten or twelve hours of flying in a tri-motor Ford, he then entered the Ford school at Dearborn, conducted by the Stout Metal Airplane Company, where he went right to the shop and studied the tri-motor Ford from the ground up and spending two or three days a week flying over fields with test flights and trips and motors cut out and emergency landings, and with officials between Dearborn and Buffalo, and by the time he had been there for six months he had acquired a total in flying time on tri-motor Fords of one hundred and ten hours, that he then came to Newark Airport and flew his tri-motor Ford some seven times prior to the last flight. Are you able, in your opinion, to state whether or not that pilot was competent, experienced and duly qualified to fly passengers on that day?

Mr. George: I object.

The Court: Sustained. I am afraid we have to draw the line somewhere, because the competency so far as his skill would have to be left for the jury. This would be taking from them a function which is normally theirs. I have persuaded your adversary to allow you to ask one such question, that is, with regard to the condition of the plane, and I have no doubt that prompted you to ask this one too.

Mr. Reed: Well, we had such a distinguished pilot at the moment I thought I would like to get his idea. You may take the witness.

Cross-examination by Mr. George:

Q. I am going to be very brief with you. I meant what I said before when I said I regarded you as one of the outstanding pilots in this country. By the way, would you consider a twenty-five velocity of wind a strong wind? A. Twenty?

Q. Yes. A. No.

Q. Twenty-five? I want to know when I can go up safely. I want to know what the wind is before I go up. A. It wouldn't make any difference.

Q. It would some, of course? A. It would not make any difference anyway.

Q. It would not to you because you have had experience. I mean, in general, regarding wind in—withdraw that.

Q. Would you consider thirty-nine miles a strong wind? A. Thirty-nine miles is a good strong wind, yes.

Q. Now, would you regard it as good piloting to take a plane of the 4-AT model with fifteen persons averaging one hundred and fifty pounds into

a wind of thirty-four to thirty-nine miles velocity and reaching an altitude of between one hundred and one hundred and fifty feet and making a sharp banked turn at that altitude with that load, with that wind? Would you consider it good piloting, assuming that was done? A. I don't think that is good piloting.

Q. Bad piloting, isn't it? Of course, if it is not good it is bad. A. Well, unless there is some reason for doing it.

Q. But, assuming there is nothing ahead, no obstruction, no power, no smoke-stack, but just so far as piloting itself is concerned, that would be bad piloting to do any such a thing under such circumstances? A. Yes, because I think he takes an unnecessary chance.

Q. A maneuver of that kind is fraught with great danger, isn't it? A. Yes, because something might happen to your equipment.

Q. And you would not have enough altitude to apply whatever skill he might have in the maneuvering of the plane to right it, put it on an even keel? A. I would not say it was good piloting, no.

Q. What? A. I don't think it is good piloting, no.

Q. Now, you told us when he asked you the question, assuming the plane in question is going north—northeast in this direction——

The Court: No, no. Northwest.

Q. Northwest. That's right—northwest and having made this turn and completed the turn, and is going east and parallel with this line, Mr. Jones, in this direction, you see? Now, the Court asked you the question whether it would be advisable when your motor fails, one of them failed and one

of them revving down, whether it would be advisable to make a left turn to go back into the wind so you could get better climbing power, and your answer was no, and if I am not mistaken the reason you gave was that would require a one hundred and eighty degree turn, is that right? A. One hundred and eighty degree turn.

Q. That is a complete half circle, isn't it? That was the reason you assigned, wasn't it? A. Well, I think the statement—that is, to go back into the wind would have required a turn of one hundred and eighty degrees to get back into the wind. I also made the statement when I spoke about turning I should have turned between ninety and one hundred and eighty degrees. I said a slight turn one way or the other.

Q. Let me ask your judgment. Following this map let us assume this is the only objective over here where I have my finger and remember the plane while she is going parallel with this line of South Street was up, Mr. Jones, in a direct line. Now, how much of a turn—assuming he is going right straight on an even keel in this direction—what degree turn would it be from this point about there to get down here? A. About forty-five degrees.

Q. That would not be a dangerous turn, would it? A. Well, now, wait a minute. Whereabouts did this motor start to rev down?

Q. Right here where this thumb tack is. A. That is where they started to rev down?

Q. Yes. And he was seven hundred feet in the air, Mr. Jones.

Mr. Reed: Five hundred to seven hundred.

Mr. George: May I?

The Court: Seven hundred seems to have been the maximum from all of the witnesses.

Mr. George: I am giving him the maximum.

The Court: Yes.

Q. Away up there how much of a turn—what degree turn would be required to divert from that easterly course to come to the southeasterly point down here? It would be about twenty degrees, wouldn't it? A. No. Forty-five degrees.

Q. Forty-five degrees? That would not be a sharp turn, would it, or a dangerous turn? A. No.

Q. Now, then, if one motor went dead and the other revved down at this point, all of that happening is on the way and reaching this point, on the way eastward and reaching this point, the plane levelled off, nosed east, would it have been a difficult maneuver under the circumstances with the wind going north of South Street to have made a forty-five degree turn back to the airport? That would not have been a difficult maneuver under the circumstances, would it? A. Well, not if he did it immediately.

Q. If he did it immediately? A. Not if he was back there, no. Not if he was back in that position.

Q. If he were back in this position I am describing here, and understanding and knowing that his left motor has died, as dead as a door nail as far as power is concerned, and the center motor revved down as though starved for gas, and that he looked around to the right and left, even in this direction, would it have been a difficult maneuver at seven hundred feet altitude with one motor going and the other one only partly revved down to have turned on a forty-five degree turn toward

the airport? A. No. If he done it immediately at that position it would not have been, no.

Q. Then he was high enough and was far enough away to have done it, is that right, under those circumstances? Am I right? A. He might have.

Mr. George: That is all.

By Mr. Reed:

Q. But, assume, if you please, that when his left motor quit cold and his center motor revved down to eight hundred r.p.m.'s there was no power in either of those motors that was propelling him ahead, was there? A. No.

Q. Then, that left motor—the torque of the right motor was pulling hard as he was going in this direction towards New York. His right motor was pulling him to the right by this torque by reason of the fact the left motor was dead and the center motor had no power. A. To the left, you mean?

Q. I mean the right motor was pulling him to the left, is that right? A. That is right.

Q. Wouldn't that torque and the pull to the left by the right motor going full revolutions, have a tendency to interfere with the turn, a cross wind to his right at that low altitude?

Mr. George: That is objected to as leading.

The Court: Overruled.

The Witness: Well, of course, the tendency of the ship would be to go in the opposite direction to——

Q. And——

The Court: Wait a minute.

The Witness: —and that can be overcome with the controls if they had been applied immediately.

Q. You could overcome it so you can go in a straight line, can you, by using the rudder? A. Surely.

Q. To attempt to overcome it and go at any angle right and permit the wind to go cross wind across your plane, would that be dangerous, with your motors failing in that way? A. It depends on how high it was.

Q. He was from five to six hundred feet and the wind was on his tail, and he also says, by the way, Mr. Casey, when the left motor quit and stopped "I attempted to revive the motor and tried to get it going again", and he also says— A. Of course, that is what I think happened. The whole point is this, as I see it:—where is it the motor started to cut down? I don't know what the scale of that map is. But, if a fellow was in that situation and something starts happening to the motor, it is his first inclination to nose the ship over and try to find out what is the matter. I should rather expect by the time he done this— and it doesn't take very far to cover that space there—by the time he realized he would not be able to get his motor, I am inclined to believe he was back this way, a little bit back further.

The Court: I think it is no more than fair to Mr. Jones to give him the dimensions from the place where the motor is assumed to have gone dead down to the airport. Scale it.

Q. Assuming, Mr. Jones, the distance is from fifty-four to fifty-six hundred feet. That is twice twenty-seven. A. That is the distance back to the field?

Q. Yes. A. From the point the motor quit?

Q. Yes. A. The point I am trying to raise——

Q. That is the distance back to the end of the runway. A. The point I am trying to raise is this: even if the motor quit and stopped dead the pilot's first tendency is to try to get the motor back. He does not figure that he is going to land immediately. His first inclination is to try to find out what the trouble is.

Q. Revive the motor? A. That is right. And, all the time he does that he has to nose the plane down straight ahead. He doesn't think about making a landing at that time because he is trying to get his motors back. He knows then if he should be able to get back to the field and land down wind. That is going to be bad enough, anyway.

Q. Assuming that the field is full of automobiles and sight-seers on the holiday. A. He is going the actual distance from the point where his motors quit to a point a mile beyond that in about thirty or forty seconds, which is not very long.

Q. Thirty to forty seconds? A. That's right. In other words, he is doing one hundred miles—one hundred and twenty miles an hour, easily.

Q. With the wind on his tail? A. Yes. So, thirty seconds he has gone from the point where the motors quit to a point a mile along.

Q. From this point? A. In thirty seconds he may be away over there—he would have been in the first thirty seconds after his motors quit. I would say it might be ten seconds, it might be twenty seconds, it may be forty seconds, but dur-

ing that first period when he has trouble, he is thinking of getting his motors back, he is nosing that plane down and trying to do what he can, and every second he is doing that he is going further away from getting into the field. The further he goes the further turn he has to make to get back into the field.

Q. The testimony is when this motor quit and immediately afterward the center motor revved down to eight hundred revs, he attempted to revive his motors. A. That is right.

Q. And he tried to pull them out and get them going again. A. Yes.

Q. Then he says when he realized that he could not revive the motors, he looked around for a place to land. He says he saw the viaduct, he said he saw the dump, and burning dump, and burning garbage in the dump, and a whole lot of railroad tracks. A. For the time he got ready to do that he is not at that point you point out. I think he is a mile or so away. Then, I say, he has to make a sharp turn to go back.

Q. Is that proper conduct on the part of the pilot? A. In the meantime he is losing more altitude in doing that, so it is probably three hundred or four hundred feet.

Q. He is losing altitude all the time? A. All the time when his motor is down and he is trying to get them back he is losing altitude.

Q. Is it proper flying on—conduct on the part of the flier to try and attempt to revive his motors in an emergency? A. Yes, that would be the first thing to do.

Re-cross-examination by Mr. George:

Q. Now, would it be possible for a skilled pilot, Mr. Casey, being at least a mile from the airport and having at least an altitude of seven hundred feet, and with the motor going—and one of them revving down—would it be possible for him just as well to be able to rev up his motors again and make his turn also toward the airport, which is simply a forty-five degree turn? Could he do that also? I mean, a skilled pilot? A. You mean would he be making the turn?

Q. Would he be able to make it?

The Court: As you indicated before, to gradually edge in toward the airport and at the same time manipulate his engine?

The Witness: He would be able to do it but it is quite doubtful if he would be thinking of two things at once.

Q. I am not asking you what he is thinking.

The Court: No. Just listen.

Q. Would it be possible for him to make a turn and at the same time also to try to rev up his motors? Would a good pilot be able to do that? A. I would say I would, possibly, but rather unnaturally.

Q. But it could be done by a skillful pilot, couldn't it? A. It could be done if you think of it all at the same time. I don't think it would be natural to do.

Q. Then the answer you gave awhile ago, Mr. Jones, as to whether, under the conditions that I have given you, considering the wind, altitude, and distance from these two points—whether it

would be possible for the pilot having already looked around after he had found his motors had gone dead and the other one revved down—whether it was possible to turn and head for the airport, you said "yes." Now, would your answer still be the same—Mr. Reed, do you want to watch me on this—with the airport about fifty-five hundred feet from this mark and the wind blowing in the direction toward the airport and this point up here six thousand feet with one motor dead and the other one revved down and the wind blowing in this direction——

Mr. Reed: You have not got the direction.

Q. —in this direction——

Mr. Reed: That is not the direction of the wind. Here is the direction of the wind.

The Court: Northwest wind, that covers it.

Q. The wind was coming down in this direction. Have you got it? When I am examining you please ignore Mr. Reed. Do you get the picture, Mr. Jones? A. Would you point out again where the plane is.

Q. Here is the plane away up here. A. Still there?

Q. Yes.

The Court: Yes, it is still there and it is dead except one motor.

Q. Let me show you something to help you. He was going in this direction, where from we won't concern ourselves. When it reaches this point it is headed due east. Do you see that? And, when

it reaches this point one motor is already dead and the other is already revved down, and the wind is going in this direction toward South Street. Get it now? And, the airport is at least five hundred, or about five hundred feet shorter than the distance from there over to here.

The Court: Where it did land.
The Witness: Right.

Q. Wouldn't it be even easier under the circumstances if the pilot had thought of all things, as you said, to have made the airport under those circumstances? A. Yes, but——

Q. What did you say? "Yes, but"? If you mean "yes, but," I am willing to hear the "but." A. I say yes, but——

Q. What is the "but"? A. I say yes, but I still think that first ten, fifteen, twenty or thirty seconds was spent by the pilot as was perfectly normal and human, by going right straight ahead. He didn't do anything but shove that wheel ahead and see if he could get his motors back. In the meantime, I say he covered considerable space. He wasn't looking for a field then. I think he had to get his motors back, and the last thing you look for is your landing.

Mr. George: As to all of that answer the witness has described as what had been happening, I ask the Court to strike out.

The Court: Now, getting back to the question, leaving out of consideration what in your opinion he was thinking or what might have happened, but assuming from the very point that that motor goes dead where Mr. George has indicated, your answer would be it would be easier to make it into the airport?

The Witness: He could have gotten into the airport had he headed for it that minute just as well as he could have gotten straight ahead.

By Mr. Reed:

Q. But would he have the obstacle of the torque from his right motor that was going? A. That would affect him.

Q. Would he have the hazard of landing with failing motors on the people in the crowds at the airport if he did that? A. He might have.

Q. And was the hazard less in that emergency, knowing that the holiday crowds are on that airport and that there are automobiles and people spread over that field there except on the take-off and landing place—would he have had the hazard of the people there and would it have been a lesser hazard to have headed for the open field—green field?

Mr. George: That is objected to.

The Court: I will have to sustain the objection because you have asked him to assume facts as to whether or not the facts existed. I think what we want to know is whether or not assuming in addition to those other things at the airport there were a great many people there and cars assembled about the buildings and near the runway, as to whether or not that would have entered into the situation at all.

Q. Yes. A. It would be perfectly normal. I mean, we have had lots of accidents in aviation where pilots have crashed into other things to avoid hitting people on the ground.

The Court: It gets back to a matter of judgment at the minute, just how the picture looks.

The Witness: That's right.

Q. Now, Mr. Jones, the witnesses have varied in this case as to the altitude that the plane was at the time that the plane began to lose altitude. In fact, some witnesses have testified it was four hundred feet. The pilot himself says at the time it began to lose altitude because the engine failed it was only five hundred to six hundred feet, and that he then attempted to revive his motors and he did say that after attempting to revive his motors he then looked for a landing field and went straight ahead. In your opinion was that proper maneuvering on the part of the pilot under those circumstances at an altitude of five hundred or six hundred feet heading along at this point, in this direction, to go straight ahead? A. He should go straight ahead. The lower he is the more reason for going straight ahead.

Q. If he was five hundred feet that was a greater reason for his going straight ahead? A. Yes.

Q. Now, this is north here, and the wind is given as northwest on that day, a northwest wind. If this is north, west is here, isn't it? A. Yes.

Q. So that the wind would be in that direction, about? A. Yes, that is northwest.

Q. Wouldn't a turn about to go into the wind there, to the right or left, carrying that wind sidewise into the plane? A. You mean would the plane be drifting, is that what you mean?

Q. No. Would you get a side wind in making a turn to the right or left at that angle? Wouldn't he be going side wind?

Mr. George: Those are three leading questions in one, wouldn't he, wouldn't he, wouldn't he. I think it is objectionable, all three.

The Court: I do, too. But, why not, let us see it.

The Witness: Yes, there would be a side wind.

Q. What? A. Yes, there would be a side wind.

Q. And would that affect the maneuvering of the plane in making a turn to the right in addition to the torque?

Mr. George: I still object.

The Court: Yes, sustained, although I am inclined to believe you can't lead this witness much.

Q. Would he have that added difficulty in making any turn other than going straight ahead?

The Court: Answer it.

The Witness: No, he would not have any added difficulty.

Q. He would have those difficulties? A. I said the wind would make no difference.

Q. Would it make any difference—I mean, what difference would the torque make? A. The only thing that would make any difference on this question is the altitude.

Q. What about the torque? A. The torque is tending to turn the plane to the left.

Q. In attempting to overcome that will you please tell us whether or not some altitude would be lost in attempting to beat that force to the left? A. He is losing altitude all the time from the time that his motors stopped. It has got nothing to do

with anything except the fact he is going to lose horsepower.

Mr. Reed: That is all. Defendant rests.

Defendant rests.

REBUTTAL.

GEORGE F. LAHEY, JR., recalled in rebuttal for plaintiffs.

Direct examination by Mr. George:

Q. A lawyer by the name of Zimmer testified on behalf of the defendant in this case—he testified that he was associated in the law office of Congleton, Stallman and Hoover, and he said you were in his office one time and that you said to him in his office in the course of his preparation of this case in Newark—I mean the Colonial case for trial—that you were at the Newark Airport on March 17, 1929, that you saw this particular Ford tri-motor plane take off, that you didn't pay any further attention to it, and that you didn't see it again until after the crash. Did you say that to Mr. Zimmer?

Mr. Carpenter: I object.

The Witness: No, I did not.

Mr. Carpenter: That has been covered on his cross-examination.

The Court: I am going to allow it, Mr. Carpenter, in view of the fact his statement at that time was not exactly this question now. I assume he can be confronted with it.

Q. What conversation did you have with Mr. Zimmer?

Mr. Carpenter: I object.
The Court: Sustain the objection.

Q. You did not say that which I have just asked you about? A. I may have told him I did not see the crash. As I remembered it I used the word "impact," that I did not see the impact, which is true. It was beyond the railroad embankment.

Q. Do you distinguish between "impact" and "crash"? A. No. As I remember the word I used was "impact".

Q. Did you see the impact? A. No. I did not see the impact.

Q. Did you tell him you did not see the impact? A. Yes, I did tell him that.

Q. You told him you didn't see the impact? A. Yes. I told him it was behind the railroad embankment.

J. Vincent Donegan, called as a witness on behalf of the plaintiffs, in rebuttal, being sworn, was examined and testified as follows:

Direct examination by Mr. George:

Q. Where do you live? A. New Brunswick.

Q. What is your occupation? A. Court stenographer.

Q. Where? A. Newark.

Q. Part of the official court stenographer's office? A. No.

Q. Do you recognize Lou Foote in the court room? A. Yes.

Q. Did you see Mr. Foote on the 19th of March, 1929? A. I did.

Q. Where? A. St. James Hospital, Newark.

Q. At whose request were you there? A. Mr. Peter O'Toole, now City Clerk of Newark, then in charge of Port Newark for the city.

Q. Was it under the direction of some municipal authority? A. Yes, under the City of Newark.

Q. And when you saw Mr. Foote, what time of the day was it? A. In the afternoon.

Q. Was he in bed? A. Yes.

Q. Was he lying down or sitting up or what? A. Sitting up.

Q. And who else was present at that time? A. Lieutenant Aldworth and Major Copsey.

Q. Did anyone talk to Mr. Foote? A. Both Lieutenant Aldworth and Major Copsey.

Q. And were questions asked of Mr. Foote by those two men? A. They were.

Q. Were you able to understand the questions that were asked? A. I was.

Q. Were any answers given by Foote to those questions? A. There were.

Q. Was he conscious or unconscious?

Mr. Carpenter: I object. This witness——

The Court: As you saw him, that is, with reference to his ability to answer questions and so forth, did he answer them promptly and intelligently?

The Witness: Oh, yes.

Q. Intelligently? A. Yes.

The Court: Did they seem to be connected?

The Witness: Yes.

Q. His answers were responsive to the question? A. Yes, sir.

The Court: Did he seem to close his eyes at any time or to indicate that he was not getting the questions and understanding them?

The Witness: I could not tell as to his facial expression. I was watching my book, but the answers followed right on the questions as they do here in court.

The Court: Was there anything to indicate to you that there was anything abnormal in the manner in which he answered those questions?

The Witness: No.

Q. Now, when the questions were asked and the answers given, did you take them down stenographically? A. I did.

Q. Subsequently did you transcribe those stenographic notes? A. I did.

Q. Have you them with you? A. I have.

Q. May I see them, please? A. Do you want the transcript or the notes?

Q. The transcript.

Mr. Carpenter: What was the date?

Mr. George: March 19, 1929, two days after the crash.

Q. Is this the original?

Mr. Carpenter: Less than two days by two hours.

Mr. George: All right.

The Witness: That is a copy of the complete investigation.

The Court: Just a minute. You took the questions and answers down correctly?

The Witness: Yes, sir.

The Court: And the transcript which Mr. George is now holding in his hand and which he has is a correct and true transcript of the questions and answers that were given that day and nothing but the exact questions and answers?

The Witness: It has been checked word for word against my notes.

The Court: You people have been over this before. You know what is in there. Now, Mr. Carpenter, is there any question as to this being a transcript taken at that time?

Mr. Carpenter: I won't question that.

Mr. George: May I do this? I ask leave to offer this in evidence.

The Court: That would make too much of a record. What I am going to suggest to do—have you got it segregated what you want to find out?

Mr. George: Yes, substantially, but not——

The Court: Insofar as it is of a contradictory nature, I am going to allow you to read it. Maybe you two can get together and pick out certain portions you will put in and certain questions.

Mr. Carpenter: Why can't we do that tomorrow morning?

The Court: The only thing is I don't want this man to come back.

The Witness (handing paper to Mr. George): On one corner you will see Foote's name.

Mr. George: I won't take but a few moments, unless, with the Court's permission, we will hold the reading of this until tomorrow morning.

Mr. Carpenter: No. Let us get that over with.

The Court: Don't lose any time. Go right ahead. Go right at it.

Q. Do you recall, Mr. Donegan, in answering Major Copsey Mr. Foote made these statements:

Mr. Carpenter: Objected to. Let the question and answer be read. I don't object to that.

Q. In answer to this question——

The Court: Were these questions asked and these answers given?

Mr. Carpenter: Now, may I at this time enter an objection on the ground that the witness Foote told you he didn't remember making them and that he was not conscious——

The Court: That is a question of fact.

Mr. Carpenter: For that reason it cannot be used for impeaching his testimony here in court.

The Court: No. The only purpose this is offered for is to contradict, if it can be done, any testimony he has given in court. (Addressing jury) The question of whether or not he was in proper condition at the time it was said he made those statements, of course, is for you to determine under the law.

Mr. Carpenter: I make an objection to the admission of the record. My objection to the admission on that line is on the record. I take an objection to your ruling.

The Court: Yes.

Q. Do you remember Major Copsey asking this question: "Just take your time and whatever you remember tell us about it?" Answer: "Well, whatever he wants to know he will probably have to ask me." Question: "Just start from the take-off." Answer: "From the last take-off?" Question: "Yes, your last take-off. You taxied down to the runway and gave her the guns." Answer: "Well, the only thing I remember, on the last take-off, that I taxied down to the runway in the regular way. I do know I had a pretty heavy load—it seemed like the passengers were extra heavy in there, but I gunned both outboard motors first to make sure they were all right and they went up to around 1200, and I gunned a little and they came right up, they were both all right, but my impression was it was a little heavy, didn't get off as quiet as it ought to get off, but it got off nicely until I started to make my turn probably a mile and a half or two miles from the field—it seemed like to me—and just as I started to make my turn—or I had made my turn—it seemed like my left outboard motor quit altogether, which pulled the machine around to the side, you see. I held all the rudder I could to still hold her straight, but between the turn and wind and one thing another it was hard to hold it on an even keel; so it seemed like it was too far from the field to make it back to the field; the only thing was to do to try to head to an open place and try to make above the high tension line or power line and try to get in this field the best I could. My only thought was to the passengers at this time to get them down safely, that which I did. It don't seem like I cleared the wires all right—that I was going to clear the wires but I guess I did. When I went out, I guess I don't remember that, but I guess I

cleared the wires all right—so they tell me—and that is about all I remember from that time on." Did Foote make that statement? A. Yes, sir.

Q. Now, do you recall Major Copsey——

The Court: It seems to me, Mr. George, that is practically what he said here.

Mr. George: Beg pardon?

The Court: That seems to be practically what he said here.

Mr. George: I think there is much of criticism in this.

The Court: All right, go ahead.

Q. Did Major Copsey ask this question: "Did you notice the r.p.m. of your motors as you took off? Do you recall glancing at those?" Mr. Foote says: "I know one motor, the right hand motor, was not turning at all. I can just look out now and see the wind against the prop, just turning it over."

Mr. Carpenter: I object. Is that correct?

Mr. George: That is what I have here. Let me finish the answer then he may be asked if that is correct.

Q. (Quoting) "I can just look out now and see the wind against the prop just turning it over."

Mr. Carpenter: How did you transcribe it? My copy seems to be different.

The Court: Before you answer, wait. Hold your answer.

Q. In answer to the question by Major Copsey that I just read, Mr. Donegan, did you hear Mr. Foote say: "I know one motor, the right hand motor, was not turning at all. I can just look out

now and see the wind against the prop just turning it over." Did he say that?

The Court: Do you wish to question on that, as to the correctness of one of those words?

By Mr. Carpenter:

Q. Was there anything in between the words "I know one motor—" A. I have "I know one motors". In my notes it is plural.

Q. Wasn't the answer "I know one motor was not turning——"?

The Court: Motors. I know one motors, plural.

Q. What is the rest?

A. "—the right hand motor, was not turning at all. I can just look out now and see the wind against the prop just turning it over."

Q. What is the next question?

Mr. George: Wait a minute. Are you asking me?

Mr. Carpenter: Why didn't you read it?

Mr. George: I wanted to read the whole thing and he objected to it.

Mr. Carpenter: I want to be fair in this case. I don't want to take advantage and I don't to be taken advantage of.

The Court: Will you just let him read until enough is read to make it fair?

Q. The next question: "This wasn't on the take-off?" Answer: "Oh, no. Take-off was perfectly all right."

Mr. Reed: I——

The Court: I can plainly see we have got to have it all because unless you can agree upon it——

Mr. Reed: May the stenographer read it all himself?

The Court: That is the usual way.

Mr. George: I have no objection to that. They are objecting to that.

The Court: It was never put to the court this way. This is the practice: it has never been varied from: simply ask the stenographer "Did you take certain testimony on that day, and have you made a correct transcript of it?" "I have." "Now, will you kindly read what this gentleman said on that day?" Go ahead.

The Witness: Shall I read it all?

"By Lieutenant Aldworth:

Q. Just take lots of time and give us a narrative story of the whole thing from the time you took off."

Mr. Reed: Will you read from the beginning of it?

The Court: I understand there is no objection from the counsel for defense as to this manner?

Mr. Carpenter: Not a particle.

The Witness: (Quoting).

"By Lieutenant Aldworth:

Q. Just take lots of time and give us a narrative story of the whole thing from the time you took off. Just take your time.

Major Copsey: This is part of the official investigation before the Department; we

have to look into every crash and I will consider this part of my confidential report. Are you able to do it? A. As far as I can remember, but I can't remember the whole of it.

Major Copsey: In the part of the report—in the account of it, and you are the best one who can give it, and that is why I would like to know it if you feel able. My part of it is strictly confidential.

Q. Just take your time and whatever you remember tell us about it. A. Well, whatever he wants to know he will probably have to ask me.

Q. Just start from the take-off. A. From the last take-off?

Q. Yes, your last take-off. You taxied down to the runway and give her the guns. A. Well, the only thing I remember, on the last take-off, that I taxied down the runway in the regular way. I do know I had a pretty heavy load—it seemed like the passengers were extra heavy in there, but I gunned both outboard motors first to make sure they were all right and they went up to around 1200, and I gunned a little and they came right up, they were both all right, but my impression was it was a little heavy, didn't get off as quiet as it ought to get off, but it got off nicely until I started to make my turn probably a mile and a half or two miles from the field—it seemed like to me—and just as I started to make my turn—or I had made my turn—it seemed like my left outboard motor quit altogether which pulled the machine around to the side, you see. I held all the rudder I could to still hold her straight, but between the turn and wind and one thing another it was hard to hold it on an even keel; so it seemed like it was too far

from the field to make it back to the field; the only thing was to do to try to head to an open place and try to make above the high tension line or power line and try to get in this field the best I could. My only thought was to the passengers at this time to get them down safely, that which I did. It don't seem like I cleared the wires all right—that I was going to clear the wires but I guess I did. When I went out, I guess I don't remember that, but I guess I cleared the wires all right—so they tell me—and that is about all I remember from that time on.

Major Copsey: Did you notice the r.p.m. of your motors as you took off? Do you recall glancing at those?

Mr. Foote: I know one motor, the right hand motor, was not turning at all. I can just look out now and see the wind against the prop just turning it over.

Q. This wasn't on the take-off? A. Oh, no. The take-off was perfectly all right.

Major Copsey: About what r.p.m. did they show on the take-off?

Mr. Foote: Oh, I should say on the take-off they showed around I would say 1550—1575, along in there, on the take-off.

Q. The old bus barged off in good shape? A. She got off fine. I would never have got off with the load I had if she didn't. She got off fine, but, of course, she didn't climb as well as I like to see a tri-motor climb, but that was due to the load I had; I had pretty good passengers in there, but as I remember looking back through the cabin door there were some pretty good huskies in there so probably I had a pretty good load in there at

that time. I do know that two motors would not sustain her in flight with just the two motors to hold it up. I remember trying that, trying to hold her up with the two motors and it couldn't be done. I just kept losing and losing right along. Whether there was more than one motor went bad or not I don't know. I don't hardly think it was. I think it was just one motor went out. The chances are if it was two outboard motors and the center motor quit I could have made it anyhow, see.

Major Copsey: Well, when this motor quit do you remember which rudder you used to offset it? Did you give it right or left rudder?

Mr. Foote: Well, when it started—as it seemed to stall like, it started to pull around to the right right away and naturally I used left rudder to overcome that.

Q. You wouldn't do that if your left engine quit? If your left engine quit it would pull you left and you would have put on right rudder? A. If the left engine quit it would pull me left. There is one thing I don't just remember, whether it is due to this—it has been kind of guess work to me which motor it was since this all happened now, whether it was my left or right motor that quit. I haven't got a very good perception of that. I don't remember very well. It was one or the other, either right or left. Of course, I understand that all right. If the left motor went out, of course, the right one would be on and naturally pull it around that way and you would have to hold the other rudder to hold her straight.

Q. But you think it was the left one, do you? A. I think so, but I wouldn't want to swear to it.

I know when I think I can remember just looking at this plane as plain as day and the prop was just turning over from the wind—the speed it was going was turning the prop over. There was nothing there at all. Whether it had a bad mag and then the other mag went dead then I don't know.

Q. It didn't sound like gas, did it? It didn't bup and run a little and then— A. It did once, and I can remember I thought it was going to come back, and then I couldn't figure out whether it was gas or whether it was air—whether it was the mag, but after she didn't come back again I didn't figure it was gas. If the whole three had quit the chances are I would have turned on my reserve and tried to get in that way.

Q. Well, that is the kind of plane—now, there are some little things we wanted to clear up here for the record, and they may sound, some of them like silly questions, but they are all required—you know how these things are, we have to do it. A. Yes.

Q. Did the engines, all of them function okeh on your previous flights? A. Yes, the engines were all right except that I hadn't tested my motors for right or left bank, the mags on that airship at any time during the morning because it had already been—of course, I didn't check my wheels or check up both switches to see if both motors were running all right because I figured that had been done all right because it was being flown when I came out there, and as a rule you don't do that unless you are just starting off. That is the only thing I didn't do. I thought of that afterwards; I thought after the accident I might have done that and made sure if the mag was all right on both of these banks. I had the

same thing happen to me about a week ago going down to Chicago."

Mr. Reed: I object to that. That about Chicago, that has nothing to do with this.

The Court: Strike it out.

The Witness (Quoting): "I had one mag go out on me."

Mr. Reed: That is objected to.

Q. Go ahead. Read the next question. "These engines, they worked okeh"——

Mr. Reed: I suggest he better go ahead and read it.

The Witness: (Quoting) "I had the same thing happen to me about a week ago down to Chicago. I had one mag got out on me. I came all the way back from Chicago to Detroit with just one mag on the center motor."

"Q. These engines, they worked okeh on this take-off—I mean you got off in good shape? A. Yes, sir, okeh. The only thing, seemed to be slow in taking off, it seemed like——"

Juror Number Five: Is this supposed to be on the same plane?

The Court: No. This is while he was at Chicago.

Juror Number Five: A different plane? Is this the same plane?

Mr. Coolahan: This is the flight.

The Court: No, no. At Chicago he is talking about. The jury has asked about this Chicago business where the mag went out. That is another plane. That is the reason the objection was made and the rea-

son I sustained it, and they want it to go in, so you better know about that. That has nothing to do with this plane whatsoever.

The Witness: (Quoting) "These engines, they worked okeh on this take-off—I mean you got off in good shape?"

The Court: Do you understand that?

Juror Number Five: I understand that.

The Court: It is not fair to interject that into this case. I would never have allowed it to be read but it was suggested it be read. It was not this plane.

Mr. Reed: That is the reason I objected at that time.

Mr. George: That is as to that Chicago visit.

The Court: That is it.

Mr. George: What he is reading now is on the same plane again involved in this crash.

The Court: I can understand that. It was only during that trip he made to Chicago one of the magnetos went dead and he ran on one magneto to get back. Now he is asked again of the plane he made this flight.

Mr. Reed: That was some other plane, some other trip.

The Witness: (Quoting) "Q. These engines, they worked okeh on this take-off—I mean you got off in good shape?"

"A. Yes, sir, okeh. The only thing, seemed to be slow in taking off, it seemed like the load I had took a little longer to get off of the ground, although the motors were running good. It seemed like it took longer to get off of the ground this last time than it did before.

Q. Do you remember whether you had the stabilizer up or down? A. The stabilizer was just exactly right. The time before that I remember I had been adjusting my stabilizer from tail heavy up about fourteen or fifteen turns from tail heavy, which was not enough for that ship being loaded up the way it was, so then I took off once that way and I noticed I had quite a bit to hold so Weatherdon said he had been turning it about eleven turns from a nose heavy in place of tail heavy back from nose heavy. So I turned it about eleven turns from nose heavy this last time and it was fine; it was all right, practically, only had to change it a couple of times.

Q. When you took off about how far dead ahead did you go? A. Well, out over the—I can't tell you distance, but I went well out over toward town and started out there—it was plenty far to make my turn, and so I did make my turn.

Major Copsey: Do you remember how high you were when you turned?

Mr. Foote: I hadn't got very high, that is the one reason I swung out a little ways. It didn't seem to be climbing as good as it should, but still the motors were turning up all right, both outboards and center motor turning up good, but just didn't seem to be climbing good. I remember one time Weatherdon and I went up we had it out across New York and we got over there quite a ways almost to where after you cross that river where they are putting in the new bridge over there, because we got about fifteen hundred feet. I didn't think then it was climbing as good as it should.

Q. You went out there—suppose we say it is to where that big stack is dead ahead of you and is a little over a mile? A. You mean the tall smokestack?

Q. Yes, away out dead ahead after the take-off it is just about a mile, maybe a little more. Then according to that you went between three-quarters of a mile and a mile? A. Yes, it was that far, it seems to me like because I went out right almost to that smokestack. I went a little farther, it seems to me. I went out straight quite a little ways before I made my turn.

Q. Well, the smokestack is on the edge of the town? A. Yes.

Q. So that the chances are that you turned this side of it, don't you think, instead of going around it, because if you went around it you would have got pretty close into town? A. Well, it might have been that.

Q. What I am talking about is the smokestack that sets right dead ahead when you take off, not the one over on the right? A. Oh, not the one on the right?

Q. No, straight ahead. A. No, I don't remember that one straight ahead the way I was taking off.

Q. Just bupped a little bit and quit, did you? A. Funny, I don't remember that big smokestack at all, I remember the big long one.

Q. That is over on the right-hand side of the field? A. I don't remember this other one.

Q. You first turned to the right, didn't you? A. Yes, I asked about making a right-hand turn there on my first trip. As a rule on most municipal fields they don't let you make right-hand turns but Wonsey and Weatherdon said it was all right to make a right-hand turn there so that is one reason I was making a right-hand turn.

Q. Do you remember how high you were, approximately when you first made this turn? A. I don't think I was over about 250 feet.

Q. Now, the engines were okeh? A. The engines were okeh.

Q. Now look, let me get this straight. You went ahead like this and you turned right, engines okeh. Then you went straight ahead in a gradual climb? A. Yes.

Q. Then you were headed towards the city? A. For a little ways in there you don't seem to climb very much after you head toward the city. There is a place you have to be almost over the second river before it pushes you right up.

Q. Then you made another right-hand turn? A. Yes. I don't even know where it was I sat down. I don't recall the place; I have forgotten that part.

Q. We have got all that dope. When you made this second turn, that is when your engine quit you? A. Yes.

Q. When you made the second turn? A. Yes.

Q. Now, I have got here "what engine." Well, you are pretty sure it is the left engine but you are not certain? A. Yes.

Q. Is that right? A. Yes.

Q. Two of them didn't quit on you? A. I don't think so. It is funny, I can't remember that. It has kind of dazed me in a way. I can't remember that.

Q. Well, now, look: When you were about you say about 250 feet when you made the first turn and then you went in this gradual climb and then you went in another turn? A. Yes.

Q. Now, when you made the last turn to the right about how high were you? A. I don't know. I might have got four hundred feet in there.

Q. Well, now, here is another question. I ask you this just because I am not quite certain. Did the engine quit dead or did it run a little, then quit, then run a little two or three times and then quit altogether? Did it burp and then quit and then did it run again and then quit or did the damn thing just phsst! out with you? A. It seems to me like it just quit, and it might have taken it once more and then quit entirely, but I can remember that prop just turning like that, and I tried to hold all the rudder I could to hold her on a level keel, hold her dead straight and it just seemed it just couldn't be done with the way we were bucking the cross wind, side wind, that you couldn't hold it right. It seemed I had to pull a little bit on my other outboard motor but I had my centerboard clear on.

Q. When her one engine quit you put on right rudder to keep an even keel? A. Yes.

Q. Did you put on any aileron? A. Yes, I had aileron on, yes, I had that.

Q. When the rudder wouldn't hold the ship straight ahead did you cut the right gun—that is assuming that your left engine quit? A. Yes, I remember——

Q. Or did you cut both middle— A. No, I didn't cut middle but I cut right. I remember that very distinctly.

Q. When the ship regained an even keel, did you put the guns on full again? A. Yes, I put the guns on full and then she quit again. It only happened for just an instance and she took the gun again.

Q. This was to keep the ship from getting away from you and going into a left-hand spin or right-hand spin? A. Well, I was watching that very closely. I knew I could put it down if I had any

kind of a chance at all and I knew I could get it down there some way.

Q. How many times, just about, did you put on the engine that way running two or three times to get above— A. Two or three times I remember trying it and she just started right around with me and I would ease her off and she would start right around. I would hold all the rudder and all the aileron I could but just as soon as I shut her off she pulled around in spite of me the way the wind was coming.

Q. When the engine quit, about how high were you, as near as you can judge? A. I don't think I was over 350—400 feet—It doesn't seem to me like—it seemed like I was rather close and I was losing altitude very fast.

Q. You were too far away, you think, to get back to the field? A. Yes, I knew I was too far away to get back to the same field.

Q. Or didn't you want to take the chance on a right-hand turn with the left motor out? Did you think you were too far away or did you think you might make it but you didn't want to take the chance turning right with your left-hand gun going? A. I might have tried to turn either way but as I remember I was figuring my wind coming back and I didn't think I could make it that way.

Q. Well, after all this you then decided, I got here, to put her down in the dump right ahead of you; there was a dump there with some little shacks on it, is that right? A. Well, I know I put her down some place there. As I remember that now that is kind—that isn't clear in my mind just where I did put it down. Wherever you say I put it down I guess I put it down.

Q. There are two fields there, Foote: There is this dump and then I have here "You then decided to put her down in the dump right ahead of you with some little shacks on it." A. I remember getting over wires there. That was my worst enemy, those wires, to get over and clear those wires.

Q. Let me finish this: "You then decided to put her down in the dump right ahead of you, didn't you, with some little shacks you say you saw there or did you say that you can reach them or did you shoot first at the open field on the other side of the wires or try to shoot the dump first and then when you saw you were going to overshoot did you try to hit the field on the other side of the wires?" A. I can't say as to that. All I remember was getting over those wires, high tension wires or telegraph wires that I had to get over to get some place to land, because it seemed like my only chance.

