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P U B L I C H E A R I N G

before

SENATE AND ASSEMBLY COMMITTEES ON TRANSPORTATION AND PUBLIC UTILITIES

ON

Senate Bill No. 377 and Assembly Bill No. 433

(Jetport Authority)

Held:
March 18, 1969
Assembly Chamber
State House
Trenton, New Jersey

Members of Committee present:

Senator Richard R. Stout [Chairman, Senate Committee)
Senator J. Edward Crabiel
Senator Hugh A. Kelly
Assemblyman Kenneth T. Wilson
Assemblyman Joseph Azzolina
Assemblyman George C. Richardson
Assemblyman Everett B. Vreeland
Assemblyman Richard A. Olsen

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I N D E X

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SENATOR RICHARD R. STOUT (Chairman): I will open this third hearing on the Jetport Bills now before both the Senate and the Assembly - Senate Bill No. 377, Assembly Bills No. 53, 421, 422, and 433. And I would like to present the members of the Committee here. Senator Crabiel of Middlesex County on the far end; Assemblyman Everett Vreeland of Morris County; Assemblyman Richard Olsen of Middlesex County; Assemblyman Kenneth Wilson of Essex County; Assemblyman George Richardson of Essex County; and Assemblyman Joseph Assolina of Monmouth County. There will be others along. Last night was St. Patrick's night so some will be a little late this morning.

If anyone would like to be heard or enter their appearance, I wish you would do so either at one of the intermissions or now, on this pad here.

If you have written statements, before you testify if you would give them to the Court Reporter who is sitting next to the witness stand here so that she might be better able to follow the witness, we would appreciate it.

I've had a lot of requests from organizations and people to be heard and this is the third day of our hearings and it looks like we won't finish with everybody here today and I want to announce that we will continue with our hearings until everyone who has an interest in this matter can be heard. So there is no attempt to shut anyone off or to prevent any group or any individual from having his views heard by this Committee. We will announce the date of the next hearing some time during the day, as soon as the Committee can get together and decide

what dates are available.

I would call this morning on the Airlines. The Aviation people have asked to be heard and, much as the Governor's Committee was heard the first day of the hearings, they were permitted to determine the order of witnesses to present their case, and I would like to present, to open this part of our hearing, Williams F. Tompkins, former Assemblyman and a member of the Tompkins Firm in Newark. William F. Tompkins.

W I L L I A M F. T O M P K I N S: Thank you, Mr. Chairman.

Mr. Chairman and members of the Committee, I am Counsel for the Aviation Development Council and we are going to ask the Committee to hear a number of witnesses in connection with the legislation pending before both the House and the Senate.

The first witness we would ask the Committee to hear is Mr. James T. Pyle, who has had a very long association with the aviation industry.

Mr. Pyle, in 1932, started out as a mechanic at Newark Airport. Subsequently, he became a junior executive with Pan American World Airways and then left for service in World War II with Naval Aviation. Subsequent to World War II, he returned to operate an air charter, an air taxi service in Denver and then went to Washington as Technical Adviser to the Navy Department on airspace matters. He was appointed by President Eisenhower as Administrator of the Civil Aeronautics

Administration, and when that agency was absorbed into the Federal Aviation Agency, President Eisenhower appointed him as the First Deputy Administrator, in which capacity he served until 1961.

After a brief tour as an executive of a defense industry firm, he came to his present position as Director of the Aviation Development Council. Mr. Pyle.

SENATOR STOUT: Mr. Tompkins, do you have other copies of this list that you might give to members of the Committee?

MR. TOMPKINS: I do.

J A M E S T. P Y L E: Mr. Chairman, my name is James T. Pyle, Director of the Aviation Development Council, and I would like, Mr. Chairman, to commend you and the members of the Committee for setting up these hearings and to explore this very complex problem in the detail that you are. I'm impressed, having testified a number of times before the Congress of the United States in my government capacity, with the conscientious manner in which you and your Committee are addressing yourselves to this problem. I can only say, as a former resident of New Jersey, that the State is fortunate in having Legislators of your caliber.

I would like to briefly describe the Aviation Development Council because this is the organization for which I work and which is intimately involved in this over-all problem.

Its membership consists of the airlines serving

the New York-New Jersey metropolitan region, forty-four American flag and foreign flag carriers: the Port of New York Authority is a member of the Aviation Development Council; the two professional pilots' associations and the Aerospace Industries Association, which build both the airplanes and the engines that are used by the air carriers.

It was formed to insure that proper facilities are afforded the aviation community to serve the metropolitan area and to be concerned with some of the problems that inevitably transportation creates in terms of relationship with communities, service patterns, and the airports as neighbors of the various communities in which they are located.

I would like at this point, Mr. Chairman, to read on behalf of Mr. George E. Keck, Chairman of the Aviation Development Council and President of United Air Lines, a brief statement.

I would like to have one of the United representatimes bring a copy of that statement for the Committee members. I will read it very briefly.

Mr. Keck asked me to express to you and to the members of the Committee his deep regret that he couldn't be here but there is a tremendous problem with which his Company is faced and he could not leave Chicago today. So he asked me to read his statement for him. I will read the statement.

(Statement follows)

Statement
by
George E. Keck
Chairman, Aviation Development Council
President, United Air Lines, Inc.
before the
New Jersey Joint Legislative Committee
March 18, 1969

Mr. Chairman, Members of the Committee, Ladies and Gentlemen:

Speaking on behalf of the aviation industry in the New Jersey-New York Metropolitan Area, I would like to express our appreciation for this opportunity to participate in these legislative hearings on the vital matter of a fourth major airport to serve the domestic and international needs.

The decision the Legislature will make is a critical one. It will affect not only the economy of this area, through the nature of the air service provided but also it will, because of its relation to air traffic congestion, affect air transportation at major cities in this country as well as in many cities abroad.

As you may know, in two recent letters to Governor Hughes, I have made our industry's position clear as to its preferences concerning the two major projected airport sites which have been under discussion at these hearings. Rather than take the committee's time to read them, I respectfully request that copies of these letters, with attachments, be placed in the records of these Legislative hearings, and I would like to emphasize the two main points they made:

1) The McGuire site is too far from the densely populated areas we must serve to be useful in the public service or to justify the large airline capital expenditures which are necessary at a major airport.

2) The airlines serving the Northern New Jersey-New York Metropolitan Area recommend Solberg because of

a) the expanding needs for transportation in that Area,

b) the airspace situation, which is the all-important factor,

c) adequacy of land area.

The Federal Aviation Administration, as recently as last month, reiterated its opinion that from the standpoint of air traffic control, the best location in New Jersey for a major intercontinental airport is in the area referred to as the northwest quadrant. The Solberg site is in the northwest quadrant.

The many studies by our industry's leading technical experts over the past several years have resulted in conclusions which completely agree with the FAA's opinion concerning air traffic control.

In reference to our statements on the relative merits of McGuire and Solberg, it has been alleged that "the airlines will change their minds." I can assure you gentlemen of the committee that nothing so far has come out at these hearings which has caused us to alter our opinion. This subject has been studied so thoroughly and so many times over the years, we cannot foresee anything not known now or which will develop in the foreseeable future that will cause us to change our opinion.

If New Jersey is to have another major airport our very extensive studies and careful analyses have led us to the conclusion that Solberg is the only practical location.

Thank you very much.

MR. PYLE: Mr. Chairman, Mr. Tompkins has the letters here which I would ask be inserted in the record.

SENATOR STOUT: They will be inserted in the record, Mr. Pyle.

MR. PYLE: Now, Mr. Chairman, if I could proceed very briefly, I would like to introduce --

SENATOR STOUT: Just a second. Do any members of the Committee have any questions of Mr. Pyle?

I have one. Does this Aviation Development Council operate in areas other than the New York-New Jersey area?

MR. PYLE: No, it does not.

SENATOR STOUT: Is it a national affair or just confined to the New York-New Jersey - LaGuardia, Kennedy, Newark, etc.

MR. PYLE: This is correct. It addresses itself to the problems of the Northern New Jersey-New York metropolitan region. It has no national responsibilities or role.

SENATOR STOUT: Thank you.

Any other questions?

SENATOR CRABIEL: Mr. Pyle, in reading the letter into the record, of Mr. Keck, you give three reasons for recommending Solberg. One is the expanding needs for transportation in that area. May I ask you are there not also expanding needs for transportation in the South Jersey area?

MR. PYLE: There are needs down there, Senator, but I think the needs of the Northern New Jersey metropolitan

region are greater, more significant and, furthermore, there is still capacity at the Philadelphia Airport to take care of these needs, and this is a natural metropolitan region in and of itself.

We have a witness who will develop this point further, sir.

SENATOR CRABIEL: You state, the adequacy of the land area. Is there adequate land area in South Jersey?

MR. PYLE: There is adequate land area in South Jersey as well as in North Jersey.

SENATOR CRABIEL: You state, the airspace situation which is the all-important factor. Is there a problem with air space in South Jersey?

MR. PYLE: There is very definitely one and I believe the Committee has Mr. George Gary, Director of the Eastern Region, to speak to this point.

SENATOR CRABIEL: Very well, I'll wait for that then.

SENATOR STOUT: Any further questions?

ASSEMBLYMAN AZZOLINA: How large of an airport could you build in Solberg? I understand there is limited space there.

MR. PYLE: Not in our opinion, Assemblyman. However, there will be testimony from the Port of New York Authority on the availability of land and the adequacy of the Solberg site.

It would be contemplated that an adequate airport, to serve the needs of a major international airport facility,

could be adequately taken care of in Solberg.

SENATOR STOUT: Assemblyman Richardson.

ASSEMBLYMAN RICHARDSON: Mr. Pyle, how important is land transportation to site selection?

MR. PYLE: It's an extremely important point, Assemblyman, and, again, I believe the Port of New York Authority will present the basic facts in this particular area and I think it would be better that they speak to this point. But airport accessibility on land is an integral part of the site selection process.

ASSEMBLYMAN RICHARDSON: Fine. Thank you very much.

MR. PYLE: Now, Mr. Chairman and members of the Committee, it is my privilege to introduce Mr. Najeeb E. Halaby, President of Pan American World Airways, who comes to that post with a tremendous and extensive background in our way of life, the aviation way of life. He was a Navy pilot, an industrial test pilot, a lawyer, an executive of an aerospace manufacturing firm, second Administrator of the Federal Aviation Administration under whom I served, and now, of course, President of one of our great international carriers, Pan American World Airways.

Mr. Halaby. I take pleasure in introducing my former boss.

SENATOR STOUT: We are very glad to have you here, Mr. Halaby.

N A J E E B E. H A L A B Y: Thank you very much for the opportunity to be here. I'll be very brief and general and submit to any questions you may have.

Naturally, we are presenting so far, Mr. Pyle and I, the point of view of the airlines, not any particular airline but all of the airlines serving New York-New Jersey metropolitan area.

We will not determine where any airport will be located. You, as the elected Legislators, and the Executive of this great State will make that decision and you will make it on the basis of a variety of interests. There are special interests involved, there are local interests, there are State interests, there are national interests, and, oddly enough, there are worldwide interests involved in your consideration.

When we had the jam last July, at Kennedy, the international carriers had airplanes backed up at Honolulu, Los Angeles, London, Frankfurt, waiting for access to this area. As I say, this will be an airline point of view and you, as responsible Legislators know that there is a very real urgency in this matter.

More than ten years ago it was recognized by the Port of New York Authority and various other agencies involved, including the airlines, that the New Jersey-New York Metropolitan area's three major airports were becoming insufficient to satisfy the rapidly growing demand. To my knowledge, that projected insufficiency, now a reality, has not been denied by any public or private body. The great need is an undisputed need in fact. The breakdown in our

vital air transportation system this past summer, created by the crippling air traffic congestion at Kennedy, Newark and LaGuardia, tells a story that requires no embroidery.

We are not now, any of us, faced with a problem of justification, but rather with a problem of location. We are faced not with considering why, but with deciding where. In the context of now, we are already too late and, without exaggeration, the governmental and business operations of this great Metropolitan Area directly or indirectly concerned with air transportation are destined to suffer severely restrictive procedures for the next five to seven years until a fourth major airport can be placed in full operation.

There is attrition of air commerce from this area now. It is, to date, small but it is there and it is growing. Individual passengers and shippers are looking for routes that bypass the metropolitan area. Airlines have or will operate schedules to and from other areas that, under a non-restrictive situation, would have originated and/or terminated in this area. The CAB is seeking to develop bypassing routes. The FAA has given notice of hourly flight number restrictions.

The alternatives are disappearing with the decline of other forms of transportation, and the dependence of all of us, even those involved in these affected areas, upon air transportation.

The location of an airport is generally a compromise relating people, geography and time. A commercial airport must serve a population concentration; it must be on and

within hospitable terrain; it must be quickly accessible by feeder transport means. And in the New Jersey-New York Metropolitan area, the population concentration is centered on Manhattan, with a business center trend line running roughly through Jersey City to Newark. Two of the existing three major airports, Kennedy and LaGuardia, are both on Long Island, east of Manhattan, separated by two rivers from New Jersey, and diametrically opposite to the Newark-Manhattan axis. The adjacent Connecticut and northern New York counties have neither the best suited terrain nor the population demand for service. New Jersey has the requirement and the terrain.

Extensive surveys have narrowed the field of possible consideration to two areas, from an operating, technical and airline point of view, northwestern New Jersey and south central New Jersey, in particular the Solberg and what I shall designate here as the McGuire south sites.

Without reviewing in detail the pros and cons of these two sites, as you have the airlines position as a matter of record as stated by Mr. Pyle for Mr. Keck and Mr. Tillinghast, both of whom would have been here this morning but for pressing other engagements, I will state again for our airline that we endorse strongly the Solberg proposal and oppose the McGuire south site.

We believe, upon careful consideration, that McGuire south is too remote from the population to be served. It would require an astronomic investment in feeder transportation systems, and it would, if built, languish like a New Jersey memorial to the wrong airport at the wrong place at the wrong

time. Solberg, on the other hand, best meets the conditions of the people to be served, terrain and accessibility. It is the place, and this is the time. And from an airline point of view, Mr. Chairman, we look to you in New Jersey, if you find it in the State's interest, in the public's interest and in the national interest. Thank you.

SENATOR STOUT: Thank you, Mr. Halaby.

Are there any questions from members of the Committee?

Senator Crabiel.

SENATOR CRABIEL: Mr. Halaby, are you familiar with the projections of air transportation as put in the Governor's Committee report?

MR. HALABY: Generally, yes, sir.

SENATOR CRABIEL: Do you concur, basically, with the projection of the number of people and the number of cargo tonnage that's going to be needed in this area?

MR. HALABY: I believe generally. One of the witnesses, who is an independent consulting firm chief, Mr. Speas, will give you some additional projections of air passenger and air cargo, and we endorse those.

SENATOR CRABIEL: Well, my specific question to you is, in reading your statement and listening to your statement, - and I acknowledge you as certainly one of the airline's experts, but how do you dovetail your remarks that McGuire is too remote if you concur in the Governor's report which indicated that it appeared that there would be practically as much demand for air transport at that site as is presently used at Newark?

MR. HALABY: Well, I said I concurred generally in the growth of demand for the whole area. Now, what they have done, as I recall the report, is emphasized the growth in the Philadelphia-South Jersey area. We in the airline industry, in the aviation community, have to look at this on a total systems basis, and the total systems basis, - the passengers and cargo are increasing very, very rapidly. There is no question but what a fifth and a sixth airport are soon going to be needed, and by the year 2000 it will be in much more like tens and twenties of airports that are needed if the trend continues.

Now, if the railroads come back; if freeways can be unclogged, which we doubt; then you will not be so dependent on the airlines. But there are very few alternatives to traveling more than 200 miles today than the airplane. And so we are going to need more airports.

SENATOR CRABIEL: Well, what makes you think then, sir, if you acknowledge the demand is there, that if the airport were built at McGuire or in South Jersey and not built at Solberg, that it wouldn't be used?

MR. HALABY: I didn't say it would not be used. I said it is not in the right place at this time. It may very very well be that in the next phase of development of air transportation you will need an airport with greater capacity than Philadelphia, and that the rate of growth in that area will be as great as the Committee found and that you may want an additional airport down there. But we're talking about now, the next ten years. And right now we are

at least three years behind and rapidly falling further behind in having a fourth jetport.

SENATOR CRABIEL: Now, you refer in your statement to the astronomic investment in feeder transportation. Just what do you mean by that?

MR. HALABY: Well, to make a McGuire South site usable, accessible and comfortable for the concentration of travelers and the primary shippers, you would have to have rapid surface accessibility. And to get that over this 70 mile stretch, from McGuire South to Manhattan, would require very substantial investment in surface transportation.

SENATOR CRABIEL: Are you talking about rail or highway?

MR. HALABY: Both, I presume, would be required.

SENATOR CRABIEL: Well, as I understand the Governor's Committee's proposal, it is that they would have both rail transportation, by a connection with the Pennsylvania Railroad, and certainly we have our fabulous New Jersey Turnpike which certainly would -- I just don't see where this astronomic transportation system is required any more than any where else in the State. I thought you could tell me exactly what you're talking about.

MR. HALABY: Well, this is an area of competence that I would not claim. My point is that the cost of getting people from and to Manhattan and the North Jersey concentration of people, this 70 to 75 miles south, with a spur off the railroad, with additional highways, and, incidentally, to assure that the regular users of the highways, the non-air traveler users, are

not inconvenienced, would be very, very substantial.

Now the Port Authority and other witnesses who have studied this in greater detail will speak to the point more specifically.

As I understand it, the highway complex that's already underway or actually constructed toward the Solberg area can be, with much more modest cost and difficulty, made accessible to the population concentration.

SENATOR CRABIEL: Is there any reason why, if proper ground transportation were provided and with the projections that we're thinking about here, if the airport were built in South Jersey, the airlines wouldn't use it?

MR. HALABY: Well, I think you would have to ask each airline whether, if there were no other airport, no really suitable airport designed to meet the public's problem, they would use an airport at McGuire South.

For our airline the use of that airport would be out of the question at this time. We can't conceive of bringing a passenger from, let us say, Frankfurt to McGuire South and then ask him - he had no intention of going to McGuire South when he left Frankfurt, he was going to New York -- then ask him to travel two to three hours to get where he was really going. That would not be suiting the public convenience and necessity. (Boos)

SENATOR STOUT: Any further questions?

Assemblyman Wilson.

ASSEMBLYMAN WILSON: Mr. Halaby, did you attend a conference in Washington on August 27, 1968?

MR. HALABY: Pardon?

ASSEMBLYMAN WILSON: Did you attend a conference on August 27, 1968, concerning the air carriers, concerning air congestion problems? Were you present at this meeting?

MR. HALABY: I would have to go back and look at my calendar book, the date. Could you tell me the purpose of the meeting and I think I can answer your question specifically.

ASSEMBLYMAN WILSON: Well this was for the purpose of discussing air congestion problems.

MR. HALABY: There were a series of meetings. I attended at least one of those and it may have been on that date.

ASSEMBLYMAN WILSON: And at this meeting - now this goes back a long time, I have to refresh your memory - did you discuss the 4th jetport at all, as far as being located in New Jersey? Do you remember this?

MR. HALABY: I would like to -- I gather you're leading to some specific question. I don't have any notes of any meeting or calendar in front of me but the meeting I think you're referring to had to do with the restrictions on the use of Washington National, Chicago O'Hare, Kennedy, LaGuardia and Newark, due to the rapid growth of air operations at those airports.

ASSEMBLYMAN WILSON: Could you answer this question. When did the airlines come out against the proposed McGuire site in a statement?

MR. HALABY: I am going to let Mr. Pyle answer that. He has specifically the record on the first time the airlines

took a position on McGuire South.

MR. PYLE: That was in Mr. Keck's letter, which is in the record, of October 2, 1968.

ASSEMBLYMAN WILSON: 1968.

MR. PYLE: October 2.

ASSEMBLYMAN WILSON: All right. Mr. Pyle, were you at this meeting on August 27th, 1968?

MR. PYLE: No, sir.

ASSEMBLYMAN WILSON: You did not attend that. Well, Mr. Halaby did, and at this meeting were you asked more or less to go along with the idea of the Port of New York Authority as far as the location of the jetport to be located at Solberg? Was this discussed at all at this meeting?

MR. HALABY: The meeting that I recall attending, sir, related to the scheduling of operations into present airports in Washington, Chicago, and in the New York-New Jersey areas. The issue of a fourth jetport and how it would relieve congestion on the present airports may have been discussed. I would be happy to answer any specific questions about our position on air traffic congestion.

ASSEMBLYMAN WILSON: Well you, as President of Pan American, when did your company, for example, take a position itself as to the feasibility of a 4th jetport and where it should be located?

MR. HALABY: Well long before I came to the Company the Pan American executives were seeking a fourth jetport. This issue is not something that the Port Authority has dreamed up. The airlines, the Port Authority, the FAA, the Departments of Transportation of three states, all of

those who seek to improve public transportation have admitted and established that we need a fourth jetport. I would say the first time it really came to urgent attention was in the order of ten years ago.

ASSEMBLYMAN WILSON: No, I'm talking about as far as the location. When did you actually, that is, your airline, fix a particular site that you were interested in?

MR. HALABY: We, at first, wanted to see the present airports expanded, and they are being expanded; second, we have looked at a whole list of sites that would be suitable from our narrow airline point of view; and after looking at all of them, I would say approximately the end of 1968 we concluded that Solberg was the best of all of the possibilities that could be financed and could be set aside. It may be some place else in Jersey. But that, of all the ones we've been able to study, all the studies we've examined, and there has been ten years now of studies and tens of committees have reviewed it, that seems to be the most feasible from the point of view of the airlines.

ASSEMBLYMAN WILSON: As President of Pan American, how much study did you give to the report of the Governor's blue ribbon committee and its recommendations, as far as McGuire and Allentown, etc.

MR. HALABY: I would say several hours. We were consulted in the research phase of the report, both as an airline executive and as a former Federal executive. Then we read the report when it was published and I've talked to several members of that Committee during and after the report,

and have talked very candidly and I believe objectively to them about the findings. And it is obviously an attempt by some very well intentioned citizens to present the case to the public, and the emphasis is clearly on locating an airport in South Jersey.

ASSEMBLYMAN WILSON: Has your company lost money in recent years as far as the effect of having the airplanes stacking, and so forth, outside of the existing airports? Could you comment on that?

MR. HALABY: Yes. The cost of stacking, the cost of delays in taking off and landing, the cost of sitting at the end of the runway to take off is growing each year and, of course, reached a peak in last summer. We don't believe that the public wants that kind of transportation. We don't think that America at this stage of development -- going to the moon rather regularly -- should be required to take two to three hours from when you get over an airport until you get to your destination. We're capable of a much greater development than that in this Country.

ASSEMBLYMAN WILSON: Well with this in mind then, suppose the jetport was not located at Solberg, keeping in mind the loss of revenue, the fact that America needs better transportation, would you, as President of Pan American, consider using a jetport in another site?

MR. HALABY: Of course, we would. We have. (Applause)

I'm afraid that the applause for that remark is not as fully justified as it might seem. We would consider and have considered other sites in Long Island, off-shore, South

Jersey, North Jersey. We have clearly come to the conclusion, after considering all other sites that have been proposed, that the one that is accessible on the ground, the one that is permissible to the air space limitations, the one that is financable, and the one that will work best for the public, because we are interested only in serving travelers and shippers, - an airport that doesn't attract travelers and shippers is nothing - for our company Solberg is the best one.

Now if there is a better one that meets all of the requirements of public transportation, of course, we'll look at it. I think we have looked at all of the possibilities that have been proposed to date.

SENATOR STOUT: Assemblyman Azzolina.

ASSEMBLYMAN AZZOLINA: There was a site at the tip of Long Island, I believe, that Governor Rockefeller is proposing. Is that a better site than McGuire?

MR. HALABY: They run neck and neck as inferior sites. They are both so far away, the surface transportation is so slow and difficult, the lack of nearby concentrated population is so great, that they really don't meet the need.

Now the fascinating thing about this problem, and I'm sure that you gentlemen have realized it, is that more and more people are completely dependent on transportation but fewer and fewer people want to pay the social price involved in having swift, safe transportation. That is the basic problem.

Many wonderful good friends of mine live in this area and I fully appreciate their search for serenity; I fully

appreciate the fact that they don't want the noise and congestion and industrial development to come to their home area. That's quite understandable. If it's not the airport, it will be some other kind of development over the next decade or so, and we won't be able, in these closed-in metropolitan area, to have the privacy and serenity we used to have. So my point would be, if they want swift, safe, convenient transportation, some of the private and local interests will have to yield to the broader world and national and state interests.

Now where you find that balance is, of course, up to the Legislature and the Governor, but only if we, as individuals, begin to yield for the general interest are we going to have any progress in this area of transportation and in a lot of other areas.

ASSEMBLYMAN AZZOLINA: Do you ascribe to the idea of a ten-runway jetport? This is what Mr. Blomquist recommended to the Governor's Commission.

MR. HALABY: There isn't any such complex at present and normally the world's airports have one to four runways. You can lay out any kind of geometry on an airport that serves the area best.

I think one thing, Mr. Chairman, is people haven't yet seen a beautiful airport and they think it's impossible to have a congenial, convenient, comfortable and beautiful airport. I would site many around the world.

SENATOR STOUT: I saw one in Jamaica.

MR. HALABY: Quala Lampur, Dulles, the new Tokyo

the new Paris Nord, are all airports that have been, by local option, by local decision, put in an area and have contributed to that area far more than industrial development has contributed to similar areas in the past. It can be done. You can have a convenient, accessible airport, with plenty of land and zoning around it. You're putting the bite now on the aircraft manufacturers to lower the noise level, to decreast the pollutant level. It can be done in a proper way in this State.

ASSEMBLYMAN AZZOLINA: Well the big problem is the noise, apparently. In Solberg area there are a lot of homes, I understand, that would have to be displaced and the noise from these jets is what's concerning most of the people plus pollution. Especially North Jersey which is heavily populated will become even more heavily populated in years to come.

MR. HALABY: I think that's absolutely so, and that at the population growth rate, the industrial growth rate, the technological rate that we're now moving, this whole area is going to be one large metropolitan area. Each year the perimeter of it expands further. And those who wish to be serene and private are going to have to move further away from the population concentration. We know that. That's happening all over the world. So if it isn't an airport, it's going to be something else that disturbs the past.

Now, we will have some technical witnesses, far more capable than I, to talk on the subject of noise suppression

and pollutant reduction. Those are very much on the minds of the airlines. They are very concerned that their passengers, who are also neighbors of airports, are protected.

SENATOR STOUT: Assemblyman Olsen.

ASSEMBLYMAN OLSEN: One of your answers to a question before seemed to indicate to me that you consider that most of your international air travel terminates in the City of New York, but, in fact, there is a good deal of domestic travel that follows it.

Don't you think it would be more feasible to locate an airport nearer to or equidistant, as much as possible, between Philadelphia and New York and utilize the Philadelphia air facilities for the domestic flights that follow the international travel. (Applause)

MR. HALABY: Well, sir, I think obviously in this room that's a popular suggestion. And if it were feasible, I would happily endorse it.

The problem is that we're going to need airports in all of these locations. But, you see, the train hasn't disappeared but its use is greatly diminished. The bus is still rapidly increasing but the freeways, like the airways, are getting quite congested, and they have a way of congesting themselves almost as rapidly as they're built. The train will continue, I hope, as a high-speed, short-distance form of transportation. And if we can get the kind of research and development into airplane noise, air engine pollutants on the train,and we can get the kind of frequency and convenience of service on the railways that we now have on the airways,

they will make a great new contribution.

Now, we have an airport at Philadelphia. It's not one of the most congested or the most utilized. It has some capacity and it's a fine airport. We have one at Kennedy. We serve them both from our flights to and from Europe and to and from the Pacific. From an airline point of view, the more passengers you can concentrate in one airport, because you have connecting passengers, you have interlining passengers, the more economical, the more efficient for the airline and for its travelers. But ultimately, I believe, we will need all three of the airports you talk about. The need now, because of the public demand, what the public wants, the general public, is for a close-in airport, as close to the center of the traveling public as possible.

SENATOR STOUT: Assemblyman Vreeland.

ASSEMBLYMAN VREELAND: Mr. Halaby, I would assume that you're very concerned, as we all are, with the congestion in the air on the corridors. I get the feeling from your testimony that the motivating factor here is to relieve that congestion and move it to the westward a little bit, if you possibly can. Am I correct in that assumption?

MR. HALABY: Yes, sir. If you could somehow build in this room a three-dimensional airspace system, you would see why we airmen feel so strongly about that. You could see flights coming up from the south. One of the most heavily traveled routes in the entire world is between the New York-New Jersey Metropolitan area and Florida, particularly this time of the year but now almost all year round. The next

is the New York-Washington area; then the New York, Newark, Kennedy, Boston area; then the transcontinental. There is an area, as Mr. Gary will point out later, a kind of spoke or two of space in this wheel of traffic that gives you access to the ground. You have to come down through layer on layer of traffic, safely and separately, and you have to take off out through this layer of traffic. There is a kind of wedge of airspace going right up, that permits the access to the ground that is the purpose of air transportation, and it happens to be in this northwest quadrant, most of it over North Jersey.

Now the State of New Jersey, the people of Solberg, the conservationists didn't design it that way, that is the way it has developed over years of air transportation. And, unfortunately, it is not changeable in the sense that you say, well, just send them all out over the ocean someplace. These intricate patterns have been worked out primarily for safety, secondarily, for efficiency. And the cost to the Federal taxpayer is one of the important considerations.

ASSEMBLYMAN VREELAND: Thank you very much.

SENATOR STOUT: I want to acknowledge the presence of the first Irishman to show up this morning, Senator Hugh Kelly of Camden County, and I am going to turn the meeting over to him, in a second, while I take a call.

Are there any questions?

ASSEMBLYMAN AZZOLINA: I understand that one of the reasons the airlines are picking Solberg, supposedly, is

the Port Authority has reins on you. Have you any objection if a jetport were built by a New Jersey jetport authority somewhere in New Jersey, or do you feel that it has to be built by the New York Port Authority? I understand the distance is some 25 miles from New York that the Port Authority can handle transportation matters.

MR. HALABY: Well, airlines won't pick the site, sir, you will pick the site. Second, the Port Authority provides airport facilities under a compact between the two states of New York and New Jersey. As I understand it, that would have to be changed for any of the sites that have been discussed here this morning. So that the Legislature will make that choice, not the airlines.

We believe the Port Authority is doing a yeoman job with the three jetports at present. They have a financial structure that permits expansion. Sometimes we would like to move it faster. But they are in charge of the three greatest jetports in the area.

Now, how you decide to allocate the responsibility for future development will determine it. And we, in the airlines, at least in our airline, will go along with that.

ASSEMBLYMAN AZZOLINA: Because you don't care who really runs the jetport as long as in the proper sector.

MR. HALABY: That is correct. If they're efficient, if they're well financed, if they're professional, that's all we want. We want an efficiently run airport and the Port Authority is capable of it. Perhaps someone else could be.

ASSEMBLYMAN WILSON: Mr. Halaby, are you familiar with the Dade County Port Authority that's building an airport down in Florida?

MR. HALABY: Yes, sir.

ASSEMBLYMAN WILSON: What is the size? Do you know the size of that jetport facility? Well, I'll tell you, it's 39 square miles, 39 square miles. Now, would you comment on that jetport as to, do you think it's a jetport for the future or do you feel it's too large?

I'm referring back to an article that appeared in a Newark paper this past Sunday which said that the Governor's Evaluation Committee's proposal was fantastic, it was something that was not in reality. Now, you made the statement that we are building transportation for the future. We are very concerned, just as the airlines are. Could you comment as far as the Dade County airport, that they're building?

MR. HALABY: Well, you have an attractive swamp here in New Jersey. They have a huge swamp in Florida and much of that 39 miles you refer to, which is probably the outer perimeter of the area under the control of the Dade County Port Authority, is swamp land, unuseable, undeveloped today.

Now the most recent, large-scale airport designed and built in this general area is Dulles, the International Airport in Northern Virginia. That is a 10,000 acre airport and it seems to be a very good size for a modern jetport and, to date, has proved to be very safe, very

efficient and, for the surrounding countryside and the neighborhood, relatively unobjectionable.

SENATOR KELLY: Are there any other questions?

Thank you.

MR. PYLE: Mr. Chairman, I would like to next proceed with the next witness, unless there are further questions. And I would like to introduce Mr. John E. Steiner, Vice President, Engineering and Sales, Commercial Airplane Division of The Boeing Aircraft Company.

He will discuss the aircraft characteristics which really form the basis and identify the initial requirement in any planning of an airport.

Jack Steiner comes to us with lots of experience. I think he will identify his qualifications but I would point out that he was one of the leaders in Boeing's program on 747 airplanes, the 350 to 450 passenger vehicle which is now in test flight and will be in scheduled service by the end of this year. Mr. Steiner.

J O H N E. S T E I N E R: Mr. Chairman and members of the Committee, Mr. Pyle asked me to indicate my qualifications. At the risk of being a little self-serving, I'll comply with his request.

I have a Master's degree in aeronautical engineering from MIT; I've participated in every Boeing commercial design in the last 25 years; I was Chief Aerodynamicist - that's chief of the flying qualities, and so forth, - on the Strata Cruiser 377; Chief Engineer of the commercial development

of the 707 and was one of the four principal engineers on the 707 program. I was head of the design, Chief Designer, of the 727 and head of that program at its inception; Chief Engineer of the 737; and Vice President of Product Development at the time that the 747 was launched.

Those are the qualifications.

We have prepared a small booklet, which you have. We intend to show the slides on the screen that are in that booklet. I will, with your concurrence, refer to the slides that are in the book. I will elaborate on them. The text in the book I will not read because I think it might be less than entertaining, although it's certainly in the record for its technical purposes.

The only time that you, as part of the Committee, might be required to turn to the screen or to stand would be during a short film squib that will be shown on the screen. At that time perhaps you could just look at it so that you can see it.

The overall trend, of course, which has characterized air transportation for a number of years has been one of sustained growth. This growth has been due to extremely fundamental causes, that is, not only population and gross national product, but to educational level, reduced fares in constant dollars, travel habit pattern changes, more desirable schedules and comfort, and greater discretionary income.

In my opinion, the two most important items are,

of course, travel habit pattern changes and greater discretionary income.

We've come a long way down an irreversible path in which major business is done by personal confrontation. We can't go backward.

Figure one shows the industry trends: Large and continuing increase in demand; continuous increase in acceptance of air transportation in business, recreation and air freight; congestion, as an industry trend, in air traffic, airports, and air terminals; larger aircraft for use between major hubs; and a growing number of city-pair nonstops or thru connections.

I might mention that the CAB, of course, is adding to the quantity of nonstops and thru connections that the transportation system has to offer.

Figure 2, please. Some considerations that I thought might be representative - and before I go through them, I would like to comment on the subject of general aviation. The same discretionary income and travel habit pattern changes, of course, lead to increases in general aviation and business aviation. My subject this morning, of course, confines itself to that of commercial airline aviation.

The general aircraft situation, of course, is also present in any community and in any airport, and must be dealt with by the airport authorities, whoever they may be, in a manner that is compatible with the scheduled use available to the maximum number of travelers.

Considerations then, other than that one, that I would like to make is that the airplane is part of the air transportation system. It is not a self-sufficient vehicle. It's the product of its environmental requirements. If those environmental requirements change, then over the long term the aircraft will also change. It can't react fast but it is definitely the product of its environment.

Average size and speed has increased and will continue to increase.

Community noise, in general, will decrease. It has not decreased very fast in the past, although I'll show you slides that will indicate the degree of accomplishment that has been obtained and, although not often recognized, is substantial.

Service reliability will increase, and the air transportation system elements, which interface with the airplanes and of which the airplane then becomes a part, must meet the demands of the travelers and the shippers.

Next slide, please. The growth in free world passenger traffic is shown on this particular slide, extrapolated to 1985. It shows that from an extremely small beginning in 1955, we now have in the neighborhood of 200 billion revenue passenger miles of aviation being flown on scheduled airlines throughout the world.

You will notice that it isn't too long since that scale on the left starts with zero that we double and then triple. The base line level is the one used actually by Boeing but in this case is very close to that being used by

most other agencies in the country and in the world.

The high level is one which tends to depend upon less cyclic economic variation. In other words, less recession followed by progress at an extremely high rate.

There is no doubt in my mind that the transportation system should address the high level, even though the basic planning must, for economy purposes, be based on the base line level.

Now I would like to merely comment on the U. S. domestic trunk airlines. Next slide, please. This is the same situation for the U. S. domestic airlines. It shows, of course, the revenue passenger miles for the U. S. domestic airlines. It shows the same sort of a circumstance, a very small beginning in 1955, far more than double - it's many times that now, and a growth tendency in an upward direction.

Now you should notice that both of these slides show constraint. Whereas the growth rate, on this particular one, is almost 18 percent in the 1965 to '70 time period, it drops to less than 10 in the 1970 to '75; 7 in the '75 to '80; 6 in the '80 to '85. This is rather normal and shows the constraint not only of, let's say, saturation of the system but conversion of the public to an acceptance of aviation.

That's why I said that the planning must account for the high level because if the constraints can be relieved, the system will in fact grow at the high level or, perhaps, even higher.

I might mention the point-to-point situation. There

is a growing need, of course, for point-to-point service recognized by the CAB. An illustration is the recent Pacific proposal wherein four designations or destinations in the United States were changed to 30.

Next slide, please. The next one relates passengers in an aircraft to growth of the system. Let me explain it a little bit. The bottom bar applies to the 707 Intercontinental. In a two-class configuration it had 139 seats. It was initially introduced in 1959. Shown beside the 1959 point is the diamond shape point which we call the sizing design point. To be successful, either for the airlines or for the manufacturer, the aircraft must be sized to fit the intended market at a point somewhat later than its year of introduction. In this case we chose 4 years, which is about one-third way through the normal 12 year production cycle or economic life of the initial vehicle.

Now we mentioned that the total system has been growing during this period of time at about 15 to 20 percent per year. The 747 is shown at the second bar, introduced then at 370 passengers in 1969 with a sizing design point 4 years later, as before.

You will notice that the difference between the two airplanes, in terms of growth rate per year for passengers, is 10 percent per year. I am not saying that one should address the 18 or so percent per year that the system has been growing, but this frequency in some cases must be increased and the airplane is designed for specific routes rather than the whole world as a total. Nonetheless,

I would say that the 747, at a design growth rate of 10 percent, is not really an overly large aircraft.

Now the left hand line is simply 12 percent. It's terminated beyond 1975 because of the variabilities in the constraints of the system that might appear.

If we had shown a similar chart relating the 707 domestic to the 747 domestic, the number, instead of 10 percent, would have been 9 percent.

Now, I mention this not to drive a point other than to enhance your understanding of why airplanes get bigger and why the 747 is the size it is.

Following that reasoning then, what kind of an airplane can we expect in the future? We simply extrapolated to say that, if one is considering an airport, one must consider, of course, the years 1980-85, and at that time I would expect aircraft about twice the size of the 747 in terms of numbers of passengers. That does not mean twice the size in terms of dimension, of course.

That chart, of course, shows on the righthand side about an 800 passenger mixed class airplane.

Next, please. The constraint evident in the saturation of the systems is addressed by the size of the aircraft. If a larger aircraft can be introduced, the frequency or the number of departures can be reduced and the saturation of the system, which is dependent upon X number of vehicles, can be reduced.

On this chart is shown, on the bottom scale, years - this happens to be Figure 5 for those who are reading the

book -- the bottom scale is years, the upper scale is relative number of departures, starting with zero.

You will notice that 1.0 is 1968. If there had been no 747 or 1011 or DC-10, if we had served the transportation system with the same size vehicles we now have in operation, the number of departures would have gone up to between 2.5 and 3, to three times, by 1985. Whereas with the growing size of aircraft they can be restricted to about 50 percent more. Thus large aircraft, of course, benefit the system in terms of saturation of the system.

There are, in terms of sizes of aircraft and in terms of departure number, opposing forces. In some case one wants more frequencies to go to more places from a given hub; in other cases one wishes a larger airplane to decrease the number so that the constraints in the aviation environment can be reduced.

Next is Figure 7. And it simply is aircraft capacity growth trend. As shown on the slide, number of passengers versus year of entering service, shows the various historical aircraft coming up from 20 passengers, or so, back in the thirties, to around 400, or so, on an all-tourist basis on the slide for the 747. And somewhat 250 to 300 for the DC-10 and 1011.

Now the shaded area represents the sort of aircraft that we can expect in the future. I might mention some of the constraints. One of them is the availability of necessary resources, in terms of money and manpower. Large airplane programs are not easy to start. They cost a lot and there is

a great risk involved.

So that I can't tell you whether a thousand passenger airplane, as shown on this slide, will appear in 1985 or not. I simply can tell you that it could. The thousand shown there is the same as the 800 shown before. This graph is on all-tourist seating. It's labeled "All economy seating." The other is for two class, first class and tourist.

Next slide, please. The next slide shows the air freight situation. Now the air freight situation, as you well know, is one that is undergoing rather difficult growth. The non-air elements of the system have been increasing in cost. The profitability of the transportation system from the standpoint of the operators has not been good. Nonetheless, we predict that the freight system will grow and it will grow relatively rapidly.

Freighter payloads, as shown on this slide, could by 1985 get up to around 600,000 pounds. I would not expect this to happen, actually. I would expect that the largest freighter for a number of years will be the 747 because of the financial constraints that I mentioned. The role or the lot of an individual company attempting to launch a very large airplane in the thin market represented by freight, at the present time, is not a very attractive one. I would forecast that it will be a good many years before very large freighters, beyond the size of the 747, appear on the scene but, nonetheless, I felt that the curve here should show what could happen if private enterprise was actually capable of launching the programs.

I think probably the subject at this time of separate freight airports and separate freight runways should be addressed.

To me, much of the written literature is somewhat misleading. About 60 percent, - I name 55 in the pamphlet but about 60 percent are very close thereto - of freight is now carried in the bellies of passenger aircraft. This situation will change only very slowly, since the economics of carrying freight in the lower decks of passenger aircraft is extremely attractive.

It is true that mechanization and automation must take place. The 747, as you know, has a lower belly of the passenger aircraft that has the freight capacity of a 707 freighter or a DC-8 freighter.

Actually, the 747 can fly with the lower hold full of freight and nobody on the upper deck at all, and still approximately break even.

Therefore, there will continue to be large quantities of freight carried in lower decks of passenger aircraft. We predict that even by the year 1985 between 35 and 40 percent of the total freight carried will be in the lower decks of passenger aircraft.

The idea of a separate freight airport is not a sound one. It isn't going to be a sound one for many, many years to come. Freight must be addressed in the design of an airport and design of the passenger terminal.

By the way, the 55 percent and the 35 percent, or the numbers are actually closer to 60 and 40, - assume that

only 35 percent of the lift capability in the lower deck of a passenger aircraft is actually used, which corresponds to about the situation today.

I mention these because in some of the reports written the idea of complete separation of passengers and freight has been explored. I simply would say that there is no technical justification for such a concept at the present time. There's lots of technical justification for off-airport consolidation. There's lots of that. But there is no technical justification for separation of airports or even of runways. There is separation of terminals providing the interaction between them is recognized.

Next slide, please. This gets into gross weight growth. Aircrafts, of course, will grow in gross weight. The 747 approaches 800,000 pounds. The curve shows, again, - not a line for financial constraints of launching programs, - what could happen and what an airport should be designed for, going up to about 1.5 million pounds in 1985.

I mentioned in the text of the report that overpasses should be over strength. Overpasses should assume 1,000 ton airplanes. The day of designing an overpass to the minimum possible size, I'm sure, is over, and overpasses should go even higher than the chart here shows.

Again, I have to make a qualification, that the red band on the slide is what can happen. What will happen is dependent upon the success of the operators and the ability to attract huge amounts of resources in terms of both financial and engineering in order to launch these kind of

programs.

Next slide, please. This is Figure 10 in the book and it discusses the over-all length growth per year. Shown, of course, are the over-all length versus year of entering service, going up to around 300 feet in the U.S. SST, a little over 200 feet in the 747.

There's a little band at the top, between 350 and 400 feet. I simply put it there to indicate that while the trends would say that one could get to 400, I would rather expect that by 1985 the 350 is a more normal trend situation. I am trying to simply give you the benefit of my judgment rather than what is the maximum safe number which, of course, could be - obviously, if you designed for a thousand feet, you can't be wrong. I wouldn't recommend that kind of action.

Now shown here also is the one deck versus the two deck concept. Double-deck aircraft will start to appear in the future, and they do reduce the total length. The thousand ton airplane, I mentioned a few minutes ago, would be about 350 feet long with one deck and about 260 feet long with two decks. So it does affect the situation.

Next slide, please. That's Figure 11. This shows the over-all length growth vs. gross weight. It also shows the one-deck - two-deck situation.

In your book it's figure 11. I think you can probably find it there.

The over-all length has a cut-off on the multi-deck airplane simply because an airplane with, say, less than 300 passengers is not very practical from a double-deck standpoint.

The next slide is Figure 12, in the book. This shows wingspan. Now the reason for getting into wingspan, of course, is that wingspan governs the design of the terminal, if it's a nose-in loading terminal. It's extremely important that the airport designers understand the subject of wingspan rather thoroughly.

Actually, I showed a number here going up to about 250 or 260 feet of wingspan. The present 747 is about 200 feet. The U. S. SST, of course, is less than 150 feet. So SST's will tend to be a good deal smaller in span than subsonics.

As the aviation industry goes along in years, the technology that's applied to our aircraft improves from year to year in many respects. For example, in the case of wingspan, the old DC-3 with 21 passengers had the same span as the 737 with 120 passengers.

The next slide is ramp area growth. Shown here is length, of course, plus 25 feet, multiplied by span plus 25 feet, vs. year of entering service, and extrapolated to the 1985 time period.

I should point out that that righthand line for the double-deck is not an extension of the SST. The SST is very unlikely to have a double-deck in this time period.

The ramp area used per passenger, of course, is very much more efficient with a large airplane. For example, the 747 uses about 119 square feet, per passenger, of ramp area; the 707 used 168.

The next slide, Figure 14, is one of particular

interest to the consideration of a new airport. It's takeoff field length vs. years. And what it shows is that since the jets were introduced our required field length has decreased. They decreased rather significantly.

If you notice there, the first 707 Intercontinental, which was the 707-320, is up around 11,500 feet; whereas the 747, for the same mission, a maximum gross weight mission, is down a little over 10,000.

I don't expect any growth in takeoff field length. The idea of, for instance, 17,000 feet, as portrayed in one of the studies, is not consistent with the technical data available.

SENATOR STOUT: Mr. Steiner, we have a couple of questions here.

What you're saying, I take it, on page 14 and 15, is that jets,and particularly the new jets, are going to lessen the length of runways.

MR. STEINER: I would like to rephrase that. They will not increase the length of runways. The runways used today, which are in the ten or eleven thousand foot level at sea level, please, not at Denver, will stay at that level indefinitely.

SENATOR STOUT: And how about the landings. Does the same thing apply?

MR. STEINER: Landing is generally not critical for a major airport. The reason I say that is that if one tries to make landing critical, the field length involved is way down around 6,000 feet. If you have a 6,000 foot airport,

you can become landing critical. If you have a 10,000 foot airport, it's never critical.

SENATOR STOUT: Well, the question I want to ask really is, does this apply just to the new big jets, the jumbo jets, the supersonic, etc., or will it apply to all jets, particularly the smaller ones that are used by the feeder airlines or the ones that may be used as corporation planes, or the star jets, etc., are they also in a position where their length of runway, needed for them to take off, is going to grow smaller?

MR. STEINER: I'd say in general, yes. Although I was specifically addressing the subject of a major airport.

Now, let me qualify it a bit. If one were to take, say a corporate jet, and try to fit it on, say, a 4,000 foot runway where perhaps some of the jets can afford to operate today, then I'd have to say, with time, - I wouldn't be willing to say corporate jets will never go beyond 4,000 feet but I would be perfectly willing to say that corporate jets, in general, will not increase field lengths that they use today and that generally the trend is to either the maintenance of airport length, that is runway length, or its decrease in all fields of aviation at this time.

SENATOR STOUT: Well, are you saying the same thing about all the new jets, that they will not increase the length of runways used today?

MR. STEINER: Yes, I think that's a fair statement. But you'll notice on that figure that the DC-10 and 1011 are way down at 7,000 feet. So I would have to say that the

trend is to short field lengths, not to longer field lengths.

SENATOR STOUT: How about approaches until you get to the runway? Are they going to be - do they come down faster, quicker?

MR. STEINER: That will be discussed, Senator, in a few minutes.

SENATOR STOUT: Oh, all right.

MR. STEINER: The general answer to your approach question is that at the present time, with the federal airways system, one approach is on an ILS glide slope, which is prescribed by law at about three degrees. So the aircraft characteristic is not significant. It doesn't matter what it could do, it is forced to do a given angle by the FAA rule. So that I would say approach by ILS will remain probably at three degrees until the FAA changes its rules. Many of the newer aircraft are capable of coming at, say, four degrees instead of three, or even five, and have demonstrated it many, many times.

SENATOR STOUT: I think Assemblyman Wilson has a question.

ASSEMBLYMAN WILSON: Mr. Steiner, I'm quoting Alan Stewart, Director of the Dade County Port Authority and their new airport, and it says "We will begin with one 10,500 foot runway, just for flight training. Ultimately we expect to have 8 runways, all of them at least three miles long." Now, going by your chart here, where you say that the new jets will only need for takeoff 11,000 feet,

they are building a jetport three miles long which is, I guess, about 16,000 feet, 18,000 feet.

MR. STEINER: All I can give you is comment based on a great deal of knowledge of industry trends in the design of large aircraft. And I would say that an 18,000 foot runway at sea level is a rather substantial waste of money. If they wish to do it, of course, they can do it. They have nothing but flat land to worry about. But there is no technical need for it nor is there any historical trend that says it will be required.

ASSEMBLYMAN WILSON: You know, it's hard to believe, for me, that here you have a modern jetport - I've read this article quite extensively, that they've taken into consideration so many items so far as planning, development of the surrounding areas, and yet they could actually be so far off base on runways, you know, having them three miles long as compared to your conclusions.

MR. STEINER: I can see no need for an 18,000 foot runway at a sea level altitude.

ASSEMBLYMAN WILSON: 16,000.

MR. STEINER: Or 16,000. Now runways do go up with altitude. For instance, at Denver certainly there will be an altitude correction and it will be the same correction used by everyone else. It's an engineering correction that has to be applied for altitude. So your altitude airport at Denver will get longer than 11,000 feet. But there is no evidence today that says that either the SST's or subsonic aircraft will require runways longer than 11,000 feet,

and my suggestion to you would be to attempt to find a qualified industry witness that says there is a need and have him address me with his justification for that need. Because I'm pretty familiar with the business and I don't see it.

ASSEMBLYMAN WILSON: All right, fine.