Q. When you say you were going to overshoot the dump—maybe I don't remember this—you decided to go for the field on the other side of the wires. Do you remember about trying to shoot for the dump? A. No, I don't.

Q. Well now, when you got to these wires or when you saw them in front of you, did you figure to stretch your glide over them or did you stick the nose down with some speed to try to jump them and pancake on the other side? A. All I remember was I was having a rather difficult time of getting over those wires.

Q. That is right, but what I am getting at, on the way down when you knew you had to get over them, did you try to get over them in a glide or did you decide you would be sure you would get over them or something of the sort, or try to do

it this way—you know how it is done sometimes, you stick the nose down to jump over the fence. A. Yes.

Q. Do you remember whether you tried to glide over or jump over them? A. I can't say as to that; it isn't very clear to my mind at all. I remember I was trying to get over the wires to make it into this open field. It seemed like it was a half-way safe bet—it seemed like the only field around there I could get into.

Q. Now, Foote, did you keep jazzing the opposite throttle to the dead engine all the time that you were gliding down or did you put everything on wide and then when she started to turn did you then cut her off? A. That is the way I did, put her on and try to hold enough aileron to hold her on a level keel; and enough rudder, and then when she would start to go I would pull her off just enough to maintain my control.

Q. All the way down? A. All the way down I remember I did that.

Major Copsey: What did your elevators feel like on the way down, did you have much on them?

Mr. Foote: Elevators or ailerons?

Major Copsey: No, elevators. You seemed to have plenty on them. Did they respond as rapidly as normal?

Mr. Foote: They responded very fair, because I had the propeller wash of the center motor on the elevators; you see, I didn't have my center motor cut.

Major Copsey: I was just wondering about the glide.

Mr. Foote: I have practiced that a great deal flying with the Ford Motor. You take

on flying freight around there; we used to practice that a whole lot because we wouldn't have such big loads. We would fly on one motor, right or left motor, but it seemed on this ship that when I had the other two motors on and the other one was off it was impossible to hold her on a level keel.

Q. With the two engines wide open she just wouldn't stick there? A. Yes, just as if you didn't have enough tail surface or something like that.

Q. Or if she did stick she wanted to go off with you, to haul off to the side the engine was on? A. Yes.

Q. In other words, if you had kept two engines wide open it might have stuck, but then you couldn't hold it with elevator on an even keel? A. No.

Major Copsey: Do you have your log here?

Mr. Foote: Yes, personal.

Major Copsey: The log out of the ship. Have you been keeping that up pretty well?

Mr. Foote: On this ship here?

Major Copsey: Your own personal log as pilot?

Mr. Foote: No, I haven't it here. It is at the house some place.

Major Copsey: It is here in Newark?

Mr. Foote: Yes.

Major Copsey: Have you been keeping that up to date?

Mr. Foote: Yes, it has been kept up to date.

Major Copsey: About how much trimotor time had you had,—just approximately?

Mr. Foote: On tri-motors?

Major Copsey: Yes.

Mr. Foote: I think about 150 hours.

Q. Well, sir, these dead engines, you can't remember Buddy about right or left quitting, can you? A. No, I can't exactly. It is kind of a blank in my mind.

Q. And you don't remember whether you tried to glide over the wires or whether you stuck her nose down to try to jump for a pancake on the other side? A. I can't remember that.

Lt. Aldworth: Well, we won't bother you any more.

Mr. Foote: There is a lot I don't remember. I don't remember whether he was with me or whether that was another time that happened. Maybe that will all come back later on.

Major Copsey: Naturally you know how we have to go, travelling here and there, and we have to get these things. We are just tramps, so I appreciate what you have given here and I do not want to tire you.

Lt. Aldworth: Hell, no.

Major Copsey: I think there is plenty there for us.

Mr. Foote: I know I was trying to do my best to save my passengers. That was my main thought when I did realize I was in trouble, and I tried my best to maintain my flight on the two motors and when that would not be I had to do the next best thing. I don't know how well I did or anything of that kind.

Q. Maybe you can straighten out one more point for me that is kind of hazy. When you took off you went up this temporary runway dead into the wind? A. Yes.

Q. Before you went straight ahead towards town you think you went about 250 or 300 feet—
10 A. Towards Newark.

Q. Yes. Then you turned right? A. Yes, made a right turn.

Q. Well, that would put the wind on your port side? A. On the left-hand side.

Q. On your left-hand side. Then you went cross wind and it was kind of a stout wind? A. Yes.

Q. Yes. Then you were going towards Newark, the city, you went towards Newark and then
20 turned right? A. Yes.

Q. And then went— A. Towards New York.

Q. And then turned right again? A. Yes.

Q. The second time you turned right that would put the wind on your tail, wouldn't it? A. Well, when did this motor quit, after I had gone all that distance and come back? Coming back do you think the motor quit or while I was still going to New York?

Q. That is what we are trying to find out. A.
30 That is one thing I don't know. I just can't seem to remember.

Q. You said awhile ago the engine quit you in the turn? A. I thought it did.

Q. It didn't quit in the first turn, did it? A. No, I don't hardly believe it did.

Q. If it quit at all it must have quit in the second turn? A. How did I ever get back to that field then with the altitude I had, that is more than I can see.

40

Q. Well, you were headed right toward it at the second turn. A. Uh huh. How was the gas in those motors, was the gas all right?

Q. Okeh. That is why I asked you a while ago did it sound like a gas miss—you know, you can generally tell them, they burp a few times and then burp a little and then burp a little. A. That gas was all right then?

Q. Yes. A. Had they filled the tanks up?

Q. A couple of hours previous they had. Put in, I think, 167 gallons, I think.

Major Copsey: 137 to full.

A. They did that on Stout's one day over here about a month ago. The mechanics were supposed to fill the tanks with gas and they didn't fill them so the fellow got up over Cleveland—Taylor—you probably heard about it—and the three motors quit and he came down and landed all right, got away with it. It must have been magneto, the only thing it could be. Must have been one magneto went bad and then the other mag went bad. That is the only thing I can see.

Q. I guess that is the only answer to it. A. It wasn't cold enough for the screen to freeze up. That will happen in real cold weather.

Q. Well, I guess that it about all. If your engine quits you in these turns it seems to me it must have been a second turn, and if it was the second turn that would put the wind pretty near right on your tail. A. Were you on the ground?

Q. No. A. Anybody hear the motor quit?

Q. Yes, several people heard it. A. Did it quit all of a sudden—quit, then go on again——

Q. You know how these people are, strangers about airplanes, they hear one quit, two quit, and they wouldn't know the difference when you pull

the throttle back to get back on an even keel. A. That was kind of a question in my mind, whether it was one quitting or two quit. It seems funny it wouldn't hold if one quit with the load I had. I know I was loaded pretty heavy on account of the number of turns it took on the stabilizer to hold it on an even keel. The first turn the engine didn't quit. That put the wind on your port side and then that was in a canting direction towards New York, and then on the second turn he made, if the left-hand engine quit while he was in this turn he would have the wind on his tail.

Major Copsey: That could have been one gradual turn and quit right when he was finishing it up.

Lt. Aldworth: Yes. You don't remember whether you turned the first time and then went straight ahead or did you make one gradual turn?

Mr. Foote: I think I was making one gradual turn and going out pretty far, making a gradual turn kind of towards the bridge—it is painted red—it is across the river—it isn't open yet—and kind of heading over the City of New York, over the Pennsylvania Railroad, that is the way we are flying there all the time.

Q. You went off like this, then turned right like this, cut back gradually, turned instead of going this way, and then around and then straight and then around, you didn't do it so— A. No, we came in back by the Statue of Liberty again. I don't remember whether I went by the Statue of Liberty that time before the motor quit. It seems like it quit before then. That is one thing I can't remember.

Lt. Aldworth: Well, we won't bother you any more. That kind of straightens us out a little. Is there anything we can send you?

Mr. Foote: No, I don't think so. I am mighty glad nobody was hurt in the ship."

Q. You have read all that you have?

The Court: Is that all now? Any cross-examination?

Mr. Carpenter: All I want to bring out is apparent on the face of it.

Cross-examination by Mr. Carpenter:

Q. By the way, you could not see this man's face and eyes at all? A. Not while I was writing.

Q. He was all bandaged up, wasn't he? A. Oh, no.

Q. Did he have a box extension on his leg? A. I don't know. There were covers over his leg.

Q. Did he have a weight on his leg to keep it straight? A. You mean a pulley?

Q. Yes. A. No. He was sitting up in bed resting on the pillows behind him.

Q. Did he have his leg in plaster? A. I don't know. He had bed clothes up to his waist and had his hands—as he would slide down he would put his hands down and boost himself that way, keeping himself in practically a straight-up, sitting position.

Q. You were not watching his eyes? A. When I was writing, no. When I went in before I actually started writing I saw him then. I was sitting waiting for to go to work.

Q. This was March 19th, three o'clock in the afternoon? A. Two.

Q. How long did it take to get all that? A. This statement? I don't recall now, but from the size

of the statement I suppose maybe a half an hour, forty minutes.

Q. Weren't you there nearly an hour and a half? A. I don't think so. We went down and we had to wait to get in. They said they had permission from the doctor and the nurses held us up until they checked with the doctor. They were a couple of minutes standing at the door outside.

Q. In comparison to the time it took to read it, it took about three times that long to get it as to read it straight off? A. I don't know. They didn't waste any time about it.

Q. In the normal taking of testimony you can read it faster than you can get it? A. There is twenty-four pages to that, and before the afternoon was over I took seventy-one pages. I went down to the Port to get them. I went right from the hospital down to the Port, then they rounded up some people. I would say we were roughly there maybe forty minutes.

Q. It took you thirty to read it as fast as you could read it? A. Yes, with objections.

The Court: So far as you could observe —you were in the room naturally, when you were taking this all the time—did his conduct there seem to you from a layman's standpoint of view to be normal and natural?

The Witness: Yes, sir.

The Court: Did he seem to be mentally alert as far as you could observe?

The Witness: Yes, sir.

The Court: From his answers?

The Witness: Yes, sir.

Mr. George: If your Honor please, your Honor will recall when I was cross-examining Adam Wtorkowski respecting the state-

ment he made in cross-examination taken by Mr. Donegan, your Honor sustained the objection to reading this, which was a copy of the statement. The statement was made in the presence of Mr. Donegan. I ask leave now that he is here—it would only take half a minute to read his statement.

The Court: I don't think you could do that. You would have to have him back again.

Q. Have you the Wtorkowski statement there? A. Yes.

The Court: I guess we will have to come back tomorrow.

Q. I show you a paper and ask you if this is a copy of the paper made by Mr. Wtorkowski in your presence? A. I have got it here in this book.

Q. Is it just on this one page?

Mr. Carpenter: Is it a signed statement?

The Witness: Yes. I took his affidavit.

Mr. Carpenter: Let us see the signature.

The Witness: I have not got the original.

The Court: Sustain the objection.

Q. Did you hear the statements made by him in your presence?

Mr. Carpenter: I object unless he took it stenographically.

The Court: It appears it has been signed by this man. I will receive nothing but the signed statement.

(Recess until nine-thirty a. m., December 4, 1931.)

(After Recess, December 4, 1931, 9:30 A. M.)

(Trial resumed pursuant to adjournment.)

Richard D. Swain, called as a witness on behalf of the plaintiff in rebuttal, being sworn, was examined and testified as follows:

Direct examination by Mr. George:

Q. You are a duly licensed physician and surgeon practicing in the State of New Jersey? A. Yes, sir.

Q. How long have you been practicing? A. Ten years.

Q. Were you the attending surgeon and physician at St. James Hospital in the month of March, 1929? A. Cranial surgeon.

Q. Do you specialize in any branch of your profession? A. In the head, yes, sir.

Q. Were you called into the hospital on the 17th of March, 1929? A. I was.

Q. Did you see a man by the name of Lou Foote there? A. Yes, sir.

Q. What time did you first see him? A. Around half-past six in the evening.

Q. Did you treat him? A. Yes, sir.

Q. Did you watch him? A. I did.

Q. When he first came in was he conscious or unconscious? A. He was semi-conscious, dazed a little bit.

Q. Dazed? A. Yes.

Q. What time was it when he first fully regained consciousness? A. Why, about seven or half-past—seven-thirty. A short time after I saw him.

Q. When I asked the question "regained consciousness" I mean full consciousness. Is that what your answer is, he regained it about that time? A. A short time after seven.

Q. Was he rational then? A. Yes, sir.

Q. You talked with him? A. I did.

Q. Did he answer your question intelligently? A. He did.

Q. Responsively? A. Yes, sir.

Q. And coherently? A. Yes, sir.

Q. Now, after that did he retain consciousness throughout your entire treatment? A. I don't get that question.

Q. Did he retain a state of consciousness throughout, thereafter? A. Oh, yes, he did.

Q. Doctor, can you state what his condition was on the—will you tell what Mr. Foote's mental state was as of March 19th, about three o'clock in the afternoon? A. There was no change in his mental state at any time. He remained perfectly rational.

Q. Understood all that was going on?

Mr. Reed: I object to the form of the question.

The Court: Sustain the objection.

Q. Did you ask him questions? A. All the time, every day.

Q. Did he answer your questions? A. Always.

Q. In what manner? A. Rationally.

Mr. George: That is all.

Cross-examination by Mr. Reed:

Q. Then this accident didn't make any particular difference to him, did it? A. I do not say that, sir.

Q. What do you say?

Mr. George: That is objected to, a general statement.

The Court: Sustain the objection.

Q. Were you at the hospital when Mr. Foote was brought in? A. No, sir.

Q. Were you sent for by a hurry call to come to him? A. Yes, sir.

Q. Where were you at that time? How far away? A. Why, about a mile and a half, two miles, I guess, about as near as I can recall.

Q. You rushed right over to him, didn't you? A. Yes, I went down right away.

Q. And when you got there, what time was it? A. It was before six o'clock.

Q. Wasn't it about six o'clock when you arrived? A. Well, it was before six.

Q. Was he unconscious? A. No, sir. He was dazed, semi-conscious.

Q. Was he unconscious when you arrived there? A. He was not unconscious when I arrived there.

Q. Was he unconscious and restless when you arrived? A. He was not unconscious at any time when I saw him. He was dazed and I said semi-conscious, meaning that he was not absolutely clear.

Q. Are you Dr. Richard D. Swain? A. Yes, sir.

Q. Do you remember testifying in another case about Foote's condition when you arrived at the hospital? A. No. I remember, yes, but I don't remember just what I said.

Q. I will refresh your recollection. A. All right, sir.

Q. Were you asked this question, Doctor, and did you give this answer: "Question: What was his condition, doctor, when you saw him? Was he

conscious or unconscious?'' Answer: ''He was unconscious and restless.'' Did you say that? A. Maybe so.

Q. Was it true? A. He was not unconscious. He was semi-conscious.

Q. So your answer at that trial, when called on that trial, you gave that answer? A. Well, the answer I gave you now is the way I remember his condition. He was semi-conscious and restless.

Q. Now, you say semi-conscious, but didn't you say when you testified some months ago that he was unconscious and restless when you saw him? A. I don't remember.

Q. You don't remember that? A. No, sir. All I remember is the way he was.

Q. Did you also say this in answer to these questions: Question: ''When did he recover his consciousness, as far as you know?'' Answer: ''Later in the evening.'' Question: ''About how long?'' Answer: ''I should say about three hours.'' Did you give that answer to that question? A. I don't remember.

Q. You don't remember that? A. No, sir.

Q. Did you give this answer to this question, the same page: Question: ''How did he respond to your questions?'' Answer: ''Well, of course, like any man who has been unconscious, he is not particularly anxious to talk in the beginning, and we did not try to make him talk very much.'' Did you say that?

Mr. George: Finish the answer.

Q. ''We were satisfied—'' Question (Quoting) ''We were satisfied that he was coming around all right. That was about between two and three hours after I got there.'' Did you give that answer? A. I suppose so.

Q. Now, isn't it a fact that for three hours that man lay in a critical condition unconscious and restless and dazed and so forth, whatever restless means? A. He was not unconscious. He may have been restless.

Q. Nothing the matter with him? A. I didn't say there was nothing the matter with him. He had a severe injury, of course, no question about that.

Q. Why did you say he was unconscious for three hours and unconscious when you got there and you would not talk to the man because no man who is unconscious can talk much.

Mr. George: That is objected to as based on an unwarranted assumption of fact.

The Witness: You did not state it correctly, for one thing, that last statement.

Q. I read it. A. You read it, yes, but this last statement was not as it was there.

Q. I will read it to you again: "What was his condition when you saw him? Was he conscious or unconscious?" A. "He was unconscious and restless."

Q. "When did he recover his consciousness, as far as you know? Answer: "Later in the evening." Question: "About how long?" Answer: "I should say about three hours." Then, I asked you this one question and answer: "How did he respond to your question?" Answer: "Well, of course, like any man who has been unconscious, he is not particularly anxious to talk in the beginning, and we did not try to make him talk very much. We were satisfied that he was coming around all right. That was about between two and three hours after I got there." Wasn't he unconscious

for three hours from the injuries he sustained in this accident? A. No, sir. He was not.

Mr. George: We have the hospital records here, Mr. Reed. They will show the situation. I am content they be received in evidence being Mr. Reed subpoenaed them and wants them. Do you wish them to go into evidence?

Mr. Reed: Will you please let me pursue my inquiry in my own way?

Mr. George: All right.

Q. Now, Doctor, was this man severely injured? A. Yes, sir.

Q. Did he have a fracture of the transverse process of the left first lumbar of the spine? A. He did. He had enough to take care of that.

Q. I know, but you came here to tell us about this man. A. I did not come here to tell you about it at all. I came here——

Q. I am asking you.

The Court: Let him.

The Witness: I came here because I was subpoenaed. That's all there is to it. I am not interested.

Q. You did not answer the question, did you? A. I answered it.

Q. Did he have a fracture of the transverse process of the first lumbar vertebra of the spine? A. I could not tell you unless I looked up the chart.

Q. It is here. You are quite welcome to do it. A. All right. I can't remember everything, I am sorry to say. It is marked on the chart he had a fracture of the transverse process of the first lumbar vertebra.

Q. Of the vertebra of the spine? A. Yes.

Q. Did he have a fracture of the right ankle? A. He had a fracture of one of the bones of the right ankle, yes, sir.

Q. At the ankle? A. One of the bones of the right ankle. It don't say where it was here.

Q. Did they do anything for it?

Mr. George: That is objected to as improper cross-examination as to what was done for him. The question is what condition did he find him in. That is the limit of the doctor's testimony on direct.

The Court: I see no objection to answering it.

Q. What are the injuries as you can describe them, refreshing your recollection? What are they? Tell us about them without my attempting to drag them out. A. He is listed here as having a fractured skull, fracture of the left ulna.

Q. That is the arm, isn't it? A. The forearm. Fracture of the left fibula.

Q. That is the left leg? A. Below the knee.

Q. Below the knee, one of the bones of the left leg below the knee? A. Yes, sir, and a fracture of the right astragalus.

Q. That is in the ankle, the astragalus bone, that is right down in there? A. I said one of the bones of the ankle.

Q. That is the bone the weight of the body rests on? A. Some of it rests on that, if you want to be exact.

Q. The astragalus bone, the heel bone, or the one in the center? A. It is more in the center than the heel bone.

Q. What is the heel bone? A. Do you want me to go into anatomy?

Q. I ask you the question. What is the heel bone? A. I fail to see the connection.

Q. I didn't ask you what you fail to see. A. The calcaneum.

Q. Isn't the heel bone the oscalcis? A. I say we call it the calcaneum.

Q. I don't want to know what we call it. Isn't the heel bone the oscalcis? A. That is right, yes.

Q. And the astragalus bone is the bone right next to your heel bone right in the center of the ankle on which the weight of the body rests? A. Some of the weight rests on the astragalus. Some people walk around without an astragalus.

Q. I didn't ask you that. Why are you volunteering those things? Are you angered about something? A. Not at all.

Q. Did he have a fracture of his head? You were reading it. Keep on reading it.

Mr. George: That is objected to, reading from the record, unless counsel wishes it to be in evidence. I will consent that it be.

The Witness: Fracture of the transverse process of the first lumbar vertebra, contusion of the left hip.

Q. What? A. Contusion of the left hip, general body contusions. That is signed by Dr. Szerlip.

Q. What else? A. That is all that is listed here.

Q. You know about something else, don't you? Come, please, Doctor. State his injuries. A. I read off the list.

Mr. George: If counsel——

The Court: Go ahead.

Q. I don't care what you read or what you refresh your recollection from. Did he have any

other fractures or injuries? A. X-ray report. This is part of what you are talking about. Comminuted fracture.

Q. What is a comminuted fracture? A. In more than one piece.

Q. Do you mean a splintered fracture? A. In more than one piece.

Q. In pieces? A. Of the left tip of the great wing of the sphenoid with a lineal fracture extending about two-thirds of the length of the bone towards the vault in the region of the frontal—lateral suture.

Q. In other words, Doctor, did he have a fracture of the temple on the left side of his head in the region of the anterior temple region? A. This says——

Q. I didn't ask you what anything says. A. You did ask me that.

Q. No.

Mr. George: May I interrupt to object?

The Court: Yes, let him answer.

The Witness: Do you want me to read what this says?

Q. I didn't ask you to read anything. I asked you to refresh your recollection from anything you have and then tell me whether or not Lou Foote at the time you saw him had a fracture in the anterior region of the temple on the left side of his head? A. Yes, sir, that is right.

Q. What? A. That's right.

Q. And did he have a fracture of the parietal bone of the skull? A. That is what I spoke of when I say he had a fracture in the anterior temple region.

Q. The parietal bone of the skull was fractured? A. It extended up into the parietal bone, sure.

Q. Did this fracture extend downward from the parietal bone of the skull down toward the base of the skull? A. It probably did, but it don't show in the X-ray.

Q. Of course, you can't get, as a rule, fractures at the base of the skull, can you, by X-ray? A. Not as a rule.

Q. But the conditions and symptoms were such that indicated to you, and your diagnosis was this fracture extended down toward the base of the skull? A. That is not right. You are assuming too much.

Q. Did it extend down to the great wing of the sphenoid? A. To the sphenoid, yes, sir.

Q. And did it extend two-thirds of the way to the vault, and another part extend toward the base of the skull? A. I say I believe a part extended toward the base of the skull.

Q. That is all your testimony, what you believe? A. But you said I diagnosed that from the symptoms. I said I did not.

Q. But you said you made a diagnosis. A. I did not make any diagnosis of that.

Q. Does this explain it? Was it an extensive fracture extending from the interior temple down toward the base of the skull? A. Well, it is not considered particularly extensive. That is not what we call extensive.

Q. You would not consider it extensive? A. No, sir.

Q. Did you give this answer at the other trial, Doctor? Question by the Court: "Will you show on your head?" Answer: "In the anterior temple region about there (indicating). It was on the left side." Question: "How many fractures were there?" Answer: "Well, it was quite an extensive fracture. The part that showed in the picture

extended about two-thirds of the way to the vault, but the part that extended around the base, which we believe was present, we do not know how far that went. That is around on the under surface of the skull. They very seldom show on an X-ray." Did you give that answer? A. I presume I did.

Q. Then, isn't it true this fracture was an extensive fracture of the skull? A. I would not consider it ordinarily that. It don't make any difference.

Q. When you said that under oath did you then consider this man had an extensive fracture of the skull? A. It depends on what you want to consider extensive.

Q. What do you consider the word extensive to mean when you said "Well, it was quite an extensive fracture"?

Mr. George: That is objected to as to what he means on the previous trial. This kind of examination can be limited to whether or not he made that statement then.

The Court: That is true.

Q. Did you make that? A. I suppose so.

Q. Where was the main force of the blow that man received on his skull?

Mr. George: That is objected to. This witness is not competent to testify to that. He was not present at the time of the crash.

Mr. Reed: He is a physician and surgeon.

The Court: Overrule the objection.

Mr. George: If he knows, of course.

The Court: Can you answer it, Doctor?

The Witness: It was probably at the point where the comminution of the fracture was.

Q. Where was the comminution of the skull fracture? A. At the tip of the great wing of the left sphenoid.

Q. Did you give this answer, Doctor?

Mr. George: Where is that?

Q. Did you give this answer—1516—by Mr. Biro: "What bone, Doctor, was fractured in the skull?" Answer: "Well, the main force of the blow was in the region of the, of the part of the wing of the sphenoid, great wing of the sphenoid, which is part of the outside of the skull, but it extended on upward into the parietal bone on the left side. That is up above there (indicating)." Did you give that answer? A. Exactly what I just said.

Q. Will you please tell me whether or not that was a Stellate fracture? A. Yes, I believe it was.

Q. Will you tell the jury what a Stellate fracture of the skull is? A. A Stellate fracture of the skull is generally considered to mean a fracture which has radiated lines from the central line, maybe two lines, maybe three, maybe more.

Q. Like a star radiated from a central point? A. Yes, sir.

Q. And you just told us this was a comminuted fracture of the skull. What does that mean, Doctor? A. That means that there is more than one piece of bone, or in the case of a skull it is one piece.

Q. More than one piece of bone fractured? A. In the skull if there is even one piece where they see the bone is cracked around the area, that is comminuted.

Q. Going off in different angles? A. No, if it is going around, we will say, if it is going around in small points all continuous.

Q. You said this was Stellate and branched off from a central point. A. I am sure the description would apply to either one. In other words, I am not trying to hedge anything or deceive you in any way.

Q. Was there some displacement there? A. That I don't know.

Q. Will you indicate on the head where that force of that blow or where that central point of that Stellate comminuted fracture was on the left side? A. It would be approximately on this region here (indicating).

Q. Do you call that the temple? A. It is far forward in the temple.

Q. That is rather a delicate point in the skull anatomy, isn't it? A. The skull, yes.

Q. Were any of his fractures set or operated upon during the first one or two or three days after the accident was received, in the hospital? A. That I could not tell you for sure.

Q. Wasn't it determined that Foote was going to die and that they did not even attempt to set his fracture until after a week or so?

Mr. George: That is objected to. This witness can't testify as to what somebody else thought.

The Court: I think that is true.

Q. Will you refresh your recollection and tell me whether or not they attempted any setting of any fractures until some week had passed or more? A. I can look at the chart, if that will help you any.

Q. Wasn't it about five or six days? A. I don't know.

Q. Refresh your recollection.

Mr. George: Of course, if the Court please, I ask leave to interpose an objection to this question unless the refreshment of his recollection is made by entries by him personally or under his personal supervision, but it would not be a refreshment of his recollection on any statement made by anybody else not connected with this witness.

The Court: That's right.

Mr. George: May I inquire here if the refreshment of the recollection—if there is to be any refreshment as to any statement or entries made by you from which you are asked to refresh your recollection? If not, wait until the Court rules on my objection.

The Witness: These are nurses' notes here, of course, I am looking at now.

Mr. George: Then I object.

The Court: There is nothing you can refresh your recollection from if they are not made by you under your supervision.

The Witness: The whole chart was supposed to be under my supervision, but I did not write them down.

The Court: Haven't we got a pretty good picture of the condition of this man? I don't think we ought to take any more time about it.

Q. Dr. Swain, have you the chart and the hospital record of Mr. Foote here? Is it all there? A. I don't know whether it is all here or not. There is quite a lot here.

Q. Is that the chart? A. This is the chart, yes, sir. At least, it has his name on it.

Mr. Reed: We have no objection to it going in if you want it to.

Mr. George: We will wait on that. I offered you the opportunity to have it in evidence. You refused to permit it.

Mr. Reed: No speeches.

Mr. George: I will keep by my assistant's suggestion. It is in evidence.

Mr. Carpenter: It is.

(Hospital record received and marked in evidence D-6.)

Q. Dr. Swain, I read you something from the chart and ask you if that refreshes your recollection as to some of the directions you gave: "March 19, 1929"—that is the second day after the accident—"in consultation, Dr. Swain of the head service. I have been instructed by him that the best interests of the patient will be served by prohibiting all persons from visiting him until the head service finds that his condition will warrant him receiving visitors." John F. Gaddis, Medical Director. There was an instructor or medical director of the hospital on the 19th of March, 1929? A. Do you want the whole truth, or do you want me to answer that question?

The Court: No. Just answer the question.

The Witness: He asked me if he could us those restrictions. I said "yes".

Q. Won't you answer "yes" or "no"? A. I agree with him. He is the director.

Q. I didn't ask you whether you agreed with anybody. Did you say or instruct the director—A. I didn't instruct him. He instructed me what he was going to do.

Q. And then did you cooperate with him in the instruction that the best interests of the patient would be served by prohibiting all persons from visiting him until the head service found his condition would warrant him receiving visitors? A. That is his statement, not mine.

Q. That don't answer my question. Won't you please answer? A. Do you want the whole truth?

The Court: If you will answer the question we will be through.

The Witness: I am perfectly willing, Judge. It is not my statement.

The Court: We want yes or no or I don't know. All the rest of it don't amount to a hill of beans.

Q. Do you want the question read to you, Doctor? A. Yes.

(Question repeated by the stenographer, as follows: "And then did you cooperate with him in the instruction that the best interest of the patient would be served by prohibiting all persons from visiting him until the head service found his condition would warrant him receiving visitors"?)

Q. Then did you cooperate with him? A. I did.

Q. Did you see this statement before which came from the hospital records? A. I didn't see that, no, sir. In fact I never heard of it.

Q. Isn't it true that the doctors in charge also——

Mr. George: Counsel is reading from a paper which is not in evidence. I object.

Mr. Reed: Technically I am not reading from anything. I am just refreshing his recollection.

Q. Isn't it true the doctors in charge of Lou Foote ordered no visitors?

Mr. George: I object. No time is fixed.

Mr. Reed: March 19, 1929.

The Witness: Well, I would say yes, from the record there.

Q. Does a man, Doctor, that gets injuries of this kind as disclosed—I won't narrate them again—suffer from traumatic shock? A. Traumatic shock?

Q. Yes. A. I think so, yes.

Q. And does a man that has not had his fractured bones set—is he in pain if he has got a fractured astragalus bone, fractured legs, fractured spine, transverse process of the lumbar, and all the other things I narrated? Is he in pain? A. I should think he would have pain, yes.

Q. And if they are not set that means they are broken and jagged in the flesh, doesn't it, if the bones are not set? A. Sometimes.

Q. In the interest of time, can you tell us how long he went with his bones broken and unset lying there in the hospital? A. He came in on Sunday, half past five.

Q. That's the 17th? A. On Monday the 18th.

Q. We want to know when the bones were set. A. The leg was put in a splint, the right leg immobilized, the following day.

Q. That is not set, you know that, don't you, Doctor? A. Splinted up.

Q. Won't you look and tell me when the bones were set? A. I would say they were set then if a man puts a splint on them.

Q. While Mr. Carpenter is looking for that I will ask you this question. Does a man——

Mr. Carpenter: Here it is, March 22nd.

Q. When were the bones set? A. It don't say anything about setting the bones. It says casts were applied to both legs and feet and left arm.

Q. On what date? A. March 22nd, eight o'clock in the morning.

Q. Then, you can't tell, you say, when the bones were set, do you mean? A. I said if it were me setting the bones——

Q. I didn't ask you that. A. I am the only one can——

Q. No, no. I don't want to know what you would do. A. It says splints were applied, which certainly means setting them, if anything does.

Q. It doesn't say so, does it? A. No.

Q. Isn't it frequently the case when a man has a broken arm or leg they put an emergency splint on it?

Mr. George: That is objected to.

The Witness: I imagine sometimes the bone is not carefully set at that time.

The Court: The observation which I said I would make I will make now. It seems to me we are unduly exciting ourselves over this. It is on a collateral matter, in any event. I am going to tell the jury whatever this pilot may have said there on his bed in the hospital is not evidence or proof of the material facts necessary to be established in this case. The only reason that was allowed in evidence was in order to show whether or not credibility could be given to his story he told us now. That don't prove he turned left or flew a loop in the air or anything of that kind. I am exaggerating that—because it makes no difference what I think—but I am exaggerating that so you will understand why I have

allowed that evidence in, and I am sorry that I did, but I had to under the rules.

Mr. Reed: No further questions.

WILLIAM ROGERS, called as a witness on behalf of the plaintiff in rebuttal, being sworn, was examined and testified as follows:

Direct examination by Mr. George:

Q. Mr. Rogers, where do you live? A. I live in Montclair.

Q. Your name is William C. Rogers? A. Yes, sir.

Q. You live in Montclair and your occupation is what? A. Engineer.

Q. What kind of engineer? Locomotive engineer? A. Selling and manufacturing, in the electrical business.

Q. What technical training have you had? A. From Cambridge College.

Q. From Cambridge in England? A. Yes, sir.

Q. Did you receive any degrees? A. Yes, sir.

Q. Graduated? A. Yes, sir.

Q. What? A. E. E. and M. E. at the institution.

Q. We don't know what that means. A. Institution degrees as mechanical and electrical engineer.

Q. And when did you graduate? A. 1902.

Q. And did you have any other technical training? A. Yes.

Q. Where? A. With the B. S. A. Company in Burlington, England.

Q. What kind of organization is that? A. Engine manufacturers, automobile engines and aeroplane engine maunfacturers.

Q. And have you been engaged in the pursuit of the studies which you took up after the practical completion of the knowledge acquired in Cambridge University, from the time of your graduation in 1902 down to the present day? A. All the way through.

Q. Have you had any connection with aeroplane manufacturing corporations? A. Yes, sir.

Q. Which? A. Retained by the Curtiss Company as their consultant.

Q. The Curtiss? A. Curtiss Airplane.

Q. What is the name of the Company? A. Curtiss Airplane Motor Company.

Q. How long were you in their employ as consulting engineer? A. I was not in their employ. I was retained as their consulting engineer for a matter of two and one-half years until the merger.

Q. And in your work as consulting engineer for the Curtiss Airplane Motor Corporation, did you make any examinations or inspections or observations of J-5 motors? A. Yes, on two occasions.

Q. Do you know anything about spark plugs?

Mr. Carpenter: I object. This is not proper rebuttal.

The Court: Sustain the objection. Mr. George, part of your case was to establish —get it down to the dregs—that there was improper inspection and improper maintenance of those engines and you produced witnesses here in an effort to show that improper spark plugs were used in this engine and that there were improper gaps and produced a man who said he was an expert in this matter. He says a gap of thirty thousandths of an inch was not a proper gap for this engine. Now, you went along with the line and rested your case.

Now, the defendants put on experts to show that that is a proper gap. Now you seek to come back and put another man on to show that that was an improper gap. Don't you see how that could not be?

Mr. George: Excepting the defense put on witnesses to show a fifty thousandths gap would not prohibit the functioning of the motors. I want this witness——

The Court: Do you want to ask him that question?

Mr. George: Just that one question.

The Court: Ask him that one question.

Q. A. C. spark plugs, you are acquainted with them? A. Yes, sir.

Q. The "N" type? A. Yes, sir.

Q. What would you say as to the efficiency of a spark plug of that type in a J-5 motor with a fifty thousandths inch gap?

Mr. Carpenter: I object to that as immaterial because there is no allegation in this case—it is only for the purpose——

Mr. George: Withdraw the question, withdraw the witness. That is all.

The Court: The objection is perfectly proper on the theory, of course, you cannot go on ad infinitum on collateral matters.

NATHANIEL C. BROWN, recalled as a witness in rebuttal for the plaintiffs, was examined and testified as follows:

Direct examination by Mr. George:

Q. Mr. Brown, did you see Lou Foote at the hospital on the evening of the crash? A. I did.

Q. About what time? A. In the neighborhood of around eight o'clock, I would say.

Q. Did you talk with him? A. Yes, sir.

Q. Was he conscious or unconscious? A. Conscious.

Q. What did he say to you?

Mr. Carpenter: I object.

Mr. George: Withdraw that.

Q. Did Mr. Foote say to you that when he had made a second turn towards New York the left motor went dead and I shut off the right motor in order to keep her from going off balance?

Mr. Carpenter: I object to that question on the ground that no foundation was laid for it in the first place.

The Court: In the second place we have a transcript of the testimony.

Mr. George: Your Honor, the testimony refers to March 19th, this testimony,—March 19th, this testimony, and the foundation was laid for it in the cross-examination of Foote: "Do you remember saying to Mr. Brown as follows: 'That the left motor went dead and I shut off the right motor'?".

The Court: Yes, I remember. I think that is true, Mr. Carpenter. If there is any doubt I will have it looked up.

Q. Did he say that to you? A. Yes, sir, he did, except he did not specify which motor. He said: "One motor went out and I had to pull the other one to keep it from swinging."

The Court: Just wait a minute. Just repeat that again, Mr. Brown.

The Witness: He said "One motor cut out and I had to pull the other one to keep it from turning—swinging."

Mr. Carpenter: I move to strike out the testimony.

The Court: Strike it out. The jury is to disregard it. It is not contrary to what Foote has already told us on the stand. That is the reason I am striking it out.

Q. With your nearly seven thousand hours of flying—do I understand you also flew a sister ship of the one involoved in the crash? A. Yes, sir.

Q. Yours came out into service long before that one, didn't it? A. Yes.

Q. Yours was number 11? A. Yes, sir.

Q. And the one in the crash was number 41, wasn't it? A. Yes, sir.

Q. Now, assuming that the plane involved in the crash had gotten to a point indicated on the map—the map being 200 feet to the inch—up to this point where the thumb tack appears and you testified in the main case that you were flying that same day and you were acquainted with the velocity of the wind and the force of the wind and the general conditions and had been hopping over that same route that same day yourself, and you were acquainted with the place where the crash occurred— A. Yes, sir.

Q. —taking all of those conditions into consideration if the fatal plane had reached the point

indicated by the thumb tack about an altitude of seven hundred feet, and having completed the turn to the right, with the left motor off at that point, absolutely dead, and the center motor revved down, which would have been the easier landing place to make, the place where it did land or the air field?

Mr. Carpenter: I object to that as not proper rebuttal.

Q. In proper, good piloting?

Mr. Carpenter: This testimony was covered on direct examination.

The Court: I think not. My recollection is this witness was interrogated with regard to two points, further to the eastward than are now indicated. In other words, your witnesses have placed the machine the time the motor went dead further to the west than any of the plaintiffs' witnesses.

Mr. Carpenter: I think that is true.

The Court: For that reason I am going to allow this question.

Q. According to good piloting and safe piloting which would have been the easier landing place to make, the place where the plane crashed or the airport?

The Court: I don't like that question. I think the question should be: Which, under the circumstances that have been related to you, would have been better piloting? Would it have been good piloting to have gone to the place where this man attempted to go? I think that is the real question.

Mr. George: Or, to the airport.

Mr. Carpenter: I object.

The Court: I don't think that is true.

Mr. George: I withdraw the question.

Q. The plane having reached a point in its position and location, altitude, direction of wind, conditions and everything else as it existed that day of which you are familiar, would it have been proper piloting if it had been possible for the plane to have been restored back—brought back to the airport with safety?

Mr. Carpenter: I object. That point is already in. We would have to be calling back our experts to cover the same thing.

The Court: Would it have been proper piloting to have made for the airport under those circumstances? Let us have that.

The Witness: Certainly it would.

Q. Could it have been made? A. Certainly.

The Court: And under the same circumstances would it have been proper piloting to have gone in the direction in which the pilot did actually go, eastward?

The Witness: No, sir.

The Court: Why not?

The Witness: There is no place to land there.

Q. Are you acquainted with the glide ratio of the 4-AT Plane that was involved in the crash? A. Yes, sir.

Q. What is the normal gliding ratio with all motors dead and no wind? A. Nine to one.

Q. With one motor dead—that is, the left motor dead and the center motor revved down—with the wind velocity as it was if the plane had been

turned from the point where the motor was dead at this point at an altitude of seven hundred feet and had been turned in the direction of the airport with the glide ratio, wind on the tail then, with one motor functioning, and the other one revved down, approximately what would be the glide ratio under those conditions? A. I should say it would be twelve to one, anyway.

Q. So that, if by way of illustration, the plane was seven hundred feet here, it would have to find a landing place between the glide under those conditions—ninety-six hundred feet from that point, is that right? A. Approximately, yes.

Mr. George: That is all.