SENATOR KELLY: Mr. Steiner, would that be an economic decision or a safety one?

MR. STEINER: I think it would have no bearing upon safety. Historically, - this is another subject, but, historically, overshoots of airports have had nothing to do with the length of the field. In fact, if you plot them all up, you become completely frustrated because it looks like the longer the field is the more they're apt to be careless and overshoot.

Now, I might mention one other thing which you probably are aware of. The SST is forced to design itself, that is to be designed, to existing runways. There is no question about the U.S. SST since it is shepherded or led by the Federal Aviation Agency and part of the contract is the use of existing runways, which are not more than 11,000 feet long. So there is no question about what it's going to be.

SENATOR STOUT: Is that 11,000 foot standard and applicable in England and in France, European countries?

MR. STEINER: Oh, airport authorities all use a certain amount of personal interpretation. And some of them go on the short side and some of them go on the long

side for reasons that are not always clear. I would say that some of the best planned airports in foreign countries are in the 11,000 foot range. There are a very few that are longer and there are a lot that are shorter. There is no need for a longer one, that I'm aware of.

Now, I might mention that all of the field length talked about in the article and displayed on the slides are FAA formula field lengths. Please don't forget that an FAA formula field length assumes that at takeoff an engine failed and the aircraft must either climb out or stop. So the aircraft doesn't use that length of field. Similarly in the landing case, the FAA formula requires that the airplane be demonstrated to land in 60 percent of the approved field.

However, as I say, for the sort of airport you're talking about, landing will never be critical. I know of no illustration of an 11,000 foot field where landing is critical. If you have a 5,000 foot one, yes, landing could be critical.

The next slide is concrete pavement thickness. Now, as I mentioned, concrete pavement thicknesses used today are prescribed in the design of the SST. Similarly, the 747 has a four-legged gear and in fact has an hydraulic connection between inner and outer gears that enable it to ride over undulations in the runway without overloading them, which would be the case if you had a four-legged gear wherein the gear was extremely stiff.

We showed a slight upward trend on this chart with 100 percent being the number prescribed, to about 1960, and

going up to maybe 110 percent in 1985, or 115.

Now that has very little to do with the footprint pressure of the aircraft; it has more to do with the number of uses of the aircraft. So that you find today that runways that once, let's say, had a certain number of heavy jet equipment using them are used by a much larger number.

And the reason for the slope on this chart is simply due to the multiplication of uses. I believe that no airport should be built that is minus, let's say, on runway thickness. That's not the problem. In terms of cost it's a relatively small problem and has nothing to do with airport site selection or with the length of the runway.

So I would recommend the curve that we show.

Now, one could always say or ask the question, is there a method of airport efficiency improvement? What is the prognosis, the forecast, as far as weather reliability? By that I mean, ability to land in bad weather and take off in bad weather, and number of operations per hour.

I thought it only fair that I address that subject even though it was done briefly. So Figure 16 - next slide, please - shows the sort of airport efficiency improvements that might be expected. Firstly, of course, new runway and taxiway concepts permitting simultaneous independent use of the runway. I think we're all familiar with that. It does have a bearing on the acreage required, although a certain length satisfactory airport could probably be built for the amount noted this morning, even with improved runway and taxiway concepts.

The improved weather reliability, of course, addresses itself to the ability of the aircraft to be reliable, from a transportation system's standpoint, in bad weather.

The next one, of course, is improved passenger terminal design, which would speed up the operation in the terminal and prevent the terminal itself from being a bottleneck.

The next one, compatible freight operations. I addressed that a little earlier. I don't mean that freight and passenger terminals have to be identical but they can't be on different airports and they must have an easy system of intermingling, as necessary, if one wishes to have an efficient freight system.

Better community access is another one. And improved air traffic control systems is the last.

Now the improved air traffic control systems, I'm going to dwell on a little more. It's something that I would say is going to take years to come but I think it only fair that one should address the subject in talking about a future airport which must serve a major metropolitan community for 20 or 25 years or more.

Next slide, please. This is a little bit complex, and it's Figure 17 in the book. It shows, of course, landings per hour and it talks about distance between aircraft - that's one aircraft approaching in the wake of another one. And it simply says that if you can reduce the present three miles to two, safely and efficiently, you can get a 50 percent increase in capacity.

Such increases are technically feasible. The most

important thing in creating this sort of an environment - and I say this in all sincerity - is to adequately provide airports such that the constraint and holding patterns will not decrease the financial viability of the airlines and the transportation system; such that money can be directed to the air space control system; such money to obtain the sort of things shown on that chart, which are technically feasible, will take many years. But I thought you should be aware that there are ways to increase airport capacities, even though they require action of the Federal government. There is no state or local agency that can take action on the airway control system. It has to be a Department of Transportation action, and it will take a long time to come.

Now the technical aspects of saturation I think you're well aware of. In an example airport, for instance, which is designed for a capacity say of 120 movements per hour, that airport can accept a number of movements, say 2,000 per day, which might average only 85 per hour but at the peaks be well above the 120 - that airport can handle the 2,000 pretty well. If it goes beyond 2,000, it starts to eliminate the dip between morning and evening departure and that dip is the way that the airport has of leveling out the holding situation. As that dip eliminates, as it has done in JFK, for example, then the airport is saturated and may not recover until three o'clock the next morning.

It's a saturation phenomena in which the overloading of an airport is not serious at the start and then as the means of correcting the delay pattern, as one delayed

airplane affects another delayed airplane, the airport starts to saturate and later on, as it saturates, of course, it becomes completely saturated and it doesn't recover until the next morning.

Next slide, please. Higher-capacity airports. I thought it was worth listing the items. More aircraft operations per hour; wider dispersion of aircraft in the terminal area; better use of prime travel hours, fewer night operations which, of course, from a community standpoint is beneficial and also for the air traveling public is beneficial; improved air traffic control systems; and reduced delays and holding operations.

All of these things are technically feasible but the airlines and the airports must be adequate, sort of a chicken-and-egg situation in which one must have adequate airports to get viable transportation facilities and the viable transportation facilities can help themselves if they become financially capable of doing it.

Next is the takeoff noise trend. Figure 19.

SENATOR STOUT: Mr. Steiner, this is a matter that is of great concern, particularly to those people in the gallery this morning, and everyone else here who is a layman, and the members of the Committee. And I notice you have some ten pages of information here and perhaps it would be helpful to all of us - we will enter this into the record, of course, - if you could summarize in layman's language. (Applause) Use the charts, if you feel it necessary, but this, as you recognize here, is of

prime importance as far as the feelings of the people in the vicinity of an airport.

MR. STEINER: Certainly. I will be glad to, Mr. Chairman.

In the noise situation, all parts of the industry have been working and are working on the subject of noise abatement. Our budget, for instance, on research for noise control at Boeing last year was $20 million. The effects of that sort of work have shown us over the years - we were going $5 to $10 million in 1956, over ten years ago, and I think, without prolonging the situation, that Figure 19 does have a couple of points that might be useful.

Number 1, it shows that we have produced civil airplanes that are distinctly quieter than military airplanes. And that's from, of course, that sort of research.

It also shows an improvement, with time, which has been demonstrated. So those two features, I think, are good. There is absolutely no question in my mind that noise will improve. Whether it will cease to be a problem in the near field, I think is open to question. But there is no question at all that it will improve over its present situation.

Next slide. Maybe we can just run through these fast. The SST is higher in its climbout over land masses that are downstream of the runway than the jumbo jet, say, and that airplane is higher than the old propeller airplanes. So progress is being made in getting the airplane up in the air. That's good from a noise standpoint. As a matter of fact, the SST, for example, if one takes a condition well

off the airport but under the climbout path, is not a problem at all. I feel the SST is one of the most maligned airplanes in the world in that from the noise standpoint the boom situation has no bearing on New Jersey whatever. Nobody is proposing operating booming airplanes over New Jersey. On climbout the SST is the quietest of the airplanes. On approach it's quieter than the present airplanes. On the airport itself it is about the same or will be about the same, that is the U.S.SST, the Concorde may be a little noisier, but on the airport itself it can be the same as present aircraft. However, that's an airport problem and generally does not get into the community at all. It's a question of how the runways are positioned and what sort of adjacent situations. But please be advised that no one is talking about booming airplanes over New Jersey, that I'm aware of.

SENATOR STOUT: You mean sonic booming.

MR. STEINER: Yes.

SENATOR STOUT: I just wanted to get that straight.

MR. STEINER: Yes. The SST is actually a quiet machine on the non-airport area, that is in the surrounding environs that we're talking about. It's not too quiet on the airport itself.

MR. STEINER: Next, please. We'll just run through them very fast.

You can see them visually. The installed engine noise trend has been one down. That thrust on the bottom, it's noise on the vertical scale, and all it says is that engines have been getting better and better.

Next, please. This one is approach noise. It shows the same trend, noise is decreasing, noise is forecast to decrease.

Next slide, please. This simply shows installed engine noise history in terms of noise - that's EPNdB, which is a technical term, of course, for noise - per thousand pounds of thrust. And you'll notice from 1958 to 1968 it's less than half. And the JT9D is that bottom point on the righthand side, which is the 747 engine. It's the quietest of all of them plotted on the chart.

Next is a review of community noise considerations and I have two minus items and about five plus items, the plus being relative to quieter airplanes, the minuses being relative to noisier, mainly more operations. I believe that the communities can expect less noise from each aircraft by an appreciable amount. That has to be contrasted slightly with the increase in numbers of aircraft. And one has to be fair in matching the two against each other. But, on balance, I would say the noise situation is now improving and it will continue to improve as new airplanes are introduced, all of which will be quieter.

Now at this point, if I could, I would like to run the little film, and I think it might be of interest.

SENATOR STOUT: All right, fine.

MR. STEINER: It addresses the subject of smoke emission from the newer aircraft. That is a 727 in a normal configuration. It is quite a smoke generator. There is a 727. Of course, having, as I mentioned, had a good share in

the design of that airplane, why it's a good airplane in spite of the smoke it's turning out. But it is turning out a lot of smoke.

Now the company - I think this next one still has smoke but let me tell you the impact of the film. The manufacturer - this is the 747 on a similar takeoff and it simply shows no smoke coming from the engines at all. That's the 747 with over three times the thrust per engine, showing a smokeless performance.

Now, you could say, well, so much for the 747, it doesn't smoke, it's in the air, the engines must be running and there's no smoke coming out, so I'll believe that, but what about the old airplanes, is there any way to make them smokeless? And the answer is, yes, there is. The Pratt and Whitney Company that manufactures the engines for the 727 - and I might mention,the other airplanes as well, - has developed a kit and in just a few minutes, we'll show you a smokeless 727. That's a 747, of course.

Now there are two airplanes approaching. The upper right one is a 727 without the smoke kit, the lower left one is a 747, it has no smoke, of course.

The new bigger airplanes with the new technology engines will all be virtually smoke-free.

Now the top picture on these are the reduced smoke burner cams on the 727; the bottom are the original burner cams. This is the two aircraft starting their takeoff run. You'll notice the smoke in the lower photo, the lack of it in the upper one, which will be more apparent as they both

get airborne.

Now you'll notice the upper airplane doesn't have a smoke trail, the lower airplane does. The upper airplane isn't completely --

(Comments from audience)

SENATOR STOUT: They're watching closely.

MR. STEINER: What's the trouble? Oh, they can see a tiny trace of smoke. Well, so that I can convince you of my technical honesty, we'll show the next slide after we get through here, which admits that we haven't gotten all of the smoke out of it but we've gotten most of it. We may be able to get all of it out in due time.

There are the two airplanes again. And if I inferred that all smoke and all noise were going to disappear, please don't get that interpretation. I'm simply saying the industry is working and we're getting results. This is a lot better.

(Audience further reacts.)

MR. STEINER: Mr. Chairman, if we could, I'll just summarize and end this.

Could I have the next slide, please, and I will show technically where we are on the smoke situation. The right-hand bars are the significant ones. The 727 - and that's a von Brand number which is just a measure of smoke, and what it says is the original 727 was the blue bar in the center. The burner cams that have relatively little smoke attendant to them, that are now being tested, are in between the two blue bars. We believe that by 1970 the progress can be very close to that of the 747, which is the righthand green bar.

In other words, we believe that we are making progress and we believe that the airlines will cooperate in reducing and, hopefully in the end, eliminating smoke from aircraft.

Well, in aummary then, the last slide might be put on. I would simply say that the aircraft demand is still increasing; the aircraft will continue to grow in size; the total aircraft operations will increase, but rather slowly; airports will become more efficient, but it will take a lot of money and a lot of time; the required runway length will remain constant; takeoff and approach noise will decrease; community zoning is still desirable, but the idea of the sort of protection mentioned in the Maimi situation, and so forth, is unnecessary; and the aircraft smoke emission will decrease, hopefully, to the point where it can't be seen at all.

In closing then, Mr. Chairman, I would simply like to say that the air transportation system is becoming more and more an accepted fact and a utilized resource by all of us. The industry is working hard to improve it in every facet. Results are being obtained. I think these results should be considered in the location and construction of any contemplated major airport.

Thank you.

SENATOR STOUT: Thank you, Mr. Steiner, for a very, I feel, objective and informative discussion.

Are there any questions by members of the Committee?

How about pollutants other than smoke. What happens to those?

MR. STEINER: You mean hydrocarbons of some kind that are invisible?

SENATOR STOUT: Yes, things you can't see.

MR. STEINER: There will be a NASA witness, I believe, later today on that subject. There are hydrocarbons emitted but the amount of them is infinitesimally small compared to those emitted from, say, a highway full of cars or a city full of cars. But I wouldn't want to say that there are no hydrocarbons that are invisibly emitted. There are, of course.

SENATOR STOUT: Are you here this morning to tell us what the characteristics of an airport can be and should be and probably will be, or on a particular location or site?

MR. STEINER: I was asked to address the subject of the airplane characteristics that must be considered in locating a major jetport, presumably in the New Jersey-New York area, not, for instance, a private airport or an airport in the Rocky Mountains or something like that, but a major eastern metropolitan airport.

SENATOR STOUT: Assemblyman Azzolina.

ASSEMBLYMAN AZZOLINA: Do you foresee that the supersonic planes will be practical in the years ahead, especially flying cross-country? It just so happened this morning, on the Today Show, I happened to -- I don't know who he was but I just caught it as he was talking about this, that it would probably not be practical to run these supersonic planes cross country because somewhere between thrity to fifty million people will have to be inconvenienced with this sonic boom. Would you comment on that?

MR. STEINER: The position the Boeing Company has taken for a good long time has been that the supersonic program is completely justified without booming over populated land masses. I would not want to prejudice the case of airlines or our customers who are saying that never will there be a compatible supersonic over land aircraft but I can tell you that our program is not based, in its foundation, on the use of the aircraft over populated land areas.

ASSEMBLYMAN AZZOLINA: Well you almost have to go over populated areas or where buildings happen to be because this morning they were mentioning that the foundations of buildings would crumble and everything else. I don't know who he was, I didn't catch the name.

MR. STEINER: Well, there are all manner - and I'm speaking as a person, really not as an expert witness, - there are all manner of people that have wanted to use the sonic boom as a means of getting in front of microphones. This has been going on for a good many years. All I can say is, the Boeing Company has many times put in print that the foundation of the SST is not over populated areas or land areas, for that matter.

Now, let me just give you an illustration. We all know that in conducting our business in the United States we think nothing of coming across the country for a half day or a day. Personal confrontation is a way of life for all of us in the business. As a matter of fact, I came here last night and I'm leaving this afternoon, from Seattle.

This is normal and not just for people in the aviation industry, it's normal for all business men, really.

The SST will convert the Atlantic into the same situation, where you can go across the Atlantic and do work and restrict your time away from your office. That's the real contribution of the SST.

The distance between the East and West Coast is not really very great. I would not expect the advantage of SST use over the United States to be anything like as great as the advantage of the SST over much longer over-water hops.

I'm trying to obviously say this without prejudicing anything anybody has said. But I can tell you forthrightly that we have never said the SST rested for its foundation on traveling over the continental U.S.A.

ASSEMBLYMAN AZZOLINA: Yes, but the fellow must have been some kind of an expert - I'm sorry I didn't get his name - but he indicated that for the gain of a couple of hours it wasn't worth all the damage it would do.

MR. STEINER: To gain a couple extra hours, of course, he would have to go farther, probably, than just from here --

ASSEMBLYMAN AZZOLINA: And he also said that unless it was used for over land purposes that the SST would not be practical, would not pay for itself just using it on overseas flights.

MR. STEINER: That just isn't so. All of our economic studies have been based on overwater use. And he simply hasn't read the material.

ASSEMBLYMAN AZZOLINA: I'll have to find out who he

is.

MR. STEINER: Now please let me mention one other thing. It is true that one can demonstrate severe damage due to sonic booms. His crumbling foundation situation is that of a very severe sonic boom. The sort of booms that ships would have over the North Atlantic would, in most cases, be nothing like that. You can create the kind of boom he's talking about by flying a supersonic fighter on the deck next to a building and you can, sure as heck, do things, but no one is talking about that, even over water.

ASSEMBLYMAN AZZOLINA: Well, one last question. Do you foresee in the future that the sonic boom, by some technological means, can be eliminated? This may be a stupid question, I don't know.

MR. STEINER: I would have to qualify it this way. We are working hard to minimize the sonic boom. I don't personally see a method in which it can be eliminated. But I have to admit that 25 years ago there were a lot of things, that are commonplace today, that I couldn't have seen at that time either. But I would say that my personal reaction would be no, I don't see a way to eliminate it.

SENATOR STOUT: Assemblyman Vreeland has a question.

ASSEMBLYMAN VREELAND: Mr. Steiner, I think you partially answered my question with that last query. My question was going to be, is there any relation between the design of an airplane and the intensity of the sonic boom. I wondered if there was, in your opinion.

MR. STEINER: Yes, there is. There is quite a substantial relationship between the design of the airplane and the intensity of the boom. And that's, of course, the area that we've been addressing for a good long time. But, again, I'd say that the SST is not obviously the subject we're discussing this morning. It is economically justifiable without relying on overland use, and no one has proposed, to my knowledge, running booming SST's over New Jersey, certainly not the Boeing Company.

ASSEMBLYMAN VREELAND: One more question, Mr. Steiner. Generally, how far out would an SST be before it would go through the sonic barrier?

MR. STEINER: I'd be guessing but I'd say a hundred miles, at least.

ASSEMBLYMAN VREELAND: And at that altitude, that would be thirty or forty thousand, would it?

MR. STEINER: Yes. It would be 40,000, something like that, on its way to sixty.

ASSEMBLYMAN VREELAND: Thank you.

SENATOR STOUT: Assemblyman Richardson.

ASSEMBLYMAN RICHARDSON: Mr. Steiner, based on your projected aircraft technology, how would you characterize the ideal jetport in terms of number of runways and length of runways?

MR. STEINER: Well, the length of the runway I've already said. I'd say a large metropolitan airport ought to have 11,000 foot runways. Now naturally one can vary plus or minus a thousand feet. I see no purpose in, say, a

16,000 foot runway. But I really wouldn't want to see a large metropolitan area base their future on an 8,000 foot runway. So I would say somewhere around 11,000 feet.

Now, so far as the layout of the runways and the number of runways, one has to address the capacity of the airspace. I think the runways should be far enough apart, namely 5,000 feet apart, so that they can operate in a simultaneous independent manner, and that's regulated by law at 5,000 feet apart. But as to the number, I would say the number should be consistent with the capability of the airspace. There is no advantage in having runways that can't be used because the airspace is saturated. I can only say, in the report I read, that Blumquist Associates prepared, I doubt very much that the airspace could possibly, in any conceivable manner, take care of that many runways. But I'd rather not say it ought to be four or it ought to be three or it ought to be five, because I think others have that data better than I, but they should be 5,000 feet apart.

SENATOR STOUT: Any further questions?

Assemblyman Wilson.

ASSEMBLYMAN WILSON: Mr. Steiner, I'm just curious. Who paid for this report that you presented to us today.

MR. STEINER: The report, if you'll excuse me, came out of my own personal budget in the Boeing Company. It was not paid for by any airline group nor was it hired by an airline group. We have airport analysis and we call it Air Commerce Analysis Service that we offer to our customers

as part of our total capability. The Director of that operation is here today. And we have, of course, computerized methods of studying airline routes, of studying air traffic routes, and it's that organization's budget that this came out of. But there was no payment for it by anyone except it came out of my budget and there's something else that I won't be able to do as a result of it.

SENATOR STOUT: Anything further?

ASSEMBLYMAN AZZOLINA: Yes, one other question. You said something about the size of aircrafts doubling every so many years. How far is this doubling going to go? You had a figure up to almost 800, I guess. Is that about it?

MR. STEINER: Well, I don't know. There is no technical constraint on aircraft size. On the other hand, there is a financial constraint on how rapidly massive projects can be introduced. So I'd have to say that I used 800 because I think that's reasonable within the time span we're talking about for planning an airport. Eventually, in the year beyond 2,000, etc., I frankly don't know where we'll go. There's no limit to size. And if we do obtain air traffic control, which makes such operations stereotyped and completely automated, I would say that if you wait long enough to a time when none of us will be around they might be far larger than that.

I used it as something the Committee ought to consider in planning an airport. It's something that's the next step, and it's within the planning period of any jetport.

ASSEMBLYMAN AZZOLINA: Would you say that as the

jetliners get larger and larger, even if they should go beyond the 800 passengers, 11,000 foot runways will be sufficient?

MR. STEINER: Yes.

ASSEMBLYMAN AZZOLINA: That's all I have.

SENATOR STOUT: That's all. Thank you very much, Mr. Steiner and have a good trip home.

MR. STEINER: Thank you, sir. It was a pleasure.

SENATOR STOUT: Mr. Pyle, who would you like to have next?

MR. PYLE: Mr. Chairman, I would next like to introduce, Mr. Matthias E. Lukens, Deputy Executive Director of the Port of New York Authority, who will speak to the subject of site suitability.

M A T T H I A S E. L U K E N S: Gentlemen, my name is Matthias Lukens. I am the Deputy Executive Director of the Port of New York Authority, and it is a real pleasure to appear here today, before this Joint Legislative Committee, representing the Port of New York Authority.

I would like, as Mr. Pyle did, to compliment this Committee on holding these hearings to get the facts on this very grievous problem that we all face.

I believe that as we meet here today we meet with a common understanding of the great need for a new airport to serve the people and commerce of New Jersey and the New Jersey-New York Metropolitan Region. In the interest of the people of New Jersey and New York, it is urgent that

this great need be met promptly.

The Port Authority is appearing before you today as an agency of the States of New Jersey and New York, and also as a member of the Aviation Development Council, as all the others have been who were represented today. My statement today has been reviewed with the Commissioners of the Port Authority, all of them, and is authorized and supported by them.

Over the past ten year, the Port Authority, in carrying out the responsibilities established for it by the two State Legislatures, has studied and submitted recommendations on the need for and location of a new major airport. The actual designation of the site for the airport is not now within the power given the Port Authority by the two states. Only the State of New Jersey, acting in concert with New York, can make that designation through Legislative and gubernatorial action.

The Port Authority has been heavily engaged in airport development and operation for the States of New Jersey and New York for twenty-two years. It may be helpful for this Committee if I briefly reviewed the Port Authority's work in the field of aviation.

In recognition of their common interest in the bi-state port region, the States of New Jersey and New York in the Port Compact of 1921 charged the Port Authority with the development and operation of transportation, terminal and other facilities of commerce, as well as the promotion

and protection of the region's commerce. In fulfillment of these obligations, the Port Authority has provided 24 public transportation and terminal facilities costing more than $1.8 billion at no cost to the taxpayer. Among those terminals which are operated on a financially self-supporting basis are the three major airports that now serve the northern New Jersey-New York region -- Newark in New Jersey, and Kennedy International and LaGuardia in New York.

The Port Authority Airport Program

Upon the plea of the Cities of Newark and New York, the two States authorized the Port of New York Authority to assume responsibility for management and development of the present airports in 1947. At that time, the airports were in deep trouble. Newark and LaGuardia had been built primarily before World War II, were in great need of major rehabilitation and expansion to serve adequately the rapidly growing aviation industry in the postwar period. They were in serious financial difficulties and their deficits had to be paid for out of municipal taxes. There was no coordination of their purposes or roles, and even their flight patterns were in conflict.

LaGuardia Airport, for example, had serious engineering problems from the start, having been constructed on unstabilized muck. It was sinking into Flushing Bay at the rate of six inches a year. It had been designed for the pre-war aviation industry and, almost from the year it opened in 1939, its facilities were inadequate to handle the growing volume of commercial flights. What is now John F. Kennedy International Airport was the result of the vision of Mayor Fiorello LaGuardia who, in the face of opposition from many Queens residents, purchased 1,200 acres of swamp for the airport in 1941. New York City then invested millions of dollars into developing and expanding the site. But, in 1946, in the face of other pressing demands on the City's capital resources, and with the airport still not

ready for operation, sentiment grew for taking the City out of the tax-supported airport business.

Newark Airport was returned to civilian duty following full use by the U.S. Army during the war. It was apparent that air transportation was due for a major growth period, and that major improvements would be required if the airport was to serve expected passenger and cargo activity and begin to contribute again to the economic well-being of the area. The City of Newark could not place this need as a top priority among the many demands on it for postwar financing of public facilities and services.

There was little doubt that metropolitan airports were money-losers. But the Port Authority had an established credit base and was recognized for its sound business management techniques. Studies confirmed the economic importance of the airports to the region, and the Port Authority, carrying out the mandate of the 1921 Charter, offered to accept the responsibility for providing the large capital sums to modernize the outmoded facilities and to put them on a self-supporting basis.