Cross-examination by Mr. Carpenter:

Q. Mr. Brown, you have been here many days during this trial, haven't you? A. How many days?

Q. How many? A. Several days. I just don't remember how many.

Q. You were here yesterday and the day before? A. Yes, sir.

Q. Do you mind telling the jury what the basis of your compensation for being here is?

Mr. George: That is objected to. Withdraw the objection. Answer the question, Mr. Brown.

The Witness: There is nothing definite. I don't know exactly. I expect to be paid expenses, anyway. Hope to be.

Q. Is your compensation dependent upon whether or not the plaintiffs win? A. Not that I know of.

Q. You have been at the counsel table coaching counsel?

Mr. George: I object to the use of the word "coaching". That doesn't sound good.

The Court: Training.

Mr. George: I am not sure about "training" either.

Q. Well, advising with them.

The Witness: I have answered a number of questions. They asked me practical questions.

Q. Now, Mr. Brown, have you got your personal log book with you? A. No, sir, I have not.

Q. Do you own a Ford tri-motor plane?

Mr. George: That is objected to.

The Court: I think we went into that. He has already said he doesn't own it now.

Mr. Carpenter: I don't remember that.

Q. If you assumed that the ship at the time was five hundred feet rather than seven hundred feet, would that change the testimony you have given this morning? A. Well, in what way do you mean? Would I have tried to make the airport or some other field if I were only five hundred feet?

The Court: Would that change your testimony as to it being good piloting to endeavor to make the airport rather than where the pilot actually did go to? Would that fact change your testimony?

The Witness: No. I would say good piloting would be to try to reach the airport

from any altitude considering the terrain around there.

Q. The reason for your answer is, is it not,—the reason you gave that answer is because that runway on the airport was the only decent place in the whole area in which to put down a ship? A. For a successful landing, yes.

Q. The reason you gave that answer was, was it not, because up here in the area indicated by counsel in the north or northwest portion of this map there is no place where you could safely put down a ship? A. Not in town, no.

Q. Take the area I give you north of the railroad tracks and west of the elevated highway. There is no place in there where you could put down a ship, is there? A. No, sir.

Q. And there is no place in between that highway and this Central Railroad where the dumps were and where there were fires where you could safely put down a ship? A. No, sir.

Q. When you were examined here last week, you did not express any such opinion as you have given today, did you?

Mr. George: That is objected to as to what testimony was given here. He has a right to know the question and answer.

The Court: Sustain the objection. That is his opinion now. He did express an opinion as to other conditions and practices.

Q. I am asking you, Mr. Brown, this: You testified here last week you were asked to assume, were you not, when this aeroplane was in the area —over the area between South Street and the railroad and the viaduct at an altitude of from three

hundred and fifty to five hundred feet— A. I was asked what?

Q. You were asked to assume in giving your testimony that the plane when the engine quit was in that area south of South Street and west of the viaduct and north of the railroad? A. Well, continue.

Mr. George: There is no question.

Q. Is that right? Is that the way you testified? A. I don't believe you specified that area.

Q. Did you not testify that if the plane were in that position at an altitude of between three hundred and fifty and four hundred feet, the pilot should have gone straight on? A. I don't believe you specified that particular area.

Q. Where did you then assume the plane was when you gave that testimony? A. I don't remember now.

Mr. George: I object to that question as being based on an unwarranted assumption of fact. The witness said nothing of the kind.

The Court: He said he don't remember now.

Q. You were not an eye witness on the flight of this plane, were you? A. No, sir.

Q. You came here last week and testified as an expert pilot? A. Yes, sir.

Q. You assumed certain distances, certain heights, and because of the plane, I believe.

Mr. George: That is objected to, what he assumed. His testimony was based on references made by counsel in his examination, not by any personal assumption.

The Court: That is true, of course. That is with reference to this altitude at which this flight was being made, and the manner in which a glide might affect the ratios were all based upon hypothetical questions.

Q. Do you remember what you did testify to last week? A. Not everything, no.

Q. You testified last week in your opinion the pilot should have gone straight ahead, didn't you?

Mr. George: Objected to as an unwarranted assumption of fact. He is entitled to the question and answer.

The Court: Sustain the objection.

Q. Didn't you then testify last week in this same case—didn't you express the opinion the pilot should not have attempted to turn because it might result in a spin?

Mr. George: Objected to as an unwarranted assumption of fact.

The Court: Well, having been shown on this map a point there indicated as the second turn by plaintiffs' witnesses, didn't you then indicate that under the conditions that were related to you, such as the velocity of the wind, the direction of the wind, the number of passengers and the altitude, didn't you then say under those circumstances it would be best judgment to go straight ahead?

The Witness: I believe I did, yes, sir.

Q. Now, Mr. Brown, when the pilot's engines on the tri-motor plane, two of them,—one of them goes out entirely and the other revs down to eight

hundred r.p.m's. a minute—that motor with eight hundred r.p.m's. has no power, has it? A. Oh, yes. Eight hundred r.p.m's. is apparently half of the cruising speed, sixteen hundred.

Q. It is almost no power, isn't it? A. No, I wouldn't say that. It would be approximately half power.

Q. Cruising speed is about six hundred r.p.m's.? A. No, sixteen hundred r.p.m's.

Q. Sixteen hundred. Would you attempt to takeoff a ship with the left motor dead and the center motor going at eight hundred r.p.m's.?

Mr. George: Objected to as improper cross-examination.

The Court: Sustained. That is not proper cross-examination at this time. We have not gone into take-offs or anything.

Q. I will put this to you: didn't you concede that when an engine quits in flight the pilot should make some effort to revive it to see if it will revive? A. Certainly.

Q. And if two quit, isn't it proper for the pilot to make some effort to revive his motors? A. Certainly.

Q. Isn't that the best thing for him to do to get his power back? A. One of the best things.

Q. And to try to get back his power he has got to reach for and grab his throttles, hasn't he? A. Yes, sir, that's right, right in this position (indicating).

Q. If you are sitting in the left side, it is with your right hand you reach for the throttles? A. Yes, sir.

Q. You got to hold them back and push them forward to try to get her going again? A. Yes, through an arc of about six or seven inches.

Q. You got also to test your magneto to see if they are all right? A. No, sir.

Q. You don't have to touch them? A. Well, you could not do anything about testing the magneto only to shut them off. If your motor is already off there would be no occasion for shutting off your mag.

Q. You got to take a look at your gas tanks to see if they are turned on? A. In that case of looking back at the gas I would look at them before starting off.

Q. You got to look at the terrain that is ahead of you and beneath you? A. Yes, sir.

Q. And it takes some seconds to do that, doesn't it? A. A few seconds, yes.

Q. You are traveling at the rate, if you are going full speed when your motors quit, and a thirty mile wind at your tail—your usual speed through the air with your motors going full speed is around ninety miles an hour, isn't it? A. Yes, sir.

Q. You got the wind on your tail of another thirty miles an hour? A. Yes, sir.

Q. You are traveling with the wind on your tail over the ground at one hundred and twenty miles an hour? A. When all your motors are going, yes, sir.

Q. So, at the time two of your motors suddenly stop, at that moment you are going at the rate of one hundred and twenty miles an hour? A. At that moment, yes.

Q. Every instant you are being swept on by this thirty miles an hour wind? A. Yes, sir.

Q. And with the certain momentum that the plane had? A. Yes, sir.

Q. Did you assume when you said it was possible to get back to the airport that the airport had a lot of ships and people on it? A. It had

no ships. All of the ships but mine and one other one had stopped flying for the day. They pulled them in the hangar.

Q. There was a holiday crowd? A. Smaller than usual, I would say.

Q. That is a matter of degree. There was a holiday crowd there, wasn't there?

Mr. George: I think the witness is entitled to his answer. It may be disappointing.

The Court: All right, go on.

The Witness: It was much smaller than the usual Sunday crowd we had, because of the high wind.

Q. I didn't ask you that. A. Pardon?

Q. I didn't ask you that. A. You asked me if there was a large crowd there.

Q. What was the question? The most favorable you can put it is there was a small holiday crowd? A. Yes, I would say that, small holiday crowd.

Q. There were lots of automobiles around there? A. Yes.

Q. Let me ask you this: if that ship had done what you said on your direct examination, if it had stretched its glide down to the airport and had come into down wind, it would come in down wind, wouldn't it? A. Yes, sir.

Q. The best he could possibly have done would have been to hit the end of that runway? A. Yes, sir.

Q. Do you think traveling at the rate of over sixty miles an hour through the air—— A. Air speed, yes, sir.

Q. With the wind behind him of thirty miles? A. No. I might qualify the other statement. The

landing speed is approximately fifty and not sixty.

Q. That was the least possible speed that ship could get without falling and crashing? A. That is the landing speed, yes, sir.

Q. Fifty miles an hour? A. Yes, sir.

Q. Behind that he would have a wind carrying him an additional thirty miles an hour? A. Yes, sir.

Q. So in the most favorable possible way you could get that ship to land if she was able to reach the runway coming down wind in order to hit that the best she would have hit it in the most favorable aspect you could possibly get that ship—she would have just about been able to get to the runway, wouldn't she? A. It would have made the runway, I think, yes.

Q. I am assuming now she was seven hundred feet in the air up here. A. Yes, sir.

Q. And to get to the runway, slide into it, she would have just been about able to get there?

Mr. George: I think the witness should have a knowledge of the distance.

Mr. Carpenter: You can tell that.

Mr. George: If it was four miles it would make all the difference in the world. It was pointed out that this was fifty-six hundred feet.

Q. The very best he could have done would be to skid into it, wouldn't it? A. I couldn't agree as to that. Just what do you mean by skidding into it?

Q. Let me ask you this: Had you assumed that there was any way possible to get that ship down here and have an altitude sufficient to make a turn-back over the airport? A. I would not say

he could get back with altitude enough for a turn, no.

Q. Then he would have to slide in down wind and just about reach there, wouldn't he? A. I believe we figured the gliding ratio would be approximately ninety-one hundred feet, so that, necessarily, would not call for a sliding landing.

Q. Take your own statements: you are assuming now that up where I told you and up where Mr. George told you the plane had an altitude of seven hundred feet? A. Yes, sir.

Q. Would you estimate with a gliding ratio of one to nine——

Mr. George; Nine to one normally, twelve to one with wind on the tail.

Q. One to twelve. Do you estimate that that ship would glide a ratio of one to twelve? A. Down wind.

Q. Down wind? A. Down the wind on that particular day.

Q. Without power in any but the right motor? A. Without power.

Q. Without any power at all? A. Without any power, yes, sir. The gliding ratio was nine to one in normal air and still air.

Q. Have you got anything to substantiate that nine to one? A. I have made numerous tests myself.

Q. Have you got any record of the Ford Company specifications that ship has any such ratio? A. I have none in my possession, no. That specification is on the ship. I made tests to prove it. I have no record of it.

Q. Your computation, then, that that ship could get back to the airport in the way you described

is based on your assumption it had a gliding ratio of twelve to one? A. In that wind, yes, sir.

Re-direct examination by Mr. George:

Q. Did you make any tests of a similar kind on that kind of ship? A. Yes, sir.

Mr. Carpenter: I object.
Mr. George. He asked it.
The Court: He told it too.

Q. Do you support your figures and your testimony today——

Mr. Carpenter: I object to the question.

Q. As a matter of fact you made a test on the very day of the accident, didn't you?

Mr. Carpenter: I object.
The Court: Sustained.
Mr. George: Plaintiffs rest.

(Testimony closed.)

(Recess taken for one hour until eleven forty-five a. m.)

(After Recess, 11:45 A. M.)

(Summation to the jury by Mr. Carpenter.)

(Summation to the jury by Mr. George.)

Court's Charge.

AFTER RECESS, 2:15 P. M.

The Court thereupon charged the jury as follows:

The Court: Gentlemen of the Jury:

On the afternoon of March 17, 1929, the Colonial Western Airways, Incorporated, was the owner of a Tri-motor Ford Aeroplane that has been designated as a model 4-AT, I think, and the Company at that time was engaged in making hopping flights or excursions with this aeroplane from the Newark Airport out over the City of New York and return. Now, between four and five o'clock on the afternoon of that day a flight was undertaken in which fourteen passengers were aboard this airship and one pilot, and among the fourteen passengers who had paid five dollars for the purpose of securing the privilege of making this trip were Anton M. Boele and Thomas J. Henderson. This aeroplane with these fifteen persons, including the pilot, aboard, took off from what has been designated in this case as the northwest runway and proceeding in a northwesterly direction flew up over Highway Route #25 and proceeded on to a distance which has been variously stated by the witnesses here beyond Highway Route #25, when either two turns or one turn was made to bring this aeroplane back into a general easterly direction to proceed on its course to New York.

Now, at about the time when this aeroplane had completed the turn to proceed toward New York it was noticed that it was losing altitude and it kept on losing altitude coming over Highway Route #25 again and continuing on until it crashed into a gondola freight car loaded with sand on

the track of the Central Railroad Company some little distance in a northeasterly direction from the airport from which it had taken off, and as a result of that crash fourteen people were killed —all of the passengers—and the pilot Lou Foote was the only one who escaped with his life.

Now, as a result of that unfortunate occurrence in which Mr. Boele and Mr. Henderson lost their lives, these two actions have followed. One of these suits which we are trying here was brought by Dina Boele, administratrix *ad prosequendum* of Anton M. Boele, deceased, against the Colonial Western Airways, Incorporated, and the other suit was brought by Mary Henderson as administratrix *ad prosequendum* of the estate of Thomas J. Henderson, who was her son. So, you see, you must keep in mind at all times that you are trying two cases here and they are being tried together here for the purpose of conserving time, and for convenience, but when you come to deliver your verdict, it will be necessary for you to render a verdict in each case just as though they had been tried separately, and, so, at the conclusion of the case when you have reached your verdicts, you will proceed to find either for the plaintiff or for the defendant in each of these two cases.

Now, I have gathered the impression, gentlemen, that some of you are serving on a jury for the first time and some of the practices of the court; some of the rulings of the Judge; and, perhaps, the general manner of procedure may be just a little bit mystifying to you, and so I feel I should start my charge with just a brief reference to the functions of the jury and of the court. You, each one of you, took an oath when you went into the jury box that you would a true verdict render according to the evidence in the

case, and you are to live up faithfully to that oath until you are discharged from your service. Now, that means, gentlemen, that you are the triers of the facts in this case. It is your function to determine what the real circumstances under which this accident occurred really were. Now, some of you may have read in the newspapers about this very case—this very accident. Some of you may have lingering in the back of your minds a preconceived notion whether there was any liability on the part of this Aeroplane Company or not. Don't you see, gentlemen, under the oath you have taken and the function you are supposed to perform you cannot consider any such matter as that, because you are to base your verdict upon the evidence that is given here on the witness stand and the exhibits that have been offered in evidence. And, while I am speaking on that subject, I might say you have heard objections here made by counsel to certain questions. Sometimes they have been sustained and again they have been overruled. When they have been overruled, gentlemen, you are to forget any implication that may have arisen from the question asked. And, also, the court may have stricken out certain testimony that had crept into the case. You are to eliminate that from your minds also, just as though the testimony had never been given and so you approach this case with open minds. You have taken an oath that you are to base your verdict upon the evidence in these cases.

Now, it is quite evident to you that you could not properly perform your duties unless you knew, after you had agreed upon how this accident happened and upon all the circumstances, the rules of law to apply to the facts as you find them. And, so, gentlemen, that is the function of the Judge,

not only to preside at the trial and rule upon the evidence, but to instruct you in the rules of law you will apply to the facts as you find them. Now, remember this: you may not agree with the law as it is stated to you by the court. You may think that some other rule of law would be better to be applied in a case like this, or you might seek to make your own rules. If you do that in these cases, gentlemen, you would be violating your oath and you would not be performing your full duty, because, right or wrong, you are to take the law as the court gives it to you just as the court gives it to you, and apply it to the facts, just as you find them. Don't you see, if you do that, your verdict will be a right verdict, no matter for which side it may be rendered, because you, as jurors, will have performed your full function. You are not concerned with whether the court has performed its proper duty.

Therefore, with your minds open, let us approach this case together from the standpoint of the rules of law applicable or which may be applicable to certain facts as you may find them to have existed upon the occasion when this accident occurred.

Now, one of the fundamental, underlying principles that I want you to have in mind is this: that the mere happening of this unfortunate accident in which these lives were lost, standing alone by itself does not entitle you to bring in a verdict in favor of the plaintiffs here and against the defendant unless it appears by a fair preponderance of the evidence that these deceased persons could have recovered had they not been killed for the injuries sustained in this accident.

Purely as a matter of history, prior to 1848 in this state where death resulted from the wrongful

act, neglect, or default of some other person or company, there would be no right of action surviving to recover any damages for any pecuniary injuries that may have resulted from such death. As we lawyers say, at that time the cause of action died with the person. But, in that year our legislature passed an act which is commonly referred to in this State, and particularly among lawyers, as the "Death Act", wherein a cause of action under such circumstances does survive. Now, that act provided that whenever a death of a person shall be caused by the wrongful act, neglect or default, and the act, neglect or default is such as would, if death had not ensued, have entitled the party injured to maintain an action to recover damages in respect thereto, then, and in every such case, the person who, or the corporation which would have been liable if death had not ensued shall be liable to an action for damages notwithstanding the death of the person injured. And, I might say, that these two suits are brought under that very Act, and unless the persons—that is, Mr. Boele and Mr. Henderson—had they continued to live, could have maintained this action, the plaintiffs in this case would not be entitled to your verdict.

Now, the persons, if injured, could have maintained an action in respect to their injuries only if it appears by a fair preponderance of the evidence—and when we say that we mean the greater weight of the evidence—that the accident was caused through the negligence of the defendant, the Colonial Western Airways, or this pilot, Lou Foote, or some other of its employees acting within the scope of their employment at the time. But, gentlemen, the plaintiffs would be confined to the charges of negligence made in their com-

plaint. They cannot raise any other theories of negligence that might occur to them during the course of the trial, but would be confined to the charges of negligence as set forth in the complaint, and I think that we might right now have in mind what charges are made in the complaint, because it will be quite significant to you as I proceed along that all of these charges could not be sustained in any event under the evidence that has been produced in this case, and I do not understand that the plaintiffs are going to so insist.

Now, it is charged that the defendant wholly failed and neglected to exercise due and proper care in the operation, maintenance and control of the said aeroplane in that it permitted the said motors and other parts of the aeroplane to become defective, insecure and insufficient; that it failed to make the proper inspection or examination of the aeroplane before the plaintiffs' intestate became a passenger, and they were negligent by employing and engaging an incompetent and unskillful pilot or operator of the aeroplane, and a pilot who was ignorant and unfamiliar with the landing fields and other parts of the airport, and furthermore than the defendant was careless and negligent—and further, that by reason of the defective motors and other parts of said aeroplane, and because of the carelessness and negligence of the defendant's pilot and by reason of the ignorance and lack of knowledge on the part of said defendant's pilot, said aeroplane in which the plaintiffs' intestate was a passenger crashed into the railroad car in question.

Now, keep those charges in mind with reference to what I shall have to say with respect to them as I proceed. You will observe that the plaintiffs here base their cases upon a charge of negligence.

Negligence is the doing of an act which a reasonably careful and prudent person would not do under the same or similar circumstances and conditions or it is the failure to do what a reasonably careful and prudent person should have done and ordinarily does do under the same or similar circumstances and conditions. You must always remember that negligence is never presumed. It must be proven. In fact, there is a presumption against negligence. Hence, the plaintiffs have the burden, gentlemen, of proving to your satisfaction in this case by a fair preponderance of the evidence that the defendant or its pilot or agents was or were negligent and that such negligence was a proximate cause of the accident.

Now, when we say the proof must be by a fair preponderance of the evidence we do not necessarily mean the greater number of witnesses who have taken the stand on one side or the other. But, of course, if the witnesses are found to be of equal degree of credibility, then the proof is an element which should be taken into consideration in determining where the weight lies. There have been a number of experts produced here as witnesses, and in this case matters of scientific knowledge, and also matters relating to conditions that are not known to the average person are involved. Many of these questions are of such a technical nature that we, as laymen, could not be presumed to know them. Therefore, experts in such matters have been called and have given the Court and the jury the benefit of their knowledge and experience in the realm of the particular knowledge—mark you—of such expert witnesses. Now, you, as jurymen, should be guided by their testimony and determine from the testimony of the experts for the respective parties when you

come to deal with those technical questions, which experts are to be believed. Now, how are you going to determine where the weight of the evidence lies? What rules are you going to apply? Well, gentlemen, you must use common sense. You must observe whether or not the witnesses have an interest in the eventual outcome of this case. Did they seem to you to be testifying freely and without reservation? What opportunities have they had of observing and remembering the things which they attempted to tell you here on the witness stand? Are they evasive? Or, did they testify fully and without hesitation? Those are just a few of the simple tests you may find convenient to use in weighing the testimony. You have a right to consider what, if any, interest any or all of the witnesses on either side have in the outcome of this case, as I have already told you. If you find any witness who has testified has some interest in this case, you have a right to determine whether or not such interest would tend to make such witness depart from the whole truth; whether such interest would be such as to cause such witness to color his testimony or exaggerate or minimize the truth of the testimony.

Now, when I instructed you, as I have already done, in respect to the burden of proof and the weight of the evidence, I did not necessarily mean —and I repeat it now—the greater number of witnesses but, rather, the greater weight that is to be given to the testimony and the proofs on the one side or the other. Now, in that connection, and before I leave that thought, there is an old maxim which is expressed in the law books in Latin and it is that "*falsus in uno, falsus in omnibus*". We lawyers love to roll that off our tongues but it means nothing more nor less than

this in plain English: that if you find that a witness has wilfully testified untruthfully upon any matter, that you are justified in disbelieving all that that witness has said. Of course, you must have in mind witnesses may unintentionally fall into error and make a mis-statement, which is quite a different matter from testifying to a fact falsely and willfully. And, so, it will not do to say, "Well, that witness testified to so and so, and that was not the truth, therefore we must disbelieve all that witness has said". You should find out whether there has been a willful and intentional effort to falsify the testimony. If you find that there has been any such testimony in this case, I tell you again you are justified, if you so feel, to disregard what that witness has said on the balance of his testimony.

Now, as you have been told, the cases are based on a charge of negligence. Negligence presupposes, gentlemen, the violation of or failure to perform some duty which one person or company owes to another person or company. And, so, you will want to know very naturally in these cases, what duty this defendant owed to the persons who were being taken upon this flight after having paid their passage fee of five dollars each. Now, gentlemen, that duty was to exercise reasonable care in the operation, maintenance and control of this aeroplane. Now, what is reasonable care? There is a maxim of the law as old as the law itself, the greater a danger the greater the care required, but you must remember that the defendant in this case was not an insurer of the safety of these persons who might have gone upon this flight. There was a duty, as I have already indicated, exacted from this defendant, but it was not the duty of an insurer. Now, reasonable care is

largely controlled by the circumstances of the case, and one of the circumstances involves a determination of the question of whether or not this defendant on this fatal trip of this plane was carrying passengers therein for hire as a common carrier, for our courts have said that in the case of passengers transported for hire by a common carrier, reasonable care means a high degree of care, and our Court of Errors and Appeals has said that common carriers of passengers are those who undertake to carry all persons indifferently who apply for passage. To constitute a carrier, a common carrier of passengers, it is necessary that it hold itself out to the public as such, and hence one who occasionally carries a passenger as a matter of special accommodation and agreement does not thereby become a common carrier of passengers. If the owner of a conveyance hires it to a certain person or certain persons, but not indifferently to everybody who may apply, he does not thereby indicate that the conveyance is engaged in the business of a common carrier. The destination of, or the distance to be traveled by the passenger is immaterial in determining whether the carrier is or is not a common carrier. Now, a common carrier is not obliged, gentlemen, to carry everybody who may apply. He is not obliged to accept obnoxious persons, persons who are intoxicated or who might endanger the safety of the passengers in the ship. And the Department of Commerce rules say pilots may be suspended for carrying passengers obviously who are under the influence of intoxicating liquor, cocaine, or other habit-forming drugs. The fact a carrier may exclude persons does not of itself deprive it—that is, the carrier—of its status as a common carrier.

So, gentlemen, if the defendant in these cases was a common carrier, then reasonable care for the safety of the passengers required a high degree of care, and in this connection in construing what is meant by a high degree of care, our Court of Errors and Appeals has said that due care from a common carrier and its servants to its passengers in its charge is a high degree of care to protect them from dangers that foresight can anticipate.

By foresight is meant not foreknowledge absolute, not that exactly such an accident as has happened was expected, but rather that the characteristics of the accident are such that it can be classified among events that without due care are likely to occur and that due care would prevent. You see, gentlemen, this question of common carrier becomes important only when you come to consider the degree of care which should have been exercised by the defendant on this occasion. But whether the defendant was on this occasion a common carrier or not, the question remains whether the defendant or its employees exercised due care under all of the circumstances, and the burden, as I have said, of proving that due care was not exercised by the defendant or its employees is upon the plaintiff in each one of these suits.

Now, the defendant insists among other things that this accident was what is termed in the law an unavoidable accident. Now, what do we mean by an unavoidable accident? Well, it is one which prudence and foresight could not have anticipated, and, so, in this case if it should appear after considering all the facts in this case that this case was an accident which ordinary prudence could not have seen and provided against, then

the plaintiffs would not be entitled to your verdict. And, if you should decide that when an emergency occurred—if you should decide that it was an emergency which caused this accident—then mere error in judgment when a person is confronted by a sudden and unexpected danger which reasonable foresight could not have anticipated, that person or corporation liable for the negligence of that person would not be liable for such error in judgment unless that emergency and that danger was created by the negligence of the pilot himself.

Now, in the requests submitted here that same principle is cited in just another way, and it would be no harm to consider it for a moment. If the pilot, Lou Foote, at the moment his left engine stopped and his center engine revved down to the point where it had no power, used his best judgment in the emergency that was created, the defendant is not chargeable with negligence for such exercise of judgment, even though the jury may be of the opinion that had the pilot done something different in the emergency, the consequences would not have been so severe—provided, of course, this emergency was not due to the negligence of the pilot himself, and if he exercised under all of the circumstances such care as the law required of him under the circumstances which I have already related to you.

The defendant also urges as a defense to this action that the passengers in this plane assumed the risk of just such an accident as occurred. Well, now, gentlemen, I want you to follow me on this because it is true that all the passengers in this plane assumed the risk of all the usual and ordinary perils and risks of aeroplane travel, such as air pockets, forced landings, and other

such matters and all dangers which could not be avoided by the exercise of that degree of care which the law imposed upon the defendant, which I have said, was reasonable care under the circumstances. If it did exercise the diligence, care, and skill required of it by law the defendant is not responsible for the accident, notwithstanding this occurrence with all its harrowing consequences, and in that event your verdict should be for the defendant, because if you were to hold otherwise, gentlemen, and base your verdict upon the principles that a passenger who goes up in an aeroplane assumes no risks whatever, you would be going back and deciding, as I said you could not do, that the company in this case was an insurer of the safety of the passengers, and that is not the law. The defendant was required to exercise care commensurate with the risks and dangers involved, and that was all.

But, gentlemen, even if you should find that the defendant was negligent in some one or more of the particulars which are charged in this complaint, which I have read to you, that would not determine the question of liability, because the plaintiff would still have the duty of establishing by a fair preponderance of the evidence that such negligence, if there was any negligence in this case—and I will dwell a little upon it in particular hereafter—that such negligence was a proximate cause of the accident and of its fatal results.

Now, what do we mean by proximate cause? Well, gentlemen, probably the best definition that can be given of it is to say that proximate cause is that cause which naturally and in the ordinary course of events would have been expected to bring about this very thing that happened. It is the moving, efficient cause of an accident without

which the accident would not have happened. And, so, in this case, if you should find that there was negligence on the part of the defendant or its employees, but that such negligence was not a proximate cause of the accident, it would be your sworn duty to bring in a verdict in favor of the defendant in each case, and against the plaintiffs here, a verdict of no cause of action.

Now, with those principles in mind, let us just briefly skim over some of the testimony in the case, because whether or not the defendant exercised due care will depend upon the circumstances under which the defendant was called upon to exercise due care, and you can only determine the circumstances from the evidence in the case by deciding what the real facts are. Now, what about the condition of the aeroplane, exclusive of its mechanism, engine, and machinery? Well, now, there is no evidence in this case, gentlemen, that I recall, that the plane, exclusive of the machinery and the mechanism, was not in proper condition. So, we might eliminate that from our consideration. How about the engines and the mechanism of the plane? A great deal has been said—I might as well deal with it now—about certain rules of the Department of Commerce—regulations they are more properly called—and particular references have been made to inspections required by those regulations.

Well, now, the regulations, gentlemen, do require two classes of inspection. One that is known as a periodic daily inspection—a line inspection some of the pilots call it—and that is an inspection, gentlemen, that has to do with the state of repair of the open control wires, all control wires and pulleys open to inspection, all hinges on control surfaces, landing gear, wheels, fittings and

shock absorbers, fuselage parts open to visual observation; main plane, including control surface fabric and covering, engine exhaust manifolds and exhaust pipe extensions. The engine shall be given a warming up test during which the proper function of the engine instruments shall be ascertained; carburetor and fuel feed lines open to visual inspection to insure proper function, cowl to insure cowlings are properly secured, propellers as to condition. Now, such an inspection is required by the regulations to be given at least once within each twenty hours preceding flight. Then there is another inspection called the one hundred hour inspection which provides that after each one hundred hours of flight the aircraft must be given periodic inspection by a licensed mechanic and the result thereof must be entered in the log by the person making such inspection. This inspection must be made to ascertain the working condition and state of repair of the engine installations, control systems throughout, propeller alignment, fuselage, including fittings, tail skid and tail skid shock absorbers, as well as the line inspection which I have already given to you.

Now, gentlemen, I have not paid, nor am I going to pay, much attention to those rules, because Captain Weatherdon who was the flight superintendent or superintendent in charge of the pilots here says that from a superficial examination the engines were in perfect condition. Mr. Wtorkowski, the mechanic who was with this plane for months before this accident happened, testified that he complied with those regulations and gave the line inspection and the one hundred hour inspection. In fact, he says that the one hundred hour inspection was given every twenty hours and

a number of other witnesses were brought here who saw him working on the plane or helped him while he was working on the plane, and I do not recall any testimony here to show that the inspections were not actually made, but that is not the point that has been stressed here on the part of the plaintiffs, because the plaintiffs in these cases say "We are not so much interested in inspections, but we say that they were not proper inspections, and not proper maintenance of the engine." That I understand to be the burden of their charge. Now, you will no doubt have noted that in quoting from the regulations a reference was made to a log book. It seems that the regulations require a log book to be kept by the pilot and by the mechanic, and considerable time was taken up in the course of the trial as to what became of those books. I think Mr. Weatherdon's book was produced here and is in evidence. That was the pilot's book or flight book. The other book, the mechanic's book, was not produced, the defendant claiming that it was lost in the accident, or at least was not in the plane and was never found after the accident or seen after the accident.

Gentlemen, the presence or absence of that book—and if the book was here—is not the important thing in this trial. You see, the plaintiffs seek to show that there was negligence with respect to the maintenance of the engines and mechanism of this plane and the absence of the book does not prove that there was no inspection made. You see, that was a matter of evidence. They would seek to infer from that that there was a reason for not producing the book, but the evidence in the case, according to the mechanic, is that these inspections were made, and he says that they were entered in the book. So, I do not want

you to get the notion that you will have to go out and say, "Well, this log book was not here, and that is a violation of the regulations of the Department of Commerce, and therefore we are going to find there was negligence." You cannot do that because that does not prove negligence, the fact they did or did not keep a log book. That is not negligence at all. It would merely be a record of what was done with respect to the work done upon this motor, and if it was produced we do not know what it might show. The point I wish to make in this connection is you cannot go out and say "Why, they violated the Department of Commerce regulation by not having a log book", assuming that you might even go so far as to say "Well, they did not keep it". Well, you could not say because they did not keep a log book that the defendant here should be penalized in this case by a verdict against them. That is what I mean, because the keeping of the log book or the non-keeping of that log book was not negligence in this case, nor is it charged in the complaint as being negligence.

Now, gentlemen, Mr. Shaw—we are coming now to consider the question of some of the evidence —I cannot begin to repeat all of it to you and am not going to attempt to—but, Mr. Shaw, who was one of the passengers on a prior flight in this same aeroplane said that he noticed as he got in the plane and before the plane took off that one of those motors—and I think he said it was the left motor—did not rev up for some time to above 1600, whereas he says the other two motors reved, as the pilots call it up to 1800 or 2000 r.p.m. He further said that on his flight back from New York the left motor, or one of the motors, I don't recall —I think he said it was the left motor—and you

will be governed by your own recollection—slowed down, but he was also questioned as to whether or not he had observed what the pilot was doing, and he said he could not see exactly what the pilot was doing and therefore he was not in a position to say as to whether or not the pilot had slowed down that engine or not. Now, several witnesses were produced by the plaintiffs here who say that the left motor labored on the take-off and that there was a sputtering of the motor, and that gusts of black smoke were emitted from the plane. Now, Mr. Lang, who styled himself as an automotive combustion engineer, testified that he went to the scene of this accident after the plane was down and that standing at some little distance from the plane—because he was prevented from coming closer to it—he observed a man coming from the plane with a carburetor which was passed over to a gentleman with him, as I understand him to say, who had ridden with him to the scene of the accident. In any event, someone who was near at hand and that he then—Mr. Lang then asked this same person who had brought the carburetor, if he could not get him some spark plugs and he saw this man go back and bend over an object near the position or about one of these motors and that shortly thereafter he came back with two spark plugs. Mr. Lang said that with a spotlight he examined those two spark plugs and he says that he gauged the gap across which the electric spark jumps on the end of the spark plug, and that he found that gap to be thirty-thousandths of an inch and he says from his experience that such a gap was too great a gap for engines of this type and that the effect would be after five, ten or fifteen minutes' running that the motor would—or engine would become hot, and that the motor would

slow down ad possibly stop. He says that in spite of the fact, however, that it seems to be uncontradicted in this case, that this very plane had made from seven to ten flights on this day in question, and the engines had not stopped on any of them except the last one. He also says that one of those spark plugs indicated that a piece of the porcelain was out or that there was a crack in the porcelain, and that that indicated to him as an expert that there had been pre-ignition—pre-explosion in the engine which would have the effect of slowing down the motor where that occurred.

Well, of course, gentlemen, you must take into account that he testifies that he went to this scene at night, he examined these plugs with a pocket flashlight, that he did not actually see the plugs in the engine, but he saw this man working near the engine and that he came to him with the plugs. You must take into account his expertness upon this particular subject, but while you are doing that you must also remember that the defendant has produced here several experts who say that a gap of thirty-thousandths of an inch is not an improper gap in an engine such as this. One of the witnesses examined the engines and spark plugs that remained in the engines after this flight and after they had been taken from the scene of the accident and brought out to the Wright Aeronautical plant, as I recall it, and he says that everything seemed to be in good condition, and he could find no reason for the engine stopping, and with respect to the spark plugs he said they seemed to him to be all right.

Now, you will recall that the manufacturer of the spark plugs was produced on the stand. He said that these plugs would function at a greater

gap than thirty thousandths of an inch. You also remember what has been said about the life of these spark plugs. Now, the mechanic who had charge of the plane says that he inspected these spark plugs about a week before the accident and he says that they were all of a gap of from fifteen thousandths to twenty or twenty-five thousandths of an inch. I think he did say, however, that the plane would not function quite so well with a thirty-thousandths of an inch gap. Of course, you will be governed by your own recollection of what the testimony has been, not only by these experts, but by all the other witnesses in the case and not by what the court has said or counsel has said regarding the testimony of the witnesses.

Now, there can be no doubt, however, gentlemen, that one or more of the engines on this plane failed and the question for you to decide is whether this was due to any negligence on the part of the defendant or its employees.

Now, let us take up for just a moment as to whether the plane was overloaded for a flight under all the conditions that were present on this eventful day. Now, again I am going to refer to a rule of the Department of Commerce and quote a bit of testimony as centered about the question of the number of persons in this plane.

These regulations provide an aircraft license may be suspended or revoked for operating an aeroplane in excess of the authorized useful load as specified in the license or operating with passengers in excess of the number authorized in the aircraft license. Now, turning to the license issued for this aeroplane, we find that the specified weight empty was 6,169 pounds, useful load 3,961 pounds, the gross weight, combining the two, was 10,130 pounds. Then it provides on the

face of this license that the seating capacity exclusive of crew is twelve. Now, gentlemen, all of the evidence in this case is to the effect that the mere number of passengers, speaking numerically, now, in this plane had no significance so long as the total weight was not excessive.

Now, Mr. Lane testified in this case and said after making certain expert computations, after having in mind the uncontradicted fact that these gasoline tanks were filled after the first flight, I think it was, having in mind the consumption of gas during those flights and while idling, that this total allowable weight of 10,130 pounds was not reached by something over 800 pounds, and I recall no evidence in this case, gentlemen, to the effect that the total authorized weight was exceeded. So, the question to be decided, therefore, is whether the defendant was negligent in permitting this flight with the load which the plane actually carried on this flight under all of the conditions, including the wind, which existed at that time.

Now, the defendant's witnesses, when confronted with this question, all say that it was perfectly proper to fly that plane with that weight, using the weight that was given by Mr. Lane, which I have said has not been attempted to be discredited or disputed, but the reason—or one of the reasons at least—I will leave that question to you to decide—is this: that at least one of the plaintiffs' experts, Colonel Chamberlain, who had considerable experience in flying, when asked the hypothetical question which took into account the weight of the machine, the weight of the useful load including gas and oil and everything given as Mr. Lane stated it to be, that is to say, a maximum weight of 9,445 pounds or minimum weight

of 9,402 pounds, whether or not it was reasonably safe to fly that afternoon with that load under all the conditions that were then present, said "No, it was not safe to fly with that load on that day." So, I say to you that it is not enough to say, "We are within the specified weight allowable by the license issued by the Department of Commerce". The underlying question is whether or not with the weight, whatever it was, on that day, with the conditions, all of them, that confronted the pilot when he took off there, whether or not it was in the exercise of reasonable care to have allowed the plane to make that last flight on that day under all of those conditions.

Now, what about the operation of the plane? Was there any negligence in the operation of the plane? Now, let us clear up a few questions which I consider more or less disconnected, but which are properly to be considered under this head. In the first place I should call your attention to the fact that a number of noted expert witnesses have been produced here and that may create in your minds the idea the pilot, Lou Foote, should be charged with the care which might have been expected from an expert. But, gentlemen, he was only chargeable, you must remember, as a matter of law, with using the degree of care which a pilot of average care, skill, experience and ability would use and exercise under the circumstances which confronted him on this occasion. And, furthermore, there is no evidence in this case that the fact that the pilot made a turn to the right in the direction in which he was going instead of to the left was in any way a factor contributing to the failure of the engines of the plane and the necessity for a forced landing. And, furthermore, the mere presence of this man Parsons—

his physical presence in the cockpit in the seat opposite to the pilot, under the evidence, was not contributory to this accident. This plane was designed to carry two persons in the cockpit. Now, whether or not Parsons as well as the other persons in that plane, together with the gas and all the other things made a weight when they took off, which, under the circumstances that then confronted the pilot, was an excessive weight, is quite another thing. Then again, the uncontradicted testimony is after the first flight on this afternoon this ship was refueled to a capacity of 245 gallons of aviation gasoline. I think that the gentleman who put it in says he used a screened funnel, and the mechanic used also certain means to endeavor to stop any impurity from going into the gasoline and the expert evidence is to the effect that about ninety gallons had been used up during the flight after the refueling and the idling which would leave approximately 155 gallons in the tank, the emergency center tank holding 25 gallons, which would leave 130 gallons in the outside tanks. The evidence is both of the outside tanks were turned on after this refueling and that there was gas in the tanks after the crash, and there is no evidence that the plane on this last flight did not have an adequate supply of fuel to carry her on her contemplated trip and return, except, of course, the stopping of the motors themselves, and the statement that I think was made by Mr. Foote that the left motor, or that motor and the middle motor, I don't recall, acted as if it was starved for gas.

Now, then, about landing places, gentlemen, you must remember that there is no proof in this case that this airport comprised any more ground than has been indicated on the map surrounding the

hangars there and the runways indicated on it. Where this pilot came down was evidently property belonging to someone else. Now, you may feel that it would have been better to have more safe landing places, but you must remember that that could not be charged as negligence against this defendant, because this defendant was not obliged to provide landing places all along its route in order that a safe forced landing might be made if it could be made in order to escape a charge of liability for an accident that might come through no fault or neglect on the part of the defendant. And so, if you feel that there should have been an open, smooth, hard, level place somewhere out in front of this pilot, upon which he might have safely alighted and that this defendant did not provide that sort of place, why, you must eliminate that from your minds as a ground for any negligence chargeable against this defendant. The pilot was required to use such means of setting down—I think that is the language used—as were available under the circumstances.