In April 1947, legislation enacted by New Jersey and New York empowered the Port Authority to develop and operate airports. Under this authorization, we entered into long-term lease agreements that year with the Cities of Newark and New York in which we pledged reconstruction, development and operation of the three municipal airports without cost to the municipalities or to either State.

Teterboro Airport was purchased directly by the Port Authority from its private owner on April 1, 1949, and today is undergoing a major modernization program to maintain its importance in meeting New Jersey's and New York's need for modern facilities for non-commercial aviation.

An Integrated System of Airports

Each of the three major airports benefit greatly from being part of a regional airport system. None of them standing alone could offer the diversity or frequency of service that the three together can provide. The airports complement each other as far as the type of service offered. For instance, Newark Airport handles long- and medium- haul domestic flights, plus a certain number of Caribbean flights. Kennedy Airport handles all international flights, as well as long-haul domestic flights. LaGuardia Airport serves the region as the short- and medium-haul, intercity air terminal. Their relative nearness permits an interchange of passengers between them for connecting flights. Thus, together the three airports offer the people they serve a selection of flight schedules to every point on the globe that is unmatched anywhere in the world. Since 1947, the Port Authority has invested some $680 million in these airports. Their physical development has never ceased, and the demands upon their services have continued unabated.

We have recently completed a $120-million redevelopment of LaGuardia Airport, including new runways, runway extensions and a new passenger terminal.

We are now deeply engaged in a complete redevelopment of Newark Airport which will cost more than $200 million and make it one of the finest air facilities in the world.

In the last five years, we have spent more than $75 million in new and improved facilities at Kennedy International, making our total investment in that airport about $425 million. Projects now under way will cost $150 million to ready Kennedy for the expected

heavy volumes of air traffic brought in by the large aircraft Mr. Steiner spoke of earlier.

Incidentally, the Committee may be interested to know, that, in contrast to the $680 million invested in the airports by the Port Authority only $26.5 million of Federal airport aid has been received, or only 4 percent of the total investment in these facilities. Thus, Federal aid has been of little significance to the development of the New Jersey-New York airports. The aid that has been received has been applied directly to the cost of aeronautical facilities, thereby reducing the fees to the airlines and other aircraft operators.

Thus, with no recourse to general tax monies, the Port Authority has provided the finest regional airport system in the world. The economic importance of this system to the region I shall comment upon later, but let me state that in terms of employment alone the airports today are the source and location of jobs for 57,164 people with an annual payroll of more that $550 million.

Current Inadequacy of the Regional Airport System

Today, our airports are under enormous pressure - pressure created by an unprecedented demand for services. On a typical day, one out of every five air passengers flying in the United States either takes off from or lands at a Port Authority airport. Three out of every four passengers traveling between the United States and trans-atlantic destinations depart from a Port Authority airport. And this is what Mr. Steiner meant and Mr. Halaby meant

when they were indicating that our airports have a great influence, not just on the air traffic and the air service in this area but also across the country and, in fact, in the world.

The extent to which demand is outstripping regional airport capacity was made painfully clear during the summer of 1968. Delays and congestion abounded at the metropolitan New Jersey-New York airports. Diversions, cancellations and overcrowding restricted air travel. Traffic demand upon Kennedy, LaGuardia and Newark airports upset the delicate balance of an already saturated system, and congestion, delay and inconvenience spread over not only our own facilities but those of a large part of the nation. Delays of two to three hours in the New Jersey-New York region have an effect upon the entire aviation system - local, national and international.

The delays and congestion will continue to increase, despite our vigorous efforts to expand the existing airport system. As a result, the FAA has promulgated rules restricting air traffic at the area's three commercial airports, and the Civil Aeronautics Board is considering the diversion of some air service to other cities because of the congestion here in this area. Until more airport capacity is provided in the New Jersey-New York area, "...there is now no alternative to the suppression of air commerce," according to FAA Deputy Administrator David D. Thomas.

The result is that the pre-eminence of northern New Jersey and the New York portion of the Metropolitan Region

as the financial economic center of the world is seriously threatened by its inability to provide a continued high level of efficient, convenient air transportation.

The evidence of this serious economic threat is already at hand. Last year, for example, the growth rate in passenger traffic at our three regional airports dropped off sharply. Especially disturbing was this sharp drop in comparison with the national air passenger growth rate. Historically, our region has always had about the same air traffic growth rate as the rest of the nation. But in the last half of 1968, after a summer of congestion and delays, this region's air passenger growth rate had dropped to 2 1/2 percent, as contrasted with the previous year, while the national rate of growth had risen to almost 13 per cent, compared with the previous year.

Studies of the Location for a Fourth Major Airport:

In 1958, when the first phase of the Kennedy International Airport development was being completed, we made a thorough review of aviation needs in the New York metropolitan area. In that year - the year that the jet was introduced into commercial aviation service - about 13,500,000 passengers used the three major airports. In 1968, just ten years later, the airports served almost three times that number, of 37,000,000 passengers. And in 1975, just six years away, we estimate that the airports will have to meet a demand to serve 70,000,000 passengers. By 1980, the demand figure, if we have the airports to handle it, will reach 91,000,000 passengers.

The growth of air cargo has been just as dramatic. In 1958, the three regional airports handled 168,000 tons of air cargo. In 1968, this volume had increased to 849,286 tons, not including air mail. And in 1975, we estimate there will be a demand for at least 2,300,000 tons of cargo to be processed through the airports.

Even with the ultimate development of the three existing airports, only an additional major airport can adequately meet the aviation needs of the New Jersey-New York region after 1970. This conclusion, first expressed in 1959, has been reaffirmed in a series of subsequent studies. The Port Authority reported its findings to the Governors of New Jersey and New York in 1959, 1961 and 1966. In addition, other reports evaluating specific sites were made in 1963, 1964 and 1965. Altogether, twenty-three specific sites have been evaluated for airspace, accessibility, engineering considerations and present and future land use.* (We would like to submit for the consideration of the Committee copies of the two reports which summarize these studies). The feasibility of possible off-shore airport sites in Long Island Sound, Lower New York Bay and in the Atlantic Ocean also have been investigated. Together, these various studies and site analyses represent one of the most detailed and thorough investigations of its kind ever undertaken, and constitute what is probably the greatest body of information and knowledge on airport site selection anywhere.

Among the sites first evaluated in these studies were McGuire Air Force Base and several others in central New Jersey. The inescapable conclusion reached by the Port Authority and by the Federal Aviation Administration was that these sites were unsuitable from the standpoint of airspace and accessibility.

At the request of Governor Hughes, the Port Authority recently evaluated the report of the Economic Evaluation Committee which again

recommended sites in the vicinity of McGuire Air Force Base. On October 4, 1968, Mr. James C. Kellogg, Chairman of the Port Authority, submitted to Governor Hughes on behalf of all the Commissioners, a report of that evaluation. I am submitting a copy of Chairman Kellogg's report to the Governor for the record. Essentially, the review found that the sites recommended by the Committee had insufficient airspace capacity, were too remote from the people to be served and thus were not economically feasible.

On October 2, 1968, Mr. George E. Keck, President of United Air Lines, on behalf of sixteen major airlines serving the New Jersey-New York metropolitan region, wrote to Governor Hughes, saying,

> "...We must state that a new airport at or near the McGuire site would not serve the air passengers of the northern New Jersey region nor of the New York portion of the metropolitan area, and for that reason we cannot support it."

Of the greatest significance also was a statement by Mr. David Thomas, Acting Administrator of the FAA in his letter of February 14, 1969 to Mr. Keck that,

> "...the FAA has made no change in its basic position with respect to the airspace situation in the New Jersey-New York Region. We have repeatedly stated, from an airspace standpoint, that an airport site in the 'Northwest Quadrant' is the most desirable..."

The sites in the McGuire area are <u>not</u> within the "Northwest Quadrant." The only suitable and feasible sites within the "Northwest Quadrant" are the Great Swamp and a site in the vicinity of the existing Solberg Airport. With the Great Swamp site now unavailable, the only remaining site is that at Solberg.

Recommendation to Build the New Airport in the Vicinity of the Existing Solberg Airport

The Port Authority has therefore recommended the development of a major airport in the vicinity of the existing Solberg Airport: the only remaining area where a major airport will work, where it will serve the great majority of the people of New Jersey, and where it can become a major contributor to the State's and the region's economy.

In this regard it has been said by some that the Port Authority favors the Solberg area and opposes other locations further south because those locations are outside of the Port District as defined by the two States in the Port Compact of 1921, and therefore outside of the Port Authority's jurisdiction. The implication is completely erroneous.

The fact is that the Port Authority has no power to build a new major airport without specific authorization from the two States. Furthermore, virtually all of the area known as the Northwest Quadrant is outside the Port District, including the Great Swamp area and the Solberg Airport area.

The Solberg site meets every requirement of the aviation industry for major airport operations. The FAA has stated that adequate airspace is available at Solberg to permit operation of a major airport. The airlines are convinced it could serve the major population and industrial centers of New Jersey and, by virtue of its accessibility to the rest of the region, support full domestic and international services. The site does have a suitable topography so that a major airport could be constructed there at reasonable cost and can be made economically self-supporting.

Accessibility

A major consideration in the selection of any airport site is the adequacy of ground access. The Solberg area is within close range of three of the major interstate highways now in existence or under construction in northern New Jersey -- routes I-78, I-95 and I-287. These roadways, together with other major connecting highways, will provide direct, convenient and quick access to the growing residential and industrial areas in northern and central New Jersey and southern New York State. Major improvements are being made on the highways in this area as part of an over-all plan of the State of New Jersey to modernize and revitalize its highway system.

By highway, an airport in the Solberg area would be 47 minutes from Newark, 32 minutes from New Brunswick, 55 minutes from Paterson, and approximately one hour from the Holland and Lincoln tunnels. These times are based upon the planned development of the regional highway system and in 1980 will be less than the equivalent times from points in the western parts of Essex and Union counties; and in Morris, Somerset, Middlesex and Monmouth counties to Kennedy Airport in New York, thus providing better air service to the large population of citizens of this fast-growing air travel market.

ESTIMATED TRAVEL TIMES TO
SOLBERG AIRPORT SITE
(1980)

	Time (Minutes)
Bayonne	55
Clifton	54
East Orange	46
Elizabeth	48
Freehold	53
George Washington Bridge (N.Y. side)	72

	Time (Minutes)
Hackensack	67
Holland Tunnel (N.Y. side)	61
Jersey City	57
Lincoln Tunnel (N.Y. side)	65
Matawan	49
Morristown	31
Narrows Bridge (Brooklyn side)	64
Newark	47
New Brunswick	32
Paterson	55
Perth Amboy	38
Plainfield	31
Princeton	30
Red Bank	63
Somerville	17
Suffern	66
Summit	36
Trenton	46

Rail access to the Solberg site is also quite feasible, using existing mainline trackage. Trackage of the Central Railroad of New Jersey passes close to the site. Thus, rail service could be provided via the Aldene connection directly to Penn Station in Newark, from which rail service is also available to midtown and downtown Manhattan. It is estimated that an express rail service from Newark to the airport site could be scheduled to take about 35 minutes.

Topographical Suitability

A new airport in the Solberg vicinity would require about 10,000 acres centered on the present Solberg Airport site twenty-five miles due north of Trenton, thirty-four miles southwest of Newark, and forty-three miles southwest of mid-Manhattan. This location is beyond the range of most existing urban and suburban development and, as a result, much of the land there is undeveloped. The terrain and geology of the site would permit comparatively economical construction.

One of the leading sanitary and hydrological engineering consulting firms in the United States, Hazen and Sawyer, has investigated the effect of the development of an airport upon the water resources located

in the Solberg area. Their preliminary expert analyses have shown that an airport could be constructed at Solberg without interference with the Spruce Run-Round Valley water system or the surrounding watershed, and that with the proper application of known technology the water system could be preserved and protected during both construction and operation. Mr. Richard Walter of Hazen and Sawyer will be appearing before this Committee to discuss the results of his firm's investigation of the effect of the development of an airport upon the water resources located in the Solberg area. For our part, we know that one of the State's most important and valuable resources is its water. We would give full attention to the protection of these valuable water resources and incorporate in the planning of the airport whatever protective devices are required.

Much that has been written and said on the effects which a new airport would have upon surrounding communities from the standpoint of noise is based on comparisons with Kennedy Airport or other existing major airports. I can understand why laymen would make such a comparison because they obviously cannot analyze or observe an airport which does not yet exist. But such comparisons are misleading because the airport which we propose, and which we have been proposing since 1959 would be designed and built with the noise control as one of the primary design considerations.

Kennedy Airport was designed and built in the early 1940's when the 21-passenger DC-3 was the largest plane in commercial service and there seemed to be little chance that the airlines would ever have planes large enough for 200 passengers. Newark and LaGuardia Airports, of course, were designed even earlier. Nobody involved with the design of those airports, or any other airport of that era anywhere else in the world, could conceive

of the noise problem as it developed in the 1950's and '60's. Later, when the problem developed, the size and surroundings of the airports put severe limitations on what could be done to control aircraft noise.

On the basis of this experience, we stated in our report of 1961 that "any new major airport would require enough acreage so that aircraft would be able to approach and depart without subjecting nearby airport neighbors to excessive noise." However, modern airport design considerations would be applied in building a new airport and this would include noise buffer zones at the sides and ends of the runways. The Port Authority and its acoustical consultants are convinced that this would provide adequate protection for the neighbors of such a new airport.

Although future aircraft will be larger, it should be noted that we now have assurance that the noise levels of future aircraft will be no greater than those of aircraft now in use and may very well be less. Legislation passed by Congress last summer directs the FAA to set noise standards for aircraft. This landmark legislation, which the Port Authority strongly supported, is a major step forward in the area of aircraft noise reduction. For the first time, the Federal Aviation Administrator is specifically empowered to certify new aircraft on the basis of noise, as well as to require the retrofitting of existing aircraft to reduce noise. In addition, it confirms the FAA's right to prescribe operational techniques for noise reduction.

Thus, future aircraft, even though they will be larger, will be quieter and a new airport, designed with adequate buffer zones for today's aircraft, will be a good neighbor.

The development of the area adjacent to the airport should be controlled by the local communities. We believe a new airport would afford an excellent opportunity to the communities for new developments of various types and purposes which will add greatly to the economic health of the area. The local communities, working in close association with the involved counties and the State over a period of years, would have a chance to prepare an orderly and coordinated plan of land usage. The decisions on such land use would be made by the local communities and their zoning and planning boards, and the economic stimulation provided by the airport would make possible bold new approaches to area development which could bring tremendous benefits to the residents and taxpayers of those communities.

Economic Importance of Planning a New Airport

The Port Authority estimates that the capital cost of a new airport at Solberg would be at least $600 million, including land acquisition for the airport itself and adjacent noise buffer zones, site preparation, installation of utility systems, terminals, runways, taxiways, roadways, a spur connection to the Central Railroad of New Jersey, and other necessary facilities. We believe this airport could be developed so as to become, after an initial developmental period, economically self-supporting. However, its initial construction would involve substantial capital requirements and prior to achieving full operating levels during the initial developmental period, operating deficits would inevitably be incurred.

Much has been said about the economic importance of a new airport. No one who has seriously studied the need for the new airport is in disagreement that it can be of extraordinary benefit to New Jersey.

Construction of the airport would create an estimated 6,500 jobs paying about $66 million annually during each year of the first six years of construction. Of these jobs, 1,600 would be direct on-site employment and 4,900 off-airport jobs. Over the six-year construction period, this represents nearly $400 million in wages.

The amount of direct aviation employment required by a new airport is estimated at 43,800 jobs, representing an annual income of about $595 million. Of these, about 31,500 would be employed by the scores of firms which provide services and other activities at the airport itself. In addition, 12,300 direct aviation jobs at airline and other offices, located off the airport but directly related to the existence of the airport, are estimated for 1980.

Considerable additional employment would be generated beyond the immediate borders of the airport as a result of the airport presence. These may be termed the "supporting" category of employment. $200 million in retail sales to visitors entering the region also can be confidently forecast. In all, the airport presence would create as many as 100,000 jobs with wages and salaries of over $1 billion annually.

Yet, all these facts do not fully reflect the real value of an airport. Over 70 per cent of northern New Jersey firms make regular use of air transportation in the conduct of their businesses; the availability of air passenger, air mail and air freight services has a special impact

upon business houses and manufacturing enterprises whose interests reach into distant markets that are the very life-blood of northern New Jersey's economy. Without an adequate level of these vital services, northern New Jersey - like the entire metropolitan region - faces stagnation, decline and ultimately severe economic losses.

In summary:

The Port Authority recommends that necessary steps by the New Jersey Legislature be taken to authorize the construction of a new major airport.

The only remaining site where such an airport can be built is in the vicinity of the existing Solberg Airport.

- this site is reasonably accessible to the people it must serve in New Jersey and in New York,
- the accessibility to these people would support the required airline service,
- there is adequate airspace for such airline operations,
- the topography is suitable for airport construction with full protection being available to protect water resources and to prevent unacceptable aircraft noise in adjoining areas,
- an airport in this location is economically feasible but will involve substantial capital requirements and will incur operating deficits during its critical developmental period.

Thank you.

SENATOR STOUT: Mr. Lukens, I think we ought to have time to catch a breath now. It's one o'clock and I think the Committee has some questions to ask, so we will come back at two o'clock.

So the hearing is adjourned until two o'clock.

(Adjourned for lunch)

Afternoon Session

SENATOR STOUT: We will call this afternoon session to order.

Mr. Matthias Lukens is on the stand, so to speak. Are there any questions? Assemblyman Azzolina has a question.

ASSEMBLYMAN AZZOLINA: If you can't get Solberg as a site for a jetport, you must have a secondary site in mind of the 23 or so sites you looked at. Where is the secondary site you would consider?

MR. LUKENS: Assemblyman, we do not have one.

ASSEMBLYMAN AZZOLINA: You must have something in mind that would be next to Solberg in preference?

MR. LUKENS: There is none. Let me explain.

ASSEMBLYMAN AZZOLINA: That is what I thought you would probably say.

MR. LUKENS: You are talking about trying to serve the people of New Jersey primarily. Sixty-five per cent of the people who would use the new airport would come from west of the Hudson. Now, there is no other site in our judgment can serve those people in New Jersey who want to use the airport. Also the other important thing is that in the seven counties of Northern New Jersey, there are 70 per cent of the population and 77 per cent of the employment in the seven counties in Northern New Jersey and that really is the place where the great interest is from the standpoint of the people and the businesses in terms of air service. This also is where you are going to experience in the next 15 years the greatest growth in the metropolitan area,

either by number or by percentage. It is going to occur in those counties. Now there is no other site in our judgment that is able to service that population in Northern New Jersey.

So when you say, "Do you have another site in mind," we do not. We know of no other place that you could put an airport that will provide the service that those people and the businesses in those counties require.

ASSEMBLYMAN AZZOLINA: But if you don't have facilities in the immediate area of the population, then you must go to the outskirts of the population as they are doing in many cities today across the world.

MR. LUKENS: I know of none.

ASSEMBLYMAN AZZOLINA: Well, aren't they outside of Tokyo, quite a distance away, building an airport?

MR. LUKENS: Yes, 40 miles like Solberg.

ASSEMBLYMAN AZZOLINA: Forty miles?

MR. LUKENS: Yes.

ASSEMBLYMAN AZZOLINA: Well, you are aware New Jersey has a population of seven million people and is rapidly approaching ten million people.

MR. LUKENS: Yes, sir.

ASSEMBLYMAN AZZOLINA: New York City has probably in the same neighborhood also. The opinion has been that maybe New Jersey needs a jetport in the central part of New Jersey to take care of the growing needs of the State of New Jersey. That is one question. Then I'll throw in this other one. The FAA official - I forgot his name - sort of changed his tune. At first he said that a jetport could not go in any other site

in New Jersey than Solberg because of the air patterns, I believe. But then when there was discussion of possibly having New Jersey's own Jetport Authority and creating a jetport for the needs of New Jersey, I forget exactly what he said, but he sort of changed his tune that maybe they can work that out.

MR. LUKENS: He was talking about a much smaller airport. He was not talking about a major airport for handling commercial air traffic, both domestic and international, that we believe and we think has been demonstrated beyond any doubt is needed to serve this area.

Incidentally, to the point you raised, Assemblyman, if you take the present traffic, for example, at Newark Airport - again to the point of the location of the airport and do we have a second place to put it - I think less than 3 per cent of the passengers that come to Newark today, for example, are in the counties south of Somerset. If you include Somerset and all the counties north of Somerset, as I said, something like 65 per cent of the traffic of Newark comes from those counties plus then 30 some from New York. But you end up with a very small proportion of the air traffic in this region already generated from south of Somerset County. And again this has a bearing on the question of where you put an airport.

ASSEMBLYMAN AZZOLINA: Isn't really one of the problems the fact that if we go too far south from your territory, maybe you won't get to build a jetport - the Port Authority won't get to build a jetport?

MR. LUKENS: Unequivocally, no.

ASSEMBLYMAN AZZOLINA: Maybe we would extend the powers of the Port Authority to build it further away than the area you are allowed to build in now. Suppose we did that.

MR. LUKENS: Whatever the Legislature of the State of New Jersey wishes to do with regard to that, they may certainly do it. It is their prerogative; it is not ours.

ASSEMBLYMAN AZZOLINA: You know the reason for this legislation to create a New Jersey Jetport Authority stems from the refusal of the Port Authority to want to build a jetport any place other than Solberg and this is the reason we are having legislation to create the New Jersey Jetport Authority. I think probably if you would be willing to construct a jetport some other place, the Legislature may be willing to extend the power to the Port Authority. I am not sure; I am just speaking for myself now.

MR. LUKENS: Assemblyman, I regret to say that in our judgment an airport at this time or within the foreseeable future cannot be built in Central New Jersey and be a successful airport as a major airport to provide the service that the people of New Jersey want and need. It cannot be done successfully because they will not go there if they cannot have access to it properly and it is doomed to failure.

ASSEMBLYMAN AZZOLINA: The Jetport in Solberg - how many runways would that possibly be if you got to build it?

MR. LUKENS: We have talked about a four-runway airport. That is dual-parallel. That is exactly like, I think, Mr. Steiner was talking about and it is generally what you have at most of the major airports today more or less.

ASSEMBLYMAN AZZOLINA: In other words, another Kennedy Airport which would probably be filled up in no time and then you would have to build another jetport somewhere else.

MR. LUKENS: I don't quite agree with Mr. Halaby's statement as to the number. I think he was looking very, very far in the future. But in the future as we would sit here looking at it today, sometime in the next 25 years, yes, you would need another airport beyond a fourth one.

ASSEMBLYMAN AZZOLINA: If all the jetports now are congested, the three that you now have, probably this other one would just about take the overflow between now and the next five years or ten years and by that time, won't you need another jetport?

MR. LUKENS: Within the next ten years, you will certainly be planning for another airport.

ASSEMBLYMAN AZZOLINA: Well, why not build a big one now like they are talking about with eight or ten runways?

MR. LUKENS: Well, as Mr. Steiner, I thought very aptly pointed out, and he is a much more qualified man than I am to talk about this, being an aeronautical engineer, the plain fact of life is you have limitations as to air-space capacity and you have to take an area as it is. So you take the three airports you have in this area today. Then you have to consider Philadelphia Airport on the south and then that determines how much air traffic you can get into another airport west of the Hudson River. As he very aptly said, he didn't know any place in the world where a ten-runway airport was being planned and that in terms of the technology he knows, you could not handle the traffic that a ten-runway airport could accommodate because of

air-space limitations.

ASSEMBLYMAN AZZOLINA: But they are building an eight-runway airport in Dade County.

MR. LUKENS: Well, Dade County is a completely different situation where you have one airport down there today which is a major carrier airport and also that happens to be 40 miles out in a direction where you do not have all of the major airways that you have here in this area. This is like no other place in the world. This is the biggest region in the world. By any measure, it is the largest in terms of population, in terms of income, in terms of airways and again the axis is from the south to the north in terms of air-traffic flow, a great heavy axis, so you have more airways and more aircraft flying from south of Washington, north to New York and on to Boston than any place else in the world. So this is the problem. You don't have that in Dade County, not even close to it.

ASSEMBLYMAN AZZOLINA: I may be asking the next question to the wrong person. Maybe I will have to ask someone from the FAA later. If it was found feasible to put a jetport somewhere in the McGuire area and the complaint now has been that you have air patterns to Washington, wouldn't it be possible to move slightly, several miles, the flight pattern to Washington?

MR. LUKES: Mr. Gary is certainly the one qualified to answer that. It happens that his predecessors have said unequivocally several times it cannot be done to the point where you would gain any substantial increase in capacity in the McGuire area or down in that area.

ASSEMBLYMAN AZZOLINA: Because there are planes landing

there now with the Air Force. I took off there last week and I didn't see many planes in the area.

MR. LUKENS: Well, that is the trouble about it and that is why Mr. Halaby was saying he wished we could have a three-dimensional model so that you could see what this looks like. You look in the clear and you don't see many airplanes, but you don't realize that they are carrying with them a block of space that is like seven miles long and three miles wide with them. And that is one of the reasons you have this traffic problem because of the separation requirements for safety considerations that you have to have. Also in the McGuire operation, it is strictly a military operation. They have carved a corridor out of this very busy air space and a slot through which these military aircraft go. I am not sure that the FAA would tolerate a civilian operation like they have at McGuire today.

ASSEMBLYMAN AZZOLINA: The thought of McGuire was, of course, to make it a huge jetport for joint use, military and civilian. I don't know how this works out but I saw at Colorada Springs - of course, a much smaller airport - they did have a combination airport.

MR. LUKENS: A much smaller airport.

ASSEMBLYMAN AZZOLINA: Yes. There is quite a sizable Air Force Base there.

MR. LUKENS: Again, it is not only a question of the air space, which certainly Mr. Gary can speak to much more expertly than I can, so far as McGuire is concerned, but as well, there is the question of accessibility. In our judgment McGuire is

just beyond the pale in terms of being accessible to all of these millions of people in New Jersey who need to use this airport and will need to use it in the years to come.

You asked a question or someone did today earlier about the traffic estimates that were made with regard to the use of McGuire, an airport in that area. We think the estimates that have been made are grossly exaggerated. Our analyses of the use that would be made of an airport in that area like by 1975 would be like 5 million people as contrasted to 20 in the Solberg area just because people just aren't going to use it. That is what happened in New York this summer and in New Jersey. Instead of having a growth rate, as I indicated in my statement, of 13 per cent like the rest of the United States, our growth rate went down to 2 1/2 per cent because lots of people decided not to fly; they decided they wouldn't make the trip for business, or people who wanted to come here on business didn't come and this is going to get worse. The same thing is going to happen if someone tries to build an airport at McGuire or that area and that is that the airlines are not going to provide any service because the people are not going to want to go there to have that service. It is too inconvenient for them in our judgment and I think if you look at the travel distances and travel times around the world wherever you look, all the airports that we are talking about, there hardly is a one today that is 40 miles from a traffic center. They are much less than that.

ASSEMBLYMAN AZZOLINA: Just one more question: How far out is the Dulles Airport from Washington?

MR. LUKENS: It is 26 miles.

ASSEMBLYMAN AZZOLINA: Is that a dud? I understand it is supposed to be.

MR. LUKENS: They had last year 59,000 people use that airport, only 59,000 people. I don't know when it opened, but it has been opened like about 8 years or more. It is a beautiful airport. I wish we could move it up here. Like Mr. Halaby said this morning, the thing you can compliment the FAA on in that airport is they did a beautiful job of planning it and working with the community to make it a good neighbor in that community. The only problem is that in their terms in Washington that airport is too far for people to go to it and the airlines are just not providing the service because the people aren't there.

ASSEMBLYMAN AZZOLINA: Thank you.

SENATOR STOUT: Any further questions? Assemblyman Richardson.

ASSEMBLYMAN RICHARDSON: Mr. Lukens, witnesses testifying before this Committee pointed out that with the World Trade Center and all the other heavy investments that the Port Authority has, that it might not be financially able to build a major jetport in New Jersey. The other part of my question is: Do you think that the Port Authority is qualified as an agency to build a jetport in New Jersey?

MR. LUKENS: Well, at the outset, Mr. Assemblyman, let me say that certainly as I said in my statement - and we can't repeat it enough times - the Port of New York Authority is very well aware it has no power to decide where an airport should be put. That is strictly in the prerogative of the Legislatures

of New Jersey and New York and there is no question in our minds about that. However, to respond to your question, in our terms looking at our whole experience of 22 years of making airports self-supporting and developing them, we think that as you consider what agency, if you decide an airport should be provided and you consider what agency should try to undertake this task, we think that such an agency has to meet two tests, and one is that that agency has to have adequate credit resources to enable it to raise the very substantial capital requirements for constructing the airport and the financial resources to carry that airport through an initial developmental period when such an airport without question is going to lose money. And the second thing is that we think that such an agency should have the necessary technical and management skills.

Now you asked me about the Port Authority and I believe and the Commissioners of the Port Authority - and I am authorized to say this by them - believe that the Port Authority as an agency does meet those two tests and they do believe they can make such an airport self-supporting in the Solberg area and if the Legislature directed the Port Authority to undertake such a development, they would be willing to do so and feel that the Port Authority has the financial capacity to do so.

ASSEMBLYMAN RICHARDSON: Would the Port Authority involve themselves with other agencies in training programs to make ready people for some of the skilled and semi-skilled jobs that would be involved in operation of a jetport?

MR. LUKENS: It most certainly would, Mr. Assemblyman. We are very proud of some of the things we have done as an

organization in this area where we did conduct for several years several programs for the City of New York - the BES Program for one and the basic office practices, the BOP Program, where we did train some six to seven thousand people in the New York area for employment in New York City in basic skills in such things as air conditioning maintenance, landscape gardening, clerical work and other things. We also have a division in our personnel department that presently has offered their services to help set up training schools in something like eight different New Jersey communities, like Jersey City and Newark and several others, where we have offered to have our people come in, some of the people who worked in these programs originally, and help the city set up a regular training program, help them pick the people who are going to run it, help them train the people so that they can conduct a training program themselves for people in that locality. So we approach our jobs this way and in any new undertaking like even the World Trade Center, we have done the same thing down there. And I think you will find more minority people working at the World Trade Center site than almost any other major construction project where we have been working with the contractors and others to help have these people become qualified to work on such an area. So this is a normal way of life for our organization to worry about the people who are available to provide the skills and to try also to help some of those who have not had the skills to qualify themselves to do such work.

SENATOR STOUT: Senator Kelly.

SENATOR KELLY: Can you explain how the FAA would handle

the heavy flow of international traffic to and from the Atlantic airways? Do you know how they would handle that?

MR. LUKENS: Well, George Gary, the FAA administrator, who has direct responsibility for that, Senator Kelly, I think is the next witness or the second one after me and he has the direct responsibility and I think it would be more appropriate and more accurate for him to describe that.

SENATOR CRABIEL: Mr. Lukens, in your prepared remarks, you stated, I think on page 9, that the airport was not economically feasible and you say then on page 10 that the Solberg site can be made economically self-supporting. Could you tell me generally how long it is going to take in your opinion to bring the Solberg site in on a self-supporting basis?

MR. LUKENS: Our best estimate of that would be approximately three years, Senator, three to four years. Again it depends on when you would start construction and how long it would take. But you do have a pent-up demand so that our guess would be three to four years.

SENATOR CRABIEL: Do you recall or do you have at your fingertips on the basis of your study what financing rate you are figuring?

MR. LUKENS: Incidentally, Senator, Roger Gilman has suggested I clarify that last remark. That is three to four years from the day you open for operation and you would have like a six-year construction period where you would have to carry interest charges and other things as well and have no income coming in.

SENATOR CRABIEL: I understand that.

MR. LUKENS: I think on the basis that we used, it was

about 5 1/2 per cent.

SENATOR CRABIEL: You might have heard me, Mr. Lukens, ask the airline representative as to whether in his opinion he thought that the traffic potential as listed by the Governor's Committee was valid and he answered that he did. Would you care to comment on whether you think their assumption that the first year of operation of the airport in South Jersey would approximate the number of people presently using Newark is correct?

MR. LUKENS: With all due respect to Mr. Halaby, I am not sure he was completely familiar with the numbers to which you are referring. As I recall the figures, the Blomquist report estimated 65 million people using a McGuire area airport by, I think, 1985, and we think that that is grossly overstated as I indicated before. Our estimate, based on our analysis by our market people who do our forecasting for us - and incidentally, our forecasters in the last ten years have proven about as good as anybody's in the business --

Our analysis of the McGuire site indicated that it would get no more than about 5 million people in 1980, as I recall. I don't know that we have a number for 1985. So we are at great odds with their estimates.

SENATOR CRABIEL: As I recall it, their estimate for the first year of operation, which, I believe, was 1973, was the same number of people as used Newark in 1967. I take it from that that you would not think that that is possible either.

MR. LUKENS: No, not at all, and as a matter of fact, their estimates go substantially beyond that in relatively short time because if you open, say, in 1975 and they are talking about

65 million in ten years and they are talking - oh, I don't know - 50 million or 45 to 50 million in 1980 - they have no detailed supporting data on where those people were going to come from and our estimates are backed up by origin and destination analyses of where people come from and travel to in New Jersey by residents, by county. So when we make a projection, it is based on a detailed market analysis of where this market is and where these people are that want to be served. All I can say to you is that we think their estimates are just grossly overstated.

SENATOR CRABIEL: Well, I understand what you think, but you are saying that you can justify Solberg and Solberg will have to have this same number of people as is estimated by the Governor's Committee, is that not true?

MR. LUKENS: No, sir.

SENATOR CRABIEL: What would make it different?

MR. LUKENS: Our estimate was 20 million in 1980 and like 36 million in 1985.

SENATOR CRABIEL: And you are saying with 20 million and 36 million, you can make Solberg self-supporting?

MR. LUKENS: Yes, sir.

SENATOR CRABIEL: Now, pray tell me, if you estimate that Solberg will cost $550 million and the estimate of the Governor's Committee down in the pines was only, I think $600 million, and the Governor's Committee, even if they have overestimated their people, then their airport would be financially feasible under your own figures here.

MR. LUKENS: Senator, I am awfully sorry, but what we are saying - and I firmly believe this - is that an airport in Central

New Jersey cannot be financially self-supporting because they will never generate the traffic to make it self-supporting. So our estimate of the level of traffic that would be using the Central New Jersey airport would be, as I indicated, around 5 million people and I don't know what the 1980 figure would be, but it wouldn't be very much beyond that, and this is not going to support an airport of the size of investment that you are talking about.

SENATOR CRABIEL: I understand that your estimate is 5 million people. You just told me that you figured there would probably be 20 million people at Solberg.

MR. LUKENS: You have to have at least 20 million to make it self-supporting.

SENATOR CRABIEL: All right. I understand that. I also understand that you said that 65 per cent of the people that use Newark, I guess, are from New Jersey, and I submit to you if the demand is there as the experts have said and people are going to fly and if there isn't any airport at Solberg, what makes you think that the 20 million people won't go south rather than try to fight their way to Kennedy? [Applause]

MR. LUKENS: Well, I have only two facts to offer, Senator.

SENATOR CRABIEL: That was not a planted question, sir.

MR. LUKENS: I have two facts to offer and, that is, you cannot find in the world a major airport that is beyond like about 40 miles from the center of the traffic generation area. All the major airports in the world today and even those that are planned, except maybe one, are 40 miles or less from the

traffic-generating center, recognizing the fact that there seems to be kind of a magic number and that when you get beyond an hour people just aren't going to go there and travel.

Now if you take Newark's traffic, which you were talking about, only 2 per cent of that traffic comes from the counties south of Somerset County, so of Newark's traffic, the balance of that, which is 50 some odd per cent which comes from New Jersey, is all in the northern counties. This is where 70 per cent of the people live and 77 per cent work, in the northern counties. These people are not going to travel those distances to go down to an airport that is more than an hour away, like an hour and a half from Paterson or longer.

SENATOR CRABIEL: Yes, Mr. Lukens, I agree with you there. But also isn't it true that the growth of New Jersey is coming south and although you say 2 per cent, I come from Middlesex County and certainly there is a large growth there which could just as easily go to South Jersey - in fact, it could much easier go there - than to Kennedy. To Solberg, no - it would be closer to Solberg. But I am trying to develop the point as to whether there won't be people to make the South Jersey Airport work out.

MR. LUKENS: Well, the Regional Plan Association, Senator, has made a study and forecast the growth of New Jersey as to population and employment and they also predict that in the next 10 to 15 years, New Jersey, as I indicated before, is going to have the greatest growth in terms of people and employment, greater than New York, both percentagewise and also by number. But again, 70 per cent of it is going to be in the

northern seven counties.

SENATOR CRABIEL: Would you also comment and explain to me, because you have opened my eyes with your statement concerning Dulles, what is the problem in the Washington area? In your opinion is it just purely distance?

MR. LUKENS: I think that is everybody's opinion. As a matter of fact, they are talking now down there to consider what they can do about it and they are talking about spending - I don't know - three hundred or more millions of dollars of taxpayers' money to build a high-speed railroad out to the airport, which will be subsidized.

SENATOR CRABIEL: One other question to get it on the record because at our first hearing Senator Forbes testified - Former Senator Forbes testified to this Committee and you are aware, of course, that he is a financial expert and a representative of a financial magazine --

MR. LUKENS: I am aware that he is an editor of a financial magazine.

SENATOR CRABIEL Very well. [Laughter]

MR. LUKENS: I read his testimony in the paper and that is why I qualified my remarks.

SENATOR CRABIEL: He testified that in his opinion because this was a deficit operation the Port Authority could not handle this job. Could you comment on that?

MR. LUKENS: Well, I anticipated that someone might ask that question, Senator. Therefore, I did discuss this matter with the Commissioners of the Port Authority and with their permission I can indicate that the Port Authority is of the

opinion that an airport in Solberg can be made to be a financially self-supporting airport after an initial developmental period when it will have some losses of, say, three years plus the construction period - thereafter, it can be made financially self-supporting - and that the Port Authority would be willing to undertake its development and finance it solely on the credit of the Port Authority if the Legislature so directs.

SENATOR CRABIEL: And you are of the opinion also, sir, that no matter whose figures you use - let me put it that way - that you would not think that an airport in South or Central Jersey would be self-supporting?

MR. LUKENS: Yes, that is correct, sir.

SENATOR STOUT: Senator Kelly.

SENATOR KELLY: Did I understand you correctly before when you said that the only place that this jetport could go would be the Solberg area in your opinion?

MR. LUKENS: When you consider all of the things you have to consider in siting an airport, yes, sir.

SENATOR KELLY: Now in the event that the future determined that it wasn't practical or feasible for a jetport to be in the Solberg area, how do you feel about it in another area so long, I think, as we are in agreement that we should have a jetport in New Jersey? I think you would agree with that, that we should have a jetport in the State or did I misunderstand you?

MR. LUKENS: No, sir. I would certainly agree with that. Basically the reason for that is that the people in New Jersey need another airport to meet their requirements now and in the

future.

SENATOR KELLY: Now if it isn't feasible or practical, and it is developed so, to go in the Solberg area, is it feasible and practical to go in the South Jersey area as a second choice?

MR. LUKENS: I honestly do not think so and our sincere belief is that if that is the answer of the Legislature, what it really means is that New Jersey is not going to have the economic growth that it otherwise would have.

SENATOR KELLY: Have you made any studies to indicate whether it would be feasible or practical in that area?

MR. LUKENS: Oh, yes. Eight of the studies we have made deal with the question you are asking me in terms of other sites. We made two special studies on the South Jersey sites and I guess we did not offer them in evidence, but we will do so because they do supplement the two major reports we made and indicate in our judgment and in the judgment of the FAA and in the judgment of Air-Borne Instruments Laboratories, who are the experts in air traffic work, that you cannot build a major airport in Central New Jersey from the standpoint of air space problems. And, of course, I add to that, there is a problem in our minds that because of the inaccessibility of such an airport to the millions of people who need to use it or want to use it, likewise it will not have the market and it will not have the airlines' service that you need to have it a major airport.

SENATOR KELLY: Wouldn't the airport, once it was there, bring accessibility? Wouldn't that follow if it wasn't done

initially?

MR. LUKENS: Senator, there isn't any experience up to now in the world that would indicate that I should answer you "yes." It is all "no." I think Dulles is a beautiful example right before you and you are talking 26 miles because the people in Washington have the option of going to Washington National Airport which is like about 8 miles. So they still go and Dulles has sat there for 8 or more years - it may even be 10 years by now - and it literally has practically no traffic to speak of. Willow Run Airport is another example where the airlines and others -- no, the University of Michigan and the county tried to develop Willow Run as a major airport for the Detroit area. It is only something like about 32 miles out. But they finally had to close it up and they moved back into the present metropolitan airport which is something like about 20 miles or 18 miles from town. As I say, the major airports that are being planned today, there is no question they are in some instances further out than the existing airport, but I can't think of any instance where they go beyond something like 40 miles.

SENATOR STOUT: Assemblyman Vreeland.

ASSEMBLYMAN VREELAND: Mr. Lukens, sometime in the past I learned that the movements in and out of the New York-Metropolitan area with relation to the overseas movements had a specific ratio. Can you tell me what that is?

MR. LUKENS: About 25 per cent of Kennedy's traffic is overseas movements -- I'm sorry -- people.

ASSEMBLYMAN VREELAND: May I reframe the question. Out of

the Metropolitan-New York airports, of which there are three, and Teterboro, I suppose, now, what is the ratio, would you say, out of the three, overseas?

MR. LUKENS: One-seventh.

ASSEMBLYMAN VREELAND: One-seventh.

MR. LUKENS: In other words, we handled last year at the three airports 37 million people and out of that number the overseas was a little over 5 million. I think it was about 5.6 million, something like that.

ASSEMBLYMAN VREELAND: Well, that dovetails pretty close. Mr. Bakke said 92 per cent to 8 per cent. That is not too far off, I guess.

If this Committee were to entertain an idea that the northwest quadrant was the logical location, forgetting a specific site, would the Port Authority still have the same degree of interest?

MR. LUKENS: Would you rephrase that question?

ASSEMBLYMAN VREELAND: If this Committee was of the opinion that the northwest quadrant as defined by the FAA is the logical general area, without being specific as to site, would the Port Authority have the same interest?

MR. LUKENS: Well, we certainly would have the same interest, but I must say to you, Assemblyman, that at this juncture after 10 years of studying the question, we know of no other suitable site other than the Solberg site and the Great Swamp site which because it is a national wildlife refuge apparently is unavailable today for development. Although I would answer your question generally "yes," I must qualify it as I did.

ASSEMBLYMAN VREELAND: Did you mean to imply that no one

but the Port Authority is capable of handling this project?

MR. LUKENS: No, sir.

ASSEMBLYMAN VREELAND: Would you say that the State of New Jersey is capable?

MR. LUKENS: That is up to you to make that decision, Assemblyman.

ASSEMBLYMAN VREELAND: I am talking now from the financial standpoint. There were some comments made about the expertise of the Port Authority and I wondered whether or not you felt that New Jersey was incapable of equalling or coming near the abilities of the Port Authority. That was my question.

MR. LUKENS: I think the State of New Jersey could employ competent people with adequate competence. I think the problem there is again a financial one where I don't think that the State of New Jersey could develop an airport in Central New Jersey without pledging the credit of the State of New Jersey behind it and, of course, with the credit of the State of New Jersey you can do almost anything in that regard.

ASSEMBLYMAN VREELAND: Thank you very much.

SENATOR STOUT: Any further questions? Assemblyman Azzolina has another one.

ASSEMBLYMAN AZZOLINA: One short one. You said Dulles handles what, 59 thousand - 59 million --

MR. LUKENS: No.

ASSEMBLYMAN AZZOLINA: -- 59 thousand passengers a year? Was that it?

MR. LUKENS: That was in 1968. They had 59,000 passengers.

ASSEMBLYMAN AZZOLINA: You just said that Solberg will

probably handle only 20 or 30 thousand.

MR. LUKENS: Twenty million.

ASSEMBLYMAN AZZOLINA: Twenty million passengers?

MR. LUKENS: Yes, sir.

ASSEMBLYMAN AZZOLINA: How many did you say that Dulles handles a year?

MR. LUKENS: I am sorry. In the year 1968, Dulles Airport -- I misspoke myself and I am sorry -- they handled 59,000 air carrier operations or 160 flights a day and they handled one million eight passengers. So I was wrong on my numbers. I got the carrier movements mixed up with the passengers. This is after six years. One million eight in the year 1968 - one million eight passengers. This contrasts with like six million eight in Newark to give you a margin and it contrasts with twenty million that we are talking about that would be handled in Solberg.

ASSEMBLYMAN AZZOLINA: In other words, Dulles is losing a fantastic amount of money then.

MR. LUKENS: I don't know what the numbers are, but I think it is obvious they are losing a substantial amount.

ASSEMBLYMAN AZZOLINA: Are you sure of the figure one million eight?

MR. LUKENS: Yes, sir.

ASSEMBLYMAN AZZOLINA: It seems impossible.

MR. LUKENS: You know, Kennedy Airport handles 420,000 aircraft movements a year; Dulles handled 59,000. They obviously are losing money, very substantial sums.

ASSEMBLYMAN AZZOLINA: O.K. Thank you.

SENATOR STOUT: Assemblyman Wilson.

ASSEMBLYMAN WILSON: Mr. Lukens, when do you expect the jetport actually to be functional? If the Port of New York builds it, when do you expect it to be functional and operating? By what date?

MR. LUKENS: We said six to seven years at a minimum. You just can't do it earlier than that.

ASSEMBLYMAN WILSON: All right. You would say about seven years from now. Would it be totally functional? When do you expect it to be totally functional so you have all your airport open, your runways functioning, etc.?

MR. LUKENS: Between six and seven years. Assemblyman, an airport does grow in stages so that you might not have everything there.

ASSEMBLYMAN WILSON: I mean totally functioning?

MR. LUKENS: It would certainly be operational in seven years.

ASSEMBLYMAN WILSON: But as far as actually functioning, would you say about 1975 when you would have your hangars?

MR. LUKENS: Yes, sir.

ASSEMBLYMAN WILSON: All right, 1975. Now to me,that's 16 years away -- Oh, I am sorry. That's seven or eight years. One thing that bothers me that you said is that any jetport located more than 40 miles away from your metropolitan area hasn't been too successful. I happen to believe in progress and I believe that the State of New Jersey just passed a Transportation Bond issue and I hope that in seven or eight years from now we are going to have a revolutionary transportation system in

this State and I think this may more or less knock your theory out of existence because of the fact by 1975 or 1976 we are going to see a remarkable improvement in transportation in New Jersey. I hope so. Would you comment on that? [Applause.]

MR. LUKENS: Well, certainly the bond issue is one of the greatest things that ever happened in the State of New Jersey and the people and the legislators are to be congratulated on that fact and the bond issue is going to do a great number of things for the transportation facilities of the State of New Jersey.

With regard to railroads, most of the plans that we are familiar with relate to commuter railroads. They don't relate to high-speed rail, the kind of which has been talked about from New York to Washington and to Boston, for example. Now the average speed that you would expect to get on a railroad after it is improved with bond issue moneys - like from Newark to Solberg, you couldn't expect to get more than an average speed of something around 60 to 65 miles an hour. The train might go up to 80 miles an hour, but you wouldn't average more than something about 60. One of the things that we believe is a problem, like in the Blomquist Report - some of the statements they made there about rail are all based on a railroad that averages 100 to 110 miles an hour, averages. Now there isn't a rail track in the State of New Jersey and there will not be one after the State bond moneys are all spent that will provide for a sustained period of time a rail operation that is going to average 100 to 110 miles an hour. As you know, the high-speed rail today that is running from New York to Washington is not averaging 100 miles an hour and they can't even run the train at its

maximum speed because of the roadbed. They have not appropriated the money and they have said it will take two hundred and some million dollars if they were going to upgrade the Pennsylvania mainline tracks to get up to that speed. So unfortunately even though you spend the bond money to improve the commuter service, which will be great, and it is badly needed, it is not going to provide the high-speed kind of rail that I think you were interested in from the standpoint of access to an airport.

ASSEMBLYMAN WILSON: Mr. Lukens, I guess it was just recently that we started talking about a jetport authority too and plans can be changed and I think that since we are the Legislature and we appropriate the money for the bond issue - naturally as you know the citizens just gave us permission to appropriate the money - we may, if this Committee sees fit and we are objective in our opinions, end up maybe having to ask the Department of Transportation to change some of these plans to make a rapid mass transit line readily available to a jetport in some other location.

MR. LUKENS: Yes, sir, and if you do that to this McGuire site or any one in the area, you might end up by spending the entire $240 million just for that railroad. The Tokaido Line in Tokyo cost $3 million a mile when it was built some several years back - $3 million a mile in Tokyo - to provide high-speed rail and they are talking about spending something like $250 million just on fixing up the mainline of the Pennsylvania Railroad to allow the high-speed train to average 100 miles an hour. So if you are talking about building a railroad like from New York down to the McGuire Airport site, at something like between

$3 to $4 million a mile without all the equipment and everything else, you are talking about something around $200 million.

ASSEMBLYMAN WILSON: We are not talking about that. I am just thinking as far as the bond issue is concerned, we can always since we do have the final approval of the appropriations - we may actually be able to meet with the Department of Transportation and change some of the existing plans.

MR. LUKENS: Assemblyman, then what is going to happen to the poor commuters in the sense that you are riding today something like - oh, I don't know -- 150,000 people a day that are riding these commuter railroads that desperately need better equipment and better service? I would think they would be better served with the spending of this money.

ASSEMBLYMAN WILSON: Well, that is just an area we could explore, also the fact that maybe if we have our own jetport authority, for example, they would be more subject to the needs of New Jersey and they might help us out in some of these areas.

I would like to ask you a question that might be of interest to the members of the Committee. Your system of pooling your revenues from your various facilities - for example, you have a procedure where you pool your revenues from your Lincoln Tunnel, your George Washington Bridge and your airports into one fund -- First explain the revenue procedure. Maybe some of the members of the Committee are not familiar with it.

MR. LUKENS: Assemblyman, this is your system if I may say so since the State Legislature in New Jersey and then

in New York in 1931 passed a statute which directed us in the Port Authority to pool all the revenues from all of our facilities and to place them in reserve funds and also which would then permit us in future financing of our facilities to sell bonds, the credit behind which would be the money in the reserve funds, and to sell those bonds for any and all facilities. So when you sold a bond for any facility of the Port Authority, then the revenues from all the others would stand behind it.