Now, the testimony varies as to whether a gradual turn was made to the right or whether there were two rather sharp turns made to the right and the altitude at which the turn or turns, as the case may be, were made.

Now, when this plane went out over State Highway Route #25, the minimum of altitude was stated to be 150 feet. Other witnesses put it at a higher altitude, and the maximum of altitude at a further distance out over State Highway Route #25 where that turn was made, was 700 feet. Now, Mr. Foote says that he did not make two turns, but that he made a gradual right hand turn coming back to proceed in the direction of New York, and that when he had completed the turn

that the left motor, as he styled it, went dead, and that the center motor revved down to about eight hundred, and he says from there on he endeavored to not only revive the motors, but that he endeavored to make a safe landing. He told us how he went over Highway Route #25 again and that he saw ahead of him some wires and he saw ahead of him a green field, as he stated, which really, I think, was nothing more than a grassy salt meadow and that with the crash his memory completely left him. Now, he made a statement in the hospital on March 19, 1929—that was two days after this accident—which corresponds in a great many parts, with the testimony that he has given here on this trial and which apparently in some respects modifies this testimony and in some respects more or less contradicts it. First, with regard to the statement, gentlemen, the reason that that was let in was to affect, if it could be done, the credibility of his testimony. That statement was not a statement of proven facts in this case. In other words, what the plaintiff was endeavoring to do was to discredit the story told here on the stand by confronting the witness with a statement made at some other time, but what I want to impress on your minds very, very forcibly is that that statement in evidence as said to have been made by Foote at some other time is not proof of the facts set forth in that statement. He said a great many things there. You cannot take that statement as proof of those facts, but you may, if it was given under proper conditions, consider it with reference to whether or not it affects his credibility. Now, gentlemen, you will recall that when he was confronted with this statement, he says he not only does not remember making it, but he says he does not remember the occurrence of

the making of it at all. A doctor was produced here in an effort to show that he was perfectly conscious at this time that the statement was made, and competent to make the statement.

Now, of course, you have to have in mind the condition in which this man was. He was pretty well broken up in this accident, but the point is, whether or not he had sufficient mental ability at the time to have remembered these occurrences and to have accurately related them, because if he was not conscious, if his memory was not clear on that occasion, then you could not give much weight to a statement made at that time to affect the credibility of a man who at the present time seems to be in sound health mentally and physically.

Now, as I say, if you find he was perfectly conscious and had a memory for the events which occurred, and are embodied in his answers to these questions, of course, then you may take them into consideration as to the credit to be given his testimony here.

I must hurry along, gentlemen. I want to say this. You will recall that a great many hypothetical questions were put to witnesses based upon an assumption of fact with respect to whether or not it would have been proper piloting to have made certain turns at certain altitudes, and many of those experts when confronted by the questions propounded by the plaintiff, said that it would not be proper practice to have made certain turns under certain conditions. But, when some of the witnesses were confronted by questions which embodied other facts assumed by the defendant, just as positively they said it would be not bad practice to have operated the plane under such conditions. So, you see, when it comes down to a question of the operation of the plane here, you must consider

this evidence of the experts and particularly with reference to those questions which are of a technical character, but you must decide where the credible testimony lies. What are you going to believe? As I have already told you, the mere number of those experts on one side or the other does not necessarily determine where that weight does lie.

Now, just one word about the competency of this pilot. The evidence does not bear out, gentlemen, the charge he was not a competent pilot. According to the uncontradicted evidence the pilot was competent and qualified to operate and manage a Ford 4-AT aeroplane carrying passengers on March 17, 1929. Even if you should find in this particular instance he might have been negligent, that would not mean in employing him this defendant employed an incompetent and careless pilot, because it is a well recognized fact that a great many competent persons get involved in accidents, and that is the reason why I now say to you that there is no proof that he was not competent to fly this ship on this occasion even though it might be found by you that in operating the ship on this occasion he was in fact negligent. Furthermore, I might say that there is no evidence in this case that the pilot did anything to cause any of the motors to fail. Have that in mind. I don't understand that he physically went out and did anything that would cause the motors to fail. And even if you should find that a sharp turn or bank was made by the plane at an altitude of 150 feet or 200 feet, there is no evidence such a maneuver had any effect on the subsequent failure of the engines of the plane. Mark you, I am dwelling here upon the operation of the plane and the physical manipulations of the plane. You see, from all that appears in the evidence in this case,

his left motor quit dead and the center motor reved down, that is, insofar as the mechanics of the plane is concerned after it was up in the air.

Now, gentlemen, by way of summation I might say that the question that you are to determine is whether or not the preponderance of the evidence here demonstrated this accident was caused through any fault or neglect of the defendant or its employees which could or should have been anticipated and been provided against by reasonable care. If the evidence shows this accident occurred from the failure to exercise such care as the law imposed on the defendant and as has been explained in this charge, such failure was a proximate cause of the accident, the plaintiffs will then be entitled to your verdict.

Now, if you find, gentlemen, that the plaintiffs should have a verdict in this case, then the Death Act which I have already alluded to gives you the measure of damages that you will apply in determining what the amount of your verdict for each one of these plaintiffs should be. Now, that Act says that the jury, in a case such as this, shall give such damages as they deem fair and just with reference to the pecuniary injury sustained by the surviving widow or husband, as the case may be, and the next of kin, and our courts have said that what is meant by "pecuniary injury" is the deprivation of a reasonable expectancy or pecuniary advantage which would have resulted from a continuation of the life of the deceased. So, gentlemen, don't you see that the first part of that measure of damages is limited by the second part. In other words, you are to give such damages as you deem fair and just, but the measure does not stop there. It is qualified very materially by what follows, and that is with reference to the pecuniary injury that will result from the death of the de-

ceased. Therefore, you must take into account, gentlemen, all the exigencies and contingencies of life. Now, here were two young men. Mr. Henderson was not married and his mother says that he was twenty-seven years of age at the time of his death. He was engaged, so she says, in selling stocks and bonds, although he had been previously engaged as a checker on the dock, that he gave her something like fifty dollars a week nearly every week, forty to fifty dollars, and that if anything was to be done about the house he would contribute to it. Now, she is fifty-eight years of age. The expectancy of life, according to the actuary who was here of a man twenty-seven years of age is 36.4 years. Now, with respect to Mr. Boele, his wife testified that he was thirty-seven years of age, there were no children, so she would be his next of kin, just the same as Mrs. Henderson would be the next of kin of Mr. Henderson. They were married, the Boeles, in 1924. She was twenty-eight years of age at the time of the accident. She says he gave her weekly about sixty dollars—sixty to one hundred dollars she said at another time. She says he was in good health. You have seen the two ladies involved in this matter on the stand and you can judge of their health, but you must remember this, gentlemen, that it is one of the contingencies of life that if these men had not met their death in this accident that they might die in the ordinary course of events within the day after this trial, had they lived until today; they might have met with financial reverses; they might have become estranged from their mother or wife, as the case may be, and on the other hand, this mother, you will remember her age, she might not live many years, and the fact the actuary has given you the ex-

pectancy of life made up from tables computed throughout the years, does not mean that these two young men may not have lived beyond the age stated as the expectancy, nor on the other hand they might very well die very much within that stated expectancy.

All those things have to be taken into account and weighed and considered, the amount they were earning, whether their ability would continue on earning that amount, remembering the business in which they were engaged. So, don't you see, you cannot fairly say, "Why, here. Here is the amount contributed, fifty or sixty dollars a week. He will have so many years to live, therefore we will multiply those weekly contributions by the number of years this man would have lived and that ought to be our verdict." You have got to take into account the contingencies of life, those unexpected things in life, gentlemen. You have to also remember that although you are to give such a verdict as is fair and just, that it is only with reference to the money loss. You cannot take into account any loss of society although there has been a heart pull to this parent and this wife. You cannot take into account funeral expenses. You cannot consider any wounded feeling. You cannot add anything here by way of punishment if you find that the defendant should have a verdict rendered against it, you can only base your verdict upon what is the money loss to those next of kin and the next of kin, as I have said, are, so far as Mr. Henderson is concerned, his mother, Mary Henderson; and so far as Mr. Boele is concerned, his wife, Dina Boele.

Now, one more thing in connection with the damages. Whatever sum you may find would have resulted from contributions made by these

young men had they continued to live, could not be given as a flat sum here without discounting that amount to its present money worth. By that I mean this: don't you see, gentlemen, had these men lived and made contributions they would have been made in small amounts weekly, or at periodic times over a period of time, but whatever verdict you give here today now is in one lump sum. Therefore, you would have to discount that very much upon the same principle as you would have a note discounted if you went to a bank. You would not give the full face of it. You would give the present worth of it with the interest taken out, and so, here, you have to remember that it would not be fair to give a lump sum of contribution without capitalizing that fund, making it according to its present worth.

Now, gentlemen, this case has taken a long time to try. The charge has been long and I hope you will pardon the time that it has taken, but I want to say this in closing: you have been very patient. You have been interested from the start to the finish, and I want to compliment you upon the care you have given to this case, and I want to compliment counsel on the very gentlemanly way in which they have conducted the case. I cannot recall in my experience a single case in which counsel have gotten along so famously and in which they have endeavored to lighten the labors of the Court as in this case. It has been a great pleasure for me to try it.

Now, of course, in connection with the question of damages, I am reminded that there was testimony that each of these decedents left an estate of approximately around twenty-five thousand dollars or so. Now, you cannot take that into account in computing what these contributions

might possibly have been if you find that your verdict should be in favor of the plaintiff in each of these cases and against the defendant.

Now, I have been requested to charge certain propositions of law. I assume that those propounded by the plaintiff are now withdrawn, because I have charged them substantially in the language in which they have been presented.

Mr. George: Yes.

The Court: Now, the attorneys for the defendant have also offered certain requests, some of which I have refrained from charging and it may be desired to take exception, if counsel will go over that list.

Mr. Carpenter: I have done that. You charged a great many of mine. I can indicate the numbers you refused. Shall the jury retire first?

The Court: Just go ahead.

Mr. Carpenter: These are those you did not: Numbers two, three, four, eight, nine, ten, twelve, fourteen, fifteen, sixteen, nineteen.

The Court: Wait a minute. Yes, I charged sixteen.

Mr. Carpenter: Did you charge sixteen?

The Court: I charged it.

Mr. Carpenter: I beg your pardon, you did. I omit that. Nineteen, twenty-four, twenty-five, twenty-six and twenty-seven. You charged all the rest.

You said I might have an exception to the refusal to charge each of those?

I have in mind twenty-seven: there is no evidence in this case that the pilot was ignorant of or unfamiliar with the landing fields in and about the Newark Airport at the time of his last flight on March 17, 1929.

The Court: I charged that insofar as it deals with the landing field, and you may have an excep-

tion to my failure to charge except as I have charged those other requests you have mentioned.

Mr. Carpenter: Thank you. You put a qualification to my number one. I want to except to it. You qualified that by——

The Court: I thought I gave you the gun on that.

Mr. Carpenter: Not quite.

The Court: I will relieve you of any question about it, so I will charge it over again.

(Addressing the jury) Gentlemen, according to the undisputed evidence in this case, the pilot, Lou Foote, was competent and qualified to operate and navigate a Ford 4-AT airplane carrying passengers on March 17, 1929.

Gentlemen, I am also reminded I might have said in my charge that the minimum altitude of the plane on the first turn was 150 feet. There was testimony it was from 100 to 150 feet, is that right?

Mr. Carpenter: It was testified by one or two witnesses——

The Court: The jury will recall the testimony on that subject. I do not want to make that a binding instruction on you because you will have to be governed by your own recollection of the testimony.

Of course, I said that in measuring the damages here, if you find the plaintiffs are entitled to your verdict, you should take into account that these two men may have had a decrease in income. Well, of course, you have heard the business in which they were engaged and you have before you the length of time they might have lived and you must take into account, of course, the incomes may have increased, having in mind, however, the estate left by each one of them as indi-

cated on that subject. And, of course, it is also true, I thought I brought it out, these men may have lived longer as well as shorter than the expectancy as testified to by the actuary.

Is there anything else, gentlemen?

Juror Number Three: Did you say, your Honor, we are to disregard the statement that was made on the 19th?

The Court: Oh, no.

Juror Number Three: We can use it?

The Court: I am glad you brought it up, because it indicates there may be some doubt in your mind as to its effect as evidence. You may use it only for the purpose of testing whether or not the statements that he has made here on the witness stand under oath were true or not, and as to what weight and credit you will give to his testimony here on the stand, if you find that he did make a statement which contradicts him here at that other time and if he was competent to have made that statement. That does not mean when he said certain things, if he did say those things down at Newark on March 19th, that that is proof that those things actually happened. That is not the purpose. Do I answer your question? You may use those statements to say that, "Well, what he said here now is different from what he said then, and hence he must be wrong now."

Juror Number Three: I could not use something that is in that statement, together with the expert testimony of another witness?

The Court: No. That would be making proof of fact from that statement. I have already said that it is not evidential as fact. I think I have sufficiently indicated that.

Mr. George: That is, the statement he made there may be regarded and considered by this jury as proof he did not tell the truth here.

The Court: Gentlemen, I can possibly best illustrate what you want to know by simply giving you an example. Supposing in considering this testimony—it is only by way of illustration, of course—I don't recall what was in that statement very well—supposing it was said over at Newark on March 19th, 1929, the left motor quit, the center motor revved down and I shut off the right motor. You could not take that statement as proof that he himself shut off that right motor. You would have to disregard that, but you might use that statement to satisfy yourself in your minds as to whether or not when he said here on the witness stand he did not shut off that right motor, but kept that open, whether he was telling the truth, or whether he was lying about it.

Mr. Carpenter: The only thing they are to do is to take into consideration his condition at the time.

The Court: Of course, I said you must remember his condition and see what bearing that had on the statement.

Juror Number Five: May I ask a question?

The Court: Of course.

Juror Number Five: Did you say that if they did not prove negligence, that is actual proof, they would not be entitled to a verdict? Do I understand that according to the lawyer's way of looking at it?

The Court: If the defendant was not negligent at all, why, of course, you could not find a verdict in favor of these plaintiffs. The whole case, and each case, is predicated on a charge of negligence. The mere fact this accident may have happened if there was no negligence on the part of the defendant, would not justify you in mulcting them in damages for the benefit of these plaintiffs. Does that answer your question?

Juror Number Five: That is not the way I understood you first.

The Court: The burden of proving negligence is on the plaintiff.

Juror Number Three: Didn't you say it was not an insured trip? Do you mean by that there was no guarantee they would be taken up and brought back safely?

The Court: Yes.

Juror Number Three: When they paid their five dollars?

The Court: Yes. In other words they did not guarantee that there would not be any mishap but what they did have to do was to see that they exercised due care that there would be no accident or any untoward event that would result in death or affect the safety of those persons. They could not guarantee this ship would be safe. The best they could do would be to guarantee that they would not be negligent.

Gentlemen, may I just say, because this has taken so long to try, I don't want you to get mixed up about the form of your verdict, if you find in these cases that the plaintiffs should have a verdict, you will want to know how to express it. Under such circumstances you will say, "We find for the plaintiff, Dina Boele, administratrix and so forth, against the Colonial Western Airways a verdict of—" so much money, expressing it in one lump sum, in which will be computed all the items which you may find, if you find for that plaintiff. Your verdict should be expressed in one lump sum.

And, if you find in the other case for the plaintiff, you will also say, "We find in favor of Mary Henderson, administratrix of the estate of Thomas

J. Henderson, deceased, and against the Colonial Western Airways Incorporated, a verdict for—" so much money in one lump sum. On the other hand, if your verdict is for the defendant, you will say, "We find for the defendant and against the plaintiff in each case, a verdict of no cause of action."

(The jury retired.)

DEFENDANT'S REQUESTS TO CHARGE.

1. According to the undisputed evidence in this case, the pilot, Lou Foote, was competent and qualified to operate and navigate a Ford 4-AT airplane carrying passengers on March 17, 1929.

2. There is no evidence in this case that the pilot, Lou Foote, was guilty of any act of negligence which was the proximate cause of the accident in question.

3. There is no evidence that the airplane in question was not properly inspected and properly serviced and cared for on and prior to March 17, 1929.

4. There is positive evidence in this case that the airplane in question was properly serviced and properly inspected and cared for on and prior to March 17, 1929.

5. There is no evidence that the airplane in question was overloaded when she took off on her last flight March 17, 1929.

6. It is uncontradicted in this case that the airplane in question was in fact not overloaded on her last flight March 17, 1929.

Defendant's Requests to Charge.

7. There is no evidence that the airplane in question on her last flight did not have an adequate supply of fuel to carry her on her contemplated trip and return.

8. There is no evidence that the failure of the left motor and the revving down of the center motor to a point where it had no power, was in any way due to the negligence of the defendant.

9. There is no evidence in this case that defendant's airplane on its last flight was flown in a wind of too great velocity, or in an improper wind.

10. There is no evidence that the velocity or character of the wind at the time the airplane took off on its last flight was in any way the proximate cause of the accident.

11. There is no evidence in this case that the fact that the pilot made a turn to the right, in the direction in which he was going, instead of to the left, was in any way a factor contributing to the failure of the engines of the plane and the necessity for a forced landing.

12. It is uncontradicted that the proximate efficient cause of defendant's airplane coming down was engine failure. There is no evidence that such engine failure was in any way due to any negligence on the part of the defendant.

13. The evidence before the court and jury is that had there been a proper landing place into which the pilot could have piloted his ship when the engines failed, the pilot probably would have been able to bring his ship safely to earth even after the engines failed. The fact that there was no proper place available into which the pilot, in the exercise of due care, could put his ship down

after the engines failed, was in no way due to the negligence of the defendant.

14. The accident in question was due to causes over which the defendant had no control.

15. The accident in question was an act of God.

16. The decedents assumed the risk of engine failure, vagaries of the wind and air pockets and the dangers of forced landings, that were not caused by any negligence of defendant.

17. The pilot, Lou Foote, was not chargeable with the care that an expert would be chargeable with. He is only chargeable, as a matter of law, with using that degree of care which a pilot of average care, skill, experience and ability would use and exercise under the circumstances of the time and place.

18. The mere happening of an accident, without proof of facts from which the violation of a duty due to the plaintiffs' intestates may be legitimately inferred, does not constitute negligence.

19. The jury must return a verdict in favor of the defendant because there is no proof that the defendant was guilty of any negligence which was the proximate cause of the accident.

20. The defendant in this case was not an insurer of the safety of its passengers.

21. If the pilot, Lou Foote, at the moment his left engine stopped and his center engine revved down to the point where it had no power, used his best judgment in the emergency that was created, the defendant is not chargeable with negligence for such exercise of judgment, even though the jury may be of the opinion that had the pilot

done something different in the emergency the consequences would not have been so severe.

22. The presence of Parsons, in the cockpit in the seat opposite the pilot, under the evidence was in no way a factor contributing to this accident.

23. The plaintiffs have the burden of proving by the greater weight of the evidence that the defendant was guilty of negligence which was the proximate cause of the accident. If they have not sustained this burden then the jury must return a verdict for the defendant.

24. The defendant in making hopping flights with passengers in its Ford 4-AT airplane was a private carrier and not a common carrier of passengers.

25. There is no evidence in this case that the defendant permitted the motors of its airplane, or other parts of said airplane, to become defective, insecure or insufficient.

26. There is no evidence in this case that the defendant failed to make or have made through expert mechanics proper examination and inspection of the airplane.

27. There is no evidence in this case that the pilot was ignorant of or unfamiliar with landing fields in and about the Newark Airport at the time of his last flight on March 17, 1929.

28. If the jury find that the testimony of any witness is not truthful in any material particular, then they may disregard all the testimony given by such a witness as unworthy of belief.

29. In determining whether or not the defendant was guilty of negligence it will be the duty of

the jury to consider not only the number of witnesses testifying to the several facts involved, but also the demeanor of the witnesses on the stand and their manner of testifying. Mere numbers of witnesses on a given point is not necessarily conclusive, but a number of credible witnesses in law outweigh the testimony of any number of incredible witnesses.

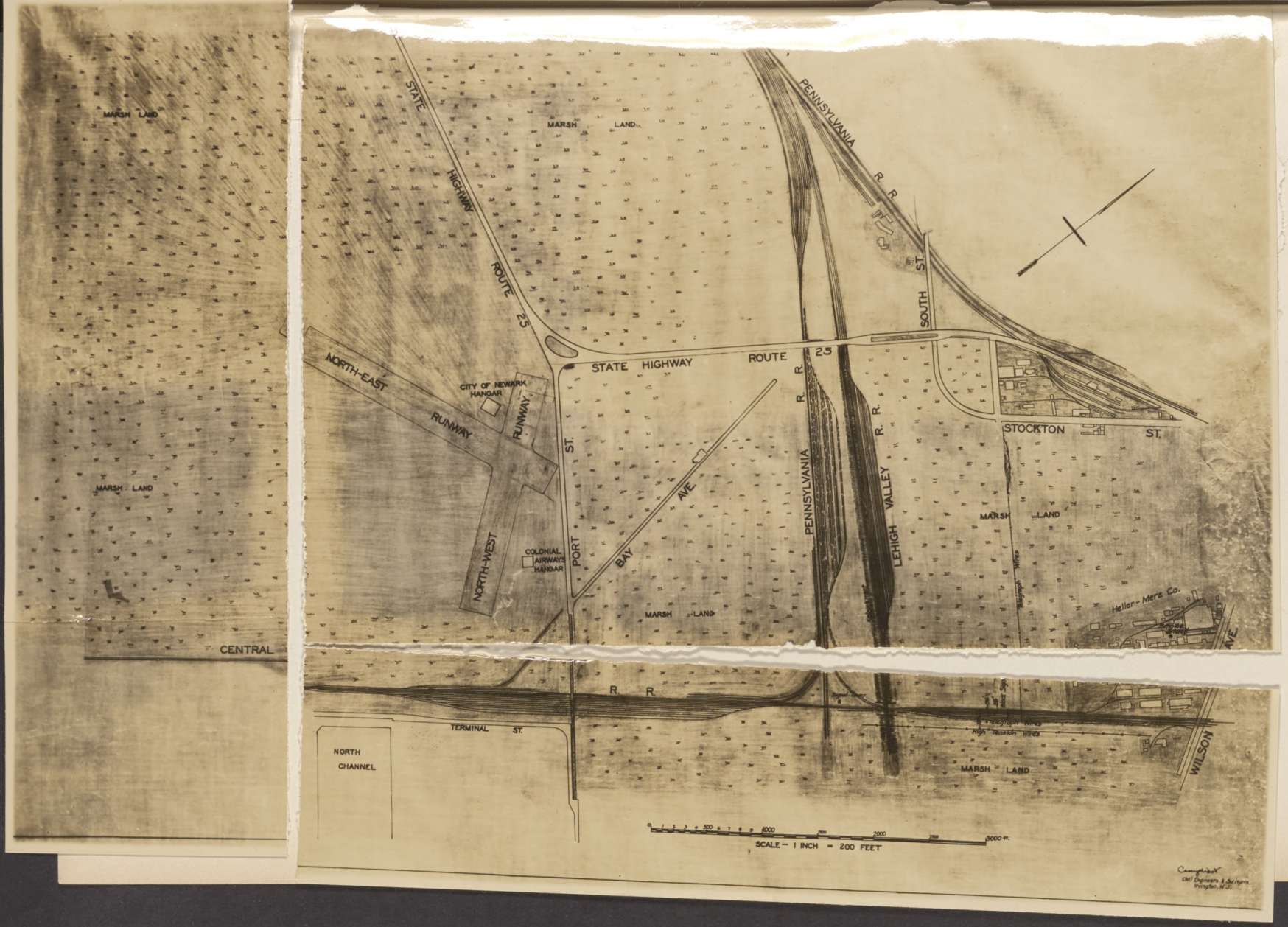
30. In this case matters of scientific knowledge and also matters relating to conditions which are not known to the average person are involved. Therefore experts in such matters have been called and have given the Court and jury the benefit of their knowledge and experience. In the realm of the particular knowledge of such expert witnesses, the jury should be guided by their testimony and determine from the testimony of the experts for the respective parties which experts are to be believed.

31. There is no evidence in this case that the pilot did anything to cause any of his motors to fail.

32. That even if the jury should find that a sharp turn and bank were made by the plane at an altitude of 150 or 200 feet, there is no evidence that such a manoeuver had any effect on the subsequent failure of the motors in the plane.

Exhibit P-1.

(Opposite) ☞


MARSH LAND
MARSH LAND
CENTRAL
STATE HIGHWAY ROUTE 25
MARSH LAND
PENNSYLVANIA R. R.
SOUTH ST.
NORTH-EAST RUNWAY
CITY OF NEWARK HANGAR
RUNWAY
NORTH-WEST
COLONIAL AIRWAYS HANGAR
PORT ST.
BAY AVE
PENNSYLVANIA R. R.
LEHIGH VALLEY R. R.
STOCKTON ST.
MARSH LAND
Heller-Merz Co.
MARSH LAND
R. R.
TERMINAL ST.
NORTH CHANNEL
MARSH LAND
WILSON AVE
SCALE - 1 INCH = 200 FEET

1209

Exhibit P-2.

(Opposite) ☞

New Jersey State Library

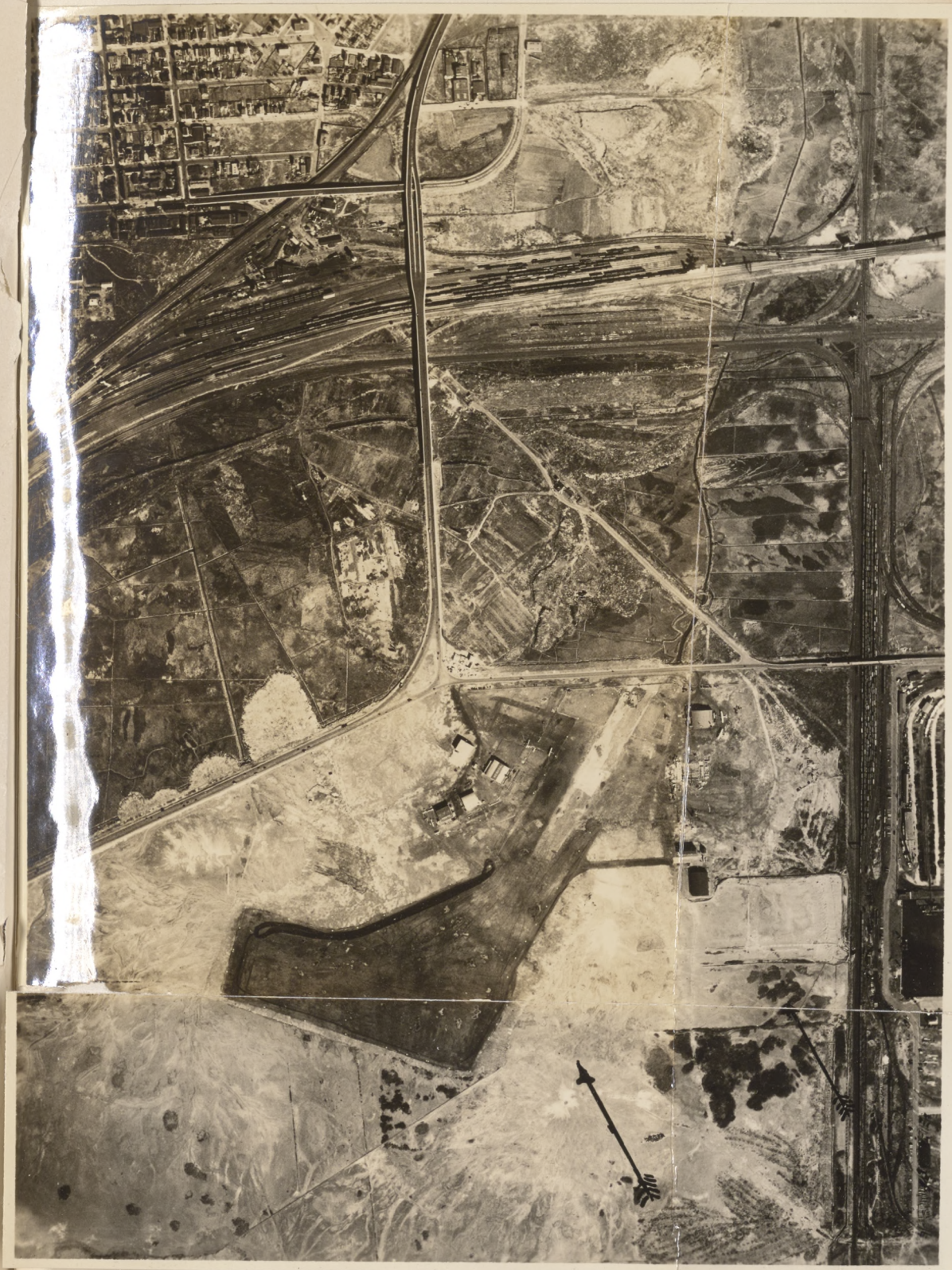


Exhibit P-4.

FORM B-49

UNITED STATES OF AMERICA

Department of Commerce

Aeronautics Branch

Official No.
NC-7683

Airplane License

THIS CERTIFIES, That the airplane described in the margin, licensed in the name of

COLONIAL WESTERN AIRWAYS, INC., NEW YORK, NEW YORK,

is a civil aircraft of the United States of America, has been found airworthy by the Secretary of Commerce and assigned the following license number:

NC-7683

Unless sooner suspended or revoked this license expires on the 15th day of January, 1930.

CLARENCE M. YOUNG,
Director of Aeronautics.

L

(DEPARTMENT OF COMMERCE SEAL)

DESCRIPTION OF AIRPLANE

Model Ford Model 4AT
Type Land Monoplane
Mf'g number 41
Engine type Wright Whirlwind 3
*Weight empty 6169 pounds
Useful load 3961 pounds
Gross weight 10130 pounds
Over-all span 74′
Over-all length 49′ 5″
Seating capacity exclusive of crew 12
*With water if water-cooled.

NOTE: This license must be prominently displayed in the airplane.

Exhibit P-5.

Extracts From Air Commerce Regulations.

Effective as amended June 1, 1928.

Chapter 2, Sec. 27. Daily and Periodic Inspections.

(A) A licensed airplane shall be given a line inspection by the owner or a licensed mechanic at least once within each 24 hours preceding flight, and the result thereof shall be entered in the log under the signature of the person making such inspection. The line inspection must be made to ascertain the working condition and state of repair of the—

(1) Open control wires, all control wires and pulleys open to inspection through apertures, and all hinges on control surfaces.

(2) Landing gear, wheels, fittings, and shock absorbers.

(3) Fuselage parts open to visual inspection.

(4) Main plane external bracing, including fittings and struts, external wires, cables, turnbuckles, and fabric or covering.

(5) Control surface fabric or covering.

(6) Engine-exhaust manifolds and exhaust-pipe extensions. The engine shall be given a warming-up test, during which the proper functioning of the engine instruments shall be ascertained.

(7) Carburetors and fuel-feed lines open to visual inspection to insure proper functioning.

(8) Cooling system and connections.

(9) Cowling, to insure that the cowlings are properly secured and safetied.

(10) Propellers, as to condition.

Exhibit P-5.

(B) After each 100 hours of flight, in addition to the line inspection, the airplane must be given a "periodic inspection" by the owner, and the result thereof must be entered in the log by the person making such inspection. This inspection must be made to ascertain the working condition and state of repair of the—

(1) Engine installation.

(2) Control systems throughout.

(3) Propeller alignment.

(4) Fuselage, including fittings, tail skid, and tail-skid shock absorbers.

Chapter 3, Sec. 35. Logs and Navigation Reports.

The owner or operator of every licensed aircraft shall keep a navigation and engine log book and shall quarterly transmit to the Secretary of Commerce a navigation summary report, in duplicate, showing the number of hours and the approximate number of miles the aircraft has been flown during the quarter, the duration of the use of each engine, the engine installation, and repairs, and the plane structure and rigging changes and repairs.

The log books shall be carried in the aircraft at all times when such aircraft is away from its home airport.

Exhibit D-2 (a).

(Opposite) ☞

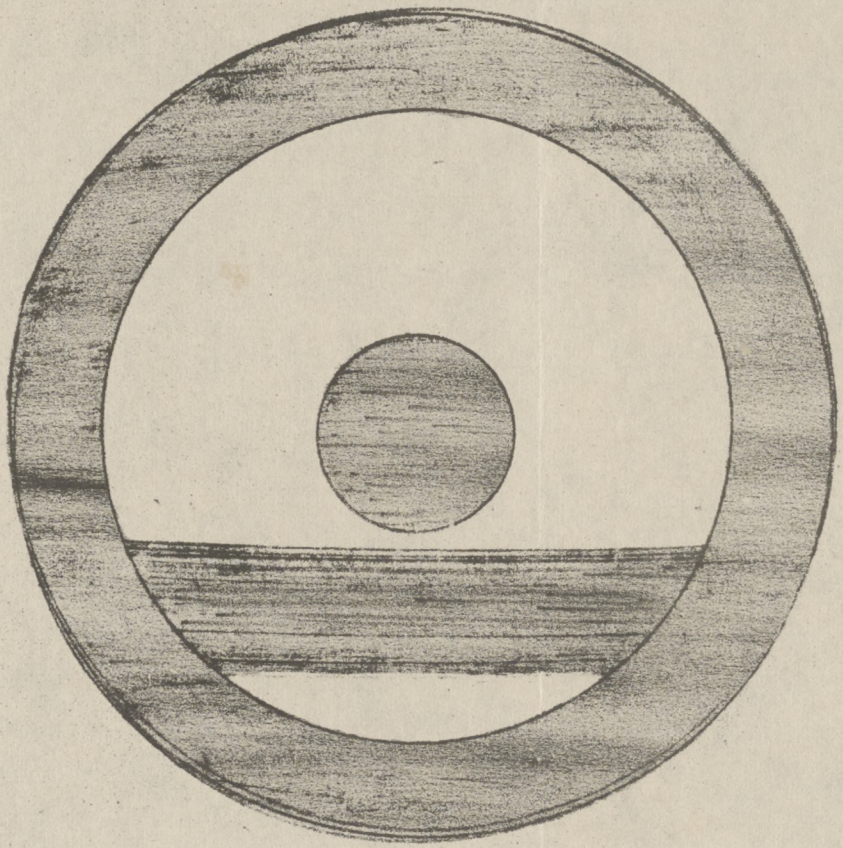


Exhibit D-2 (b).

(Opposite) ☞

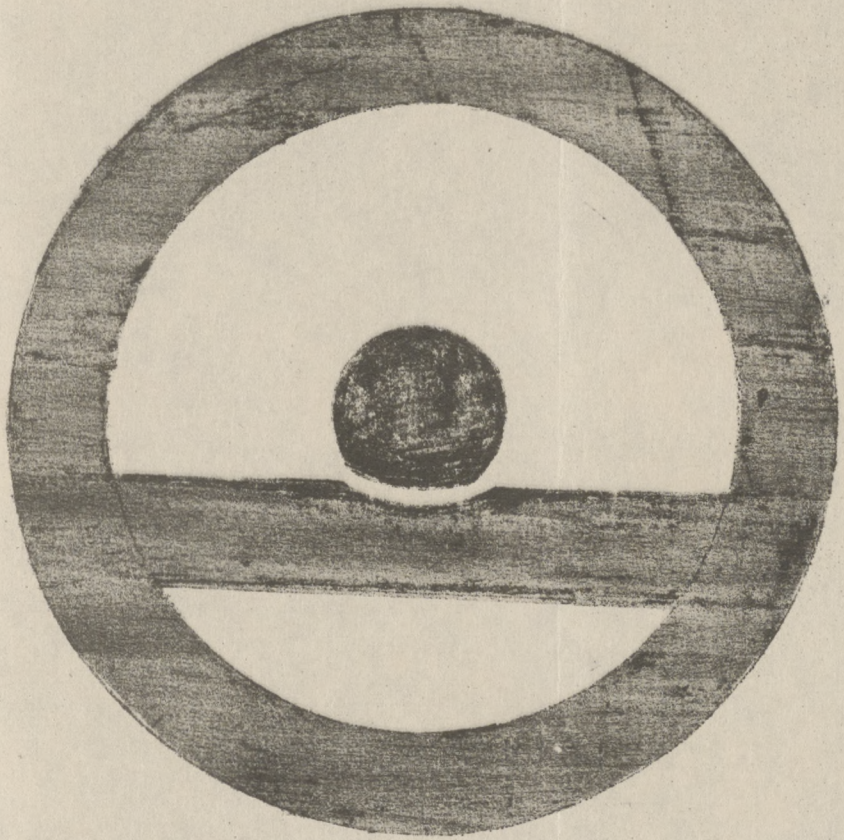


Exhibit D-3.

PILOT RECORD

Date Sept. 10, 28

Name Lou Foote

Address 6311 Greenwood Ave. Chicago, Ill.

Married Yes. Single —. Age 31. License No. 2202. Transport

Date of first solo Mar. 13, 1919. Date of last solo Sept. 8, 1928

Total flying hours Approx. 2,000. Flying time last 6 months 480 hrs.

Types flown JN4D—T. M. Scout—Standard—Swallow—Vaught—Ryan—Travel Air Mono.—Travel Air B1.—Liard—Stinson—Waco—Lincoln Page—Eagle Rock—Tri Motor Ford

References (at least two) Paul Ming—Gray Goose, Air Lines—Chi. Ill.

Grover Tyler, Pacific Air Transport, Oakland, Calif.

(Please attach photo on opposite side)

(Reverse Side)

(Leave Blank)

Interviewed .....

Flight tested by McGee. Date Nov. 15/28

Rating OK. 4 AT

OK 5 AT & night flying

Hired.....Airplane Factory.....

Transfers .....

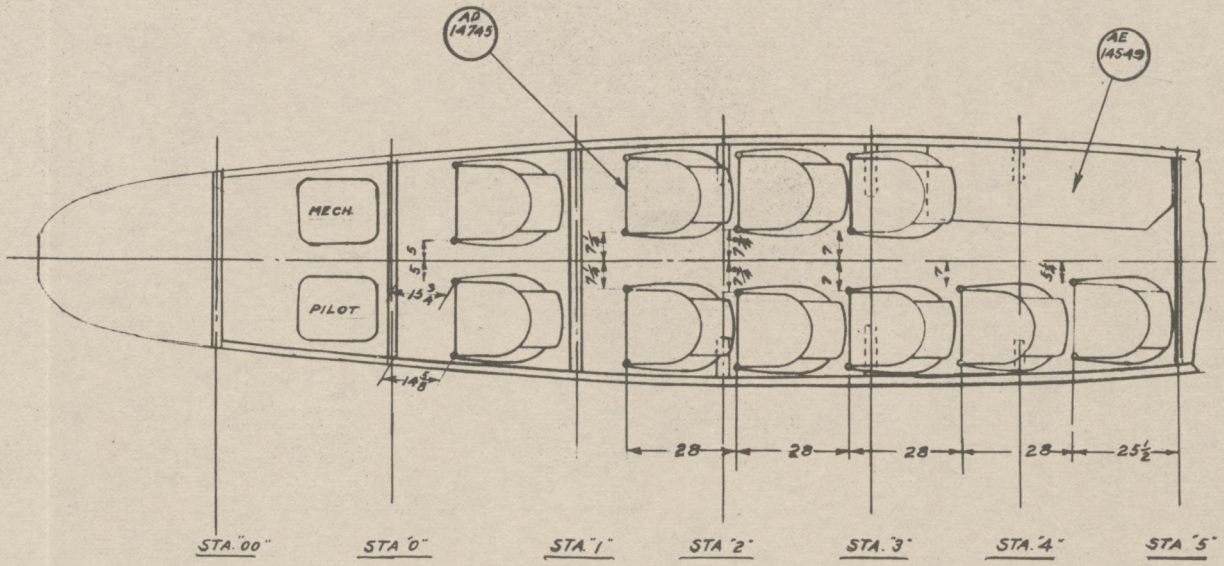
Remarks references Lott & Peterson, N. A. T. Colonial Air Lines 3/12/29

Exhibit D-4.