Now initially the Holland Tunnel really helped finance the Staten Island bridges and the Geroge Washington Bridge and the George Washington Bridge and the Holland Tunnel helped finance the Lincoln Tunnel and the Lincoln Tunnel and the other two helped finance the airports and the piers and docks in Elizabeth. Now you are on the other end of the cycle where every facility of the Port Authority today is contributing to the reserve funds except maybe about three. So even the airports and the piers and docks today are contributing to the reserve funds and, therefore, enable us to issue bonds for future purposes. So if we were directed and authorized to build another airport in a proper site and we sold bonds to finance it, those bonds would have behind them the revenues from the present airports, the docks and piers in Elizabeth and Newark, the Holland Tunnel, the Lincoln Tunnel, the George Washington Bridge and I think as we discussed at our other hearing, the Lincoln Tunnel as an entity is not self-supporting and it could only be built because of the revenues from the other facilities, that any future tunnel and even maybe a bridge may not be self-supporting; if we would ever be authorized by this Legislature to build another

one, it might not be self-supporting on the present toll structure and it would have to be supported by the existing facilities that have surplus revenues that go into our reserve funds. Also PATH which I neglected to mention is similarly financed where we have issued $122 million worth of bonds for PATH. We are losing a little over $10 million a year and that can only be done from the revenues that exist because of the other facilities of the Port Authority, again as directed by the Legislature. Just in 1962 they authorized and directed us to go forward with the PATH program and authorized us to pledge the revenues, that is, authorized our Commissioners to pledge the revenues of the reserve funds for this purpose. I am sorry to give you such a long answer.

ASSEMBLYMAN WILSON: Mr. Lukens, then you are saying that the revenue from this new jetport if you were directed by the Legislatures of New Jersey and New York - well, New York has already given you permission to do so - would be put into this one revenue fund, reserve fund, as you call it.

MR. LUKENS: The Commissioners could not do it otherwise and they would have to certify, when they undertook to fulfil this authorization and directive, that in their judgment such an airport could be developed and not impair the credit of the Port Authority, in other words, be self-supporting, and they would have to make such a certification, which means it would be financed by bonds supported by our general reserves and the revenues of all the other facilities.

ASSEMBLYMAN WILSON: If you were to take over and build the jetport at Solberg, you have a provision for payment in lieu of taxes, do you not, that would go to the municipality in

that area? How does that function?

MR. LUKENS: Well, it is a permissive statute so that actually what happens is that we sit down with the locality and review with them the particular project and work out an agreement with them, under which we make payments in lieu of taxes. And we have done that in every case of our terminal facilities with all the municipalities and counties that are involved and we do make the maximum payments, which we are permitted to do, equating to the taxes last paid by the private holder.

ASSEMBLYMAN WILSON: Yes. You are limited by a 1931 law which says that you may make payments in lieu of taxes based on what the value of the property was when it was last privately owned. Is that correct?

MR. LUKENS: Correct.

ASSEMBLYMAN WILSON: What type of land is most of this land in the Solberg area? How would you classify it? Would it be residential, industrial, farmland?

MR. LUKENS: Well, some of it is dairy farms. As I said, it was relatively undeveloped, which the gallery did not appreciate. But it is all relative in terms of density of population. It is not very densely populated and it is generally rolling farm country - lovely country.

ASSEMBLYMAN WILSON: So most of it is farmland -- [Chorus of "noes" from the audience.] Well, most of it is undeveloped area then. We will use that terminology. [Another chorus of "noes."] So, therefore, as far as payments in lieu of taxes, they would be based on the assessment of farmland and

since farmland is assessed quite low, therefore, your payments to the municipalities where this land is taken away would remain quite low, would it not?

MR. LUKENS: Assemblyman, I do not know the taxes that are paid there. Of course, we have no specific site as such in terms of an exact location. We do know approximately in the area where such an airport would go if it was authorized. But until the Legislature would authorize such a site, we would certainly not want to make the necessary engineering surveys and we would obviously need to work with the county and the localities and the State to try to work out the best arrangement for the best siting of such an airport. So until you know all that, nobody can really say what the taxes are and what would be involved. I just don't know.

ASSEMBLYMAN WILSON: All right. Now once you take over the property and you reach an agreement as far as payment in lieu of taxes, in the year 2000 would that payment in lieu of taxes remain the same even though the property is later developed? Would the payments that you are paying the municipalities stay the same?

MR. LUKENS: Assemblyman, the short answer to that question is "yes." Let me make another answer if you would permit me that has a bearing on it, and that is, one of the interesting things around Kennedy, for example, and I think is the thing that also has a bearing on some of the benefits that do come to a locality, is that in the average in Queens, for example, the assessed value of property since 1950 and '52 has risen like about 60 per cent. Around Kennedy Airport it has risen

almost 450 per cent in assessed value, which means that the locality is deriving a tremendous amount more taxes. This is land, not including improvements. So the municipality has derived a benefit from the airport just in tax terms from it being there.

ASSEMBLYMAN WILSON: Mr. Chairman, does someone else want to ask some question? I have some other questions, but I don't want to monopolize this. I have quite a few questions.

SENATOR STOUT: Go ahead.

ASSEMBLYMAN WILSON: In an article that appeared in a Sunday newspaper, Newark Sunday newspaper, March 16th, it is indicated that you consider a 22,000-acre airport as being a fantastic proposal. Now do you consider it fantastic that Miami, Forth Worth and Dallas are also developing this same size of an airport?

MR. LUKENS: Well, we don't see the need for such an airport in terms of size. And except for Dade County, and I think Mr. Halaby commented on that, where it is a completely different situation, where you do have miles and miles of swamp land - they may have some other purposes in mind - but they certainly don't need the 20,000 acres or whatever it is they are taking down there for an airport. So far as Dallas-Fort Worth is concerned, you know the area down there where they have again a surplus of land and a lot of it is prairie land and nobody lives out near that area and they may very well have some plans for industrial development - in fact, I think they do - that don't relate to the airport, per se. When you look at future plans of other airports around the world, you will

find generally speaking that they are around 10,000 acres. In fact, some of them are less than that in terms of future planning.

We consider that 10,000 acres is an adequate size for an airport today and when I say that, that includes the buffer zones which in our judgment ought to be planned in an airport to provide the necessary noise buffer in terms of any residential developments adjacent to the airport.

ASSEMBLYMAN WILSON: I want to ask you something about the buffer area and you happened to mention it. It is my understanding from the information that I have that the Federal government plots noise levels for four-engine heavy transports that they are using today as highly objectionable and say that these noise levels go well beyond the 750-acre buffer zone as you just mentioned. What would be your buffer zone at the end of each of the runways, etc.? In fact, in the information that I have - and I have checked this out with the Federal government - they say that three times the amount of buffer zones, 375 acres - three times that amount would still not be satisfactory and still bring out the noise. Would you comment on that?

MR. LUKENS: I don't know your source, Assemblyman. I am not familiar with that. The buffer zones that we have talked of in terms of our planning,and as a matter of fact in the '61 report, we had indicated in this schematic idea that you would have a buffer zone on the end of each runway that itself would be something like three miles long. So from the start of

roll of the aircraft, you would have five miles to the point before you would have any kind of a development on the end of that runway. That, of course, is one of the things that in our judgment, if anybody today were to be able to build an airport unlike Kennedy and unlike LaGuardia and Newark, you ought to be able to sit down with the county planning people and the local planning boards and the State and work out the best land use, compatible land use, around that airport to minimize any problems of noise. But from the standpoint of the size of buffer zones we are talking about, in our judgment this would not provide objectionable noise levels.

ASSEMBLYMAN WILSON: As far as land use, I am also concerned with that because this article went on further to state that you believe 170 thousand acres recommended for land-use control around the airport was also fantastic.

Let me ask you this question: In the light of the comment you have just made, don't you think that the airport itself should have control over the growth and development of the vicinity around the jetport so that there is not this conflict and if the authority had control of this area, you would not have to meet with individual municipalities and local governments and county planning boards and so forth?

MR. LUKENS: I think that would be fatal, Assemblyman. It could only be done working with the localities and the local planning boards and the county planning boards and the State. It could only be done that way and should only be done that way.

ASSEMBLYMAN WILSON: Why?

MR. LUKENS: Because they have the power and they are the

local people and they know what they want in their community. [Applause.]

ASSEMBLYMAN WILSON: See, now you are getting applause.

MR. LUKENS: It is the first time today.

ASSEMBLYMAN WILSON: But if the authority has control of a wide buffer zone around the airport, therefore, they can establish the patterns that would be more susceptible to the growth of an airport and so forth, a jetport.

MR. LUKENS: But the Port Authority should not have the power to control that land and to say what use should be made of that land. The locality should have that power. We can advise them. We can tell them what the problems are. We can show them different schemes as to how the runways could be laid out. We could show them different ideas about where the hangars and other buildings could be placed from the standpoint of minimizing noise on the ground. But when it comes down to the question, "Should you have an industrial development? Should you have a planned community? Should you have other things adjacent to a particular place in the airport," that should be up to the local community.

ASSEMBLYMAN WILSON: Do you have for us, Mr. Lukens, a plan of the runway layout and so forth and the buffer zone so that we on the Commission could avail ourselves of it so we can study this as far as the buffer zone and so forth, and exactly how the runways would be laid out?

MR. LUKENS: No, we do not have such a plan because we would not develop such a specific plan until someone said to us like the State of New Jersey Legislature, "You now have the

authority to build an airport in this area." Only then would we at that point go out and start to find out the information we need from a planning standpoint and an engineering standpoint and local community standpoint as to how best to develop a plan for that airport, the same with runways. The one thing I can say to you absolutely and, that is, there are two things on the runways - three things. There are certain criteria of the FAA you have to abide by which were mentioned this morning. One of the things is you have to have them separated by 5,000 feet. Another thing is that generally speaking they should be parallel to the runways that exist today, the main runways, at La Guardia, Newark and Kennedy. The third thing is - I don't think there is any question in terms of the way we have looked at it and in terms of the interest of the State and the localities that any runway configuration ought to be so laid out that you would not have any aircraft over the reservoirs that are presently there or planned, and it can be done and it should be done. The people that have made studies of pollution and contamination have never found any evidence of such a pollution or contamination that has caused any problem from any airport that I know of. The U.S. Public Health Service has studied the air pollution and in Seattle they also studied the question of water pollution and air pollution and there is no indication that this is a major problem. But there is no reason to even expose the area to a problem if you can so plan the airport that you wouldn't have any aircraft flying over the reservoirs themselves.

Incidentally, there are at least two airports that are

developed right in the middle of watersheds with reservoirs around them in Sacramento and in another airport in North Carolina of reasonable size. So they can be made compatible.

ASSEMBLYMAN WILSON: Mr. Lukens, I believe this is the responsibility of this Committee that represents the citizens of the State of New Jersey to actually look at a plan to see if there are things provided for, such as buffer zones and so forth, and we are not going into technicalities. If you do not have a plan where you can actually show us, you know, that you have so many acres of buffer zones provided -- I think this is why a lot of people are here. They are very concerned as far as the noise involved; they are concerned as far as pollution.

MR. LUKENS: This page did not lend itself to showing three miles of buffer zones. But we could certainly give you a sketch plan showing what an airport would look like of 10,000 acres with buffer zones of three miles in length and the width as well.

Now as to where you put that exactly in the area we are talking about, nobody should at this point say this is exactly where it ought to go because you would undoubtedly be wrong and you wouldn't want to do that until you have all these facts I mentioned.

ASSEMBLYMAN WILSON: I am sure the Committee would like to see it, and if the Chairman would ---

MR. LUKENS: We will submit you a sketch plan that would show what an airport would look like that we are talking about, a major airport of 10,000 acres with adequate buffer zones and

four runways.

ASSEMBLYMAN WILSON: I have one other question. Mr. Lukens, it seems that you and the airlines are running very parallel in thought and I know that you provide facilities for the airlines now. Have you ever to your knowledge spoken to the various airline companies to try to have a unified effort as to the location of a jetport?

MR. LUKENS: I would say many times.

ASSEMBLYMAN WILSON: You have worked together to try to establish a location of a jetport. Did you work together or did you decide where the jetport should be located and then come to the airlines for help or did you work together and arrive at the site that was mutually agreed as to where the jetport should be?

MR. LUKENS: Well, our first reports generally were done by the Port Authority planning staff and then later on we sought the assistance of some of the best consultants we could find in the country, which were reflected by name in the 1961 report. Actually until two years ago the airlines were indicating that they had questions about the need for another airport. They finally realized that the demand for air service was so great from the people in this area that another airport was needed. So about two years ago in the summer, they did make a public statement that another airport was required and in New Jersey. Now we had already been on record like five times before in different reports that, first, the Great Swamp was the one area that met all the criteria that we thought needed to be considered, except, of course, for the social and political

questions, and Solberg was the second area as indicating a lesser choice of the two. So the airlines when they began to say, yes, another airport was needed, they began to basically support the position we had taken.

Since that time we have discussed - the airline presidents and other key members of their staff have discussed many times the problem that they are facing right now of added airport capacity and what could be done about it.

You asked Mr. Halaby this morning or someone here did, one of the Senators or Assemblymen, whether or not he had spoken out on behalf of Solberg and the need for another airport at a meeting on August 13th, I think, last summer. I was at the meeting.

ASSEMBLYMAN WILSON: The meeting I am concerned with was August 27, 1968.

MR. LUKENS: Well, there were two meetings.

ASSEMBLYMAN WILSON: In Washington.

MR. LUKENS: There were two meetings in Washington. One was August 13th and one was August 27th. I attended the one on August 13th. Mr. Halaby did get to his feet and he did say very clearly to all the airlines present - and most of the airlines serving this area were present, high officials of them - he did say that he thoughtthat although the airlines and the FAA and others needed to concern themselves about measures to reduce congestion and to meet the short emergency problems which everybody was facing, on a long-range basis the only answer in his judgment was to have another airport and from everything that he had seen, he felt the area ought to be in Solberg, based on the

Port Authority's studies and other facts that he had seen in his research of the question. He did say that and I then was called upon to make a few remarks. I think I was the only one there from the Port Authority. No, John Wiley was there with me. I said Mr. Halaby had said exactly what I had intended to say to the group, that they were unfortunately concerning themselves with only short-range solutions to problems which also had to be faced in terms of long-range solutions and that the long-range solution was another airport and we had furnished studies which indicated Solberg was it.

So Mr. Halaby had said that and I did support his statement and I think he said it again on the 27th, although I was not there. But the airlines consistently have said that since about two years ago.

ASSEMBLYMAN WILSON: I have nothing further.

SENATOR STOUT: Anything further? [No response.] Thank you very much, Mr. Lukens, and if we need anything further, we will certainly call upon you and your staff.

MR. LUKENS: Thank you very much, Mr. Chairman and gentlemen. We appreciate your attention.

SENATOR STOUT: Mr. Reinauer. Go right ahead, sir.

B. F R A N K L I N R E I N A U E R, I I: Thank you, Mr. Chairman.

My name is Franklin Reinauer. I am appearing here today on behalf of the Bergen County Chamber of Commerce to present a resolution which was passed by that Chamber's Board of Directors.

[Reading]

"A RESOLUTION supporting a new major airport in the Northwest Quadrant area of New Jersey:

"WHEREAS, the need for a new major airport to serve the northern New Jersey-New York metropolitan area has now reached a condition of extreme urgency; and

"WHEREAS, the continuing growth of New Jersey will depend to a very great extent upon accessibility of comprehensive air transportation; and

"WHEREAS, the continuing prosperity of the economy of the entire northern New Jersey region is dependent upon such service; and

"WHEREAS, the people, their welfare, businesses, and industries require improved air transportation facilities; and

"WHEREAS, the Federal Aviation Authority has repeatedly stated its conviction that air traffic control problems preclude consideration of a major airport in the central or southern areas of the State; and

"WHEREAS, the major airlines have stated their unwillingness to operate at a central or southern New Jersey location, because of the distance from the major concentration of people and business desiring and requiring air transportation service; and

"WHEREAS, an airport in central or southern New Jersey will not provide adequate service for the place where people live, northern New Jersey, and especially in Bergen County; and

"WHEREAS, the organizations which possess professional and technical resources and expertise in air transportation,

that is, the Federal Aviation Authority, the major airlines, and the Port of New York Authority, recommended the Solberg Airport area as the most suitable location for a major airport; and

"WHEREAS, ground transportation networks do exist or are planned for the immediate future to service Solberg Airport; and

"WHEREAS, continuing inaction will result in a stifling of business growth in New Jersey; and

"WHEREAS, the State of New Jersey's Joint Legislative Committee on Transportation and Public Utility now has under its consideration legislation affecting the deliberations of a site in the State for locating such an airport; and

"WHEREAS, after due consideration and deliberation, the Board of Directors of the Bergen County Chamber of Commerce, wish to place on the records its opposition to the construction of an airport in the central or southern areas as not serving the best interests of the people of the State of New Jersey or of Bergen County;

"NOW, THEREFORE, BE IT RESOLVED:

"That the Board of Directors of the Bergen County Chamber of Commerce strongly support action by the State Legislature authorizing the immediate construction of a new major airport in the Northwest Quadrant area of the State of New Jersey."

SENATOR STOUT: Are there any questions on that statement? It is very clear.

MR. REINAUER: Thank you.

SENATOR STOUT: Thank you very much, Mr. Reinauer.

Senator Bateman is here today and has asked to be heard.

Would you give your name and address, please. [Laughter]

S E N A T O R R A Y M O N D H. B A T E M A N: Mr. Chairman and members of the Transportation Committees, my name is Ray Bateman and I am the Majority Leader of the Senate. My address is Somerset County.

I have been involved in the problem of a jetport for New Jersey for about ten years, first as an attendee at the first Port Authority meeting in Newark. I believe it was in 1959. I testified here against the Great Swamp in 1961 in the fall when Former Governor Meyner held the hearings. I am the sponsor of S 377 and helped to write the bill. I believe strongly it should pass.

I believe that a New Jersey Airport Authority is the proper start for a solution to a problem that has sought solution for too long.

I would like to discuss two basic elements with the Committee today - the facts of life practically and politically with respect to the site under discussion today, Solberg, and the arguments of substance on a jetport in New Jersey.

I would want to look carefully at the substance arguments first, the arguments of airlines, jobs, financial feasibility, distances, air traffic, etc. As I look at the substance arguments that have been presented, I keep seeing something I had seen for a number of years now, which is a conspiracy by the Port Authority, a conspiracy, if you will, by people in New York who seem to be trying to tell people in New Jersey what to do and how to do it.

Now the airlines are here today and I charge here that their views have been compromised by the tenant-landlord relationship with the Port of New York Authority and I intend to try to prove my charge by their own testimony.

Just a few moments ago Assemblyman Wilson asked about some meetings and I would like to read just a little bit of testimony from the Civil Aeronautics Board meeting, "Conference with Air Carriers concerning Air Congestion Problems," which was held in Washington, D. C., on August 27th of 1968.

I would first quote from Mr. Wiley who is a very important employee of the Port of New York Authority. And in reading these quotes and putting them into the record, I would point out to you that these are statements that were made over a month before the report of the Governor's Committee with respect to the jetport problem.

Mr. Wiley said in part - and I am not taking this out of context and they are discussing the upcoming report of the Governor's Jetport Commission - he said, and I quote from page 215, "We need the support of the industry when and if that report comes out in knocking down that site because it is totally unacceptable from the point of view of serving the New York-New Jersey metropolitan area."

He says a little further along, and I quote, "We do need the all-out aggressive support of the industry in knocking down the McGuire site because it won't work for New York."

Now the response to this, public testimony, CAB, and this is a meeting that Mr. Halaby who testified earlier today attended, from a Mr. Fisher of Seaboard World - and this response

is the framework for the airlines' position and I would read the entire response: [Reading] "MR. FISHER: Seaboard World." This is a quote from page 216. "I want to support what Mr. Halaby and Mr. Cocke have said and put it in the form of a resolution. I think this is the master committee now and that the committee agrees on the urgent need for a fourth airport in the New York area and further to support whatever site is selected by the Port of New York Authority, or words to that effect.

"I do think, in that way, I might say, Mr. Chairman, there is no need to discuss the relative merits of Calverton and McGuire, et cetera, and I think that may take care of American's problem.

"The two purposes of this are, number 1, to make it clear that the industry supports the fourth jetport, and number 2, to make it clear the industry supports the site that will be selected and made public by the Port of New York Authority, which I understand will be sometime around the Ides of September." Unquote.

Now these are very important men in industry. But I maintain and I think the testimony supports that they have agreed to support the Port Authority's position, legal and public relationwise, a month before the Governor's distinguished Committee ever made its report. It was decided to knock down that report and go for whatever the Port Authority wanted. I have to take this testimony seriously and I believe it is the indication that when you are talking about airlines' problems, you are really talking about what the Port Authority has asked them to do and

wants them to do. And I would hope after a New Jersey Airport Authority is established that the airlines will be free to talk to us and to the members of that Authority about their problems and about how we can be of help with a New Jersey Authority.

The subject of jobs. Assemblyman Richardson has been rightfully concerned about jobs. But regardless of where a jetport would go in New Jersey, we will get the jobs. I would suggest to you, George, that at the success rate of the Port of New York Authority, ten years and no results, you may never get the jobs that way.

I would say one thing more because I represent Somerset County. It is very interesting that the major labor unions of that area, labor unions of several thousand members, RCA and several others, have taken direct public positions in opposition to the Solberg jetport.

Senator Crabiel and others have been concerned about financing and that is a big question mark at this moment. Senator Forbes at a hearing that I couldn't attend questioned the Port Authority's capacity and I am not really capable to discuss that. But it is interesting to note that the New Jersey Turnpike seems sure that it could handle such financing and I believe - and I think the questions can only be answered after we establish a jetport authority and go into this in the kind of detail that has not yet been presented - I believe that a jet airport of the future with the growth that everybody sees can be financed by a variety of means, including the New Jersey Turnpike Authority and including revenue bonds hopefully from a New Jersey Jetport Authority.

We talk about distances. We keep measuring distances to Metropolitan New York, again the New York influence on the New Jersey Jetport Authority. And questions were asked by Senator Crabiel and others about measuring distances in New Jersey and it seems to me that this is something that a New Jersey Authority can do a lot more objectively than the Port of New York Authority has done.

We just heard testimony that Dulles is a complete flop because it is 26 miles from Washington and that's the only major reason. It sort of shoots the whole argument because Solberg is 50 miles from New York City and if you can't produce traffic 26 miles away, it just seems to destroy an argument that you have to have a site that might be 45 or 55 or in the case of McGuire perhaps 60 miles away.

I believe the FAA in their letter to Governor Hughes not long ago removed or started to remove the argument that the airlanes can't be shifted around.

So on the issues of substance, we keep getting New York oriented figures, New York oriented ideas and it is high time we looked at this from the point of view of New Jersey's needs and interests and that is precisely what these bills intend to do.

Now look at the practical political aspects of this for a moment, and this won't take long,because you don't have to be a genius to look and come to the conclusion that Solberg practically and politically is dead as a site.

Now I cite several things. I cite the Governor's opposition, the opposition of the political party platforms of

both parties, that many legislators in both parties, many of us who will be here through early 1972, have taken complete commitments in this direction. Nearly 60 sponsors in the two Houses are sponsoring New Jersey Jetport Authority legislation. And I believe that both political parties will continue those pledges and I believe that all the gubernatorial candidates before it is over will also continue Governor Hughes' pledge against it. So practically and politically we have spent the day talking about a site that can't be realized in New Jersey.

Now a distinguished group of New Jersey citizens have shown us a new way. They have recommended a New Jersey Airport Authority. Who shows us the other road and who has been showing it to us for ten years? The answer, of course, is the Port Authority, but that is not the whole answer. Doesn't it seem strange that the State of New York, the New York Legislature and the Governor of New York have given the Port Authority carte blanche, have given them approval, to pick a jetport site anywhere in their area and that they are not looking in the State of New York? They are looking in the State of New Jersey.

Now it just seems to me that we have come to the point of time where New Jersey people should control the fate of their future. We are a small, urban state. We have basic residential developments which represent our present and our future. We have basic water supply problems. The suggestions that have been made with respect to a jetport at Solberg and the Great Swamp affect the future of New Jersey. We have plans for New Jersey that will make it a state where people want to live in, work in, have businesses in and send their kids to college in.

It would be the height of folly to let the Port Authority, a group over which we have not enough control, make the basic decisions for us. This belongs to the Legislature, this belongs to the gentlemen on this Committee and the Governor.

I can't urge you in stronger terms to do it the New Jersey way, to recommend at the conclusion of your hearings that we proceed with the New Jersey Airport Authority as has been recommended by Governor Hughes' Committee and by members of both political parties and the Legislature. I think then we will get to a solution that makes sense and makes sense for the State that we represent. Thank you. [Applause.]

SENATOR STOUT: Thank you, Senator.

ASSEMBLYMAN WILSON: I also have a copy of the same transcript which I referred to before this morning and this afternoon and I would like to continue a little bit further to read into the record something that Senator Bateman did not.

On page 216 of the transcript after that resolution was mentioned, Mr. Overbeck who represents the American Airlines made the statement: [Reading] "I have no difficulty with that at all. I think it is quite a proper approach. We just eliminate the second sentence and beef up our desire to support the Port Authority."

Mr. Tipton who represents the Air Transport Association then followed with this statement: "The resolution proposed has been heard. I think it would be of great value in our work on trying to deal with congestion that we also make recommendations for long-range programs here. Is there a second to this proposal?

"It is seconded.

"Further discussion of the proposal?

(Question called)

"If there is no further discussion or question, I will put the question. All those in favor raise their hands.

(Show of hands)

"Those against?

"None. The vote is unanimous in support of that resolution."

And this is the resolution of supporting the Port of New York Authority and the site that they have selected.

As a member of this Committee I have not taken a stand on any of the proposed sites for the jetport. I have not sponsored or been a co-sponsor of any of the bills. I have not made a public stand in the paper. I have just received a copy of this transcript this weekend and to me, it shows a conspiracy. It shows a conspiracy with the Port of New York Authority and the airlines. The airlines said that they would back the Port of New York Authority for whatever site they selected before they even gave the Governor's Commission a chance to actually present their findings. Again I want to state this meeting was on August 27th, 1968, and the Evaluating Committee which the Governor of the State of New Jersey appointed did not even make its presentation to the Governor of New Jersey until the middle of September. [Applause.]