(Opposite) ☞

MODEL
4 AT

ENG INF	REVISED	CK
9 8 28	TRACED	



RANGE { CRUISING. HR-5 MIN 10 @ 1600 R.P.M
FULL OUT HR-3 MIN. 10 @ 1850 R.P.M

CAPACITY 13 PASSENGERS & CREW

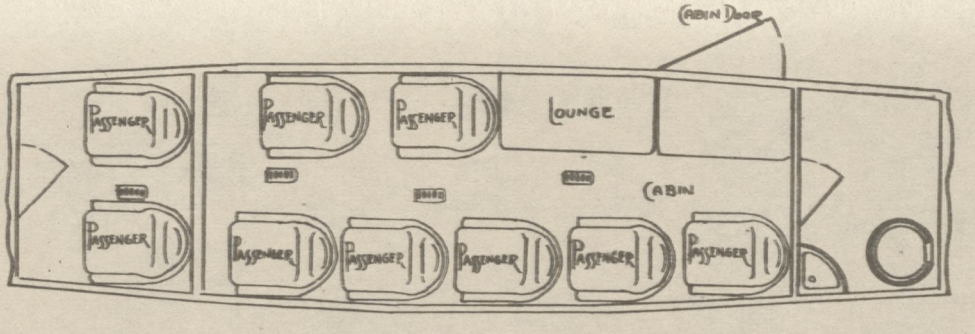
SEATING ARRANGEMENT
SPECIAL

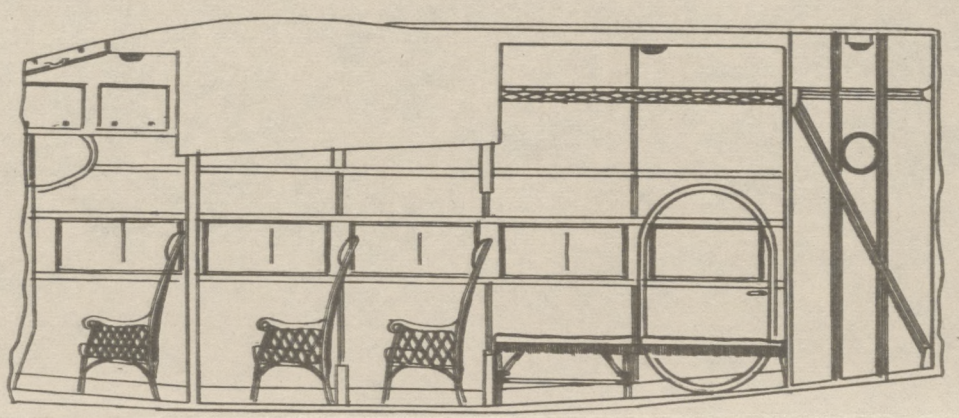
SCALE	CR	CK	TR	CK	O.K.	FORD MOTOR CO DETROIT MICH	AC-14941

AC-14941

Exhibit D-5.

(Opposite) ☞





CREW = 2
PASSENGERS = 13
TOTAL = 15

MODEL 4-AT	1. ± .010	2 ±	3 ± .001
MATERIAL	DR. Bulson 5-31-24		
FINISH	TITLE SEATING ARRANGEMENT SPECIAL (COLONIAL)		PART NO. ACL-50510
FORD MOTOR COMPANY AIRCRAFT ENGINEERING DEPT DEARBORN MICH			

LET'R	REVISIONS	DATE	CHK

NOTES AND OPERATIONS

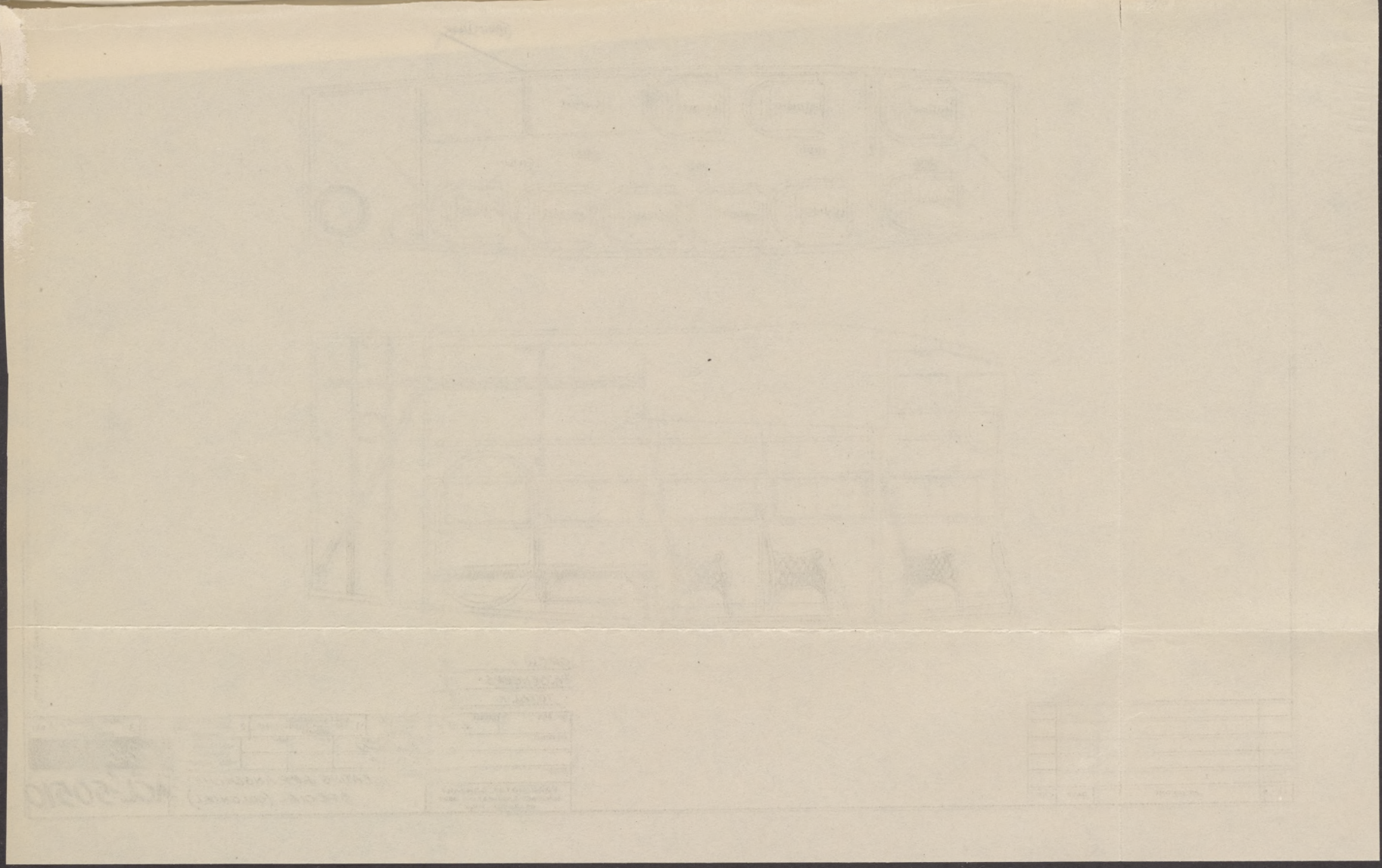


Exhibit D-6.

FORD TRI MOTOR NC 7683
4 AT-41

LOG OF PLANE
COLONIAL WESTERN AIRWAYS
INCORPORATED
BUFFALO, NEW YORK

LOG OF PLANE

Time brought forward — COLONIAL WESTERN AIRWAYS, INC. — No. NC 7683 Year 1928

DATE	FROM	TO	Reg. Ferry Test	TIME Hrs.	Min.	Passengers Carried Pay	Free	Engine No. L	C	R	Pilot	REMARKS (For Additional Remarks Use Reverse Side)
9/22/28	Dearborn	Dearborn	Test		50	1		9181	9131	9134	Weatherdon	
9/27/28	"	"	"	1	20			"	"	"	"	
9/28/28	"	"	"	2	45			"	"	"	"	
"	"	Buffalo	X C	2	50			"	"	"	"	
"	Buffalo	Albany	"	2	50			"	"	"	"	
9/29/28	Albany	Montreal	"	2	15			"	"	"	"	Gen ORyans party
"	Montreal	"	Spec	1	40			"	"	"	"	Hopping
9/30/28	"	"	"	4	10		Total	"	"	"	"	"
10/ 1/28	"	"	"	1	55		280	"	"	"	"	"
"	"	Albany	X C	2	35			"	"	"	"	Gen ORyans party
10/ 3/28	Albany	"	Spec	1	45			"	"	"	"	Hopping
10/ 4/28	"	"	"	2	15			"	"	"	"	"
10/ 5/28	"	"	"	3	45	Total	Total	"	"	"	"	"
10/ 6/28	"	"	"	2	45	284	40	"	"	"	"	"
10/ 7/28	Albany	Buffalo	X C	4	10			"	"	"	"	
"	Buffalo	"	Spec	4	—	172		"	"	"	"	Hopping

Total Flying Time — Hrs. 41 Min. 50

(Reverse side.)
REMARKS

Date: 10/15/28 110 gal gas
10/24/28 85 " "
"/25/28 83 " " 2 qts of oil

Exhibit D-6.

LOG OF PLANE

Time brought forward 41—50 — COLONIAL WESTERN AIRWAYS, INC. — No. NC 7683 Year 1928

DATE	FROM	TO	Reg. Ferry Test	TIME Hrs.	Min.	Passengers Carried Pay	Free	Engine No. L	C	R	Pilot	REMARKS (For Additional Remarks Use Reverse Side)
10/10/28	Buffalo	Buffalo	Spec	1	20			9181	9131	9134	Weatherdon	Hopping over Niagara Falls
"	"	"	"		50		26	"	"	"	"	" " "
10/11/28	"	"	"	6	05	16	40	"	"	"	"	Hopping
10/12/28	"	Le Roy	X C		35			"	"	"	"	
"	Le Roy	"	Spec	5	30	104	12	"	"	"	"	Hopping
"	"	Buffalo	X C		40			"	"	"	"	
"	Buffalo	"	Spec	2	30	14	40	"	"	"	"	Hopping (night)
10/14/28	"	"	"	5	54	176	35	"	"	"	"	Hopping
10/18/28	"	Syracuse	X C	1	50			"	"	"	"	
10/19/28	Syracuse	"	Spec	1	50	38)	20	"	"	"	"	"
"	"	"	"		30	)		"	"	"	"	" (night)
10/20/28	"	"	"		20	14		"	"	"	"	"
10/21/28	"	"	"	3	06	161	12	"	"	"	"	"
10/24/28	"	Rochester	X. C.	1	20	3		"	"	"	"	X. C.
10/25/28	Rochester	Buffalo	X. C.		55			"	"	"	"	X. C.
10/26/28	Buffalo	Buffalo	Spec		25	17	4	"	"	"	"	Hopping

Total Flying Time — Hrs. 33 Min. 40

(Reverse side.)
REMARKS

Date:	10/28/28	86 gal gas	3 qts oil
	10/30/28	187 " "	
	"/31/28	32	
	11/ 3/28	110 gal gas	2 qts of oil
	11/ 5/28	138 " "	
	11/ 6/28		1 gal oil
	11/10/28	100 " "	1 " "
	11/11/28	100 " "	

Exhibit D-6.

LOG OF PLANE

Time brought forward 75—30 COLONIAL WESTERN AIRWAYS, INC. No. N.C. 7683 Year 1928

DATE	FROM	TO	Reg. Ferry Test	TIME Hrs.	Min.	Passengers Carried Pay	Free	Engine No. L	C	R	Pilot	REMARKS (For Additional Remarks Use Reverse Side)
10/27/28	Buffalo	Buffalo	Spec		51	31	6	9181	9131	9134	Weatherdon	Hopping
10/28/28	"	"	"		35	20	4	"	"	"	"	"
10/29/28	"	Rochester	X.C.		45			"	"	"	"	
"	Rochester	"	Spec		15	6	4	"	"	"	"	Hopping
"	"	Schenectady	X.C.	2	00			"	"	"	"	
10/30/28	Schenectady	"	Spec	1	25	40	28	"	"	"	"	Hopping Night
10/31/28	"	"	"		16	11	1	"	"	"	"	Hopping
11/ 1/28	Schenectady	Staten Island	X C	2	00	2	1	"	"	"	"	"
"	Staten Island	" "	X C		25			"	"	"	"	
11/ 3/ 28	"	Hadley Fld	X C		35			"	"	"	"	To carry mail to Montreal. Dense fog
11/ 5/28	Hadley Fld	Albany	X C	2	20	3		"	"	"	"	" " " " Albany
"	Albany	Miller Fld	X C	1	50			"	"	"	"	
11/ 6/28	Newark	Newark	Spec	2	56	83		"	"	"	"	Hopping
11/10/28	"	"	"	1	05	32	9	"	"	"	"	"
11/11/28	"	"	"	4	55	193	7	"	"	"	"	"
11/12/28	"	"	"	1	11			"	"	"	"	"

Total Flying Time Hrs. 23 Min. 24

(Reverse side.)
REMARKS

Date:					
	11/15/28	100	gal gas		
	11/17/28	74	" "		
	20	134	" "		
	21	112	" "		
	22	107	" "	2	gal oil
	23	232½	" "	1	" "

Exhibit D-6.

LOG OF PLANE

Time brought forward 98—54 COLONIAL WESTERN AIRWAYS, INC. No. 7683 Year 1928

DATE	FROM	TO	Reg. Ferry Test	TIME Hrs.	TIME Min.	Passengers Carried Pay	Passengers Carried Free	Engine No.	Pilot	REMARKS (For Additional Remarks Use Reverse Side)
11/13/28	Hadley Fld.	Albany	XC	2	40				Weatherdon	Mail
"	Albany	Miller Fld.	XC	1	52				"	
14	Newark	Newark	Spec		35				"	Hopping
15	"	Miller	"		20				"	
16	"	Newark	"		40	14			"	Hopping
17	"	"	"	1	30	31			"	"
18	"	"	"	4	25	185			"	"
20	"	"	"		45				"	"
21	Newark	Washington	XC	3	35	4			"	Pan Am Dedication
22	Washington	Newark	XC	2	15	2			"	
22	Miller Fld.	Hadley	XC		20				"	
23	Hadley	Buffalo	XC	5	25				"	
24	Buffalo	Miller Fld.	XC	4	30				"	via Albany with Mail 2315 lbs.
25	Newark	Newark	Spec	2	20				"	Hopping

Total Flying Time Hrs. 31 Min. 12

Exhibit D-6.

LOG OF PLANE

Time brought forward 130—06 COLONIAL WESTERN AIRWAYS, INC. No. 7683 Year 1928

DATE	FROM	TO	Reg. Ferry Test	TIME Hrs.	TIME Min.	Passengers Carried Pay	Passengers Carried Free	Engine No.	Pilot	REMARKS (For Additional Remarks Use Reverse Side)
Nov. 29	Newark	Newark	Spec	2	50	68	43		Weatherdon	43 stockholders
30	"	"	"	3	30	65	14			1 night flight
Dec. 1	"	"	"	6	10	163				Also a charter to Atlantic City
5	"	"	Spec		20					
7	"	"	"		20					
11	"	"	Spec		40	7				
12	"	"	"		20					
15	"	"	"		60	31				
16	"	"	"	2	45	109				
19	"	"	"		45		4			Good will to Gms for Southern trip
22	"	"	"	1	35	15	14			Good will at night for newspapers
23	"	"	"	2	01	63				
24	"	"	"		45	10				
25	"	"	"	3	39	129				Flew Amelia Earhart
26	"	"	"	1	05					
27	"	"	"		25					

Total Flying Time 158—17 Hrs. 28 Min. 11

Exhibit D-6.

LOG OF PLANE

Time brought forward 158—17 COLONIAL WESTERN AIRWAYS, INC. No. 7683 Year 1928

DATE	FROM	TO	Reg. Ferry Test	TIME Hrs.	TIME Min.	Passengers Carried Pay	Passengers Carried Free	Engine No.	Pilot	REMARKS (For Additional Remarks Use Reverse Side)
Dec. 28	Newark	Newark	Spec		55	12			Weatherdon	
30	"	"	"	3	10	93			"	
31	"	Schenectady	XC	2	30	1			"	Miller to Newark to Curtiss to Schenectady for a dead body
31	Schenectady	Miller Fld.	XC	2	20	7			"	Stopped at Newark
31	Miller Fld.	Miller Fld.	Spec	1	05	9			"	New Years Eve pty

Total Flying Time 168—17 Hrs. 10 Min.

Exhibit D-6.

LOG OF PLANE

Time brought forward 168—17 COLONIAL WESTERN AIRWAYS, INC. No. 7683 Year 1929

DATE	FROM	TO	Reg. Ferry Test	TIME Hrs.	Min.	Passengers Carried Pay	Free	Engine No.	Pilot	REMARKS (For Additional Remarks Use Reverse Side)
Jan. 3	Newark	Newark	Spec	1	55				Weatherdon	RCA charter
" 3	"	Boston & ret	"	5	50				"	Mail
" 5	"	Newark			35				"	12 pass
" 6	"	"		1	45				"	53 "
" 7	"	"			25				"	0 "
" 9	"	"			45				"	9 "
" 11	"	"			40				"	9 "
" 13	"	"		2	10				"	54 "
" 15	"	"		1	00				"	28 " Wight
" 16	"	"		1	00				"	10 "
" 19	"	"		2	25				"	78 "
" 20	"	"		1	50				"	40 "
" 21	"	Utica		2	45				"	Gans
" 22	Utica	Cleveland		4	25				"	"
" 23	Cleveland	Mt Clemens		2	10				"	"
" 24	Mt Clemens	NYC		6	20				"	"

Total Flying Time 204—07 Hrs. 36 Min.—

Exhibit D-6.

LOG OF PLANE

Time brought forward 204—17 COLONIAL WESTERN AIRWAYS, INC. No. NC7683 Year 1929

DATE	FROM	TO	Reg. Ferry Test	TIME Hrs.	Min.	Passengers Carried Pay	Free	Engine No.	Pilot	REMARKS (For Additional Remarks Use Reverse Side)
Jan. 27	Newark	Newark	Spec	1	40				Weatherdon	
									"	
Feb. 1	"	"	"	1	40				"	Night flight with Amelia Earhart
2	"	"	"	1	05				"	24 pass
3	"	"	"	4	30				"	162 pass 1 night hop
3	"	"	"	1	05				"	Night flight over NYC with Gans
5	"	"	"	1	05				"	
6	"	"	"	1	55				"	Dual to Earhart
10	"	"	"	3	40				"	
11	"	"	"		20				"	Mail
12	NY	Boston & ret		5	30				"	
12	Boston	"			45				"	Dual Earhart
13	Newark	Newark		1	40				"	
14	"	"		1	10				"	
15	"	"		1					"	
16				2	52				"	

Total Flying Time 234 hrs 14 min Hrs. 29 Min. 57

Exhibit D-6.

LOG OF PLANE

Time brought forward 234 hrs 14 min — COLONIAL WESTERN AIRWAYS, INC. — No. 7683 Year 1929

DATE	FROM	TO	Reg. Ferry Test	TIME Hrs.	TIME Min.	Passengers Carried Pay	Passengers Carried Free	Engine No.	Pilot	REMARKS (For Additional Remarks Use Reverse Side)
Feb. 17	Newark	Newark		8	19				Weatherdon	
18	"	"		1	40				"	
19	"	"		1	50				"	
20	"	"			30				"	
22	"	"			60				"	Charter Gans
24	"	"		3	45				"	
									"	
Mar. 3	"	"		5	—				"	180 pass
9	"	"		1	15				"	6 "
10	"	"		3	50				"	118 "
11	Miller	Miller		1	—				"	6 " Charter Gans
12	"	"		1	15				"	6 " " "
13	"	"		1	—				"	6 " " "
16	Newark	Newark		2	20				"	70 "
17	"	"		3	10					114 " Crack up
Total Flying Time—			Hrs. 32	Min.	44	234.14				
			3		10	35.54				
			35		54	270.08				

New Jersey Court of Errors and Appeals

DINA BOELE, Administratrix *ad prosequendum* of the goods and chattels of ANTON M. BOELE, deceased,
Plaintiff-Appellee,

vs.

COLONIAL WESTERN AIRWAYS, INC.,
Defendant-Appellant.

MARY HENDERSON, Administratrix *ad prosequendum* of the goods and chattels of THOMAS J. HENDERSON, deceased,
Plaintiff-Appellee,

vs.

COLONIAL WESTERN AIRWAYS, INC.,
Defendant-Appellant.

Action at Law.

On Appeal from Supreme Court.

BRIEF FOR PLAINTIFFS-APPELLEES.

These cases come before this Court on appeals taken by defendant, Colonial Western Airways, Inc., from two final judgments entered in the New Jersey Supreme Court on February 15th, 1932.

The judgment in the *Boele* case is for $25,000.00 and the judgment in the *Henderson* case is for $15,000.00.

The cases grow out of the crash of a tri-motored aeroplane at Port Newark on March 17th, 1929. The two decedents were passengers in the plane.

The two cases were tried together, by consent, before Honorable Henry E. Ackerson, Jr., with a jury, at the Hudson Circuit; they are printed in one State of the Case and will be argued and briefed together.

The grounds of appeal, as set forth and argued in defendant-appellant's brief, are five in number, and are limited to refusals to charge the jury as requested by defendant-appellant.

The actions are founded upon plaintiffs-appellees' charge of negligence of the defendant-appellant in the care and operation of its aeroplane.

Statement of Facts.

On the 17th day of March, 1929, plaintiffs' decedents engaged passage in a Ford tri-motor aeroplane owned and operated by the defendant-appellant, Colonial Western Airways, Inc., at the Newark Airport for a flight to New York City and return. Each of the decedents prepaid $5.00 for passage. Defendant-appellant was engaged in operating regular daily schedule planes between Albany, Buffalo and Cleveland. They also operated planes at Montreal, Syracuse and Newark. The plane operated by defendant-appellant company, upon which decedents engaged passage at the Newark Airport, was a Ford tri-motor monoplane, Department of Commerce license #NC-7683, Model 4-A T, which was the first commercial tri-motored aeroplane manufactured by the Ford Company. This plane was powered with three Wright Whirlwind engines known as J-5 engines of 220 H.P. each.

In March, 1929, the pilot of the plane, Lou Foote, was attending the Ford Motor Car Company School at Dearborn, Michigan, as a student pilot. He and another student pilot, Ray Wonsey, attended the school until March 13th, 1929, and

on that day, Lou Foote left the school and drove to Newark in his automobile. He arrived at the Newark Airport on March 16th, the day before the crash. He then went to the New York office of the defendant-appellant and was there employed to fly defendant's planes at the Newark Airport on Sunday, March 17th, 1929, and he was instructed to gain experience in flying their Ford tri-motor planes for passenger flights at the Newark Airport, and then to fly their planes on the New York to Boston route, when that line became established. He had obtained a transport pilot's license in May, 1928. March 17th was the first time that the said pilot, Lou Foote, ever took sole charge and control of a Ford tri-motor 4-A T with passengers at Newark Airport, or any other airport, and that was the first day that he had ever seen Newark Airport, with the exception of the day before, when he made a casual observation from the seat of his automobile at or near the entrance of the airport.

The defendant company employed one Adam Wtorkowski to take care of this plane. Wtorkowski had no previous experience with this model Ford tri-motor plane or any other tri-motor plane, but was nevertheless given complete charge of this ship, as a mechanic. Wtorkowski, due to his ignorance of the language and inability to read and write English, was not familiar with the rules and regulations of the Department of Commerce, particularly relating to the prescribed line and periodic inspection. As a result of his ignorance of the rules, he did not perform the required twenty-four hour line inspection and the one hundred hour periodic inspection, but instead, attempted to justify the omission by other work, which he claimed he did every twenty-four hours or oftener, but entirely ignored the vital periodic inspection and work, namely, (1) engine installa-

tion, (2) control system throughout, (3) propeller alignment, (4) fusilage, including fittings, tail skid and tail skid shock-absorbers, as required by the Department of Commerce rules. Wtorkowski's testimony shows, at best, that his work consisted in making a superficial inspection and examination of the plane.

An examination of the plane's engines, by an expert, immediately after the crash, disclosed that the gaps of the spark plugs were entirely too wide to permit efficiency of the motor in which they were installed.

During the morning of March 17th, 1929, Ed. Weatherdon, defendant's regular pilot on this plane, flew it from Miller Field to Newark. He arrived at Newark Airport at about 11:30 A. M., and commenced the regular flying operations for the defendant-appellant. At the Newark Airport, Weatherdon met Ray Wonsey. He took Wonsey up in the plane as co-pilot and was instructing him in its operation (Wonsey was the student pilot at the Ford School who arrived at Newark Airport with Lou Foote on the preceding day). Lou Foote, the pilot of the fatal plane, appeared at the airport at about 1:00 P. M. Foote's first flight in the plane was with Ray Wonsey as the pilot. On this flight, Wonsey, the student pilot, became Foote's instructor. Weatherdon then took control of the plane, with Foote alongside of him, for three flights. Then the control of the plane was turned over by Weatherdon to Foote, who flew with passengers on three trips. On his fourth and last flight, at about five o'clock that afternoon, the plane was loaded with fourteen passengers, with Foote at the controls.

The plane was licensed by the Department of Commerce to carry twelve passengers, exclusive of crew. The defendant-appellant had altered the seating arrangement of the plane so as to seat

thirteen persons in the cabin with two seats in the cockpit, one for the pilot and the other for the co-pilot.

During the afternoon, the velocity of the wind had been steadily increasing, and, at the time of the last flight, it had attained its maximum velocity of thirty-nine miles per hour. It was a cold wind, gusty and treacherous.

On the last flight, Foote sat at the controls of the plane, occupying the left seat in the cockpit. He looked back into the cabin and saw the plane loaded to capacity with some "pretty good huskies." He had a heavier load than on previous trips.

He took off along the Northwest runway into a North-Northwest wind. On taking off, Foote observed that the plane did not gain altitude as well as it had on previous trips. The plane rose lazily and sluggishly. He continued the flight about 1,000 feet from his take-off and, about 200 feet from the end of the runway, he had attained an altitude of 150 feet or less. Then he turned or "banked" very sharply to his right.

It was the last scheduled flight to New York for that day. Foote was anxious to complete the trip in the shortest possible time. New York was to his right. To turn to the left would lengthen the flight. Dusk was fast approaching. He turned right.

After the first turn, the plane flew in a course parallel with Route 25 until it reached South Street. The pilot "banked" it again, sharply, at about 350 to 500 feet altitude in a southeasterly direction. The pilot had brought the plane into a dangerous and precarious position by reason of his faulty, careless, negligent and reckless piloting. An engine failed either during the making of the first sharp turn to the right or between the first and second turns. The plane started to

wabble. The speed of the plane had been tremendously increased in going down-wind, that is, with the wind at its tail, and had attained a ground speed of 130 to 140 miles per hour.

Stretching before the path of the plane were the factories, tall chimneys, railroads, railroad embankments, railroad cars and high tension wires. The plane was rapidly losing altitude and sinking lower and lower. Within a few moments the plane crashed into a steel railroad car, loaded with sand. The thirteen passengers in the cabin were instantly killed. The other person seated in the cockpit with Foote died within twenty-four hours; only Foote survived.

The foregoing facts, in addition to much other facts, unnecessary to be recited at this point, was presented to the jury, who returned verdicts in favor of the plaintiffs-appellees herein, as aforesaid.

Defendant argued rule to show cause before Trial Court on weight of evidence and upon ground that verdict was contrary to charge of the Trial Court. The Trial Court discharged the rule as to both grounds.

Defendant-appellant applied for and obtained a rule to show cause why the verdicts in favor of the plaintiffs and against the defendant should not be set aside and a new trial granted on the following grounds:

(1) Because the verdict is excessive.

(2) Because the said verdict is against the weight of evidence.

(3) Because the verdict was contrary to the charge of the Court.

Upon the return of said rule, arguments on behalf of the respective parties were made before

the Trial Court, who thereupon held, upon the first ground, that the verdicts were excessive and ordered that, if the plaintiffs-appellees would accept a reduction of said verdicts from Thirty-eight thousand Dollars ($38,000) in the case of Mary Henderson, *ad pros.*, to Twenty-five thousand Dollars ($25,000), and from Thirty-three thousand nine hundred Dollars ($33,900) to Fifteen thousand Dollars ($15,000) in the case of Dina Boele, *ad pros.*, the rule to show cause would be discharged.

Plaintiffs filed their acceptance to said reduction whereupon the rule to show cause was discharged, and judgments for accepted amounts entered (Case, pp. 24-26).

Defendant-appellant, upon exceptions reserved for appeal, take this appeal, and assigned seventeen grounds for reversal. In the brief of defendant-appellant, only five points are argued and relied upon, to wit, Points I to V, inclusive. Said five points, argued and relied upon by defendant-appellant, are limited to its exceptions to the Trial Court's refusal to charge requests Nos. 26, 8, 2, 9 and 10.

We respectfully submit that, grounds of appeal originally filed, but not argued or relied upon in defendant-appellant's brief, are taken to have been abandoned.

Porter vs. *Neitling,* 88 N. J. L. 735;
Blanchard Bros. vs. *Beveridge,* 86 N. J. L. 561;
Clark vs. *Hudson & M. R. Co.,* 89 N. J. L. 708;
Landow vs. *Vilensky,* 7 N. J. Misc. R. 339;
Grand Lodge, et al. vs. *Ferretti,* 7 N. J. Misc. R. 394;
Nygren vs. *Board of Freeholders,* 86 N. J. L. 364;

Donohue vs. *Campbell,* 98 N. J. L. 755;
Goldfarb vs. *Phillipsburg Transit Co.,* 103 N. J. L. 690;
Sargent Bros., Inc. vs. *Brancati,* 107 N. J. L. 84;
Cleaves vs. *Yeskel,* 104 N. J. L. 497;
Hygrade Cut Fabric Co., Inc. vs. *United States Stores Corp.,* 105 N. J. L. 324;
Cropsey vs. *Cropsey,* 144 Atl. Rep. 621;
Klein vs. *Shryer,* 106 N. J. L. 432.

Point I in defendant-appellant's brief is as follows:

> "Plaintiffs having supplemented their proofs of the occurrence of the accident with proof that the plane's engines stopped in flight, without showing that this was due to defendant's negligence, and defendant having met that proof by uncontradicted evidence that the engines were given all possible care, that they were properly fueled, and had never failed in any particular before they stopped in mid-air, it was error for the Court to refuse to instruct the jury as requested."

It is respectfully submitted that Point I does not constitute a proper ground for reversal, particularly in the form in which it is set forth. This Court has held in the recent case of *Stathos* vs. *Bunevich,* 107 N. J. L. 269, as follows:

> "Grounds of appeal relating to refused requests to charge should embody the actual language of the requests, and a mere reference to them by numbers is irregular and insufficient."

Mr. Justice Trenchard, speaking for the Court of Errors and Appeals in the aforesaid case, said:

> "Lastly, grounds of appeal numbers 9 to 19 inclusive are argued. They are all in the same form, and only one of which need be

> quoted. It is this: 'The Trial Court erred in refusing to charge the jury defendants' third request to charge.'
>
> "These we have not considered. They are plainly in violation of the rule (which Mr. Justice Parker for this Court took pains to lay down in State *vs.* Blaine, 104 N. J. L. 325), that grounds of appeal relating to refused requests to charge should embody the actual language of the requests, and mere references to them by numbers are irregular and insufficient. The reason for the rule is pointed out in the *Blaine* case."

It is to be observed that, of the Four Points, to wit, Points II to V, inclusive, contended by defendant-appellant as grounds for reversal, unlike Point I, conform to the rule laid down in the *Stathos* and *Blaine* cases, *supra,* in that the actual language of the requests to charge is fully set forth.

This is not so, however, as to Point I, but, on the contrary, is a vague generality respecting which this Court, in the case of *Chapin* vs. *Kreps,* 106 N. J. L., p. 424, held that:

> "A ground of appeal challenging the propriety of the charge to the jury must reproduce the language objected to or it will not be considered."

By legal implication, it must necessarily follow, therefore, that wherein, of the Five Points argued by defendant-appellant, four of them make verbatim reference to the refused requests to charge, one of them, to wit, the first, fails so to do.

The record being conceded by defendant-appellant, at least to the extent that a rule to show cause was allowed, argued before, and determined by, the Trial Court, upon defendant's complaint "that the verdict was against the weight of the evidence" and also that "the verdict was contrary to the charge of the Court," the only grounds

which may be presented to the Court (though not conceding any merit therein) are those contained in Points II to V, inclusive.

As to the foregoing, however, the very recent case of *Freschi* vs. *Mason,* 108 N. J. L. 272, is controlling, wherein this Court lays down the rule that:

> "Granting a party a rule to show cause why a new trial should not be granted is a bar against him to taking or prosecuting an appeal, except on points expressly reserved in said rule.
>
> Exceptions reserved in a rule to show cause but argued and determined on the return of the rule are deemed waived or abandoned on appeal.
>
> Argument and determination of the reason on rule to show cause that the verdict was against the weight of evidence is a bar to the grounds of appeal by the party holding the rule that the Trial Court should have taken the case from the jury by a non-suit or direction."

To the same effect did this Court hold in the case of *Shaw* vs. *Vermont Marble Co.,* 107 N. J. L. 154, that:

> "Where there has been a rule to show cause for a new trial, for the reasons that the verdict was against the weight of evidence; that there was no evidence of negligence, and finally because it was excessive, and these grounds have been urged and argued before the Supreme Court, and that Court has considered and decided them, exception taken at the trial and reserved in the rule, for refusal to non-suit or direct a verdict on the ground there was no evidence of negligence upon the part of the defendant *cannot be considered on appeal.*" (Italics are ours.)

A general assertion that "the verdict was contrary to law" stated as a ground of appeal is so

vague that it is meaningless and therefore is entitled to no consideration.

Considering then the efficacy of all which may remain for consideration in the present appeal, to wit, Points II to V, inclusive, it is contended that said points, upon the reading of the Trial Court's charge to the jury, must necessarily fall.

The attention of the Court is respectfully invited to the fact that not a single word contained in the Trial Court's charge to the jury has been complained of, notwithstanding the fact that said charge embraces thirty-six printed pages (Case, pp. 1168 to 1204, inc.).

The general rule, constituting the *stare decisis*, is to the effect that it is proper to refuse an instruction embodying principles already substantially covered by other instructions given.

In this category New Jersey also is replete with cases supporting this view, to wit:

Grybowski vs. *Erie R. Co.*, 89 N. J. L. 361, affirming judgment 88 N. J. L. 1;
Miller vs. *I. P. Thomas & Son Co.*, 89 N. J. L. 364;
Parkes vs. *Delaware L. & W. R. Co.*, 86 N. J. L. 696, affirming judgment 85 N. J. L. 577;
Daggett vs. *North Jersey St. Ry. Co.*, 75 N. J. L. 630,

and numerous other cases in point.

In the *Daggett* case, last named, Mr. Justice Trenchard, speaking for the Court of Errors and Appeals, said:

> "A party has no just cause of complaint where, although his requests for instruction have been refused, the Court embraced them in its charge, so far as they stated correct propositions of law. *Thomp. Tr.*, Section 2351."

And to this pronouncement of law the Courts of this State have consistently given their sanction. We proceed to a discussion of defendant-appellant's Points II, III, IV and V.

Point II complains that the Court below erred in refusing to grant defendant's request to charge, as follows:

> "There is no evidence in this case that the defendant failed to make or have made through expert mechanics proper examination and inspection of the airplane" (Request 26; Ground of Appeal 16).

Clearly this was not a request to instruct the jury as to what the latter *may* find respecting proofs in the case. In short, defendant's request was for a direction of a verdict, or a direction to the jury which, in effect, was to take from the jury the latter's right of consideration of the testimony received in evidence.

It is respectfully submitted that the form of the request is, in itself, fatal to the establishment of any right to have such an instruction charged to the jury.

But even if the request were properly framed in such form as to give legal warrant to the Trial Court to instruct the jury as requested, there is ample proof to justify the refusal of the Trial Court to grant such request.

Henry M. Shaw, a witness for the plaintiffs-appellees, testified that, immediately before the take-off of the fatal plane in which he was a passenger on the flight next preceding the fatal flight, that two mechanics of the defendant were working on the left motor which thereafter failed or went dead in flight (p. 246, l. 38) and also that the tachometer, indicating the speed or r.p.m.'s of said left motor, indicated that said motor was not functioning efficiently (p. 248). In the light

of this testimony and the admitted fact that shortly after the incident testified to by Mr. Shaw, said motor did actually fail or go dead, there was evidence before the jury from which the latter could properly find that the so-called expert mechanics of the defendant company failed to make a proper examination and inspection of the aeroplane and, by reason of which failure, the aeroplane failed of proper and efficient functioning shortly thereafter, resulting in the fatality.

But even if the foregoing were not a sufficient and, as we respectfully contend, a complete answer to defendant-appellant's complaint upon its Second Point, we respectfully address the Court's attention to the Trial Court's charge to the jury relating to this Point (Case, p. 1181, l. 12), as follows:

> "Now, with those principles in mind, let us just briefly skim over some of the testimony in the case because, whether or not the defendant exercised due care will depend upon the circumstances under which the defendant was called upon to exercise due care, and you can only determine the circumstances from the evidence in the case by deciding what the real facts are. Now, what about the condition of the aeroplane, exclusive of its mechanism, engine and machinery? Well, now, there is no evidence in this case, gentlemen, that I recall, that the plane, exclusive of the machinery and mechanism, was not in proper condition. So, we might eliminate that from our consideration. How about the engines and the mechanism of the plane? A great deal has been said—I might as well deal with it now—about certain rules of the Department of Commerce—regulations they are more properly called—and particular references have been made to inspections required by those regulations."
>
> "Well, now, the regulations, gentlemen, do require two classes of inspection. One that is

known as a periodic daily inspection—a line inspection some of the pilots call it—and that is an inspection, gentlemen, that has to do with the state of repair of the open control wires, all control wires and pulleys open to inspection, all hinges on control surfaces, landing gear, wheels, fittings and shock absorbers, fuselage parts open to visual observation; main plane, including control surface fabric and covering, engine exhaust manifolds and exhaust pipe extensions. The engine shall be given a warming up test during which the proper function of the engine instruments shall be ascertained; carburetor and fuel feed lines open to visual inspection to insure proper function, cowl to insure cowlings are properly secured, propellers as to condition. Now, such an inspection is required by the regulations to be given at least once within each twenty hours preceding flight."

And further (Case, p. 1182, l. 16 to p. 1186, l. 16, inc.):

"Then there is another inspection called the one hundred hour inspection which provides that after each one hundred hours of flight the aircraft must be given periodic inspection by a licensed mechanic and the result thereof must be entered in the log by the person making such inspection. This inspection must be made to ascertain the working condition and state of repair of the engine installations, control systems throughout, propeller alignment, fuselage, including fittings, tail skid and tail skid shock absorbers, as well as the line inspection which I have already given to you.

"Now, gentlemen, I have not paid, nor am I going to pay, much attention to those rules, because Captain Weatherdon, who was the flight superintendent or superintendent in charge of the pilots here, says that from a superficial examination the engines were in perfect condition. Mr. Wtor-

kowski, the mechanic who was with this plane for months before this accident happened, testified that he complied with those regulations and gave the line inspection and the one hundred hour inspection. In fact, he says that the one hundred hour inspection was given every twenty hours and a number of other witnesses were brought here who saw him working on the plane or helped him while he was working on the plane, and I do not recall any testimony here to show that the inspections were not actually made, but that is not the point that has been stressed here on the part of the plaintiffs, because the plaintiffs in these cases say 'We are not so much interested in inspections, but we say that they were not proper inspections, and not proper maintenance of the engine.' That I understand to be the burden of their charge. Now, you will no doubt have noted that in quoting from the regulations a reference was made to a log book. It seems that the regulations require a log book to be kept by the pilot and by the mechanic, and considerable time was taken up in the course of the trial as to what became of those books. I think Mr. Weatherdon's book was produced here and is in evidence. That was the pilot's book or flight book. The other book, the mechanic's book, was not produced, the defendant claiming that it was lost in the accident, or at least was not in the plane and was never found after the accident or seen after the accident.