SENATOR BATEMAN: Mr. Chairman, so that the record might reflect the entire testimony, in fairness to everybody, I would offer for your record the CAB file on this which was sent to me. I think what we read was a true reflection of the

entire discussion.

SENATOR STOUT: Thank you. That is the record of the meeting on --

SENATOR BATEMAN: -- August 27, 1968, in Washington, held under the auspices of the CAB.

SENATOR STOUT: It will be received.

[Senator Bateman submits the transcript referred to to the Committee.]

ASSEMBLYMAN RICHARDSON: Senator, you mentioned two what I feel to be important remarks, one, New Jersey interests and even though it may appear that some of us reflect the thinking of the Port Authority, believe me, it is solely because of our geographical closeness to New York. Our prime concern is New Jersey's interests. Like, yourself, I too have a suspicion of conspiracy. Are you aware that the Division of Regional Planning of the New Jersey Community Affairs Department made an analysis of five potential jetport sites?

SENATOR BATEMAN: No, I am not, Assemblyman. When was that?

ASSEMBLYMAN RICHARDSON: And that their conclusion showed that Solberg was the most feasible site?

SENATOR BATEMAN: No, I am not familiar with the report, Assemblyman. Frankly, I would like to see it because if it has been made, it hasn't been made public because I try to comb everything that comes out.

ASSEMBLYMAN RICHARDSON: I had the privilege of seeing it and I would hope that this Committee would request this information from Sidney Willis, who is the Director of the Regional Planning Division.

SENATOR BATEMAN: I am not surprised that they would be involved in a report, but I would like to see what the substance of it is.

ASSEMBLYMAN RICHARDSON: Well, I am surprised it wasn't made public.

SENATOR STOUT: Well, we will receive the report. Anything further? [No response.] Thank you very much, Senator.

SENATOR BATEMAN: Thank you.

SENATOR STOUT: I will call C. Richard Walter. As I understand it, Mr. Walter is going to testify as to the problems concerning watershed pollution in the Solberg area so we will know exactly what you are going to talk about. Is that correct, sir?

C R I C H A R D W A L T E R: That's correct, Mr. Chairman.

Mr. Chairman and members of the Committee: My name is C. Richard Walter. I am a professional engineer, registered in the State of New Jersey.

SENATOR STOUT: We will qualify you this afternoon in the interest of time.

MR. WALTER: I have attached to the statement there a brief schematic map that shows the general arrangement of water resources in the Solberg area and I think if you look at that while I talk, it might help a little bit.

The Solberg site lies within the watershed of the Raritan River, between and immediately above the confluence of its North and South Branches. The Raritan River above Manville, and the Millstone River and Delaware and Raritan Canal which

join the Raritan at Manville are classified by the State of New Jersey as approved sources of water supply after treatment and suitable for all recreational purposes. Major potable water supplies are taken from the Raritan at Somerville and from both the Raritan and the Canal just below Manville. Downstream of this point the Raritan is not used as a water supply source. Several small municipal water supplies are taken from the tributaries of the Raritan above the confluence of the North and South Branches.

The existing Spruce Run and Round Valley Reservoirs, on the Raritan watershed northwest of the site, were built as the initial phases of a project to supply water to the metropolitan areas to the northeast. The State of New Jersey has proposed an additional one billion gallon compensating reservoir at the confluence of the North and South Branches of the Raritan as part of the Raritan Valley water supply development program. The feasibility of additional reservoir development on the North Branch of the Raritan above U. S. Route 22 is now being reviewed by the U. S. Corps of Engineers.

The largest municipal sewage treatment facility in the area is the Raritan-Somerset Sewage Authority primary plant at Somerville. The effluent from this plant is given secondary treatment at the nearby American Cyabamid industrial waste plant in Bound Brook and discharged to the Raritan River. In addition, treated municipal and industrial wastes are discharged to the Raritan at Manville. On the upper Raritan watershed, Flemington and other small communities have sewage treatment plants.

A 10,000-acre airport development at Solberg would occupy less than 5 per cent of the 465 square mile Raritan watershed above the confluence of the North and South Branches. Certain precautions would have to be taken to insure protection of the water supplies taken from the area, but no problems would be created which cannot be handled by known and proven sanitary engineering procedures.

Sanitary and other wastes from the airport facilities would need be collected, treated, and discharged to the Raritan River downstream of the water supply intakes of the Elizabethtown Water Company near Manville. Special pretreatment of some of the hanger and repair shop wastes would be required, and these wastes and the sanitary wastes from the airport would then need to be processed through a secondary treatment plant prior to discharge to the river. The total volume of wastes from the airport will be considerably less than that of other industrial wastes presently discharged to the Raritan in the Manville-Bound Brook area. The treatment procedures required for the airport wastes are conventional ones used successfully elsewhere.

Creation of a major airport would affect the natural runoff and drainage from the developed area. During construction, the exposed soils from excavations, as well as construction debris, could be prevented from being washed downstream during storms. Water turbidity and suspended solids at the various water supply intakes downstream would be increased, but such situations are commonly encountered and controlled at construction sites on watersheds. Effects on downstream water supplies can be minimized by controlled excavation procedures, construction of detention ponds to trap erosion from the construction activity, and increased chemical usage at downstream water plants during times of high turbidity.

After completion of the airport the storm runoff from the airport can be expected to contain traces of materials washed off runways, taxiways and aprons. These materials are similar to those washed off highways, parking lots, etc., that are located on watershed areas. They can be controlled by provision of detention ponds to permit settling of suspended material, skimming of oils and greases from the surface of the ponds, and by modification of the chemicals and treatment processes used at downstream water plants whenever required.

Some particulate matter from aircraft exhausts can be expected to settle over the watershed area and be washed into the streams. The chief component is carbon. Very fine carbon particles suspended in the air behind the aircraft comprise the smoke which can be seen from the ground. The suspended carbon particles will scatter, but will eventually settle to the ground. They should have little effect on water supplies in the area since the carbon is readily removed in conventional treatment processes.

Gases present in jet exhausts are dissipated in the atmosphere and have no ground effect.

Of significance is a study made in Seattle, Washington in 1965 in which the effect of total air pollution "dustfall" on large uncovered reservoirs of the Seattle water distribution system was evaluated. It was found that the increase in concentration of various substances due to exposure to the atmosphere in the open reservoirs was small. The study showed only a two per cent increase in total residue for example, and total concentrations of each substance evaluted far below those permitted by common drinking water standards. Two facts concerning this study are significant - the effects on the water supply were due to air pollution from all sources in

the heavily industrialized Seattle area and the water in the Seattle reservoirs is finished water on its way to the consumer. Water in the existing or proposed reservoirs near the Solberg site will be raw water to be treated before delivery to consumers. We are confident that aircraft engine exhausts will create no water supply problem, certainly none which could not be handled by conventional water treatment practices.

It should be noted that the proposed airport development would cause a slight reduction in stream flows during the dry summer months. Rainfall on the paved areas will run off quickly and not percolate into the ground water table. During dry periods, when stream flows are derived almost entirely from ground water, stream flows will be reduced somewhat. If one-fourth of the total airport site is paved, the paved area will amount to about one per cent of the total watershed area above the confluence of the North and South Branches. The reduction in low flows of the Raritan will likewise be on the order of one per cent. The net reduction in available water supply will be less and not of great significance.

In conclusion, the development of a major airport at Solberg will create no difficulties for the water supplies in the area which could not be handled by conventional water supply practices. Airports have been located on watershed areas elsewhere in the country as, for example, at Sacramento, California and Greensboro, North Carolina. By proper precautions and treatment, the downstream water supplies have been fully protected.

[Schematic Plan submitted by Mr. Walter can be found on page 126Aof this transcript.]

SENATOR STOUT: Any questions? Assemblyman Wilson.

ASSEMBLYMAN WILSON: Mr. Walter, first of all you mentioned Seattle. Are you referring to the airport that is located there?

MR. WALTER: There are three airports in the Seattle area, but this study was a study of contamination due to air pollution fallout on eleven open reservoirs in the Seattle system and they did not differentiate between the sources of pollution. These effects were from all pollution in the area.

ASSEMBLYMAN WILSON: Let me ask this question: What were the number of flights involved at each airport? I mean, would it be comparable to, say, the jetport that we are talking about building in New Jersey as far as relativity is concerned? You can't just say, "a jetport here," if maybe they only have half as many flights.

MR. WALTER: I have no knowledge of the total number of flights at the three Seattle airports. Boeing has its airport there. I can say this, that the average fallout amounted to something on the order of 50 tons per square mile per month. Based upon a thousand flights per day in the Solberg area, a thousand movements, and the present state of technology as far as aircraft exhausts are concerned, the fallout from the exhausts in the airport area would be approximately one ton. It would be a 50 to 1 ratio.

ASSEMBLYMAN WILSON: I have another question and this refers back to a news release that was in Sunday's paper. This is where I got a lot of my information. "A report by Hazen and Sawyer, consultants for the aviation industry,states that the

sanitary and industrial waste flow from the airport facilities would average about one and one-half million gallons a day." Is that correct?

MR. WALTER: That is correct.

ASSEMBLYMAN WILSON: The consultants apparently did not refer to or consider the handling of the urbanized runoff area surrounding the jetport. When you have a jetport, you are actually going to have the area around the jetport built up. Now did you take into consideration the sewage that would result from the built-up area also? This would also have an effect as far as the pollution is concerned and also an effect maybe on the reservoirs which many people have stated.

MR. WALTER: We did not in that 1.5 million gallons per day figure take into account urbanization of the area surrounding the airport. However, we would presume that this would be handled in the same manner it is handled in other cities where as this area develops the sewage would be collected and conducted downstream, treated and discharged below the water supply intakes. This is common practice and it is done as watersheds develop.

ASSEMBLYMAN WILSON: One thing that bothered me with the report was the word "should." This was used in the article - "should." Now to me it doesn't mean "will." The consultants seem to have reservations. This was my interpretation. I remember when I read it, this stood out in my mind because the article I am quoting from exactly - and maybe they misquoted you - says, "Disposal from the airport should be satisfactory." The word "should" was used. What did you mean by the word "should"

in that case?

MR. WALTER: I mean that if the practices are followed, proper practices are followed, there would be no problem - there should be no problem. I use the two interchangeably I am afraid.

ASSEMBLYMAN WILSON: O. K. Now you say there would be no problem.

MR. WALTER: That's correct.

ASSEMBLYMAN WILSON: I just wanted to clarify that use of the word "should." O.K., no other questions.

SENATOR STOUT: Are you aware of any pollution problems surrounding any present airports?

MR. WALTER: I am not aware of any. I referred to the Sacramento situation and there is the McClellen Air Force Base, which is a large installation. Originally when the base was developed, there were no facilities for treatment and collection of the waste and there were problems. These facilities have been provided and there are no problems at the present time.

SENATOR STOUT: Do you know anything about the McGuire Air Force Base situation?

MR. WALTER: I am not familiar with the situation. We have not looked into it.

SENATOR STOUT: Well, they have a problem there I know.

Any further questions?

ASSEMBLYMAN OLSEN: I just wanted to check on something here. In your statement you refer to the treatment of this waste down around the Bound Brook area and eventually being

discharged into the Raritan below Bound Brook. Approximately how many years would all this additional waste put back cleaning up the Raritan River?

MR. WALTER: I'm sorry. Will you repeat that?

ASSEMBLYMAN OLSEN: I say approximately how many years would all this additional waste put back the cleaning up of the Raritan River below Bound Brook?

MR. WALTER: I disagree with your statement that it would put back the cleanup of the Raritan River. I think that complete treatment can be provided and you can meet all State standards for the Raritan River. The Raritan River below the Bound Brook general area, the confluence of the Millstone, is not classified as a source of water supply, is not used as a source of water supply and you could meet standards.

ASSEMBLYMAN OLSEN: Granted it is not used as a source of potable water now, but it has been discussed as being used as a possible recreation area in connection with the Crab Island Dam. We don't want that water destroyed. Whether it is a source of potable water at this point is immaterial as far as I am concerned.

SENATOR STOUT: Anything further? [No response.]

That's all. Thank you very much.

MR. PYLE: Mr. Lukens would like to just make a very brief statement about this question that Senator Bateman brought up. Would that be in order?

SENATOR STOUT: Mr. Matthias Lukens.

MR. LUKENS: Thank you, Mr. Chairman and gentlemen. Since Senator Bateman used the phrase there was a conspiracy, I would appreciate a moment just to talk about that.

I think the last place in the world one would want to have a conspiracy is in the offices of the Civil Aeronautics Board, under their auspices, with a public stenographer present and minutes being taken at such a meeting. This happens to be the case.

I indicated before that there was a meeting on August 13 which preceded the meeting on August 27th. The first meeting was sponsored by the Civil Aeronautics Board, was approved by them, was under their auspices and there was a stenographer present and all elements of the industry were represented at that meeting. They were talking for three hours about the terrible problems of congestion and the cost to the airlines, the cost to the public and what could be done about it on a short-range basis. It was only after two or three hours of discussion that Mr. Halaby got up and made the statement about the need for another airport, that it was high time the airlines recognize this and got out in public on it and supported the Port Authority on the question of the Solberg site. And I replied by thereafter saying he had made my speech in effect and that all I did was to second the motion and then went on from there.

The second meeting that Assemblyman Wilson was quoting from as well as Senator Bateman was held under the auspices of the FAA, likewise in their offices, with FAA people present, with a public stenographer, and again all elements of the industry were present and again the text that the Assemblyman mentioned is what was said. There were some other things said because John Wiley had made some other presentations about the size of the problem on a long-range basis and he also concluded talking about the problem. He said nothing that was not said in the '61 report nor said in the 1966 report. So this does not, I don't think, justify in any way a description of this being a conspiracy. If it was, it included the FAA, it included the airline pilots, it included the CAB and this was all done in public.

Now the fact of life is that before the Blomquist report was made public, almost everybody around I knew of knew what it was going to say and that it was going to recommend the McGuire Airport site. So this was not a secret to anybody at that point in time. There was no surprise there and the action of the airlines was in anticipation that that was what the report was going to say.

I would like to comment on one thing further and that is that historically in this country, the airlines have

never taken a public position on the need for an airport and where airports should be located. I worked for an airline at one time, American Airlines, and I remember very well that this was the policy of all the airlines and this was the policy of the airlines up until just very recently when they realized that in the interest of the public they serve, in their own corporate interest in terms of survival, another airport was needed and they needed to get out and say so publicly along with us, because nobody else was saying it. On the contrary you had other people on the other side of the issue like General Johnson and a number of his people from his company, as well as some other citizens from that area, who were very vocal about being against an airport in Northern New Jersey. So the airlines finally realized that they needed to tell their story to the public and in those terms they felt that our studies were good studies and that our recommendations on site selection were proper ones and so this is why they suddenly decided in their own interest that they should support the position we had taken and become public on this issue.

So I do not think in the framework of how it took place, why it took place and the public manner in which it was done and the reason why it was done that this can in any way be called a conspiracy. Thank you.

SENATOR STOUT: Thank you. Assemblyman.

ASSEMBLYMAN WILSON: Mr. Lukens, I believe in being objective and you would think that the airlines, for example,

would wait and at least give the Governor's Commission a chance, even if you knew where the location was, to point out the reasons why they thought they wanted the jetport located in that particular area.

MR. LUKENS: Mr. Pyle said he was there when this took place. He might shed some light on that.

MR. PYLE: Assemblyman, there was a presentation, first phase presentation, of this report in the late winter. I don't have my date book here. But I took some airline people down there to the Princeton Inn where this presentation was made and it was the presentation of basically the Governor's Committee.

ASSEMBLYMAN WILSON: Excuse me. You said late winter.

MR. PYLE: Late winter of '67-'68. January of '68. January - February of '68.

ASSEMBLYMAN WILSON: All right. January - February of '68.

MR. PYLE: That's right - late winter of '67-'68.

SENATOR STOUT: Are you talking about the Governor's Economic Evaluation Commission report?

MR. PYLE: Yes, Mr. Chairman. And Mr. Blomquist gave a report at Princeton Inn and there were at least four airline representatives who came with me to listen to that report. It was very clear what the recommendation of that Committee would be, namely, a Central Jersey site and the airlines at that

time took the position without any discussion with the Port that this was not feasible, impractical. And this was no conspiracy. They arrived at this decision independently.

ASSEMBLYMAN WILSON: Mr. Pyle, was it a complete report that you heard? You heard the location. But it was not the complete report that you heard before you made up your mind that you wouldn't support it.

MR. PYLE: Well, it wasn't the bound volume admittedly, Assemblyman.

ASSEMBLYMAN WILSON: As I say, there is a long period of time between February '68 to September of '68 when the report was actually prepared and finalized. A lot could transpire during that period of time. That is the only thing I am bringing out, the fact that before the final, finished report was even given to the Governor, the airlines had already made their decision that they would not support the McGuire site. Is that correct?

MR. PYLE: Assemblyman, can I state it in my own terms, not yours?

ASSEMBLYMAN WILSON: I would like a "yes or no" answer.

MR. PYLE: I am not going to give it to you. I am going to state it in my own terms. The basic concept was developed at that initial presentation and it has not changed one iota and the airlines made their decision and have seen no reason to change their opinion, which was the correct one at that time. That's my answer.

SENATOR STOUT: Thank you, gentlemen.

MR. PYLE: The next presentation will be by R. Dixon Speas, President of R. Dixon Speas Associates, and he is Consultant to the Aviation Development Council, to discuss the whole question of the market analysis.

SENATOR STOUT: Before we start this, Mr. Pyle, I notice that Mr. Speas has his remarks summarized in the first two pages. We have a time factor and there are a couple of witnesses from out of town, and it might be that he will want to confine his remarks to the summary and, if we have any questions based on that we can either refer to the exhibit later or ask questions - if that's all right with you. Or if you prefer to go through the whole thing, fine.

R. D I X O N S P E A S: Mr. Chairman, my name is Robert Dixon Speas. I am a registered professional engineer in my resident state - New York. My engineering and flight training education was obtained from Massachusetts Institute of Technology from which I graduated in 1940, and the Boeing School of Aeronautics where I obtained a transport pilot rating. I was with American Airlines for approximately ten years immediately after graduation from MIT.

I am President of R. Dixon Speas Associates, a firm of professional aviation consultants. Our headquarters are located at Manhasset, New York, with branch offices at Atlanta, Miami and Palo Alto. A wholly-owned subsidary - R. Dixon Speas Associates of Canada, Limited - is headquartered at Montreal.

During the seventeen years since our founding in 1951, we have engaged in airport planning as one of our principal activities.

Currently we are accomplishing airport planning work for the responsible governmental agencies, both locally and in the regions of Atlanta, New Orleans, Des Moines, Minot, Greenville, Buffalo, Rio de Janeiro, Bogota, Copenhagen, Rome, and other localities. Previously we accomplished airport planning work locally and in the regions of Fort Worth-Dallas, Washington-Baltimore, Metropolitan New Jersey-New York area, Chicago, Paris, Genoa, Stockholm, and other localities.

Projects completed during the past ten years include assignments in the Metropolitan New Jersey-New York area on behalf of several private interest and governmental agencies. Our work for private corporations concerned their use of air transportation with particular reference to transportation congestion problems in the area of New York City and other sections of the country. Also, we have accomplished airport planning work for the Tri State Transportation Committee, The Port of New York Authority, Metropolitan Transportation Authority, and individual business aircraft operators,

Our present work on which I will report today was done on behalf of a group of airlines.

With respect to the summary of findings, if I may - - I would like first just to read these into the record briefly and then come back and comment on them.

SUMMARY OF FINDINGS

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An examination of the relative benefits to be realized by New Jersey citizens from a major airport located at the Solberg site as compared to one in the proposed McGuire area leads to the following basic conclusions:

1 .. A location at Solberg would be utilized by 3.5 times as many passengers as would utilize an airport located at one of the McGuire sites.

2 .. Fifty-six percent of New Jersey's current airline passengers in the Metropolitan New Jersey-New York area would find Solberg more convenient than Newark, LaGuardia or Kennedy whereas only 17% would find McGuire more convenient.

3 .. A substantial number of passengers originating east of the Hudson could be expected to use an airport at the Solberg site, but very few passengers could be expected to cross the Hudson to use an airport located at McGuire - more than 70 surface miles away. Without the benefit of the market east of the Hudson a major New Jersey airport would not be feasible.

4 .. More than half (58%) of New Jersey's industries* are less than 35 miles from the Solberg site whereas only 19% would be less than 35 miles from a McGuire airport site.

5 .. Only 8% of New Jersey's industries are more than 50 miles from the proposed Solberg site whereas more than half (60%) are more than 50 miles from McGuire.

6 .. The geographic relationship of Solberg to the present airports in the Metropolitan New Jersey-New York area is far more conducive to a coordinated terminal operation than would be

* Those of over $500,000 net worth

McGuire. Without effective coordination of the New Jersey airport into the present airport systems the complication of traveling and shipping to and from the Metropolitan New Jersey-New York area would be substantially increased.

7 . New Jersey will lose the economic benefits associated with the operation of a large airport center if an adequate and convenient airport is not made available for accommodation of the Metropolitan New Jersey-New York area. The respective economic benefits subject to such loss are estimated to amount to approximately $885,000,000 per year for New York by 1980.

8 . New Jersey has a large stake in the air transport manufacturing industry with sub-contract business from the manufacturers of transport aircraft estimated to be between $150 and 200 million during the seventies. Sub-contract business would be adversely affected by any major deficiencies in the air transport capacity of the New Jersey-New York Metropolitan area. One out of every five of the nation's domestic passengers departs or arrives at one of the airports serving the Metropolitan New Jersey-New York area and any lack of capacity in these airports would have a heavy impact on the future growth of the air transport industry.

As a sidelight there, we are doing a study at the moment. We don't have the final figures but it looks like approximately 50 per cent of the fleet of the major airlines sometime during the day passes through this area so that if you have a congestion problem where you slow it down, that airplane, it means you are slowing down 50 per cent of the nation's air transport system.

9 . Because of its proximity to the New Jersey-New York metropolitan area with the attendant economic and transportation utility features, Solberg would become a successful addition to the

area's airport system.

10 . Because of its remoteness from centers of travel and shipping generation, McGuire would become a "white elephant" and a burden instead of a service to New Jersey citizens.

I would now, Mr. Chairman, if I may, like to illustrate very briefly a few of these points. I would like to dwell for just a minute on the last conclusion. This matter of being a service is sometimes not understood, I think. An airport is only that. It's a service to people who use it, and, therefore, it must be conveniently located, and when the airlines are said to favor one site or another, if they are looking out for their own best interests, they are thinking where are the people going to use it. So it is really the people, be they passengers or be they shippers, which determines the convenience and the feasibility, so to speak, of an airport.

Now we undertook a passenger forecast for both. The results of this passenger forecast for Solberg are summarized on the chart that you are now looking at. You will note that we show no passengers generated from Solberg coming from Burlington or Ocean County. These areas in the southern part of New Jersey are, in fact, very adequately serviced and have been served by the Philadelphia Airport and, of course, there are some expansion programs planned for the Philadelphia Airport, and we would not expect that the airport at Solberg would draw from there.

On the other hand, you will note that a very substantial group of passengers are drawn out of New York over into New Jersey. This is somewhat, not a reverse flow, but you

might say that the flow then from New Jersey down to Pennsylvania is of the same category. By the time we get down between Virginia, my home State, and North Carolina, the overflow is practically gone. But in any case, the fact is that the Solberg site has the convenience of location, whereby its feasibility can be substantially supported by this amount of traffic coming from east of the Hudson.

This is Figure I, from which we are speaking at the moment.

Figure II gives the same category of information but with respect to McGuire. And here you will note that we have assumed that passengers, as we said in the conclusions, would not cross over the Hudson to come to McGuire. You will note that we have shown the same number of passengers coming out of Middlesex and Monmouth and going into McGuire as went to Solberg. I think one of the Assemblymen spoke of this before, and we would agree that the passengers out of Middlesex would go to McGuire just as well as they would go to Solberg. But when we came to the totalling of these, we did come out with the difference which is shown on Figure III which is the next page. We show a total passenger demand of 15,425,000 Solberg, 4,384,000 McGuire, and these are the category figures that the airlines really focus on when they decide whether they feel that an airport location is feasible or not. It's really the passengers who are the customers, not the airlines.

The next chart simply summarizes that.

On this matter of airport accessibility to industries of New Jersey, we took the major industries of New Jersey and environs as had been drawn up and reproduced in the Blomquist Report. It's shown as its source "New Jersey Transportation Research," and we more or less "bull's-eyed" Solberg and drew rings at every five miles around it in order to study this matter of the location of industries, which is, of course, one of the big matters to be served if industry is to prosper and industry is to be served from air transportation, and we found that, as far as Solberg is concerned, the average distance out of Solberg to these industries was 33.3 miles. As we previously stated, there were over 50 - almost 60 per cent, that were less than 35 miles from the airport, whereas there was only 8 per cent that were more than 50 miles. So we felt that the Solberg site location is, in fact, very effectively located as far as serving the industries of New Jersey.

With respect to McGuire, we drew the same category of drawing, and there, we found the average distance for the industries to be served is 49.7 miles. The number of industries less than 35 miles from the airport - only 19 per cent were less than 35 miles from the airport, whereas over 60 per cent of these industries were over 50 miles from the airport.