"Gentlemen, the presence or absence of that book, and if the book was here—is not the important thing in this trial. You see, the plaintiffs seek to show that there was negligence with respect to the maintenance of the engines and mechanism of this plane and the absence of the book does not prove that there was no inspection made. You see, that was a matter of evidence. They would seek to infer from that that there was a reason for not producing the book, but the evidence in the case, according to the mechanic, is that these inspections were made, and he

says that they were entered in the book. So, I do not want you to get the notion that you will have to go out and say, 'Well, this log book was not here, and that is a violation of the regulations of the Department of Commerce, and therefore we are going to find there was negligence.' You cannot do that because that does not prove negligence, the fact they did or did not keep a log book. That is not negligence at all. It would merely be a record of what was done with respect to the work done upon this motor, and if it was produced we do not know what it might show. The point I wish to make in this connection is you cannot go out and say, 'Why, they violated the Department of Commerce regulation by not having a log book,' assuming that you might even go so far as to say 'Well, they did not keep it.' Well, you could not say because they did not keep a log book that the defendant here should be penalized in this case by a verdict against them. That is what I mean, because the keeping of the log book or the non-keeping of that log book was not negligence in this case, nor is it charged in the complaint as being negligence."

"Now, gentlemen, Mr. Shaw—we are coming now to consider the question of some of the evidence—I cannot begin to repeat all of it to you and am not going to attempt to—but, Mr. Shaw, who was one of the passengers on a prior flight in this same aeroplane said that he noticed as he got in the plane and before the plane took off that one of those motors—and I think he said it was the left motor—did not rev up for some time to above 1600, whereas he says the other two motors reved, as the pilots call it up to 1800 or 2000 r.p.m. He further said that on his flight back from New York the left motor, or one of the motors, I don't recall—I think he said it was the left motor—and you will be governed by your own recollection—slowed down, but he was also questioned as to whether or not he had observed what the pilot was doing, and he said he could not see exactly what the pilot

was doing and therefore he was not in a position to say as to whether or not the pilot had slowed down that engine or not. Now, several witnesses were produced by the plaintiffs here who say that the left motor labored on the take-off and that there was a sputtering of the motor, and that gusts of black smoke were emitted from the plane. Now, Mr. Lang, who styled himself as an automotive combustion engineer, testified that he went to the scene of this accident after the plane was down and that standing at some little distance from the plane—because he was prevented from coming closer to it—he observed a man coming from the plane with a carburetor which was passed over to a gentleman with him, as I understand him to say, who had ridden with him to the scene of the accident. In any event, someone who was near at hand and that he then—Mr. Lang then asked this same person who had brought the carburetor, if he could not get him some spark plugs and he saw this man go back and bend over an object near the position or about one of these motors and that shortly thereafter he came back with two spark plugs. Mr. Lang said that with a spotlight he examined those two spark plugs and he says that he gauged the gap across which the electric spark jumps on the end of the spark plug, and that he found that gap to be thirty-thousandths of an inch and he says from his experience that such a gap was too great a gap for engines of this type and that the effect would be after five, ten or fifteen minutes' running that the motor would—or engine would become hot, and that the motor would slow down and possibly stop. He says that in spite of the fact, however, that it seems to be uncontradicted in this case, that this very plane had made from seven to ten flights on this day in question, and that the engines had not stopped on any of them except the last one. He also says that one of those spark plugs indicated that a piece of the porcelain was out or that there was a crack in the porcelain, and that

> that indicated to him as an expert that there had been pre-ignition—pre-explosion in the engine which would have the effect of slowing down the motor where that occurred."

There can be no just complaint by defendant-appellant that so much of the Trial Court's charge, above referred to, is not supported by proofs in the case. In fact, defendant-appellant has made no complaint whatsoever respecting the Trial Court's charge, nor did the former take any exceptions thereto.

Further relating to the proofs respecting the question whether the condition of the left motor of the fatal plane, as found immediately following the crash, gave evidence of a proper inspection or examination having theretofore been made, the Trial Court, with immaculate care, gave to the jury not only the proofs offered by plaintiffs' expert on motors, but charged the jury fully as to proofs on this point offered by, and which, if believed by the jury would be most advantageous to the defendant, to wit (Case, p. 1186, l. 17, to p. 1187, l. 18).

> "Well, of course, gentlemen, you must take into account that he (Lang) testified that he went to this scene at night, he examined these plugs with a pocket flashlight, that he did not actually see the plugs in the engine, but he saw this man working near the engine and that he came to him with the plugs. You must take into account his expertness upon this particular subject, but while you are doing that you must also remember that the defendant has produced here several experts who say that a gap of thirty-thousandths of an inch is not an improper gap in an engine such as this. One of the witnesses examined the engines and spark plugs that remained in the engines after this flight and after they had been taken from the scene of the accident and brought out to the Wright Aeronautical plant,

as I recall it, and he says that everything seemed to be in good condition, and he could find no reason for the engine stopping, and with respect to the spark plugs he said they seemed to him to be all right.

Now, you will recall that the manufacturer of the spark plugs was produced on the stand. He said that these plugs would function at a greater gap than thirty-thousandths of an inch. You also remember what has been said about the life of these spark plugs. Now, the mechanic who had charge of the plane says that he inspected these spark plugs about a week before the accident and he says that they were all of a gap of from fifteen-thousandths to twenty or twenty-five thousandths of an inch. I think he did say, however, that the plane would not function quite so well with a thirty-thousandths of an inch gap. Of course, you will be governed by your own recollection of what the testimony has been, not only by these experts, but by all the other witnesses in the case and not by what the Court has said or counsel has said regarding the testimony of the witnesses."

The Court properly refused to charge "There is no evidence that the failure of the left motor and the revving down of the center motor to a point where it had no power was in any way due to the negligence of the defendant."

We repeat our answer made to the Second Point in that, not only was this request to charge properly refused by the Trial Court, but on the contrary, would have constituted error to have so charged the jury. The very language is not, in fact, a request to charge, but, in legal effect, a motion for a direction of verdict in favor of the defendant.

This is evident from the fact that the nature of the charge would be to take from the jury any consideration of the cause of the failure of the left motor and revving down of the center motor as being due to the negligence of the defendant.

We are supported in this contention by the adjudications of this Court, referring particularly to the case of *More-Jonas Glass Co.* v. *W. J. &c. R. R. Co.*, 76 N. J. L. 708, wherein the Court held that:

> "Where fair minded men might honestly differ as to the conclusion to be drawn from facts, *whether controverted or uncontroverted the question at issue should go to the jury.*"

Thus we reiterate it would be error for the Trial Court to have charged as requested in request Number 8. Defendant-appellants' ground for reversal under Point III, being without merit, must fall.

And further referring the Court again to the testimony of Mr. Shaw and Mr. Lang, the latter an expert on motors, spark plugs, etc., together with the testimony of defendant's experts on aeroplane engines, the Trial Court properly charged the jury upon this point, particularly as to so much thereof as has been heretofore referred to, and, clearly, in a manner about which defendant cannot justly complain, leaving the issue thus presented, properly to the jury.

Point IV involves defendant-appellant's complaint that:

> "The Court erred in refusing to charge the jury: 'There is no evidence in this case that the pilot, Lou Foote, was guilty of any act of negligence which was the proximate cause of the accident in question.' "

Here again, this Court is asked to give legal sanction to a request to charge in language such as is here requested. We repeat that the language here employed destroys its own legal efficacy and, we reiterate, consists of language which is not a request to charge but, in legal effect, is

a motion to direct a verdict in favor of the defendant and against the plaintiffs.

Obviously, if the Trial Court charged the jury as thus requested, a charge which does not leave to the jury the right to determine whether or not "the pilot, Lou Foote, was guilty of any act of negligence which was the proximate cause of the accident in question," but rather, directs the jury to find that there was no such evidence. In such a posture of the case, if the Court could, in view of all of the evidence in the case, justify such an instruction, the defendant could not possibly be held to a legal responsibility for the fatality.

On the contrary however, upon the mass of testimony, greatly preponderating in favor of the plaintiffs as constituting evidence of negligence on the part of the defendant, to some of which we shall hereinafter make reference, the Trial Court properly refused to charge the jury as requested under Point IV and also properly left the consideration of disputed facts to the jury.

The well settled rule respecting this aspect of the case *sub judice* is laid down in *Carroll* vs. *Central R. R. of N. J.*, 81 N. J. L. 567, wherein this Court held that

> "Where there is a substantial dispute as to the facts or in the inferences to be drawn therefrom, it is not the province of the Court to determine with whom the preponderance of evidence lies; that is for the jury to determine."

Reverting again to the *Daggett* case, *supra,* holding that

> "A party has no just cause of complaint where, although his requests for instruction have been refused, the Court embraced them in its charge so far as they stated correct propositions of law,"

may we respectfully invite the Court's attention to so much of the Trial Court's charge embracing the matter referred to under the head of defendant-appellant's Point IV (Case, p. 1179, l. 15) as follows:

> "Now, in the requests submitted here that same principle is cited in just another way and it would be no harm to consider it for a moment. If the pilot, Lou Foote, at the moment his left engine stopped and his center engine revved down to the point where it had no power, used his best judgment in the emergency that was created, the defendant is not chargeable with negligence for such exercise of judgment, even though the jury may be of the opinion that had the pilot done something different in the emergency the consequences would not have been so severe—provided, of course, this emergency was not due to the negligence of the pilot himself and if he exercised under all of the circumstances such care as the law required of him under the circumstances which I have already related to you."

It is difficult to find any basis for just complaint by the defendant in the light of the Trial Court's charge, as above cited. The manifest judicial fairness to the defendant and the eminently correct enunciation of the law, as employed by the Trial Court in his charge to the jury, is the self-evident reason that the defendant took no exceptions to any part of the entire charge. But if so much of the Court's charge to the jury is not a sufficient answer to defendant's allegation of error, we refer also to other instructions given by the Trial Court to the jury (Case, p. 1189, l. 18), as follows:

> "Now, what about the operation of the plane? Was there any negligence in the operation of the plane? Now, let us clear up a few questions which I consider more or less disconnected, but which are properly to be

considered under this head. In the first place I should call your attention to the fact that a number of noted expert witnesses have been produced here and that may create in your minds the idea the pilot, Lou Foote, should be charged with the care which might have been expected from an expert. But, gentlemen, he was only chargeable, you must remember, as a matter of law, with using the degree of care which a pilot of average care, skill, experience and ability would use and exercise under the circumstances which confronted him on this occasion. And, furthermore, there is no evidence in this case that the fact that the pilot made a turn to the right in the direction in which he was going instead of to the left was in any way a factor contributing to the failure of the engines of the plane and the necessity for a forced landing. And, furthermore, the mere presence of this man Parsons —his physical presence in the cockpit in the seat opposite to the pilot, under the evidence, was not contributory to this accident. This plane was designed to carry two persons in the cockpit. *Now, whether or not Parsons as well as the other persons in that plane, together with the gas and all the other things made a weight when they took off, which, under the circumstances that then confronted the pilot, was an excessive weight, is quite another thing.*"

And further, the Trial Court charged the jury (Case, p. 1193, l. 26) as follows:

"You will recall that a great many hypothetical questions were put to witnesses based upon an assumption of fact with respect to whether or not it would have been proper piloting to have made certain turns at certain altitudes, and many of those experts when confronted by the questions propounded by the plaintiff said that it would not be proper practice to have made certain turns under certain conditions. But, when some of the witnesses were confronted by

questions which embodied other facts assumed by the defendant, just as positively they said it would be not bad practice to have operated the plane under such conditions. *So, you see, when it comes down to a question of the operation of the plane here, you must consider this evidence of the experts and particularly with reference to those questions which are of a technical character, but you must decide where the credible testimony lies. What are you going to believe?* As I have already told you, the mere number of those experts on one side or the other does not necessarily determine where that weight does lie.

Now, just one word about the competency of this pilot. The evidence does not bear out, gentlemen, the charge that he was not a competent pilot. According to the uncontradicted evidence the pilot was competent and qualified to operate a Ford 4-AT aeroplane carrying passengers on March 17, 1929. Even if you should find in this particular instance he might have been negligent, that would not mean in employing him this defendant employed an incompetent and careless pilot, because it is a well recognized fact that a great many competent persons get involved in accidents, and that is the reason why I now say to you that there is no proof that he was NOT competent to fly this ship on this occasion even though it might be found by you that in operating the ship on this occasion he was in fact negligent. Furthermore, I might say there is no evidence in this case that the pilot did anything to cause any of the motors to fail. Have that in mind. I don't understand that he physically went out and did anything that would cause the motors to fail. And even if you should find that a sharp turn or bank was made by the plane at an altitude of 150 feet or 200 feet, there is no evidence such a maneuver had any effect on the subsequent failure of the engines of the plane."

At top of page 1195 of the Case, the Trial Court added:

> "Now, gentlemen, by way of summation, I might say that the question that you are to determine is whether or not the preponderance of the evidence here demonstrated this accident was caused through any fault or negligence of the defendant or its employees which could or should have been anticipated and been provided against by reasonable care. *If the evidence shows this accident occurred from the failure to exercise such care as the law imposed on the defendant and as has been explained in this charge, such failure was a proximate cause of the accident, the plaintiffs will then be entitled to your verdict.*"

We are utterly unable to perceive any just ground of complaint which may be advanced by the defendant in the light of so much of the Trial Court's charge above set forth. The very fullness of correct statement of law therein contained, constitutes not only a complete bar to any complaint which defendant-appellant may make under Point IV but, as evidenced from the fact that no complaint of nor exceptions taken to any part of the Trial Court's charge, evidenced a consciousness on the part of defendant's counsel that the Trial Court's charge was fully correct, both as to the references to the evidence as well as the statements of law governing such facts.

The undisputed evidence in the case is that the license issued to the defendant by the United States Department of Commerce limited the number of passengers to twelve besides two pilots or a pilot and a mechanic, or a total of fourteen persons. It is also admitted that upon the take-off of the plane upon its fatal hop there were fifteen persons therein. It is uncontroverted also

that the wind velocity from the northwest averaged between thirty-three and thirty-nine miles an hour, and during parts of the day other than at the moment of the happening of the accident, the wind velocity had attained forty-five miles per hour (p. 107, l. 28). It is undisputed that the wind was gusty and the day quite chilly.

Considering the character of the terrain at the Airport and the surrounding and adjacent territory there was testimony that with a plane of the type involved in the accident, on the kind of day in question under the conditions of wind velocity, with the functioning of the engine or engines of the plane as testified to at the trial, it was dangerous to take off with such a load as then and there existed.

Clarence Chamberlin, internationally known aviator, who flew an aeroplane upon a non-stop flight from New York to Germany, and who, of course, upon the trial qualified as an expert, testified as follows (Case, p. 354, bottom of page):

"By Mr. George:

Q. Now, with that weight, including the nineteen hundred some odd pounds, gasoline and so forth, everything that has been described in addition by Mr. Carpenter, (defendant's counsel) considering the condition of the day, the course of the wind, velocity of the wind, character of the airport, and kind of plane involved, was it reasonably safe to fly that afternoon with that load? A. *No.*

The Court: *Now, is that with reference to the manner in which turns were made and the altitude at which they were made, or is that just not safe to fly?*

The Witness (Chamberlin): *Not safe to fly with that load on that day.*"

Nathan C. Brown was properly qualified as an expert aviator. It is uncontroverted that up to

the time of the trial he had to his credit about six thousand hours of flying (p. 276, l. 17). This great flying experience was conceded by defendant's witnesses, Bernt Balchen and Charles "Casey" Jones, as being probably as much, if not more, than any other living aviator. His testimony is to the effect that in addition to his war aviation and otherwise, he had flown Fokker and Ford tri-motor planes for approximately twenty-five hundred hours (p. 276, l. 29). Moreover, Mr. Brown, on the very day of the fatal crash, was the owner of the sister ship to the one involved in the fatal crash, and, in fact, was engaged on that very day at the same airport in the same kind of sightseeing hopping as was the case with the fatal plane (p. 278, l. 7).

Mr. Brown was asked whether the pilot of the fatal plane, Lou Foote, exercised proper or reasonably safe piloting under the conditions which existed at the time immediately before, during the flight and immediately before the crash. He was asked a hypothetical question, part of which was formed by plaintiffs' counsel and other parts of the hypothesis supplied by the Court and an additional hypothesis supplied by defendant's counsel, the sum total of which embraced all of the proved conditions which existed at the time of the take-off, the question being whether the actions of pilot Lou Foote, as proved by plaintiffs' witnesses, constituted good or bad flying. The testimony follows (Case, p. 287, l. 25):

> "Q. Why?" (As to whether it was bad practice to fly as Foote did pilot the plane under the conditions that then existed.) "A. It would be almost suicide to attempt to turn in a strong wind with one motor partly out of commission at that altitude.
>
> Q. Then, with the question I have given you, with all of those facts, do I understand you to say it is almost suicide to make a turn

under those conditions? A. I would hate very much to try it.

Q. Now, with the same conditions, weather conditions, same plane, same load, then pursuing a northeasterly course, reaching a point approximately where I indicate on this map, 'I-2,' little circle, which you can see is South Street, and being a flier you have good eyesight, reaching an altitude of not more than six hundred feet with a motor that had sputtered as has been described and had on one, two or three times in this course from 'I-1' to 'I-2' emitted large clouds, or clouds of black smoke intermittently, and having gained no greater altitude from 'I-1' of one hundred and fifty feet or two hundred feet than four hundred and fifty to six hundred feet, making a sharp turn at that point due east, would you say that that was the reasonably proper thing to do under those circumstances and conditions? A. *No, sir.*''

Here follows also a colloquy between the Court and defendant's counsel wherein a statement is made by defendant's counsel which, in itself, we respectfully submit, should be dispositive of defendant's present claim of error under *all* of the points argued by defendant (Case, p. 288, l. 16).

And may we here interpolate, preliminary to setting forth said colloquy, that the objection which Mr. Carpenter, for the defendant, presently makes, came after the witness answered the question above referred to, and, moreover, that the entire colloquy which follows, contains no exception to anything which the Court said therein:

''Mr. Carpenter: I object. That's a question for the court *and jury;* that isn't a question for an expert witness. That's the ultimate question to be decided here.

The Court: Of course, we have to have it from experts.

Mr. Carpenter: *On the contrary, they can say whether that is proper flying or good flying, but they can't say that is negligence.*

The Court: Of course not.

Mr. Carpenter: Yes.

The Court (to the witness): Is that proper piloting?

Mr. Carpenter: I don't mean to object to that question.

The Court (to the witness): Assuming those things to be true, whether they are true or not; assuming them to be true, is that proper piloting?

The Witness: No, sir, it would not.

The Court: What was wrong?

The Witness: *A sharp turn in a wind like that in any direction would be improper at that altitude.*

By Mr. George:

Q. Improper why? A. Dangerous.

Q. What effect is the likeliness of such an operation? Dangerous you said? A. Yes, sir.

Q. With what possibilities? A. Sudden loss of altitude, loss of control, which might result in a tail spin—crash."

We are not relying solely upon the testimony of the world-famed flyers, Chamberlin and Brown, as furnishing the proof of negligence which was a proper consideration for the jury. Nor do we limit the plaintiffs' proofs thereof to the additional mass of proofs of negligence, such as lack of sufficient knowledge of the terrain on the part of the pilot, defective or inefficient motors as evidenced by defective spark plugs, which a proper inspection or examination would have disclosed, but, we respectfully refer also to the experts called on behalf of the defendant, whose testimony supports the plaintiffs' proofs of negligence of the defendant, through its servant, Lou Foote.

Charles S. Jones, universally known as "Casey" Jones, called by the defendant as a witness, is in aviation circles known internationally. He has

personally about five thousand flying hours to his credit. He testified as follows (Case, p. 1087, l. 35):

> "Q. Would you consider thirty-nine miles a strong wind? A. Thirty-nine miles is a good, strong wind, yes.
>
> Q. Now, would you regard it as good piloting to take a plane of the 4-AT model with fifteen persons averaging one hundred and fifty pounds into a wind of thirty-four to thirty-nine miles velocity and reaching an altitude of between 100 and 150 feet and making a sharp banked turn at that altitude with that load with that wind? Would you consider it good piloting, assuming that was done? A. *I don't think that is good piloting.*"

The defendant claimed that upon the making of the second turn the plane was at a much higher altitude than that claimed by the large number of plaintiffs' witnesses.

Defendant's expert, "Casey" Jones, upon cross-examination, was interrogated by plaintiffs' counsel as to the possibility of the pilot of the fatal plane to have turned back to the airport and safety at the time the left motor went dead and the center motor revved down as if starved for gas, (the latter expression having been given by Lou Foote, the pilot), *Mr. Jones stated that it could have been done* (Case, p. 1090, l. 30). This phase of Mr. Jones's testimony follows:

> "Q. If he were back in this position I am describing here, and understanding and knowing that his left motor has died, as dead as a door nail as far as power is concerned, and the center motor revved down as though starved for gas, and that he looked around to the right and left, even in this direction, would it have been a difficult maneuver at seven hundred feet altitude with one motor going and the other one only partly revved down to have turned on a forty-five degree

turn toward the airport? A. No. If he done it immediately at that position it would not have been, no.

Q. *Then he was high enough and was far enough away to have done it, is that right, those circumstances? Am I right?* A. He might have."

The Court interrogated Jones, as follows (Case, p. 1097, l. 34):

"The Court: Now getting back to the question, leaving out of consideration what in your opinion he (the pilot) was thinking or what might have happened, but assuming from the very point that that motor goes dead where Mr. George has indicated, your answer would be it would be easier to make it into the airport?

The Witness: *He could have gotten into the airport had he headed for it that minute just as well as he could have gotten straight ahead.*"

The Court inquired of the witness, Brown, as follows (p. 1158, l. 33):

"Q. If you assumed that the ship at the time was five hundred feet rather than seven hundred feet, would that change the testimony you have given this morning? A. Well, in what way do you mean? Would I have tried to make the airport or some other field if I were only five hundred feet?

The Court: Would that change your testimony as to it being good piloting to endeavor to make the airport rather than where the pilot actually did go to? Would that fact change your testimony?

The Witness: *No, I would say good piloting would be to try to reach the airport from any altitude considering the terrain around there.*"

Thus it will be seen that two of the outstanding aviators in the country, Brown and Jones,

testifying, one for the plaintiffs and one for the defendant, are in full accord that, even if the plane had been piloted to an altitude claimed by the defendants' pilot at the time of his making of the second turn, there was still not only opportunity, but it would have been proper for the pilot immediately upon his being faced with the emergency which occurred, to turn his plane back toward the airport where, according to both Brown and Jones, he could have returned with safety.

Another famous flyer, called by the defendant, is Bernt Balchen. It will be remembered that Balchen flew with Admiral Byrd across the Atlantic to France and is an internationally known aviator.

In cross-examination, Mr. Balchen testified as follows (Case, p. 629, l. 28):

> "Q. Mr. Balchen, assuming this same kind of plane with fifteen persons averaging one hundred and fifty pounds— A. How much weight? Not exceeding the Department of Commerce load? I am not interested in passengers. I am just interested in poundage.
>
> The Court: Not exceeding that load.
> The Witness: All right.
>
> Q. Not exceeding the load authorized, but one hundred and fifty pounds average for fifteen persons—that gives you load—with the wind thirty-three to thirty-nine miles northwest before the take-off, and in the process of the take-off one motor is sputtering and emitting black clouds of smoke, would it be good piloting to take off with the plane under those conditions and under those circumstances and with that load with the motor functioning in that way? A. *No.*"

Balchen, when further asked if it would be good piloting to take off under those conditions, also said (Case, p. 631, top of page):

"Q. I am not talking about the aeroplane in the air. I am talking about the take-off. Considering that plane with that kind of load under those conditions you said it would not be good policy to take off under those conditions.

Mr. Carpenter: The witness has not said that.

Q. Why wouldn't it be good policy? A. Just a matter of training. I don't do it. *I want to have my motors clean before I go off.*"

It was proved that, according to the aeroplane specifications applicable to the plane involved in the crash, as issued by the Ford Motor Company, manufacturers of the plane, that the glide ratio of such plane is "nine to one."

Said specification is the result of tests made by the Ford Motor Company as establishing that an aeroplane, of the type in question, has a gliding capacity of nine feet forward to every foot of altitude. This specification of glide ratio embraces ideal weather conditions when the plane is aloft, but with all motors dead, so that, upon the basis of such specifications, conceded by all of defendant's witnesses, including the aviators Balchen and Jones, if the plane in question attained an altitude of seven hundred feet the said plane would have been able to glide a distance of sixty-three hundred feet with all motors shut off and dead.

We have said that the glide ratio of nine to one involved ideal conditions. But it was also proved, and admitted by Mr. Balchen, that a thirty-three mile per hour wind on the tail of such a plane would increase the ratio; that is to say, from an altitude of seven hundred feet the glide of sixty-three hundred feet would be increased (Case, p. 616, ll. 13 to 18).

Taking the testimony most favorable to the defendant as to the distance the plane had reached at the time of making its second turn, and which, according to defendant's witnesses, had attained an altitude of approximately seven hundred feet, defendant's witnesses admitted that with the complete failure of the left motor and the revving down of the center motor at the time of making the second turn there was ample opportunity, in the exercise of safe flying, to have turned the plane back toward the airport with reasonable opportunity to have reached the airport with safety.

And considering further the testimony in the case that the normal glide ratio of nine to one, with all motors dead or not functioning, the glide ratio would have been increased by the fact of a thirty-three to thirty-nine-mile wind on its tail, plus the additional fact that the glide ratio would have been further increased by the fact that one motor was still functioning efficiently, and another partially functioning, it would have still further increased the glide ratio as rendering the pilot better able, in the exercise of proper piloting, to have brought the plane back safely to the airport.

The last and remaining Point V argued and relied upon by defendant-appellant is, as follows:

> "The Trial Court erred in refusing to charge defendant's requests to the effect that 'there was no evidence that defendant's plane was flown in an improper wind, or that the velocity or character of the wind was in any way the proximate cause of the accident.' (Said Requests are numbers 9 and 10; Grounds of Appeal, 8 and 9.)"

Defendant-appellant in setting down the foregoing ground for refusal, under said Point V as contained on page 53 of its brief, is immediately followed by defendant-appellant's own statement to the effect that the Court, instead of charging the jury as requested, said:

> "I recall no evidence in this case, gentlemen, to the effect that the total authorized weight was exceeded. *So, the question to be decided, therefore, is whether the defendant was negligent in permitting this flight with the load which the plane actually carried on this flight under all of the conditions, including the wind, which existed at that time*" (p. 1188, ll. 15 to 25).

Defendant-appellant makes further reference, in its brief, under the same point, on page 53 to what the Court did actually charge the jury on this point, as follows. Again the Court charged:

> "The underlying question is whether or not with the weight, whatever it was, on that day, with the conditions, all of them, that confronted the pilot when he took off there, *whether or not it was in the exercise of reasonable care to have allowed the plane to make that last flight on that day under all of those conditions*" (p. 1189, ll. 10 to 20).

Defendant-appellant's counsel, on page 55 of its brief, makes a further reference to a remark by the Trial Court, relating to the matter of overloading of the plane, to wit:

> "The Court: I shall give the Court's impression to counsel in the matter. I have not heard anything that will indicate on either side that this plane was overloaded (p. 610)."

Notwithstanding the proofs that the aeroplane carried a number of persons in excess of that authorized by the license issued by the Government and also the testimony of experts heretofore cited to the Court that it was dangerous to take off in the wind of the velocity which existed at the time of the take-off, with fifteen persons aboard, the defendant-appellant can hardly be heard to complain of the Trial Court's refusal to charge as requested under Point V. More particularly is this

so, in view of even so much of the Trial Court's charge, which defendant-appellant itself cites in its brief, which, clearly, was anything but unfavorable to the defendant, in view of the issues framed and the testimony and proofs adduced at the trial.

Here again we refer to the testimony of expert Brown, to the effect that for the pilot to have taken off at all, with the excess load, high and gusty wind, and the making of a sharp right turn at a low altitude, off the wind, or, in other words, maneuvering the plane into the position with the strong wind upon its tail, with failing motor, was bad practice (pp. 282 to 285).

The witness, Clarence Chamberlin, testified that the wind played a part in the handling of the plane, thus supporting the opinion expressed by Mr. Brown (Case, p. 368, ll. 31 to 34).

Clarence Chamberlin further testified that the wind velocity plays an important part, particularly in the take-off, the reason being that if the wind is of a great velocity, as was the fact in the instant case, the matter of wind velocity is extremely important in consideration of an emergency landing (Case, pp. 368 and 369).

It is respectfully submitted that there is abundant testimony in the case, not only to warrant the refusal by the Trial Court to charge, as requested under Point V, but also that, as pointed out by defendant-appellant itself, in its brief, the Court did charge the jury substantially as to the law applicable to such facts relating to this point. *Daggett* vs. *North Jersey St. Ry. Co., supra.*

In the same month in which the crash occurred, to wit, March, the pilot of the plane, Lou Foote, was attending the Ford Motor Car Company School, at Dearborn, Michigan, as a student pilot.

On March 13th, Foote left the school at Dearborn, and drove to Newark in his automobile. He arrived at the Newark Airport in late afternoon

of the day before the crash. He then went to the New York office of the defendant company and was then and there employed to fly defendant's plane at the Newark Airport on Sunday, March 17th, and he was instructed to gain experience in their Ford tri-motor planes for passenger flights at the Newark Airport and then to fly their planes on the New York to Boston Route, when that line became established.

Upon Foote's arrival at the Newark Airport, upon the completion of his automobile journey from Dearborn to Newark, arriving at Newark Airport at about 5:00 P. M., of March 16th, he got out of his automobile, glanced over the Airport and reentered his automobile and started for New York, not returning to the airport again until 11 A. M., of the morning of the crash.

Immediately upon his arrival at the airport on the 17th, he began taking up passengers in the fatal plane. On the first two or three flights which Foote made he had with him either Ray Wonsey, who was, with Foote, a student at the Ford Motor Car Company School, and Captain Weatherdon.

Specifically, as proof of Lou Foote's unfamiliarity with the terrain, as charging the defendant-appellant with negligence in permitting the take-off with passengers, in a dangerous instrumentality, at an airport and over a terrain with which the pilot was unfamiliar, we cite Foote's own testimony (Case, p. 886, top of page), as follows:

> "Q. And it was because of your unfamiliarity with the ship that you were being broken in gradually, is that it? A. No. Not absolutely. *To give me a chance to look over the terrain and the country and also the course.*"

And further, on page 886 at line 27:

> "Q. And the only observations that you made of the terrain were those you made on

the one-hundred-foot walk from your automobile while your wife sat in the car at the time that you took these trips with Wonsey or Weatherdon or both?

Q. Is that the fact? A. Yes.

Q. Those were the only observations you made? A. From flying with Weatherdon and Wonsey and driving out with my car to the airport were the only observations I made."

Much has been said by defendant-appellant in its brief respecting the care and maintenance of the plane. The simple answer to this entire argument on this score is that spark plugs in the motor which failed were found to have been defective to the extent of greatly reducing the efficiency of the motor.

The testimony of Mr. Shaw is pertinent as indicating that there was something wrong with the left motor on one of the prior flights, in fact, the flight immediately preceding the last and fatal one, as evidenced from the fact that mechanics were working on said left motor and the further important fact that the tachometer of the left motor indicated that the motor did not rev up to the r.p.m.'s that the center and right motor did.

And further, and more important than this, is the pilot's own testimony, to wit (Case, p. 905, l. 10):

"Q. Now, you testified, Mr. Foote, that on the last trip—on the last take-off—your words were, 'She did not get off the ground as soon as the last take-off.' What did you mean by that? A. Well, like I told you before. It seemed like the ship took a little more time to get off."

Surely the greatest amount of inspection may have been made by defendant's mechanics. The complaint which the plaintiffs make is that however much the inspection by however great a num-

ber of mechanics, the inspection must of necessity have been careless because of the failure of disclosure to the mechanics, of the dangerous condition of the motors which a proper inspection would have disclosed.

Further proof of the lack of proper inspection is the evidence of several witnesses, every one of them disinterested, that, upon the take-off of the plane, on its fatal journey, the left motor sputtered, and from the exhaust thereof, clouds of black smoke was intermittently emitted.

In the foregoing proofs there is also the testimony that the plane had given evidence on several occasions during the same day of some defect in its mechanism. It is uncontradicted, in fact admitted by Captain Weatherdon, for the defendant, that on one of its other flights that day the plane had a bad landing and had to be towed out of the mud. Another witness, Arthur Ingold, who had been employed by the defendant company, testified (Case, p. 65, l. 10):

> "Q. Now, will you describe the plane on its other flights that day? A. Well, he had one bad landing where he was towed out of the mud.
>
> Q. When you say 'he had,' who do you mean? A. Lou Foote.
>
> Q. With that plane? A. The tri-motored Ford.
>
> Q. The same one? A. The same one.
>
> Q. That was involved in the last crash? A. Yes, sir.
>
> Q. And who took—who pulled him out of the mud? A. The tractor they have at Port Newark."

At page 72, of the case, Mr. Ingold testified that prior to the last flight of the fatal plane, and on the very day of the accident, that not only the mechanics employed by the defendant company, but the pilot Lou Foote and Captain Weatherdon

had been working around the left motor of the plane. He also testified, and this we point out as being highly significant, that after each flight these same persons, to wit, Pilot Lou Foote, Captain Weatherdon and Mechanic Wtorkowski, went around the plane and that some time was spent by those men upon the left motor of the plane.

The witness Henry Rosenthal was a passenger in the same plane on one of the flights preceding the fatal one. He testified (Case, p. 117, bottom of page, and top of page 118) that on his return the ship would seem to drop a little and then go ahead and drop some more and then proceed further. When asked if, when the plane approached the airport, anything unusual occurred, his answer was, "Yes, my attention was called to the fact something was wrong with the motor of the plane."

> "By the Court: Where was this?
> The Witness: Coming back on the trip I had taken.
>
> Q. Somebody called your attention to the fact that there was something wrong with the motor, is that what you said? A. That's right, with the left motor, to be exact."

We quote further from Pilot Foote's statement of his knowledge of the defective condition of the plane, even prior to the flight resulting in the crash, as follows (Case, p. 1117, l. 25):

> "Mr. Foote: I hadn't got very high, that is the one reason I swung out a little ways. *It didn't seem to be climbing as good as it should,* but still the motors were turning up all right, both outboards and center motor turning up good, but just didn't seem to be climbing good. I remember one time Weatherdon and I went up we had it out across New York and we got over there quite a ways almost to where after you cross that river where they are putting in the new

> bridge over there, because we got about fifteen hundred feet. *I didn't think then it was climbing as good as it should.*"

Dr. Joseph A. Rubacky testified (Case, top of p. 259) that he saw the plane before it took off and after and during the course of its flight, and that he noticed particularly when he, too, was endeavoring to gain admittance into the plane, after having purchased a ticket therefor, that the left motor was sputtering, and subsequently watched the movement of the plane going down towards the end of the field and then swing back up the runway.

It can hardly avail the defendant to say that inspections were made by the defendant's mechanics of the plane and its motors. The probative fact is, however, that the left motor was inefficient; that such inefficiency was known to the mechanic as well as the pilot, Foote, and that notwithstanding such knowledge of the inefficiency of the motor, which rendered the plane dangerous to be taken up with such a load, into such a wind, negligence is clearly established, at least to the extent of the propriety of leaving the question thereof to the determination of the jury.

The Supreme Court has affirmed judgments in a group of cases arising out of the same accident which forms the subject matter of the case *sub judice.*

In *Andrew Hagymasi, ad. prs., et als.* vs. *Colonial Western Airways, Inc.* (defendant-appellant herein), in which the facts and proofs were substantially the same as in the instant case and a large number of witnesses who testified in the *Hagymasi* case having testified also in the instant case, held, that,

> "notwithstanding seventy reasons assigned for a new trial, there was no error in refusing to non suit or direct a verdict and that

> on the question of liability, the Court was 'entirely clear that the verdict was not against the weight of evidence.' "

The Supreme Court in that case, answering one of defendant's contentions that, because the pilot, Lou Foote, had managed to come safely through three previous trips on the day of the fatality, is of no particular significance, citing *Temperance Hall Association* v. *Giles,* 33 N. J. Law 260.

The Court further said, in the same case:

> *"Laying aside without discussion such claims as that the spark plugs were improperly adjusted, that the plane had not had the necessary inspection and checking up, we think the jury were clearly entitled to take the case on the theory that there was negligence in entrusting the plane to a pilot new to the locality and unfamiliar with the terrain: in failing to observe the ground rule about turning to the left, or in failing to ascertain that such rule existed: in selecting the less safe turn to the right, perhaps as a matter of convenience; in taking out a heavily loaded plane on a day distinctly unfavorable to flying: and in loading the plane beyond the numerical limit set by the rules."*

Being familiar, of course, with all of the facts adduced at the trial in the *Hagymasi* case, and being fully acquainted with the record of the case, and the briefs submitted to the Supreme Court thereon, we are compelled to say to this Court, without fear of contradiction, that, included in the seventy assignments of error filed by the defendant in the *Hagymasi* case (who is also the defendant in the case *sub judice*) were the very requests to charge, the refusal of which, by the Trial Court, constitute the sole grounds argued and relied upon in the case *sub judice.* In fact, the very identical language employed by the defendant in its requests to charge, and refused by

the Trial Court, is employed in the refused requests herein reviewed.

The Court properly gave the case to the jury.

In *Podolsky, et al.* vs. *Sautter,* 102 N. J. L. 598, it was held that:

> "Before the trial judge can take away from the jury the question whether or not the negligence of the defendant is the proximate cause of the injury and determine that question himself, the facts must not only be undisputed, but the inferences to be drawn from those facts must be such that fair-minded men ought not to differ about them."

Embracing the consideration of the proofs of unfamiliarity of the airport and its surrounding terrain, by the pilot, his lack of experience in piloting the type of plane in question, with the excessive number of passengers, numerically, in the plane, we respectfully submit that the fact of hiring of such a person for an undertaking which, under all of the circumstances and conditions which existed, on the day of the fatal flight, constituted negligence on the part of the defendant at least sufficient to raise a jury question.

The logic of the statement of John R. Bullock, Jr., in 1 Air Law Review, page 411, note 30, can hardly be assailed when he says:

> "It is worth considering that a pilot has to have many hundreds of hours of successful flying to his credit before he can hope for a job with one of the transport lines. *Strict liability of the owner for crashes tends toward employment of better pilots.*"

Defendant-appellant in its brief stresses a conflict of opinion respecting many of the facts adduced at the trial. The very conflict of proofs is of itself sufficient justification for leaving such

controversial facts for the jury to pass upon. It has been repeatedly held that where there was evidence of negligence, it was for the jury to pass on, though it may have been contradictory. *Magone* v. *Patterson,* 104 N. J. L. 132.

Where the proof would justify a finding that the negligence of the defendant was the proximate cause of the accident, and that the plaintiff was free from contributory negligence, the case should be submitted to the jury for its determination. *Ross* v. *Pennsylvania R. Co.,* 106 N. J. L. 536.

The testimony having been to the effect that any one of a great number of acts or a combination of them caused the crash of the plane, what the pilot did after the plane had already begun its fall was immaterial. The emergency having been created by the negligence of the defendant's pilot, the defendant cannot be exonerated by showing that the pilot did the next best possible thing.

Where the emergency is created by the negligence of the actor, he cannot be exonerated from liability on the strength of the emergency doctrine. One cannot shield himself behind an emergency created by his own negligence.

Harber v. *Graham,* 143 Atl. 340, 105 N. J. L. 213;
Chaney v. *Moore,* 47 A. L. R. 800.

On page 411, Volume 1, #3 Air Law Review, a principle is justly pronounced to the effect that:

> "Appropriate care in dealing with airplanes may well be the same as the standard of 'highest degree of care' which is said to be that of common carriers—that is, reasonable care in handling airplanes which are admittedly not fool-proof, may well require owners to take every precaution possible in the present condition of the industry for the safety of their passengers.

Since at the present time most accidents are due to the negligence of the pilot, a strict rule of liability may well make for safer aviation.''

In Civil Air Accidents, 1 Air Commerce Bulletin No. 14, January 15, 1930, page 8, the following statement is made:

> ''It is estimated that 59% of all aircraft accidents are due to errors of judgment on the part of the pilot. Insurance underwriters emphasizing the importance of skilled pilots, estimate 70% of aviation accidents are due to pilots' mistakes.''

We have pointed out to the Court an abundance of evidence to the effect that, not only on and immediately preceding the take-off of the plane on its last and fatal flight, a defective condition of the plane or its motors, or either of them, was obvious to the pilot or the mechanics, or both, but also the existence of knowledge thereof for a considerable period of time prior to the last flight.

In this connection it has been held that:

> ''Evidence of the condition of an appliance from which an injury occurred, within a reasonable time *after* such injury occurred, is admissible, and from such evidence a jury may infer the condition of the appliance at the time of the accident.''
>
> *Collison* vs. *Curtner,* 141 Ark. 122, 212 S. W. 1069, 8 A. L. R. 760;
> *Snyder* vs. *Mutual Tel. Co.,* 135 Iowa 215, 14 L. R. A. N. S. 321;
> *Murray* vs. *Frick,* 277 Pa. 190, 121 A. 7, 29 A. L. R. 74.

If proof of condition of appliances may be shown to have existed after an injury occurs, *a fortiori* proof of defective condition of the motors in the

plane *prior* to the accident, and the knowledge thereof, by the defendant, is, clearly, proper evidence for the consideration of a jury.

The evidence in the case is conclusive that the motor failed, and there was evidence in the case of other conditions indicating a lack of care of the motors on the part of the defendant-appellant. There was also evidence of negligence which might have caused the failure of the engine.

It is for the jury to determine what the standard of care required in a particular case is, and whether there has been a compliance with such requirement.

Fort v. *Reid Ice Cream Co.*, 98 N. J. L. 559;
Towski v. *Griffiths*, 91 N. J. L. 663;
Koonz v. *N. Y. Mail Co.*, 72 N. J. L. 530;
Collins v. *West Jersey Exp. Co.*, 72 N. J. L. 231.

What the wind conditions were and their effect on the plane and what caused the plane to fall and, in fact, all of the facts on the issue of negligence, on which there was evidence, were for the jury. The greater weight of evidence or the preponderance of the evidence was surely for the jury, and the Court's charge to the jury was certainly proper in law, and the Court's submission of the facts in issue, to the jury, was proper. And it is for the jury to determine where the preponderance of the evidence lies.

Carroll vs. *Central R. Co.*, 81 N. J. L. 567.

The weight of the testimony of the witness is for the jury.

Kearns vs. *Waldron*, 76 N. J. L. 370.

The conclusion to be drawn from the facts are for the jury to determine.

> *Glass Co.* vs. *West Jersey Ry. Co.*, 76 N. J. L. 708.

We have stated before in this brief that not only was the charge of the Trial Court wholly proper, but must be conceded by defendant-appellant to have been so, for the reason that no complaint thereon was made as evidenced by any exceptions taken thereto.

This being so, the defendant-appellant cannot be now heard to complain except upon a charge that the verdict of the jury indicated that the latter had been misled. This complaint had previously been made by the defendant, as the basis of its application for a rule to show cause. The rule, as has been previously pointed out, had been argued and determined by the Trial Court, the determination resulting in a discharge of the rule. Conceding then the propriety of the Court's charge, nothing remains upon which the defendant-appellant can, with propriety, complain here.

> "Where the law is stated correctly and intelligently, the test of the soundness of the instructions is whether the jury was actually misled."
>
> *Public Nat. Bank* v. *Patriotic Ins., Co.*, 144 A. 566, 105 L. 477.

Thus, there being eliminated from the case any complaint respecting the findings by the jury, and conceding the correctness of the Trial Court's charge, the defendant-appellant's claims for reversal, here made, are without merit.

The plaintiffs-appellees respectfully submit that the Court having fully and correctly charged the jury as to the law applicable to the evidence in the case, and, having been wholly justified in his refusal to charge the requests, as complained of before this Court, and the Trial Court having properly submitted the case, consuming two weeks of trial, to the jury, the verdicts found by said jury were proper and, therefore, the judgments of the Supreme Court should be affirmed with costs.

Respectfully submitted,

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William George,
Of Counsel,
Attorneys for Plaintiff-Appellees.

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New Jersey Court of Errors and Appeals

DINA BOELE, Administratrix *ad prosequendum* of the goods and chattels of Anton M. Boele, Deceased,
Plaintiff-Appellee,
vs.
COLONIAL WESTERN AIRWAYS, INC.,
Defendant-Appellant.

MARY HENDERSON, Administratrix *ad prosequendum* of the goods and chattels of Thomas J. Henderson, Deceased,
Plaintiff-Appellee,
vs.
COLONIAL WESTERN AIRWAYS, INC.,
Defendant-Appellant.

Action at Law.
On Appeal from Supreme Court.

BRIEF OF McDERMOTT, ENRIGHT & CARPENTER, FOR DEFENDANT-APPELLANT.

This case comes before this Court on appeals taken by defendant, Colonial Western Airways, Inc., from two final judgments entered in the New Jersey Supreme Court February 15, 1932.

The judgment in the Boele case is for $25,000; the judgment in the Henderson case is for $15,000. The verdicts of the jury as rendered were for $38,000 and $33,900 respectively, but they were found to be so grossly excessive by Circuit Judge Henry E. Ackerson, Jr., that he ordered them reduced to $25,000 and $15,000 respectively, as above

indicated. The reductions were accepted by attorneys for the plaintiffs, and these appeals are taken from the final judgments entered on the reduced verdicts.

The cases grow out of the crash of a trimotored Ford airplane at Port Newark on March 17, 1929. The two decedents were passengers in the plane.

The two cases were tried together by consent before Judge Ackerson at the Hudson Circuit; they are printed in one state of the case, and will be argued together and briefed together. Defendant's exceptions were reserved in the rules to show cause.

The grounds of appeal that will be urged and relied upon are that the learned Judge of the Circuit Court erred in refusing to charge the jury as requested by defendant.

For the sake of brevity we will not specify at this point all of the requests to charge. They will be stated *in extenso* in the several points of the brief.

The actions are founded upon the alleged negligence of the defendant in the care and operation of its airplane.

Defendant's contention is that the plaintiffs did not prove that the defendant was guilty of negligence as charged, and, in brief, that the accident was caused by the sudden failure of two of the three engines of the plane in mid-flight. The cause of the failure of the engines has never been discovered.

Statement of Facts.

A. The Plane and Its Care.

Defendant purchased the Ford tri-motored airplane new from the Stout Metal Airplane Com-

pany (a subsidiary of the Ford Motor Company) for $55,000 September 22, 1928 (pp. 512-513). It was known as a 4-AT plane and its number was 41, being the forty-first plane of this type manufactured and sold. Captain Edward Weatherdon took delivery of the plane at Dearborn for the defendant, and flew it from Dearborn to Buffalo, where on September 28, 1928, Adam Wtorkowski, licensed by the Department of Commerce as an airplane and airplane engine mechanic, joined the plane and he remained with it continuously until the time of the crash (p. 517). Wtorkowski had no other duties than to care for this plane and its engines (p. 525). The life of the plane was from September 22, 1928, until the day of the crash, March 17, 1929, during which time it had flown a total of 270 hours (Log, Exhibit D-6, p. 1222 to p. 1230, inc.).

Prior to the engines stopping in the midst of the last flight, not a single engine had ever failed and no trouble whatsoever had been experienced with the plane (pp. 549-550).

The week before March 17, 1929, was a rainy week, during which the plane was kept in its hangar at Miller Field, Staten Island, and the mechanic Wtorkowski gave the engines their periodical twenty-hour inspection. The regulations of the Department of Commerce require that every airplane shall be given an inspection each day before flight, and that it be given a more comprehensive inspection every one hundred hours of flight.

The uncontradicted testimony is that this plane was given the daily inspection every day before flight by Wtorkowski, and that, pursuant to defendant's orders, he gave the airplane and its engines every twenty hours of flight the inspection that was required every one hundred hours of

flight by the Department of Commerce. In other words, this plane and its engines were given five times the inspections required by the regulations of the Department of Commerce (p. 585).

While the plane was in the hangar at Miller Field the week prior to March 17, Wtorkowski gave the plane and its engines their twenty-hour inspection and he finished that inspection the night before March 17 (Saturday night) (pp. 651-652). On the morning of March 17 he gave the plane its daily inspection, including draining gasoline from the carbureters and each of the three gasoline tanks to see that there was no water caused by condensation in the tanks or carbureters, and he examined all the movable parts of the plane, started the engines, warmed them up, tested the instruments and found that everything was in perfect working order (p. 661).

B. Functioning of Plane March 17, 1929.

Between ten and eleven o'clock on the morning of March 17, Captain Weatherdon flew the plane from Miller Field, Staten Island, to the Port Newark Airport, with Wtorkowski and several other men (p. 662).

During the day the plane made nine hopping flights with passengers from Port Newark over New York and Newark (p. 523). Each flight was made without accident or incident (p. 526). It was on the tenth flight, commenced shortly before five P. M., that the accident happened.

The first flight of the day was made by Pilot Wonsey and Captain Weatherdon, now Chief Pilot on the Boston-New York run (p. 526). The second flight of the day was made by Wonsey and Lou Foote, the latter being the pilot on the last flight. The third, fourth and fifth flights of the

day were made by Captain Weatherdon and Lou Foote (p. 527).

Foote made the next four flights successfully alone, without accident or incident, and he was flying the ship on her last flight (pp. 530-531).

At the time of the last flight the wind was blowing about 30 miles per hour, about the same as on preceding flights (pp. 533-534). In the plane were fourteen passengers and the pilot, one passenger occupying each seat in the plane. According to the uncontradicted testimony the load in the plane was at least eight hundred pounds below the load that the plane was licensed by the Department of Commerce to carry (p. 818). No witness testified that the plane was overloaded.

March 17, 1929, was a clear rather cold day, the wind averaging between twenty and thirty-nine miles per hour, depending upon the location where the weather observations were taken. At that time all weather observations for Port Newark were taken at Hadley Field, near New Brunswick, where the records showed the wind was steady, velocity about thirty miles an hour (p. 534). Observations taken at the New York Weather Bureau, top of the Whitehall Building, showed that in the afternoon the wind was steady, with a velocity of thirty to thirty-nine miles per hour. Observers at Port Newark said that the wind was from twenty to thirty miles an hour. The testimony is uncontradicted that wind of this velocity could have no effect upon a Ford tri-motored plane after it had left the ground (pp. 540; 609).

There was a conflict of testimony concerning the course flown by the ship on its last flight, which conflict is immaterial on this appeal. By far the greater number of witnesses and all of the aviator witnesses testified that the ship on its last flight took off on the northwest runway, rose gradually

on a course toward Newark until it reached an altitude of from five to seven hundred feet, and that then the ship made a wide, gentle turn to the right and headed in an easterly direction toward New York. After the ship had completed its turn and while it was going in an eastwardly direction, persons on the ground observed that it began to lose altitude. At this time it was going down wind on an even keel in the direction of a salt meadow east of the Central Railroad tracks. The plane did not quite clear a line of freight cars that stood on the Central Railroad tracks. The underneath portion of the plane, just behind the pilot's seat, struck the edge of a steel gondola car, loaded with sand. The pilot was thrown through the windows over the tracks, and received a fractured skull, fractured leg and other serious injuries, from which he recovered. All the other passengers died as a result of the accident.

C. Pilot's Statement of the Flight.

The pilot, Lou Foote, the only one who survived, testified that after making the same kind of turn to the right that he had been making all day, "a long sweeping turn, a gradual turn, you might say, a shallow bank, just straightened out on my turn and headed towards New York City, and right then my left motor quit cold."

> "Q. Where was it with reference to the turn? While you were making the turn, before the turn or after the turn? A. After I had made the turn and straightened out" (bottom p. 852).

At page 853:

> "Well, the left motor quit cold just as if somebody shut off the switch or as if the motor was starved for gas, there was not any-

thing there. I immediately opened up the remaining two motors again and the center motor started to lose r.p. m.'s—revved down. I could shove the throttle wide open on the center motor and it would quit and go lower. I pulled it back to about two-thirds back and it would start running again and by juggling the throttle back and forth I could keep the center motor turning about eight hundred and the right motor seemed perfectly all right, it revved up wide open about eighteen hundred. So, I continued on in that direction. I looked around for a place to set down. There was not any place there, nothing but factories and buildings and wires and concrete viaduct there. It was too far away from the airport to go back into the airport and I noticed this place out ahead of me in a straight line of flying'' (p. 853, ll. 15 to 40).

''It just looked like a big open meadow swamp at that time. I don't know whether it is a swamp now or not. The stuff I had to go over looked bad. I could not—I would not attempt to land an aeroplane in there.

Q. What was in there? A. Well, it looked just like dumps of brick, concrete and garbage and it was all burning and smoking up there. The first thing that I thought of was fire. I did not want to try to set down in there, I don't know whether I could have gotten down there or not. I might have tried to side slip and go down in there, but it did not look good. The best thing looked good to me was this open space out ahead of me, so, I just headed for that space, and that is all I remember, except wires. I remember some wires up in front of me. That is the last thing I remember. I woke up in the hospital'' (p. 854, ll. 8 to 26).

In response to questions by Judge Ackerson, Foote testified:

''The center motor really acted as though it were starved for gas more than the left motor. The left motor quit cold. The left

motor could have been the ignition or it could be gas, too, but the center motor is the one that acted as if it was starved for gas, because when you would open the throttle wide open it would quit cold. There would not be anything there'' (p. 865, ll. 9 to 20).

Again Foote testified:

''The Court: In other words, you don't know whether there was something in there that prevented the gas from going in the carbureter?

The Witness: They did not backfire. Usually the symptoms of a motor that is starved for gas or getting a partial amount of gas through the needle valve will backfire'' (p. 865, ll. 32 to 40).

''The Court: Sputter?

The Witness: Yes. And this motor did not backfire, the center motor did not backfire at all and the outboard motor just quit cold. There was not anything there, just as if you took a sledge hammer and knocked it off the wing. That is the way it acted. There was not a particle of life there, and never was any life up until the time of the crash.

Q. Before that it had been what? A. Perfect. Everything was just as perfect as could be. Revving up, temperature was all right, everything'' (p. 866, ll. 1 to 18).

D. The Plane Had Ample Fuel.

According to the uncontradicted testimony the three tanks of this plane were filled to the top with Tidewater Oil Company's aviation gasoline about 1:30 p. m. on the day of the accident (Carraher, p. 489). It required one hundred eighty-seven gallons to fill the three tanks (p. 490). The gasoline was strained through a strainer on the truck, and in addition the mechanic on the airplane filtered the gasoline through a chamois funnel (Carraher, p. 490).

The three tanks held a total of two hundred and forty-five gallons of gasoline (Weatherdon, p. 523, l. 22). Each of the main tanks, one on each wing, held one hundred and ten gallons, and the reserve tank in the center held twenty-five gallons (Weatherdon, pp. 521-522).

Wtorkowski, the mechanic, testified that the gasoline put in the ship the afternoon of March 17th, was Tidewater aviation gasoline, and that it was strained through a metal strainer on the gasoline truck, through a chamois strainer in a funnel which came with the plane, and also through a wire screen in the filler neck of each gas tank (p. 664). He said: "I filled all three tanks to the top; put on the covers, and signed a receipt for the gas" (p. 664).

Wtorkowski also testified that after the gasoline was put in the tanks he examined the condition of the oil, and testified: "We had five gallons in each oil tank and when I examined it, it was just about right. I always got some oil at Miller Field." They used Mobile oil. The capacity of each oil tank was eight gallons, but they only used five gallons, leaving a space for the oil to expand when it heated (p. 665).

Between the time the tanks were filled and the time of the accident, the engines had consumed ninety gallons of gasoline, according to the computations of Mr. Lane, the Aeronautical Engineer, whose testimony was not disputed (p. 765, l. 35). At the time of the accident Mr. Lane calculated that in the three tanks there was a total of one hundred and fifty-seven gallons of gasoline (p. 767, l. 40).

When Officer Hopkins reached the wreck after the accident he noticed an odor of gasoline and oil, and to prevent a fire threw on sand (p. 970, ll. 33 to 40).

E. Observations of Persons on the Ground.

All the other eye witnesses observed the flight of the plane from the ground, except Officer Hopkins of the Newark Police Department, who saw the flight of the plane from his motorcycle which he was riding on South Street, and Pilot George W. Branson.

Branson that day was flying a smaller ship. He testified that his ship was on the northwest runway when defendant's Ford took off. After the Ford had reached a point approximately fifteen hundred feet ahead of him, Branson took off. He said the Ford continued straight on toward Newark, gradually climbing, and he turned his ship to the right after crossing Route 25, a short distance from the airport, and went on his trip to New York and observed while he was returning that the Ford was down.

There was some testimony by lay observers that the Ford plane shortly after its take off, after reaching a point beyond Route 25, made a sudden turn to the right, kept climbing until it reached the vicinity of South Street, where it again turned to the right, toward New York, and then gradually lost altitude.

One eye witness at the airport, Lester Conover, testified that after the plane had started on its last flight he noticed a gust of black smoke come out of the exhaust.

Another lay witness, Dr. Rubacky of Passaic, who is both a physician and a lawyer, said that just prior to entering the field where the plane was stationed, he called his wife's attention to the fact that the left motor was sputtering (p. 259, l. 10).

On cross-examination Doctor-Lawyer Rubacky said that he did not hear the motor sputter, he was simply able to see the propeller revolving

occasionally, but not all the time, which he termed sputtering. This was while the plane was on the ground with the motors idling (p. 263, ll. 20 to 40). The testimony as given by Rubacky regarding sputtering was an improper use of the word.

Only one other witness, George Krieger, referred to the motors as sputtering.

We are well acquainted with the rule that if there is a conflict of material testimony, the facts must be submitted to the jury. The testimony as to sputtering, however, when carefully examined, discloses that there is no evidence whatsoever of sputtering which would impair the efficiency of the motor. The word "sputtering" was incorrectly used by the witness Rubacky when he referred to the fact that occasionally the propeller, while the motor was idling, could be seen slowly revolving.

The witness Krieger, who went to the airport with Henderson and Boele, testified that as the plane flew over his head on its last flight it was about one hundred and fifty feet in the air. He said that he noticed nothing about the motors while the plane was on the ground, but that when it flew over his head "it sounded like one of the motors was missing or sputtering. I don't know which one" (p. 269, l. 25). Krieger testified, however, on cross-examination that the plane on the take off climbed one hundred and fifty feet while making the run of three hundred feet (p. 274), which certainly is the strongest possible indication that the motors were operating efficiently.

Krieger, Conover and Rubacky were not acquainted with Ford tri-motored airplanes, and it may well be that what was described as sputtering or missing motors was a normal sound in a ship of this type, with three motors running simultaneously. The motors of such a ship are not synchronized, according to the evidence, until

the ship has gained an altitude of five or six hundred feet. Before they are synchronized they run at slightly different speeds, and the wind racing from the three propellers will cause a condition that might cause a novice to believe that something was wrong. However, according to all these witnesses, the ship was rapidly climbing and it continued to climb. Certainly the motors, even if sputtering immediately after the take off, were turning up ample power. Moreover, even according to this testimony, the motors were all right when the ship was on the ground, and the sputtering, if any, *did not develop until the ship was well up in the air on her last flight.*

F. Sharp Turns, if Made, Did Not Affect Engines.

Several bystanders at the airport testified that after the take off and after getting several hundred feet from the airport, the plane made a sharp turn to the right (Lahey, p. 97; Hennessy, p. 131; Donohue, p. 146).

Any criticism contained in this record of the manner of operating the airplane at any time before the engines failed on its last flight, are conceded by the expert witnesses not to have been a proximate cause of the engine failure or the subsquent crash (Chamberlin, p. 363, ll. 10 to 40; Brown, p. 299; Weatherdon, p. 565, l. 4).

Bernt Balchen said that the turns would not influence the fuel system at all, since the fuel system works as well in curves as in straight ahead flying. He said that sharp turns would not influence the ignition system. He said: "If it did it would not be safe to fly and perform any stunts in planes" (p. 608; Bertrandias, p. 819, ll. 2 and 3).

Bertrandias also said:

> "As soon as you are back on an even keel I would say you were not affected by anything you had done so far as the mechanics of the aeroplane or engine is concerned" (p. 820, ll. 1 to 10; also p. 829, ll. 1 to 25).

Mr. Hicks said:

> "Our 4-AT airplane, when I was in the airplane, has been dived to a speed of 165 miles an hour, and pulled out of this dive with all possible force that the pilot could exert. This is considered a supreme test; in my sight this 4-AT airplane has been looped five consecutive times" (p. 1038, ll. 28 to 35).

Casey Jones said that the fuel tanks will feed the motors at all angles (p. 1070, l. 35, to p. 1071, l. 10).

The only danger from the making of sharp turns, according to the experts, is that the plane in making such a maneuver might come in contact with the ground. If the plane did not come in contact with the ground, sharp turns would not in any way cause the motors to stop functioning. The fact is that after this turn was made, as testified by several witnesses, the ship continued to climb, and went for at least a half mile before it again turned to the right. It was after the second turn was made that the left motor quit cold and the center motor slowed down. Again, the second turn, even though a sharp turn, as described by one or two witnesses, or a wide turn as described by others, would have had no effect on the operation of the motors. Again, the danger from such a maneuver would be that the ship might get out of control and stall and spin, or that it might touch some object and crash. Nothing of this kind occurred.

Furthermore, the testimony of these lay witnesses, as to the pilot making sharp turns when

close to the ground, is testimony as to facts which were in no way the proximate cause of the accident. Judge Ackerson instructed the jury:

> "And even if you should find that a sharp turn or bank was made by the plane at an altitude of 150 feet or 200 feet, there is no evidence such a maneuver had any effect on the subsequent failure of the engines of the plane" (p. 1194, l. 35).

The proximate, efficient cause of this accident was nothing less than the stopping of the left motor and the slowing down of the center motor while in mid-flight.

A Ford tri-motored plane cannot maintain altitude and fly on one motor (p. 571, l. 20). The center motor running at eight hundred revolutions per minute gives no power. It might somewhat assist the ship to glide a little further, as testified to by Lou Foote above. It would be of no assistance in maintaining altitude. This ship can climb with three motors operating efficiently. It can maintain its flight on any two motors. It must come down when it has only one motor functioning properly.

G. The Pilot's Ability and Experience.

It was also contended by the plaintiffs that Lou Foote, the pilot, was inexperienced and not a proper pilot for this tri-motored Ford airplane with a capacity load of passengers.

This contention was so completely annihilated that Judge Ackerson charged the jury that according to the undisputed evidence in this case the pilot Lou Foote was competent and qualified to operate and navigate a Ford 4-AT airplane, carrying passengers on March 17, 1929 (p. 1200, ll. 10 to 20).

Judge Ackerson also charged the jury that there was no evidence that the pilot did anything to cause any of the motors to fail (p. 1194, l. 30).

Judge Ackerson also instructed the jury that there was no evidence in the case that the authorized weight the plane was allowed to carry was exceeded (p. 1188, l. 20).

We have no hesitancy in saying that according to the evidence in this case the proximate cause of the crash was engine failure. In fact Judge Ackerson in his charge to the jury said:

> "Now, there can be no doubt, however, gentlemen, that one or more of the engines on this plane failed and the question for you to decide is whether this was due to any negligence on the part of the defendant or its employees" (p. 1187, l. 20).

H. Impossible to Land Ship at a Safer Spot.

When the engines of an airplane fail the ship must come down. According to the testimony of Foote, who piloted the plane, the only place he could put his ship down was in the meadow beyond the railroad tracks. He testified that from the point where the engines quit, it was not possible for him to get back to the airport.

The expert witnesses all testified that if the engines quit at the place indicated by Foote and by substantially all the other witnesses, the proper thing for a pilot to do was to go straight ahead, no matter what was ahead of him and land in the best possible place. To attempt to turn and land down wind would most certainly have caused the plane to lose flying speed and crash (Chamberlin, pp. 382-383; Brown, pp. 299-300).

Balchen said, "It is mostly recommended if you are at low altitude and your motors quit, it is the golden rule in the service, keep going straight ahead and try to hit the best spot that way. It

is the golden rule we generally follow'' (p. 604, ll. 25 to 32; Casey Jones, p. 1075, ll. 30 to 40, pp. 1076, 1077).

Bertrandias gave the reason why it is better to go straight ahead when at low altitude, engines failing, page 820, lines 10 to 40.

Foote said that from the point that his engines failed he knew that he could not get back to the airport (p. 856, l. 16). He said the only place where it looked possible to put the ship down with any degree of safety was in the meadow on the far side of the railroad tracks (pp. 853-854).

Bertrandias said it is always better to slide than to fall (p. 820, l. 36).

Since when engines in an airplane quit the ship must come down, the farthest it can go is the length of its gliding ability. If the pilot seeks to stretch the glide and the ship loses ''flying speed,'' it will fall. When engines quit the pilot tries to glide to a landing within the range of his gliding ratio. If there is no place to land within that gliding ratio, he is forced to hit whatever is before him. Lou Foote in this case thought that he would be able to put his ship across the railroad tracks and into the meadow. This, although a poor place to land, was the best place within his gliding ratio. The cause of the ship striking the freight car was simply because the freight car was there and because the ship did not have altitude sufficient to glide over it.

No matter how the case is viewed, the proximate cause of the ship coming down was the failure of the engines. Every witness in the case admits that if the engines had continued to function there would have been no crash.

I. The Spark Plugs Were in Proper Condition.

The only attempt made by the plaintiffs to show anything the matter with the engines was through the witness Lang, a so-called "expert" on spark plugs. This man was nothing but a mechanic, with no education, who was interested in the "Tiger" spark plug, who was permitted to testify that the type "N" A.C. spark plug, with which these engines were equipped, was an improper spark plug for the purpose; that the night following the crash he went down to the Newark meadows in the dark and stood on the edge of the City dumps while an unidentified man went across through the mud to the wrecked plane and brought back a carbureter which he gave to a junkman. Lang said that he then asked this unidentified man to go back to the plane and get him some spark plugs; that this unidentified man went back to the plane and came back with two spark plugs (p. 177), which Lang said he examined by the aid of a pocket search light and a flat thickness gauge.

Each engine was equipped with eighteen spark plugs, a total of fifty-four on the three engines (Wtorkowski, p. 651). According to Lang, he saw only two, while standing in the dark of the City dumps across the creek from the wrecked plane (p. 188).

Mr. William D. Kennedy, of the Wright Aeronautical Corporation, testified that he examined all the spark plugs that were returned to the factory with the engines after the accident, about thirty-five in number, and found them all in perfect condition (pp. 703, 704).

Lang testified that in the spark plugs he examined the gaps between the electrodes was thirty thousandths of an inch, and that in his opinion this gap was too great, and that with such gaps a Wright J-5 engine would run from five to fifteen

minutes when the spark plugs would get red hot and at high speed the motor would slow down and stop (pp. 180, 187, 188).

The testimony of this witness as a matter of law is absolutely valueless for these reasons: (a) there is no evidence that the plugs which he examined were in any of the engines at the time of the flight; (b) there is no evidence from which of the engines they came, if they came from any of the engines; (c) the type "N" A.C. spark plug was the spark plug that was specified for the Wright J-5 engine by the Wright Aeronautical Corporation, manufacturer of the engine; (d) the testimony of all other experts was that such engines will properly function with such spark plugs having gaps of thirty thousandths of an inch. They will function normally with gaps ranging from ten thousandths to fifty thousandths of an inch. The only difficulty experienced with spark plugs having gaps as large as fifty thousandths of an inch is that it is difficult to start the engines, but once they are started the plane will function normally. Contrary to the theory of Lang, the engines will operate once they are started much better at high speed with a wide gap than at low speed (Lane, p. 772; Branson, p. 805; Conway, p. 736; McDougal, p. 721). At low speed with a wide gap for the spark to jump, the engines may not operate smoothly. At high speed, however, more electricity is generated and the spark will jump the gaps.

Mr. Taine G. McDougal, Vice-President of the A.C. Spark Plug Company, testified that he was at Le Bourget Field, Paris, when Colonel Lindbergh landed on his flight from New York, and that he and Colonel Lindbergh together examined the spark plugs taken from his Wright J-5 engine. He testified that the insulators in Colonel Lindbergh's plane were exceptionally clean and the

gap surprisingly even. "The distances were what we considered even, from about 26 to 31 thousandths of an inch" (pp. 717-719).

Colonel Lindbergh on his flight had the same type engine and the same make and kind of spark plugs that were used on this Ford plane (p. 719).

Adam Wtorkowski, the mechanic, said that when he gave the engines their twenty-hour inspection the week before this accident, he tested all the spark plugs on a testing machine and set the gaps at twenty thousandths of an inch, and that they all operated perfectly (pp. 650 and 651). He testified that there are a total of fifty-four spark plugs on the three engines, eighteen on each engine. Each engine has nine cylinders, and each cylinder is equipped with two spark plugs. One magneto is connected with the spark plugs on the front of the cylinders and another magneto is connected with the spark plugs on the rear of the cylinders. Wtorkowski said that the life of a spark plug is about three hundred hours. He testified that he measured the clearances between the electrodes with a twenty thousandth wire and then used a flood gauge. He scraped and cleaned the spark plugs, made adjustments, tested them, and said they were all in good condition when put back in the motors (pp. 657 to 659, inc.).

J. Subsequent to Crash Examination of Engines Showed Them Well Cared For.

Mr. Kennedy, Service Manager of the Wright Aeronautical Corporation, testified that he made an examination of the motors at the Wright Aeronautical Corporation plant in Paterson a few days after the crash, and that he endeavored, if possible, to find the cause of the engines failing. He could discover no cause of either engine failing (p. 707). He testified that the engines were dam-

aged from the contact with the freight car; that in the case of the center engine six spark plugs were short; in the right motor six were short; the left engine seven were short (p. 703). That he personally saw every spark plug that came in with the engines. He therefore personally examined 35 spark plugs from these engines. They were in proper condition, normal in appearance. They "had indications that they had been in use and that they had been properly taken care of, that is, that the gap had been set up periodically" (p. 704). His examinations showed the engines to have been given proper care (p. 703).

Mr. Conway, Superintendent of Experimental Testing for the Wright Aeronautical Corporation, testified that he had run experimental tests with various types of spark plugs, and that the Wright J-5 engine will perform in a normal manner with the type "N" A.C. spark plug with "any gap from twenty to thirty-five thousandths of an inch between the electrodes" (p. 234, ll. 30 to 40).

Mr. Conway produced in Court several spark plugs having gaps between fifteen and forty thousandths of an inch (p. 733, ll. 10 to 20), which he had tested on a spark plug tester, and the test showed that the plugs functioned properly with a continuous spark across the electrodes (p. 749). They were all used spark plugs that had been picked at random from the Company's hangar at Teterboro. One spark plug that he produced had a cracked porcelain, which he said functioned properly (p. 749).

Lang had testified that one of the spark plugs he saw had a cracked porcelain, which showed preignition and that it was not the right plug for that engine; not the right plug for that service (p. 221).

The testimony given by Mr. Conway, Mr. Lane, a mechanical engineer, Mr. Kennedy, and others,

was to the effect that whether a spark plug with a cracked porcelain affects the motor's operation depends upon the location of the crack, the age of the crack and whether there is dirt in it which would affect insulation.

K. Lang's Testimony Insufficient to Create Issue for Jury.

Lang's testimony, taking it at face value, related to only two out of fifty-four plugs. When he expressed the opinion that the type "N" A.C. spark plug "wasn't the plug for that particular operation," he simply testified to matters he did not know anything about, since it was uncontradicted that this was the spark plug that was specified by the manufacturer of the engine and made for that service by the A.C. Spark Plug Company.

When he testified that a gap of thirty thousandths of an inch was too large and that fifteen thousandths was proper, and that such a large gap would cause pre-ignition, and cause spark plugs to heat up and the motor to slow down and stop after five to fifteen minutes operation, he was testifying to matters of which he had not only no knowledge, but no experience. Such testimony is not only disproved, but destroyed by the uncontradicted testimony that this plane had operated all that day, including nine complete flights over New York with the engines operating perfectly prior to the last flight; and also by the evidence of actual operation of the Wright J-5 engine with spark plugs with gaps even greater than thirty thousandths.

Surely a case of this importance is not to be decided upon the wild imaginings of a theorist who is unworthy of belief. Nor should the theories he propounds be held to create an issue of fact to submit to the jury when he bases all of his

contentions upon seeing only two out of fifty-four spark plugs that were actually in use (if the two that he saw in fact came from the engine, which is not proved). If it is possible in a Court of law to annihilate and destroy the testimony of an expert, then that was done in this case. His testimony related to two plugs that he contended had been in a terrific crash before he saw them, the effects of which on the two plugs cannot even be surmised.

With these essential facts before the Court we shall show that the Court below erred in refusing to give defendant the benefit of the instructions requested, which would have resulted necessarily in a verdict for the defendant.

POINT I.

Plaintiffs having supplemented their proofs of the occurrence of the accident with proof that the plane's engines stopped in flight, without showing that this was due to defendant's negligence, and defendant having met that proof by uncontradicted evidence that the engines were given all possible care, that they were properly fueled, and had never failed in any particular before they stopped in mid-air, it was error for the Court to refuse to instruct the jury as requested.

Defendant requested the Court to charge the jury as follows:

> "3. There is no evidence that the airplane in question was not properly inspected and properly serviced and cared for on and prior to March 17, 1929."
>
> "4. There is positive evidence in this case that the airplane in question was properly serviced and properly inspected and cared for on and prior to March 17, 1929."

"8. There is no evidence that the failure of the left motor and the revving down of the center motor to a point where it had no power, was in any way due to the negligence of the defendant."

"10. It is uncontradicted that the proximate efficient cause of defendant's airplane coming down was engine failure. There is no evidence that such engine failure was in any way due to any negligence on the part of the defendant."

"19. The jury must return a verdict in favor of the defendant because there is no proof that the defendant was guilty of any negligence which was the proximate cause of the accident" (p. 1204 to p. 1206; grounds of appeal Nos. 5, 6, 7, 10, 13).

These requests were refused and exceptions allowed (p. 1199, l. 40).

Plaintiffs in this case did not attempt to rely upon the doctrine of *res ipsa loquitur,* but proved the facts concerning the operation of the plane the entire day, the last take-off and the failure of the engines in mid-flight, bringing the case within the rule laid down by this Court in *Dentz* vs. *Pennsylvania R. R. Co.,* 75 N. J. L., 893, where Mr. Justice Bergen, speaking for the Court, said:

"When nothing appears except that a boat, coming into a slip under ordinary conditions, collides with another moored therein, a presumption of negligence in the operation of the moving boat arises, but where, as in this case, the plaintiffs show the conditions under which the accident happened, and the question is raised whether, under the circumstances specified, the conduct of the defendant was negligent, the rule of *res ipsa loquitur does not apply.* . . . The plaintiffs did not rely upon the presumption of negligence arising from a collision resulting from negligent operation alone, but upon circumstances entirely aside from it which contributed to that end. The collision did not result from the direct opera-

tion of defendant's tug, but because of the separation of the tug from the lighter it had in tow, and whether the act which parted the tug from the lighter, whereby the lighter collided with the plaintiff's tug, was a negligent one, depended on circumstances proven and not alone upon the fact of the collision. If a vessel lying at anchor in plain view is run into by another, nothing more appearing, the reasonable presumption is that the collision resulted from negligence in the operation of the moving vessel, but if it appear in the plaintiffs' case that, while the moving boat was being navigated, her rudder chains suddenly broke and she became unmanageable, no presumption of negligence in the operation of the vessel arises. It is only where the cause of such a collision remains undisclosed that the presumption of negligence exists. Presumptions exist in favor of the plaintiffs only in the absence, not in the presence, of explanation by them."

In *Kelson* vs. *Public Service R. Co.,* 94 N. J. L., 527, this Court, speaking by Mr. Justice Black, said:

"A carrier is not liable for an injury to a passenger from an accident which is not the reasonable, natural and probable result of the situation, and which could not have been foreseen by the carrier, in the exercise of that high degree of care which the law demands of him. 3 Thomp. Neg. Sec. 2778; Ayers *v.* Rochester Railroad Co., 156 N. Y. 104," and other cases cited.

"As a general rule, where an accident arises from a hidden defect which a careful examination would not disclose and which could not be guarded against by the exercise of a sound judgment, and the most vigilant oversight, the carrier is not liable for an injury resulting to a passenger therefrom."

Thompson on Negligence, Vol. VIII, Sec. 2789.

In *Roanoke Railway & Electric Co.* vs. *Sterrett,* 108 Va., 533, 62 S. E., 385, 19 L. R. A. (N. S.), 316, the Court of Appeals of Virginia considered a case where a railroad bridge fell because of a defect in the loop of the bottom cord where there had been an imperfect weld. The broken cord was produced in Court, and the unqualified testimony of the experts was that the breaking of that cord was the sole cause of the accident, and that the defect in the cord was the imperfect weld, which could not have been detected by the utmost scrutiny. The Court said:

> " 'Where the accident arises from a hidden and internal defect, which a careful and thorough examination would not disclose, and which could not be guarded against by the exercise of a sound judgment and the most vigilant oversight, then the proprietor is not liable for the injury, but the misfortune must be borne by the sufferer as one of that class of injuries for which the law can afford no redress in the form of a pecuniary recompense.' 2 Hutchinson, Carr. 3d ed. Sections 903, 904. The liability of a carrier of passengers as thus defined is now almost universally adopted.
>
> As a matter of course, there can be no negligence where there is no breach of duty. It must appear, therefore, not only that the defendant owed a duty, but also that he did not perform it; and, if the accident complained of was inevitable, it is not a case of negligence. An accident is inevitable if the person by whom it occurs neither has, nor is legally bound to have, sufficient power to avoid it or prevent its injuring another. In such a case the essential element of a legal duty is wanting, and it cannot, therefore, be a case of negligence. 1 Shearm. & Redf. Neg. Sections 15, 16" (p. 318).

In *Feary* vs. *Met. St. Ry. Co.,* 162 Mo., 75, 62 S. W. 452, a street railway company was absolved

from liability for injuries to passengers caused by a car escaping down an incline, where it was shown that it used the best machinery known, such as experience had shown to be safe, and the accident was caused by something which it could not have foreseen or guarded against, though the evidence failed to show the exact cause of the accident.

Cases involving accidents to airplanes are very few.

The French Court of Appeals in *Veuve de Courson de la Ville* vs. *Societe Aeronautique Latecore,* Vol. II, *Revue Juridique Internationale de la Locomotion Aerienne,* page 239, where a passenger in an airplane of the defendant Company was killed in an accident to the plane which was in flight between Morocco and France, resulting in the death of the pilot, said that the action was brought under Section 1382 of the French Code, which provided that:

> "Every act whatever of a person which causes damage to another obliges the one by whom the fault was brought about to make it good."

The Civil Tribunal of the Seine found for the defendant on the ground that plaintiff had not established that the defendant was guilty of any fault, without which no tort liability could be had.

The Court of Appeals affirmed this decision, saying:

> "It was incumbent on Mrs. Courson de la Ville Veuve to particularize and to establish the effective cause of the damages which she claimed from the defendant; that she was content to allege that the accident might have been due either to a fault of the plane or to an act of carelessness or negligence on the part of the pilot without proving nor offering to prove the reality of one or the other

> of the hypotheses which she advances; that in the absence of all evidence, many other causes to the accident might be assigned with equal probability, certainty of which exclude any liability on the part of the defendant company."

In *Sherman & Redfield, Law of Negligence,* 6th Ed., 1913, Sec. 653, it is said:

> "Aero vehicles, it is submitted, are not to be classed with dangerous agencies, such as explosives, ferocious animals and the like * * * rules for determining the liability of aviators are to be sought in the law relating to negligence and nuisance."

To the same effect see *Davids, "The Law of Motor Vehicles"* (1911), page 303; *Hotchkiss, "Aviation Law"* (1928), pages 42, 43.

The Supreme Judicial Court of Massachusetts in *Wilson* vs. *Colonial Air Transport,* 180 N. E., 212 (1932), said, at page 214:

> "The rules of law relating to the operation of aircraft, in the absence of statute, in general are rules relating to negligence and nuisance, and are not distinguishable from those which relate to the operation of vehicles, perhaps, more closely to motor vehicles on land."
>
> "The principle of *res ipsa loquitur* only applies where the direct cause of the accident and so much of the surrounding circumstances as were essential to its occurrence were within the sole control of the defendants or of their servants. Reardon *v.* Boston Elevated Railway Co., 247 Mass. 124, 141 N. E. 857. It is to be noted that the presumption raised in favor of the plaintiff by the application of the *res ipsa loquitur* doctrine is one of evidence and not of substance, and that the burden of proof remains during the trial upon the plaintiff. . . . There is at present no common knowledge of which courts can take cogni-

> zance concerning the customs or usual practice of air transport companies as to operation, inspection and repair of their airplanes. There must be evidence. We are not as yet, in respect to the operation, care and characteristics of aircraft, in a position where the doctrine of cases like Ware *v.* Gay, 11 Pick. 106, as to a stagecoach; O'Neil *vs.* Toomey, 218 Mass. 242, 105 N. E. 974, as to the qualities of ice; or Gilchrist *v.* Boston Elevated Railway Co., 272 Mass. 346, 172 N. E. 349, as to trolley cars or steam railroad trains, can be applied."

In the case at bar we find that the defendant had purchased the latest type of all-metal monoplane; that it was powered with three J-5 Wright Whirlwind engines, recognized at the time as the most reliable airplane engine ever made. This plane had been purchased less than six months before and had flown altogether only two hundred and seventy hours. To care for this plane defendant had employed the chief airplane and engine mechanic at Miller Field, Staten Island, a mechanic who had graduated from the Army School for Airplane and Airplane Engine Mechanics, and who had had many years experience in servicing Army planes. His only duties between September 28, 1928, and the day of this accident, were to care for this plane and its engines. The plane was given a daily inspection, as required by the Department of Commerce, every morning before being used. The type of inspection required by the Department of Commerce to be given to airplanes every one hundred hours of flight was given to this plane every twenty hours of flight. The plane had never failed in any particular. During his periodical inspections Wtorkowski had discovered one or two minor defects, one being a crack in a cylinder, which developed within a month after the plane

was purchased, and a broken valve spring, and these were immediately replaced.

The testimony of every witness who was familiar with this plane was that it was in perfect condition and had never failed in the slightest particular until in the midst of the last flight.

Several witnesses testified before the jury that shortly after the take-off the plane made a sharp turn to the right, but then continued climbing, and upon reaching the vicinity of South Street, Newark, made another turn to the right, and after being straightened out on its way eastwardly toward New York the plane started to descend.

Plaintiffs called as expert aviators, Clarence Chamberlin and N. C. Brown.

Both of these witnesses testified that the only danger from a sharp turn close to the ground is that the plane may touch ground. Brown said that if the plane does not touch ground there is no danger (p. 299, ll. 20 to 30). Brown was flying a Ford tri-motored plane, manufacturer's number eleven, from Port Newark, carrying passengers, on March 17, 1929, and was actually in the air with a load at the time defendant's plane crashed (pp. 298, 299).

Chamberlin testified:

> "Q. He would have had to make an emergency landing if his engines stopped, wouldn't he? A. If the engines stopped, certainly.
>
> The Court: And if they did stop, what bearing—that's what we are getting at—what bearing did the turns have upon the safety of the operation of the plane from there on, from the time the engines stopped?
>
> The Witness: I think I perhaps don't understand.
>
> By Mr. Reed:
>
> Q. Put it this way, Colonel. If the engines had continued to function he would have gone right on, wouldn't he? A. Yes; certainly.

Q. If they stopped he would have had to make his landing? A. Yes. . . .

Q. If the engines hadn't stopped he would have continued his flight? A. Yes.

Q. Then the turns had nothing to do with it, the fact this man, when his engines stopped, made an emergency landing? A. The turn didn't cause the crash" (p. 363).

Again Chamberlin testified:

"Q. The turns didn't cause the engines to stop so far as you know, did they? A. No" (p. 364, ll. 20 to 25).

Again Chamberlin was asked:

"Q. Once you are up any wind within this thirty-three to thirty-nine miles an hour doesn't make any material difference? A. No.

Q. Well, then, the wind wasn't the cause of the crash, was it?

The Witness: It wasn't the primary cause.

Q. It played no part except insofar as the location of the plane was concerned by virtue of the wind. That's so, isn't it? A. It played a part in the handling of the plane.

Q. So, it wasn't the cause of the crash at all, was it? A. It wasn't" (p. 368, ll. 18 to 36).

Chamberlin was flying a single motored plane, taking up passengers from the Jersey City Airport, on March 17, 1929, the date of this crash (p. 376).

It thus appears from the plaintiffs' own case that the failure of the engines in mid-flight was the thing that made an emergency landing a necessity. As Chamberlin said, if the engines had not failed the flight would have continued. Neither the wind, nor the passengers in the plane, nor the airport—nothing else, made it necessary for the plane to descend. When the engines of an airplane fail, the ship must come down within the

limits of the gliding ability of the plane, which are determined by the gliding ratio of the plane, the wind and the altitude at which the engines quit.

Therefore, the proximate cause of this crash was the failure of the engines.

> "The efficient proximate or intervening cause in such a situation is tantamount in law to the force or operating factor, without which the accident could not have happened. Such a power must have been active, operative and carrying and containing within itself the possibility and potentiality for harm."
>
> *Powers* vs. *Standard Oil Co.,* 98 N. J. L., 730; affirmed 98 N. J. L., 893.

> "The 'proximate cause' is that cause which naturally and probably led to, and which might have been expected to produce, the result. Whether the cause is too remote to allow compensation by way of damages is a question of law to be decided by the court."
>
> *Kelson* vs. *Public Service R. Co., supra.*

The proximate cause of an injury is the one that necessarily sets the other causes in operation.

> *Batton* vs. *Public Service Corp.,* 75 N. J. L. 857;
> *Comer* vs. *Meyer,* 78 N. J. L. 464;
> *Zellers* vs. *Delaney,* 80 N. J. L. 452.

Since the evidence in the case is that this plane, during its life of less than six months, had operated perfectly; that not a single engine had ever stopped in flight until in mid-flight in the late afternoon of March 17, 1929, and since the cause of the engine failure has not been discovered even to this very day, we submit that there was no proof of negligence on the part of the defendant to submit to the jury.

New Jersey State Library

As this Court said in *Kingsley* vs. *D. L. & W. R. R. Co.*, 81 N. J. L. 536, quoting Justice Earl in *Laflin* vs. *Buffalo & Southwestern R. R. Co.*, 106 N. Y. 136:

> " 'No structure is ever so made that it may not be made safer. But, as a general rule, when an appliance or machine or structure, not obviously dangerous, has been in daily use for years and has uniformly proved adequate and safe and convenient, its use may be continued without the imputation of culpable imprudence or negligence.' . . .
>
> And in line with the principle thus enunciated, it was held in the same jurisdiction that the owner of a vehicle is not bound to furnish appliances which will render an accident impossible, but only such as are commonly used by men of judgment and common prudence. Rattagliata *vs.* Hubbell, 7 Misc. (N. Y.) 103."

In *Carroll* vs. *Boston Elevated Railway Co.*, 200 Mass. 527, in an action against a corporation operating a street railway, for personal injuries caused by the derailment of a car in which plaintiff was a passenger, alleged to have been due to a broken and defective switch, the Court said that the plaintiff, after showing that he was in the exercise of due care, can establish a prima facie case by proving the derailment, but the defendant can rebut this presumption of fact by showing that it was not negligent, and the burden of proving the defendant's negligence remains upon the plaintiff as before.

We submit that the applicable rule of law for this case is that laid down by this Court in *Adriance* vs. *Schenck Bros.*, 95 N. J. L. 185, because the facts of this case, as in that one, disclose an injury, which is admitted, but do not disclose how it happened, beyond the proof that the engines failed. What caused the engines to fail the plaintiffs did not prove and nobody knows.

> "If there is no proof of any fact by which the conduct of the defendant can be ascertained, there is nothing for a jury to pass upon."
>
> *Bahr* vs. *Lombard, Ayres & Co.*, 53 N. J. L. 236.

It is also a well recognized principle of law that:

> "The only presumptions of fact which the law recognizes are immediate inferences from the facts proved."
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> *Price* vs. *New York Central R. R. Co.*, 92 N. J. L. 429.

This is not a case where either actual or constructive notice of any defect had in any way been brought home to the defendant, because so far as the evidence discloses there was not a single known defect in this plane. The plane and its engines had been given all the care that the utmost prudence could suggest. The testimony to this effect was given by Captain Weatherdon (p. 518 and p. 549). The plane was equipped with the best that money could buy, and there was no notice whatsoever of any defect (p. 550). The inspections that the Government required every one hundred hours of flight the defendant gave this ship every twenty hours of flight (Weatherdon, p. 585).

Wtorkowski testified that the plane was always kept in good condition; that none of its engines had ever stopped in flight before; that they never had any trouble with the functioning of the plane (p. 660). He saw every take-off of the plane on March 17th. He said that the engines were always revved up before each flight; that he saw the last flight and he saw nothing that did not properly function. In the last take-off he saw

nothing unusual in the exhaust and there was no sputtering (pp. 665-666).

Ray Wonsey, one of the Boston-New York pilots, who flew the plane on its second flight of the day, testified that the engines operated in a normal manner (p. 945). He was on the Airport and saw the last take-off and he said there was no smoke from any of the motors and no sputtering (p. 951).

Lou Foote, the pilot who was operating the plane on its last flight, said that before his left motor quit the plane and the engines "were just as perfect as they could be." He said: "I don't know any more about why they quit than you do" (p. 866).

Captain Wm. G. Rector, Adjutant of the 27th Aviation Division, stationed at Miller Field, said that it was one of his duties to see that planes landing at and leaving from Miller Field were in good condition. He said: "From my observation it was kept in good condition at all times." He was at the Airport at Port Newark intending to ride back to Miller Field with Captain Weatherdon in this plane and observed the last take-off and said that the plane, the take-off and the operation of the engines were normal (p. 477).

Wm. D. Kennedy of the Wright Aeronautical Corporation testified in detail as to his examination of the damaged engines after the accident (pp. 701 to 704). He said that his inspection of the engines showed that they had been regularly attended to as far as lubrication was concerned. He said the spark plugs were clean and were proper for the proper functioning of the engines when he examined them (pp. 704-705). Kennedy found no part of any engine that was in any way defective. Kennedy also said that the engines were equipped with dual ignition system, with two spark plugs on each engine. He said:

"The ignition systems are entirely independent. There are two separate magnetos and one will function without the other. The same thing is on the engine in duplicate and you can take one off and it will run with the other.

Q. In normal flight, normal operation of the engine, are both ignition systems in action? A. It is customary, and in fact it is universally done, to operate with both magnetos functioning" (p. 707).

"Q. Operating both at the same time? A. Yes.

Q. That was so on each of the three engines? A. That is right.

Q. I wish you would tell the Court and jury whether the spark plugs which had a gap of thirty thousandths of an inch would function in a Wright J-5 engine? A. In my opinion it would.

Q. Have you known them to function properly? A. Yes, sir.

Q. With a gap of that size? A. Yes, sir" (p. 708, ll. 1 to 12).

The testimony concerning the dual ignition system and its efficiency given by Kennedy was corroborated by Mr. Lane, a consulting aeronautical engineer of large experience, who was consulted by Lindbergh, Byrd and others preparatory to their well known flights. He testified that from his calculations the plane was not overloaded; that there was a margin of safety in the allowable load allowed by the Department of Commerce of eight hundred and eighteen pounds on the last flight (p. 769); that there was one hundred and fifty-seven gallons of gasoline in the tanks (p. 767, l. 40), (assuming as specified by Carraher, page 489, that the three tanks were filled to the top about 1:30 p. m.; corroborated by Wtorkowski, p. 664, and Weatherdon, p. 520).

Lane testified that not only is a gap on a spark plug of thirty thousandths of an inch proper on

an A. C. plug on a J-5 engine, but that when Brocke and Sleigh flew from America to Japan, with the same plugs on the same engine, they started with gaps of thirty thousandths of an inch (p. 771).

As to the construction of the ignition system on a Wright J-5 engine Lane testified that one complete set of the plugs and one magneto could be shut off and the engine would only lose about fifty revolutions per minute (p. 773). He explained the ignition system fully (p. 774, ll. 1 to 30).

According to this expert, Lane, this plane had not reached a point in two hundred and seventy hours of flight when it would be necessary to tear down the engines and overhaul them (p. 776).

Lane said that the Wright J-5 engine in 1929 "was a very, very efficient engine. It had very good fuel consumption and very good reliability. I could say it had unquestionably the best reputation of any commercial engine at that time."

> "Q. And was the J-5 engine commonly used in the profession of aeronautics at that time? A. Yes, it was.
>
> Q. And was the A.C. spark plug commonly used in the profession of aeronautics at that time? A. Yes, in the J-5 engine on the average it is universally used.
>
> Q. On J-5 engines? A. That is right" (p. 783).

George Branson, an aviator of four thousand flying hours' experience, now flying the night mail for the Eastern Air Transport between Atlanta and Richmond, testified that he occasionally took down and put together his own Wright J-5 engine himself. He testified that a Wright J-5 engine, with an A.C. type "N" spark plug, with a gap of thirty thousandths of an inch, will run efficiently. He has known of his own knowledge such an engine to run efficiently with gaps as high as forty thousandths of an inch (p. 804).

Victor E. Bertrandias, Chief Test Pilot for the General Aviation Corporation, is the pilot who flew the Fokker plane F-32, the largest plane built in this country, from Teterboro to Los Angeles with a party of invited guests (p. 812). He testified that a gap of thirty thousandths of an inch in a type "N" spark plug in a Wright J-5 engine would have no effect on the efficiency of the engine. He also said that one complete set of spark plugs could cut out in a Wright J-5 engine and it would still function and would have the required flying power to use cruising or whatever the condition might be (pp. 813-814).

Bertrandias testified that black smoke coming from an engine would not indicate anything particularly wrong with the engine. He said:

> "There might be a mixture—the gasoline mixture might cause a little black smoke or there might have been a little residue where the engine had not been properly cleaned out.
>
> Q. Residue of carbon? A. Yes, sir, carbon or oil and it might just incidentally backfire; it might be just a question of a sticking valve for the moment. That might do that.
>
> Q. Could it come from cleaning out the cylinder as the motor gets in the air? A. Cleaning out the engine? Not one cylinder, you probably would not see it. It might be if the engine is a little dirty. There might be a little water which is in your gas at that time—a mixture condition—which might throw out a little black smoke.
>
> Q. That would not indicate any difficulty in the flying capacity of your ship, would it? A. Not in my experience. I have had them do that a good many times and clean themselves out.
>
> Q. A sputtering motor just after the take-off, does that indicate any difficulty in your motor? A. Not particularly, again. I could say it was maybe formed by condensation in the carbureter, water in the gasoline, something like that, might cause a little sputtering of the engine" (pp. 814-815).

Bertrandias on page 820 of the record gave the reasons why it is advisable for a pilot flying at low altitude to go straight ahead instead of attempting to turn. He said: "In my opinion I think he did the right thing in going straight ahead" (p. 821, l. 18).

Every expert pilot who testified in this case said it was a first rule in aviation that if engines quit at low altitudes, to land straight ahead no matter what is there.

Of course, when the engines quit, the pilot was thrown instantly into an emergency. The law of gravity compelled him to come down. He could not have stretched his glide beyond the gliding ratio of the plane without the plane losing flying speed and falling, and a slide is always better than a fall, as Mr. Bertrandias testified.

What caused the engines to fail? The plaintiffs did not prove the cause. Although the defendant called every witness who might know anything about the matter, not one could give an explanation for the sudden failing of the engines. The first persons who reached the plane after the crash said that the smell of gasoline was very evident, and that oil was scattered all about.

So far as it was humanly possible to determine this ship when it took off on her last flight was in perfect condition. The most careful examination, made by experts after the crash, has not shown what the cause of the failure was. The cause of the accident is a complete mystery.

In *Hummer* vs. *Lehigh Valley R. R. Co.*, 75 N. J. L. 703, Judge Dill, in a case where there was no evidence of any specific omission on the part of the train employees to do anything which could reasonably have been done to have brought the train sooner to a standstill, said:

> " 'Where the evidence is equally consistent with either view, with the existence or non-

> existence of negligence, it is not competent to the judge to leave the matter to the jury. The party who affirms negligence had altogether failed to establish it. That is a rule which ought never to be lost sight of.' *Cotton* v. *Wood,* 8 C. B. (N. S.) 568, at p. 572."

He also said:

> "The rule is well settled that 'where the sole basis of liability is the omission to perform a certain duty suddenly and unexpectedly arising, there ought to be at least a consciousness of the facts which raise the duty on the part of the person who is charged with its performance, and a reasonable opportunity to discharge it.' H. M. & F. Pass. Ry. Co. *v.* Kelley, 102 Pa. St. 115 (at p. 120)."

In *Smith* vs. *Public Service Corporation,* 78 N. J. L. 478, Mr. Justice Trenchard speaking for this Court said:

> "Whether an act of omission alleged to be negligence naturally and proximately caused an injury, is, as a rule, a question for the jury. But if there is no evidence connecting the alleged negligence with the injury, or if it is obvious that the act or omission was not the natural and proximate cause thereof, the question is for the court."

He also said:

> "The rule of law requires that the damages chargeable to a wrongdoer must be shown to be the natural and proximate effects of his delinquency. The term 'natural' imports that they are such as might reasonably have been foreseen—such as occur in an ordinary state of things; the term 'proximate' indicates that there must be no other culpable and efficient agency intervening between the defendant's dereliction and the loss."

In view of the overwhelming testimony as to the care used by the defendant in keeping its air-

plane in proper condition, and the inability after the crash to determine any cause, to say nothing of the testimony of Lou Foote that the engines of the plane functioned perfectly to the moment when the left engine quit in mid-air and the center engine slowed to the point where it had no power, the language of the present Chief Justice in *Eissing* vs. *Erie Railroad Company,* 73 N. J. L. 343, is peculiarly applicable:

> "As against this positive affirmative evidence of witnesses, all of whom, except the engineer, and perhaps the fireman, seem to have been disinterested, there should have been something more than the testimony of two witnesses who were, presumably, too far away from the scene of the collision to have heard the sound of the bell, even if they had been listening for it, that they did not hear it ring, and the testimony of a third witness, who was not listening for it, that he did not hear it, but could not say whether it was ringing or not, to justify the submission of the question to the jury. Hubbard *v.* B. & A. R. R. Co., 159 Mass. 320; Culhane *v.* New York Central &c. Railroad Co., 60 N. Y. 133; Keiser *v.* Lehigh Valley Railroad Co. (Pa. Sup. Ct.), 61 Atl. Rep. 903."

Judgment for the plaintiff was reversed on writ of error.

We therefore respectfully submit that the learned Judge of the Trial Court erred in refusing to charge as requested under defendant's third, fourth, eighth, tenth and nineteenth requests, *supra.*

POINT II.

The Trial Court erred in refusing to charge that "there is no evidence in this case that the defendant failed to make or have made through expert mechanics proper examination and inspection of the airplane" (Request 26; Ground of Appeal 16).

Not only did the Court below refuse to charge this request, but charged the jury:

> "I do not recall any testimony here to show that the inspections were not actually made, but that is not the point that has been stressed here on the part of the plaintiffs, because the plaintiffs in these cases say, 'We are not so much interested in inspections, but we say that they were not proper inspections, and not proper maintenance of the engine.' That I understand to be the burden of their charge" (p. 1183, ll. 1 to 13).

There is no evidence that the inspections were not properly made. There is positive evidence that all proper inspections were made. There is evidence that all the inspections required by the Department of Commerce rules and regulations were made. In fact the one hundred hour inspection required by the Department of Commerce was made every twenty hours (Weatherdon, p. 582, l. 10; Wtorkowski, pp. 649-650). There is voluminous evidence of proper maintenance of the engines which is wholly uncontradicted. The testimony as to the making of the examinations was given by Mr. Wtorkowski, the airplane and engine mechanic, who had nothing to do but to take care of this plane and the engines. The fact that the twenty hour inspection was made during the week preceding the crash, as testified to by Wtorkowski, was verified by three Government

mechanics from Miller Field, who saw Wtorkowski giving the plane said inspection during the preceding week. These Government employees were George H. Lawton, Hector Ghertzo and George Wittich. The testimony of pilot Lou Foote that the plane operated perfectly until the left engine quit in mid-air, the testimony of Captain Weatherdon and Ray Wonsey, both of whom flew this plane the day of the accident, was to the effect that it was in perfect condition, and the testimony of Captain Rector, who was familiar with the plane and the way it was kept, was also to the effect that the plane was kept in perfect condition at all times.

We therefore respectfully submit that it was error for the Court to refuse to charge as requested. There was absolutely no evidence that proper inspections were not made. The circumstance of the engine stopping in mid-flight was not sufficient for the Court to permit this question to go to the jury.

As a general rule the proof of the occurrence of an accident does not raise a presumption of negligence.

Bahr vs. *Lombard Ayres & Co.*, 53 N. J. L. 233;
Paynter vs. *Bridgeton & C. Traction Co.*, 67 N. J. L. 619.

POINT III.

It was error for the Trial Court to refuse to charge the jury that "there is no evidence that the failure of the left motor and the revving down of the center motor to a point where it had no power was in any way due to the negligence of the defendant" (Request No. 8; Ground of Appeal No. 7).

The testimony of Lou Foote, the pilot, that his left engine suddenly quit cold and that the center motor then revved down to a point where it had no power, when he attempted to put more power on his remaining two motors, was not contradicted by any witness. He was corroborated by the actual circumstance that the plane did come down because it did not have sufficient motive power to hold it up and continue its flight.

Therefore, since it is admitted by every expert, and is a matter of common sense, that had the motors continued properly to function, there would have been no crash and the plane would have continued on and completed its flight, it is demonstrated that the proximate cause of the accident was motor failure.

This was the cause which necessarily set the other causes in motion which proved to be so disastrous.

Aside from the fact of the stopping of the engine, no concrete fact either of omission or commission, constituting negligence, was laid by the testimony at the door of the defendant.

As was said by Mr. Justice Garrison in his opinion in this Court in *Wyckoff* vs. *Birch,* 76 N. J. L., at page 653:

> "If he was negligent in some other regard that caused the death of plaintiff's intestate

it must have been either with respect to some act done by him or some duty that he omitted to perform, but as to any such act or as to any such duty the testimony is not only silent but is conclusively to the contrary. Arguments based upon isolated circumstances or detached statements of witnesses or upon general allegations of negligence go for nothing when unsupported by testimony as to concrete facts. 'There is,' as was said upon another occasion, 'no such thing as negligence at large.' ''

Lou Foote testified that:

"A. The center motor really acted as though it were starved for gas more than the left motor. The left motor quit cold. The left motor could have been the ignition or it could be gas, too, but the center motor is the one that acted as if it were starved for gas, because when you would open the throttle wide open it would quit cold. There would not be anything there.

The Court: Just a minute. You eliminated in your mind the gas tank situation. You say 'starved for gas'. That gets it down to the carbureter then, don't it?

The Witness: Yes, sir.

The Court: So far as the carbureter is concerned, you don't know whether it was functioning properly or not, do you?

The Witness: They were functioning all right as far as running up until this time.

The Court: At that time?

The Witness: No. I didn't know at that time.

The Court: In other words, you don't know whether there was something in there that prevented the gas from going in the carbureter?

The Witness: They did not backfire. Usually the symptoms of a motor that is starved for gas or getting a partial amount of gas through the needle valve will backfire.

The Court: Sputter?

The Witness: Yes. And this motor did not backfire, the center motor did not backfire at all and the outboard motor just quit cold. There was not anything there, just as if you took a sledge hammer and knocked it off the wing. That is the way it acted. There was not a particle of life there, and never was any life up until the time of the crash.

Q. Before that it had been what? A. Perfect. Everything was just as perfect as could be. Revving up, temperature was all right, everything.

Juror Number Five: There could not be anything else but one or two things, either the juice or the gas?

The Witness: I don't see how it could. I don't know.

Juror Number Five: It is surely one of them two. It could not have been anything else.

The Witness: I can never tell you. I will never tell you.

Q. You really don't know? A. I don't know any more about it than you do yourself. Just one of those things—you drive down the highway in your car and she quits for some unknown reason, and there she is. You go over a bank and crack up'' (p. 865, l. 5 to p. 866, l. 35).

Wtorkowski, the mechanic, said that when he saw the ship coming down:

''I thought there was something wrong when he was coming down so fast and getting lower right along.

Juror Number Five: Something wrong. What did you think, for example, for the minute, could be wrong?

The Witness: There are hundreds of things could be wrong. I did not think just what could have been wrong. I knew he was in some predicament coming down so low over the buildings in that spot somewheres.

Q. You knew something must be wrong? A. Yes.

Q. Did you have any idea what it was? A. No, I did not" (p. 669, ll. 38 to 40 to p. 670, ll. 1 to 18).

The witness Bertrandias, in response to a question of the Court, said that some residue in the gas tank, some flakes or something that might accidentally have stopped up the gas line, *might* have been the cause of the engine stopping (p. 830, ll. 30 to 40).

Judge Ackerson asked Mr. Jones:

"Q. What variety of causes would cause such a condition as that? Here is a plane going along all right, had been going along all right all day. All of a sudden this thing happened on the last flight up in the air. A. Well, of course, under the circumstances there are several things that might have happened. It might be gas stoppage or something like that.

The Court: Ignition?

The Witness: Ignition, it might be.

The Court: That is pretty near the limit?

The Witness: Valve trouble. I would say the chances are it might be either ignition or carburetion or something in the gas line would be a logical conclusion.

Q. Are there possibilities of something happening in that carburetion system, valve system, or ignition system, even with the best of care? A. Yes" (p. 1079, ll. 3 to 25).

Harold A. Hicks, designer of this airplane, was pressed on cross-examination to give an opinion as to the cause of the engines failing. He said:

"A. It is not possible for me to hit upon the cause of that accident. * * *

There are a variety of things which would cause a power plant to fail, and in case of a failure of a power plant to operate on our airport over here, we look for a number of things, many things. It depends upon the symptoms that you see there. Your decision

depends upon it. Now, if an eye witness were standing by and he could tell whether it was ignition or whether it was carburetion, or whether it was gas, or there might have been a plugging in the lines. There are so many things it is really foolish to conjecture what happened.

Q. Assuming it was ignition, what would the failure of the ignition be caused by? A. The ignition system is quite complex, as you know. It could be caused by defects in the system.

Q. If it were perfect the moment it left the field, is it natural or reasonable to expect it to get out of commission while in flight? A. It would be exceptional.

Q. And if it did get out of commission in flight, wouldn't it show that there was something wrong or probably wrong at the time it left the ground? A. It might and it might not. When a crash occurs, such as occurred in the Little Fleet over here, we go over there and look at the wreck. It was difficult to tell what happened to that job, and it was mostly intact. You have got to take it all apart" (p. 1046, l. 10, to p. 1048, l. 10).

The witness Charles S. (Casey) Jones, one of the best known of American aviators, and Vice President of Curtiss Wright Corporation, was asked by the Court and one of the jurors as to the possible causes for engines stopping in mid-flight. His testimony was that *occasionally an engine will stop with the best of care and the best of inspection;* that a particle of dirt or foreign matter might get in the jet of the carbureter and stop the engine, because it would not be getting any gas (p. 1083). He said the jets are just "like a needle. It would not take very much. If you got it in just right it would not take very much dirt" (pp. 1083-1084). Of course this testimony is speculative and does no more than suggest what might have happened despite the use of all possible care.

All such testimony as to the possible causes of the stopping of the engines relates merely to the possibilities of the case. The fact is that the engines did stop. Their stopping compelled the plane to descend. The engines were carefully inspected by the manufacturer after the crash and no cause for the failure of the engines was discovered.

The case seems to fall within the rule laid down by Mr. Justice Trenchard in *Stumpf* vs. *D., L. & W. R. R. Co.,* 76 N. J. L., at page 155, as follows:

> "When the fact is that the damages claimed in an action were occasioned by one or two causes, for one of which the defendant is responsible and for the other of which it is not responsible, the plaintiff must fail if his evidence does not show that the damage was produced by the former cause. And he must fail also if it is just as probable that they were caused by the one as by the other, as the plaintiff is bound to make out his case by the preponderance of evidence. The jury must not be left to mere conjecture, and a bare possibility that the damage was caused in consequence of the negligence and unskillfulness of the defendant is not sufficient."

We therefore respectfully submit that the Court erred in refusing to charge the jury as requested.

POINT IV.

The Court erred in refusing to charge the jury: "There is no evidence in this case that the pilot, Lou Foote, was guilty of any act of negligence which was the proximate cause of the accident in question" (Request No. 2; Ground of Appeal No. 4).

Judge Ackerson charged the jury that the evidence does not bear out the charge that the pilot was not competent.

> "According to the uncontradicted evidence the pilot was competent and qualified to operate and manage a Ford 4-AT aeroplane carrying passengers on March 17, 1929. Even if you should find in this particular instance he might have been negligent, that would not mean in employing him this defendant employed an incompetent and careless pilot," &c. "Furthermore, I might say that there is no evidence in this case that the pilot did anything to cause any of the motors to fail. Have that in mind. * * * And even if you should find a sharp turn or bank was made by the plane at an altitude of 150 feet or 200 feet, there is no evidence such a maneuver had any effect on the subsequent failure of the engines of the plane" (p. 1194).

There being no evidence, as the Court instructed the jury, that the pilot did anything to cause any of the motors to fail, and it having been established by uncontroverted testimony that the reason the plane came down was because the engines failed in mid-flight, we submit that the defendant was entitled to have the jury instructed that there was no evidence that the pilot was guilty of any act of negligence which was the proximate cause of the accident in question.

In a long trial such as this, covering a period of two full weeks, it was of the utmost importance that the questions submitted to the jury should be limited as much as possible, so they would not be confused, so they would have a clear cut issue of fact to decide, if there were any fact to submit to them. The Court not only refused defendant's second request as above stated, but told the jury "even if you should find in this particular instance he might have been negligent, that would not mean in employing him this defendant employed an incompetent and careless pilot" (p. 1194, l. 20).

There was nothing in this case warranting the Court to leave the question of any negligence of the pilot to the jury regarding the proximate cause of the accident. The utmost that was charged against the pilot was (a) that he made a sharp turn directly after leaving the airport, but the Court instructed the jury that "there is no evidence such a maneuver had any effect on the subsequent failure of the engines of the plane" (p. 1194, l. 35); (b) it was also charged that the pilot was unfamiliar with the terrain. Many times that day, prior to the last flight, this same pilot had flown this same ship from the airport over the same route, over the City of New York, the Statue of Liberty, and return with passengers, with complete safety. The terrain had been pointed out to him by Captain Weatherdon. Weatherdon said that he pointed out to him the terrain, dumps, swamps and places he might land; the various points of interest; rules of the Company, &c. (p. 530).

Casey Jones testified that such flights and such instruction were amply adequate to acquaint a pilot with the terrain. He said: "I think that a pilot automatically sizes up the conditions around the field" (p. 1085, ll. 30 to 40). He said: "From his training and experience, and if he was taken over this terrain in this series of flights, well, certainly, that is adequate training to do that sort of thing" (p. 1086, ll. 1 to 5).

As we said earlier in the brief, when the engines failed the ship had to come down within the distance that the altitude and the ability to glide permitted. It could not stretch that glide without falling.

Lou Foote kept this ship on an even keel from the time the motors quit until the end. Witnesses described it as a flat glide.

Captain Weatherdon described it as a normal glide. He said the ship was on a level keel to the end; that, if anything, it was "a little flatter than a normal glide" (p. 546). Captain Weatherdon also testified that there was no decent place anywhere along there where a pilot could land his ship (p. 549). Weatherdon said: "No matter where you turn at if your motors fail you are going to have an accident" (p. 546).

Captain Weatherdon said from his observations, "*I do not think he could have made the airport. I would have done just as he did. The average pilot would too*" (p. 572).

Captain Wonsey said that the ship kept on in a straight direction, the wings being parallel with the ground, and gradually lost altitude. In other words, the ship was level and still it lost altitude, which indicated it was flying without power, without sufficient power to keep it in level flight (p. 951, ll. 35 to 40).

Foote said:

> "Q. Was it your belief when you made that maneuver and made your glide and went straight ahead you were going to make that meadow? A. I was sure I was making that meadow. I had a feeling I would crack up because I was almost down wind and that's bad.
>
> Q. You did not have the power to climb? A. No.
>
> Q. With your motors gone? A. I should say not. I tried to put the motor on and put the wing down. The torque was so great I could not hardly keep in control down wind that way. I had so much speed I knew when I landed I would crack up. There was no question about that.
>
> Q. Even knowing that, did you keep right at your controls maneuvering that ship right up until the time you were knocked out? A. Absolutely (p. 868, ll. 20 to 40).

Plaintiffs' expert, Clarence Chamberlin, testified that the pilot had practically no choice but to land straight ahead, regardless of what was there (p. 383, l. 10). Chamberlin also said that a great many good pilots have lost their lives when they attempt to turn about at low altitudes when their motors fail and attempt to go back into the wind (p. 389, l. 40).

No less an authority than Bernt Balchen testified that under the circumstances he would have tried "to stretch it over to that green lawn" (meadow) "and try to make it in there with the plane."

> "Q. You think that was a proper maneuver to make? A. Yes, when I could not see any opportunity for turning around and getting in the wind and landing on some clear space any other place.
>
> Q. Do you know whether there was any landing place proper to put down the ship in the neighborhood of South Street, elevated route number 25 and the railroad track? A. Oh, no, you can't land in there.
>
> Q. How about this particular point here below the railroad? Do you know what that was in March, 1929? A. There was a swamp.
>
> Q. Just swamp? A. Yes—and with only five hundred feet it is a question of your judgment at the time, but it just looks to me it would not be possible to turn in and try to make a landing in there. You would not have altitude enough to do that maneuver" (p. 606).

Balchen explained on pages 604 and 605 his reasons why it was necessary for a pilot at low altitudes to fly straight ahead, even though going down wind, rather than to attempt to turn. He summed up his testimony by saying that a ship loses flying speed in turning about to go into the wind and control is lost of the ship. He said: "When you lose control Old Man Gravity

will work on your ship and drag it on the ground and that ends things'' (p. 605, l. 35).

For the reasons aforesaid we respectfully submit that it was error for the Court to refuse to charge defendant's second request.

POINT V.

The Trial Court erred in refusing to charge defendant's requests to the effect that there was no evidence that defendant's plane was flown in an improper wind, or that the velocity or character of the wind was in any way the proximate cause of the accident. (Said Requests are numbers 9 and 10; Grounds of Appeal 8 and 9.)

The Court instead of charging the jury as requested said:

> ''I recall no evidence in this case, gentlemen, to the effect that the total authorized weight was exceeded. So, the question to be decided, therefore, is whether the defendant was negligent in permitting this flight with the load which the plane actually carried on this flight under all of the conditions, including the wind, which existed at that time'' (p. 1188, ll. 15 to 25).

Again the Court charged:

> ''The underlying question is whether or not with the weight, whatever it was, on that day, with the conditions, all of them, that confronted the pilot when he took off there, whether or not it was in the exercise of reasonable care to have allowed the plane to make that last flight on that day under all of those conditions'' (p. 1189, ll. 10 to 20).

The evidence of the various witnesses as to the character and velocity of the wind differed some-

what. The lowest velocity given was twenty miles per hour and the maximum thirty-nine miles per hour.

The wind according to the weather records given by Homer W. Ball, who took the observations at Hadley Field, and James H. Scarr, from the New York Weather Bureau, was that the wind was steady. There was some evidence from lay witnesses that it was gusty.

Clarence Chamberlin was flying a lighter ship, with passengers, all that afternoon from the Jersey City Airport (p. 376).

Chamberlin testified that once a Ford tri-motored plane is up in the air a wind from thirty-three to thirty-nine miles an hour makes no material difference in the functioning of the ship.

> "Q. It" (the wind) "played no part except insofar as the location of the plane was concerned by virtue of the wind. That's so, isn't it? A. It played a part in the handling of the plane.
>
> Q. So, it wasn't the cause of the crash at all, was it? A. It wasn't" (p. 368, ll. 18 to 38).

N. C. Brown was flying a Ford tri-motored plane, No. 11, with passengers, throughout the entire day, March 17, 1929 (p. 301, ll. 20 to 40 to p. 302, ll. 1 and 2). He was taking the same course as the Colonial plane. Brown said:

> "Considering the plane as you know it, no change in weather conditions, would you say that it was reasonably safe to take up the full capacity even authorized by the license on that kind of a day as existed on March 17, 1929? A. You mean the full 3961 pounds?
>
> Q. The full capacity authorized by the license, 3961 pounds.
>
> The Witness: Yes, sir" (p. 291, l. 32 to p. 292, l. 19).

Bernt Balchen was asked by the Court:

> "Assuming that there were fifteen persons aboard this ship on this day and their average weight was one hundred and fifty pounds, taking off in a northwest direction, in a northwest wind, averaging from thirty to thirty-nine miles an hour, say that it is not terribly gusty but a fairly gusty wind, would that load of live freight there be excessive for that plane under those conditions? In other words, would it be good piloting to take off with that load aboard on that day under those conditions, assuming that when you left the runway your engines are functioning perfectly?
>
> The Witness: Yes. We are doing it daily.
>
> The Court: It would be all right?
>
> The Witness: Yes.
>
> The Court: Would that be an excessive load for that plane?
>
> The Witness: No, your Honor" (p. 609, ll. 10 to 30).

At this point permit us to call the Court's attention to a remark by Judge Ackerson:

> "The Court: I shall give the Court's impression to counsel in the matter. I have not heard anything that will indicate on either side that this plane was overloaded" (p. 610).

Both counsel agreed (p. 610).

Captain Weatherdon testified that in his estimation the wind that day was from twenty-five to thirty miles per hour and steady (p. 539). He said the wind that day would have no effect on the flying ability of the plane (p. 540). There was no difficulty experienced that day from the wind in flying the ship (p. 541).

Casey Jones testified that a strong wind makes it easier for a tri-motored plane to get off the ground and it climbs more quickly than on a calm

day. He testified that once the ship is in the air a wind of thirty-three to thirty-nine miles an hour makes no difference (p. 1072, ll. 30 to 40).

Branson, who took off with a plane directly behind defendant's plane on its last flight, testified that he judged the velocity of the wind at the time was something around twenty miles an hour; that flying conditions and visibility were good (p. 791, ll. 20 to 30). Bertrandias testified that neither the turns nor the wind would have any effect on stopping the engines of the plane (p. 820).

We therefore submit that the defendant was entitled to have the jury instructed as requested. The granting of these two requests would have removed all question concerning the wind from the jury, as it should not have been submitted to the jury under the evidence.

The ship had been flying all day in safety in a wind as strong, and with loads as great, and yet neither the wind nor the load made the plane come down. Under the evidence there was no question concerning the wind to be left to the jury's consideration. It was therefore error to refuse to charge these two requests.

Conclusion.

When the facts of this case are boiled down the residue is engine failure. That and that alone caused the accident by forcing this airplane to make an emergency landing. An emergency landing is nothing less than an "emergency." That two of the engines of this plane unexplainably lost power at a point where it was impossible for the pilot to make a safe landing, was one of those misfortunes that all the care in the world did not prevent.

Not the slightest evidence was presented to the Court or jury explaining the cause of the stopping of the left motor and the revving down of the center motor. The facts are that there was plenty of oil and gasoline in the engines. They had been given infinite care and attention throughout their entire history of less than six months. The plane was built to have a life of at least five years. The reasonable life is at least twenty-five hundred flying hours (p. 1032), yet this plane had only flown a total of two hundred and seventy hours in less than six months.

Since, under the law, there is no such thing as negligence at large; since it is always concrete; since proof of it must always rest upon evidence that tends to the establishment of concrete acts either of omission or commission (*Wyckoff* vs. *Birch,* 76 N. J. L., 646), where is the legal evidence that either or both of these engines failed because of negligence of the defendant?

Did they fail because of water in the gasoline; or because a flake of carbon or other foreign matter closed the needle valve of one engine and partly closed that of another engine; or what did happen? Nobody knows.

In the total absence of knowledge as to the cause of the failure of the motors; in the face of the certainty that the only reason the plane had to make an emergency landing was because those motors failed, the case was left in the position where the plaintiffs had failed to sustain the burden of proving the concrete proximate cause of the accident was due to negligence on the part of the defendant as required by the decisions in

Wyckoff vs. *Birch,* 76 N. J. L. 646;
Stumpf vs. *D., L. & W. R. R. Co.,* 76 N. J. L. 153;

Austin vs. *Pennsylvania R. R. Co.*, 82 N. J. L. 416;
Hummer vs. *Lehigh Valley R. R. Co.*, 75 N. J. L. 703.

We respectfully submit that the judgments below should be reversed.

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