One thing we looked at was - how about the size of the industries? We did not pursue that part but it became quite clear as we looked at it that it would make a compounding effect that would further favor an airport at Solberg, because these are industries that need serving and need serving now, just as last summer every industry in New Jersey, as well as

every industry in New Jersey, as well as everybody who was in this room before some of them left, suffered because of the fact that our air transport service deteriorated and, in order not alone to build it back but improve it, there has to be the convenience of location.

We will skip the next one.

Then on the matter of geographical relationships of major airport systems, the airports that serve the metropitan area have certain interrelationships, transfer of passengers, transfer of cargoes, transfer of flight crews, transfer of diverted flights, so that the matter of compactness with which an airport system is designed is important. When we studied and looked at the differences involved there, we found that the inclusion of Solberg into the system was much more attractive and would allow a much closer-integrated operation than the inclusion of McGuire.

Now one other thing that we referred to in this matter is the importance to the industries of New Jersey that we have a strong air transportation system - we sent out telegrams to the five major manufacturers of transport aircraft and engines; namely, Boeing, Douglas, General Electric, Lockheed and Pratt-Whitney, and we asked them what was the status of their subcontracts in the State of New Jersey towards building these transport aircraft.

The answers that came back led us to the conclusion that as far as the seventies, the State of New Jersey could expect somewhere between 150 and 200 million dollars.

For example, one of the manufacturers had a current backlog of 42 million; another manufacturer in just one year issued better than 2000 purchase orders to 128 different New Jersey industries, and New Jersey is tied into this picture. You are not isolated as a State unto yourself; you are really part of this air transport picture in the standpoint of electronics and many other important ingredients that go into the transport aircraft manufacture.

We also looked at this matter of the economic consequences to the State of New Jersey of additional airport; what happens if, in fact, the airport isn't provided. We have said that we find, and we believe it very strongly, that an airport that is located at Sol berg can be successful and we do not believe a major airport located at McGuire would be successful. We have said, well, this doesn't mean it's going to be done. What are the economic consequences?

So we calculated for periods of 1975 and 1980 the losses that we considered wouldtake place if such an airport were not provided or if the usuable airport capacity were not provided. We counted up the matter of salaries lost from airport employees, airline employees and the air transport related taxi drivers, the nearby hotels and places where local passengers coming here would spend money, and we came up with a figure for 1975 of $602 million per year, and 1980 $885 million. This was done completely independently from the study that was spoken about by Mr. Lukens. I noted that his was just over $800 million for the same period.

We recognize that Solberg is out some greater distance

than Dulles, as has been suggested, and also that it's out almost as far as Willow Run which had a real hard time of it. So we believe that there must be a very substantial major upgrading of transportation to make Solberg work, although we believe this would take place and, therefore, under these circumstances we have felt that going ahead with Solberg at this time is really of the utmost importance.

I would like to say just one thing in closing, if I may. I mentioned that we have done a number of studies in this metropolitan New York area. As a matter of fact, I sat in this chair in July of 1961 when we were doing some work for the Port of New York Authority. I would estimate that during the last nine years we have done on the order of somewhere between 300,000 and 400,000 dollars worth of study on this matter of the airport for all the people we have done these studies for, for airport locations in metropolitan New Jersey-New York. So I don't think there are any further surprises and I think I for one would be misleading you if I said that I thought if we studied it some more we could find some, because all of the potential sites have been known now for years and all of the relative factors, one or the other, have been known for years. It may sound like a self-defeating statement but personally I don't think there should be any more studies. I think that there should now be action.

Thank you.

SENATOR STOUT: Are there any questions?

SENATOR CRABIEL: Mr. Speas, on page 7 of your report you show 15 million passengers for Solberg and 4 million for McGuire.

MR. SPEAS: Yes, sir.

SENATOR CRABIEL: If Solberg is not built, are these 20 million people not going to fly?

MR. SPEAS: Some of them will not fly. Others will use other facilities elsewhere.

SENATOR CRABIEL: Well, if Solberg were not built, isn't it reasonable to assume - and if McGuire was built - isn't it reasonable to assume that some of those people will go to McGuire?

MR. SPEAS: They are included in the 4,384,000. But as far as the bulk of these, in our judgment or our opinion they would not go to McGuire.

SENATOR CRABIEL: I see you have 5 million of these people coming over from New York City to go to Solberg. Now, that's kind of far-fetched, isn't it? If we've got Solberg built, that would relieve New Jersey people from going to Newark, I can see that; but it would appear to me that most of the New York people would end up in Kennedy or LaGuardia; they wouldn't come down to Solberg.

MR. SPEAS: I'm afraid I don't follow you.

SENATOR CRABIEL: Well, to bring Solberg up to 15 million, you have better than 5 million people coming from New York over to Solberg, something like that.

MR. SPEAS: Yes, sir.

SENATOR CRABIEL: What makes you think that people from New York and Long Island, for instance, would come over to Solberg when Kennedy is there and LaGuardia?

MR. SPEAS: Well, you will notice on the map, Figure I, that the main part of these are out of Manhattan - 3,950,000 are out of the Isand of Manhattan.

SENATOR CRABIEL: Yes, I saw that.

MR. SPEAS: And with the variety of service that would be provided at Solberg, we would expect that some passengers would also be attracted from the other spots because, just as now in my travels, although I live at Manhasset, Long Island, I still frequently use Newark, New Jersey, and I go to North Carolina practically every month out of Newark, New Jersey. I drive over here and fly down. So it's a personal reference that this does happen. It's a fact of life. And I think by the time that the transportation is improved in the way that I'm confident it will be with Solberg, I'm sure I'll be flying out of Solberg if that airport is built when the schedule of service is more convenient because, if I go out of LaGuardia - I can go out of LaGuardia to Greensboro, North Carolina - but the thing is it's a one-stop and it leaves at the wrong time. Simply by driving over to Newark, I can get a non-stop at the time I want it and come right back in there.

SENATOR CRABIEL: That's the key to what I'm saying. If you want to fly, you're going to go where the plane is and you're not going to care whether it's 20 miles or 30 miles or 50 miles if it makes it convenient for you to fly.

MR. SPEAS: But I'm not going to drive to McGuire, Senator. I will drive to Solberg but I wouldn't drive to McGuire.

SENATOR CRABIEL: Well, where would you fly from then?

MR. SPEAS: Wherever there was capacity. Or I'd probably take the one-stop out of LaGuardia.

SENATOR CRABIEL: All right. You would take the one-stop out of LaGuardia and that would allow space if McGuire were built and there would be more room in New York if New Jersey people were flying out of McGuire.

MR. SPEAS: Well, I won't be down in McGuire helping to fill up the airport.

SENATOR CRABIEL: Well, if you had the option that you fly out of there or nowhere, that's what you're up against.

MR. SPEAS: Except that under those circumstances last summer there were a lot of people to the injury of businesses that did not fly. We are doing work at the moment for one of the major corporations in the country that has headquarters in Manhasset, and the Chairman of the Board told us that one of the major concerns that he had of last summer was not the inconvenience to his people but the fact that he felt his business had been hurt because the air transportation service had fallen down and there were delays so that people didn't get their business done. So the area can be blighted by the lack of air service.

SENATOR CRABIEL: Oh, I agree with that. I don't think there is anybody on this Committee who argues that we don't

need more air service, but where the big argument is here is where that site would be. I'm trying to develop by my questioning whether, if you didn't build these airports, people would refuse to fly. And I would doubt it. I still think they would want to fly. So if you didn't build Solberg but built the airport at McGuire, I would still think that a substantial number of those people would still fly.

MR. SPEAS: Well, in our judgment something over 4 million would, but in our judgment the remainder would go elsewhere or would not fly.

ASSEMBLYMAN VREELAND: Mr. Speas, is this report you have put together here pretty much a compilation of studies made over the past ten years?

MR. SPEAS: No, sir, I would say that they were put together with judgment. I personally was very fully involved in what you are looking at and, in putting it together, it brought forth the judgment of ten years of looking at this area and at this problem and living in it and functioning as part of it.

ASSEMBLYMAN VREELAND: I see. And then you developed your own material for this after reviewing past studies of ten years or so.

MR. SPEAS: Yes.

ASSEMBLYMAN VREELAND: Thank you very much.

SENATOR STOUT: Any further questions?

ASSEMBLYMAN AZZOLINA: The difference of a few miles in transportation - I notice the miles going out to Solberg

and the miles going down to McGuire - and I can't believe that ten or fifteen miles extra makes a big difference. That's all it shows here in some of the areas. I don't think it makes a big difference as to whether passengers are going to go there or not.

MR. SPEAS: It's the cumulative effect.

ASSEMBLYMAN AZZOLINA: Especially cargo. What's the difference of 10 or 15 miles after you get it here by air and transport it ten or fifteen miles on good roads?

MR. SPEAS: The cargo side, I think I would agree entirely with the earlier witness who said that the two are integrated together - passenger and cargo - and at the moment, the passenger is the dominant factor and the passenger is the one who is determining where this should be. Now, as far as the numbers of miles, it is a rather sensitive thing, as is pointed out in Dulles, and, as we point out, to make the 40 miles work, you are going to have to have an upgrading of the transportation system. But the fact is that the airlines have found over the years that passengers are in fact very sensitive to just how far they will travel, because, remember, you can't enact a law and tell them they've got to use the airport. They're the ones who are finally going to do the flying.

ASSEMBLYMAN AZZOLINA: Yes, but if they want to fly and there aren't facilities at Kennedy or LaGuardia or Newark, they are going to go to McGuire. Now I, myself, like to take off from Newark. I live in Monmouth County. And when they say they haven't got room or haven't got a flight

I won't go to Kennedy because of driving through the congestion there. If there was no congestion, I would go to Kennedy or LaGuardia but it's a real effort to drive through that mess up there. And when you come down to Jersey you can use the Turnpike or the Garden State Parkway, as the case may be, and a connecting link to the Turnpike. They are expanding the Turnpike now, so it's relatively simple to get to McGuire, especially if it's an international jetport. The people will come down an extra 15 or 20 miles if they are going to fly all over the world.

MR. SPEAS: Except that in actual fact it has been proven in other places that they really have not and do not. If you drive down that Turnpike, and I have driven down many, many times - I happen to have relatives down the way - and as we pass McGuire, my wife says, "My God, you mean all the way down here?"

ASSEMBLYMAN AZZOLINA: It just seems long.

SENATOR STOUT: Any further questions? [No questions] Thank you very much, Mr. Speas.

MR. PYLE: Mr. Chairman, I've got one last witness. I think he will be relatively brief - Mr. Wade S. Smith, Vice President of Dun & Bradstreet, on financial aspects.

SENATOR STOUT: Mr. Smith.

W A D E S. S M I T H:

Mr. Chairman and Members of the Committee:

My name is Wade S. Smith. I am vice president of the Municipal Service Division of Dun & Bradstreet, Inc. As such, I am responsible for the study and appraisal of the credit quality of the bonds of the states and their local subdivisions. These studies and appraisals, which are contained in comprehensive municipal credit reports, are prepared for the use and guidance of our subscribers, who are in the main large institutional investors and the underwriters who serve them. We have studied and reported on virtually every major governmental and public service enterprise project currently in operation by the state and local units, as well as on many of lesser magnitude. I have been associated with the Division for more than thirty years, as a staff member, as director of municipal research, and since 1965 as head of the department. It is a pleasure to appear before you.

I have been requested to discuss with you the considerations entering into the feasibility of long-term financing - that is, borrowing money on bonds. In particular, we are concerned with the factors affecting the feasibility of borrowing for the construction of the modern large, complex, and costly commercial air terminal facilities popularly known as jetports. We will consider, first, conditions which must be met if a public security of satisfactory quality is to emerge for <u>any</u> type of public bonding, and we will then discuss the application of these factors to airport financing in particular.

State and local government bonds, for whatever purpose issued, must meet certain minimum requirements if they are to be acceptable to investors generally. To the extent that these minimal requirements are not met, the market for the bonds will be limited and the price (interest cost) adversely affected; in some instances, financing may prove to be impossible on any acceptable terms. Furthermore, the larger the borrowing program and the greater the volume of bonds to be issued, the more essential it is that the security be soundly structured. This is simply because very large bond issues must be placed predominantly with very large institutional investors, and these investors are knowledgeable, critical, and have available numerous alternative opportunities for the investment of their funds.

The first requirement for any satisfactory state or local financing program is that the project be governmentally viable. This means, quite simply, that the state or local governmental unit undertaking the program shall have the powers and competence to plan, construct, and operate the public improvement involved. Planning powers and competence have a particular relevance since they involve not blue-printing (that is a phase of construction) but rather the whole process by which needs are recognized, priorities determined, alternatives judiciously weighed, and a comprehensive, broad program set. The larger and more important a project or program, it seems to me, the greater the need that it mesh constructively with the broadest foreseeable needs of the people and the territory to be served. Similarly, the larger and more complex the project itself, the greater the need for administrative competence if construction is to be efficient and economical and if operation is to live up to advance expectations.

The second general requirement for any successful state or local financing program is that it be technically viable. This involves design concepts equal to at least best prevailing standards, sound engineering for both functional efficiency and operational economy, provision to the extent feasible for economical adaptation to unforeseeable future changes in needs and uses. In the case of projects intended to be supported by user charges, technical viability also involves the various economic considerations controlling supply-demand and cost-price relationships.

The third and final general requirement for any state-local bonding scheme is that it be fiscally viable. In a nutshell, this means that there be assurance of revenues adequate to meet all costs necessary to the successful construction and operation of the project. The costs include operation and maintenance, interest on and amortization of the capital investment, and provision for repair and renewal of the physical plant. In the case of a governmental facility - a school, hospital, fire station, jail - the revenues come from taxation. In the case of a public service enterprise, revenues may come from user charges, or from taxation, or from a combination of the two.

Before proceeding, it is appropriate to note that the relative importance or urgency that investors will attach to the various governmental, technical, and fiscal considerations will vary, depending on the kind of debt instrument chosen for the financing. Thus, the buyer of a general obligation bond issued by a governmental unit with ample taxing capacity might be relatively indifferent to various governmental or technical considerations, or even willing to tolerate markedly substandard conditions as to a few of them. The buyer of an enterprise revenue bond, on the other hand, would be acutely conscious of the fact that he could look only to the proceeds of user charges, and would tend to test the entirety of the set-up for its strengths and weaknesses. We may therefore conclude the general part of this discussion with the observation that the feasibility of a given capital financing proposal is affected in part by the type of security instrument chosen.

We will now turn to the consideration of the characteristics of capital financing feasibility of airports. Specifically, we are concerned with the peculiar problems, if any, posed by the large modern international air terminal - the jetport of today and tomorrow.

The central fact of life with respect to large, modern airports is that to date no one has discovered a way to make the aviation activities, per se, self-supporting. That is, the costs of providing facilities and service to get passengers on and off the planes and get the planes off and onto the ground entail

prices that, if the facilities and operation are to be supported by user charges, exceed competitive limits. In this, commercial aviation does not differ from railroad and highway transportation. Airports, like large railroad and bus terminals, are made self-supporting by the ingenious and skillful development of transportation-related activities; shops, restaurants, service establishments, etc., provide rentals, fees, and royalties which added to the strictly aviation charges raise the totality of revenues to a level adequate to cover expenses of the entire facility.

A corollary to the need for a complex of aviation and aviation-related revenue sources is, that it takes time to develop the potential from such a complex. This arises partly from the fact that any large, expensive service facility must be designed and constructed, in due prudence, with future as well as immediate needs in mind; it thus may be expected to commence operations with some excess capacity. This involves acceptance of initial costs greater than the immediate users of the facility will be willing or able to pay. The lag in realization of the revenue potential also results, however, from the fact that any new facility must undergo a developmental period; that is, even were capacity to be no greater than the imminent demand, such demand does not materialize overnight but gradually, as potential users habituate themselves to new patterns of behaviour. This is particularly true of what may be termed branch operations, the duplication of facilities as demand grows. The branch is constructed in part to meet anticipated additional need, in part to divert useage from older facilities so that they in turn may have capacity to meet growing demands proximate to them. For these reasons, experience demonstrates that large airports generate their revenue potential gradually, passing through an initial period when they do not achieve self-support.

This means, in practical terms, that the modern air terminal facility undergoes a developmental period during which it must be subsidized.

The most simple, most direct method of providing the subsidy is to derive it from established air terminal operations. If the new airport facility is part of an airport system that includes matured, developed facilities, their earning capacity may be placed behind the new facility and used to carry it during its developmental

phase. Additionally, the prior experience of the operator in design and construction, the opportunities for coordination to improve service to the public and decrease costs, and the centralization of responsibility in a single operating entity, all enhance feasibility. The arrangement appeals to considerations of equity, economy, and efficiency, and it is the means by which revenue bond financing has been utilized for the expansion of the commercial airport facilities of our large U.S. metropolitan centers.

This method of airport financing by means of revenue bonds supported by a pooling of revenues from two or more developed airports not only provides a viable fiscal basis for borrowing; it also has enjoyed investor acceptance arising from investor familiarity with and confidence in an administrative and management set-up of predictable performance. The bond may be for a new, untried facility, but it is the obligation of an established, proven instrumentality.

There are alternatives, of course. User-charge supported revenue bonds are not the only debt security available. A governmental unit with the taxing power may issue its general obligation bonds for the construction of the facility and provide subsidies during the developmental period from its tax or general revenues. Such an arrangement does not preclude setting up the project in other respects to assure that ultimately the facility will be self-supporting. As operating revenues develop, the subsidy is decreased, so that on achievement of full self-support both operating expenses and debt charges are being met from the airport earnings.

General obligation bond financing with direct tax support until self-support was attained is the method by which communities initially acquired their airport facilities in the 1920s and 1930s. Many of these airports were taken by the Federal government during the war and enlarged, especially the landing strips, aprons, hangars, and field areas, then returned at nominal cost after the war. These developed facilities subsequently provided the capital and earnings basis for modern, revenue-bond-financed jetports. While the device has been in disuse recently, there is no impediment to direct tax financing and subsidy as the base for a new, isolated facility or for the creation of a new airport system.

Other alternatives are not so attractive. One is that the conventional revenue-bond set-up be fortified by adding the bond guarantee of a strong taxing unit. This ignores the fundamental fact that the need for subsidy is for operating or current expense, not for capital costs alone. Further, some institutional investors are less than enthusiastic about guaranteed bonds because of technical, legal considerations. Another device is that bonds be issued in amount sufficient to cover the anticipated subsidy. This procedure is highly expensive, however, is regarded by many investor institutions (properly, I think) as imprudent, and if the subsidy needed proves greater than the amount funded can lead to disaster. Nonetheless, alternatives include the guaranteeing of bonds and the sizing of the bond issue to include funding of the expected early deficits.

To recapitulate, then: the feasibility of capital financing for any public enterprise rests upon the governmental, technical, and fiscal viability of the program and project. In addition, in the case of large, modern airports, a period of deficit operations is foreseeable, and must be adequately provided for if a marketable bond is to be created that can be sold to the large, knowledgeable institutional investors whose interest is essential in the placing of a large volume of securities. Granted the use of airport revenue bond financing, the subsidy is assured by a pooling of earnings from the new, untried, and developing facility with those of matured, proven facilities of an established operator. Alternatively, a project created de novo may be financed (without prejudice to an arrangement aiming at ultimate self-support) with the general obligation bonds of a fiscally strong taxing unit. Guarantees and the funding of early deficits are less attractive expedients.

Finally, I would emphasize that these broad principles are operative regardless of the technical features of the facility involved. That is, they hold regardless of the specifics in a given case. In every instance, however, successful financing rests on adherence to the broad principles, and the most successful financing is reflective of programs meeting the highest standards of governmental, technical, and fiscal quality.

SENATOR STOUT: Thank you, Mr. Smith.

Are there any questions?

ASSEMBLYMAN RICHARDSON: Assuming, if the New Jersey Jetport Authority was created without the State's tax credit behind it, what would be the feasibility or the possibility of then getting bonds for a jetport?

MR. SMITH: Without subsidy?

ASSEMBLYMAN RICHARDSON: Yes.

MR. SMITH: I don't think it would have much chance, sir.

The foreseeable feature essential to this is that you are going to have deficits and some provision has to be made for them. If a new agency is to do it, it's got to have a method of meeting the deficit. And there are various ways of doing this.

SENATOR STOUT: How are most airports being financed now?

MR. SMITH: With revenue bonds. All of our large jetports today are the successors to airports that were originally begun and financed with general obligation bonds of the cities. These were extended, they developed, they provided the earnings base of the city or of an agency created to take over the city airports, built a new port, pooling the revenues from an established operation. So you weren't beginning new in any of these. This is the way the Metropolitan North Jersey, New York-New Jersey Metropolitan Airports began. The cities of Newark and New York City built airports. They operated them. They operated them competitively, rather disastrously, but they got commercial aviation service in the New York-New Jersey

metropolitan area into the air, and the investments that they made provided initial subsidy.

SENATOR STOUT: Dulles is not a revenue -

MR. SMITH: Dulles is not a successful jetport. Nobody wants a Dulles. Nobody wants a Naimon-Carter Field such as Fort Worth built.

MR. SMITH: Naimon-Carter Field?

MR. SMITH: Well, you don't hear about it because very few people use it.

SENATOR STOUT: How was that financed? Was that financed by the municipalities?

MR. SMITH: They used revenue bonds. Actually they had to be very ingenious to provide hidden subsidies because theoretically they weren't supposed to be providing any tax money for it. But this was handled by picking up the charge from governmental funds.

SENATOR STOUT: Who is financing Dulles?

MR. SMITH: The Federal Government.

SENATOR STOUT: Us.

Assemblyman Olsen has a question.

ASSEMBLYMAN OLSEN: This pooling concept interests me, and I was wondering, if we were to take our existing authorities such as the New Jersey Highway Authority, the Garden State Parkway Authority, which, in addition to the Highway operates a cultural center now - take the Turnpike Authority, the Atlantic Expressway Authority, etc., and pool these - the revenues from these Authorities to create an over-all Transportation Authority which could later build a jetport

or could build a jetport, would that enhance the marketability of the bonds?

MR. SMITH: Well, it might enhance the marketability of the bonds, but on the other hand I would judge that considerations entering into the decision by the Legislature would be the probable alternative uses that would be made of those funds and the relative needs. Basically, what you are considering with any public improvement is the fact that we have a limited amount of resources and almost unlimited demands. I would judge that the Highway people would not be very receptive to the idea of taking an established earning base for highway improvements and using it for airport improvement. But this would be a valued judgment, a political decision or a policy decision on the part of the State. You would still have the problem of the technical competence of the agency to develop, construct and operate an airport. After all, their expertise is in the area of highway transportation. But from the standpoint of providing the subsidy, this would probably be a permissible device.

SENATOR STOUT: Do you think the Solberg site could be economically feasible?

MR. SMITH: I am not competent to speak on that, sir. I assume that any type of project that is undertaken is going to have to be tested for its feasibility. If it's not feasible, it is not going to be possible to sell a large volume of bonds. And what I have been describing here is the setup, the prerequisites, for large financing. We

are not talking about twenty-five or fifty million dollars or anything like for a second or third string facility that the State might chose to include in its budget. We are talking about something that runs into hundreds of millions, whether it runs closer to half a billion or closer to a billion is immaterial.

Now to place this volume of securities, the bond must attract repeated purchases by large institution investors in very large amounts. You could have a program here, assuming a six or seven-year construction period - suppose the cost runs to $700,000,000, you could have $100,000,000 a year. You are going to have investors who are capable of buying these bonds in the tens of millions over that six or seven-year period.

Now these people are going to be rather hard-boiled in the way they look at it, particularly when we have the volume of borrowing available, the alternatives from mortgages, corporate securities, both equities and debt securities, and so on. You are going to have to appeal to them, and they are going to expect, whatever the facility is, if they buy the bonds, that it is going to be economically valuable. So that the site must fit, the economics of it must fit, the traffic must be there prospectively, and so on, if a large volume of bonds is to be sold.

SENATOR STOUT: Thank you very much, Mr. Smith. Are there any further questions? [No questions] I will call Mr. George Gary whose name has been

mentioned on several occasions. Thank you for your patience, Mr. Gary.

G E O R G E M. G A R Y: Mr. Chairman, my name is George Gary. I am the Director of the Federal Aviation Administration's Eastern Region, which comprises the 15 northeastern States. My experience has been 24 years with the FAA and the CAB.

I would like to indicate to you, as Mr. Halaby and Mr. Lukens have, that we in the FAA congratulate the Committee on their interest in this matter. We in FAA have had very intense interest in this matter for some period of time. The need for additional airports is a national problem. The FAA's national airport plan calls for an additional 800 airports throughout the nation and, in this most populous region, the airport requirements are highly critical because of the concentration of population and industry. The question of another major airport to serve the northern New Jersey and Metropolitan New York area has been studied, analyzed, reviewed and restudied over and over again for the past 13 years without any positive results.

There have been several comments made today concerning certain letters and, to set the record straight and to emphasize the position of the FAA, I should like to present two letters; one addressed to Governor Hughes and the second address to Mr. George Keck, the president of United Airlines. Both letters describe the airport problem and both are signed by the then Acting FAA Administrator, Mr. David Thomas.

The letter is as follows:

FEDERAL AVIATION ADMINISTRATION

January 14, 1969

Dear Governor Hughes:

We appreciated the opportunity to review the report, entitled "A Future System of Airports for New Jersey" and hope you will find our comments to be constructive and helpful in your consideration of the report's recommendations. The portions of the report dealing with an appropriate system of general aviation facilities for your State will be given careful consideration by the FAA in their planning efforts for the national system. We hope the State will pursue the development of a State Airport System plan further and we urge continuing coordination with the FAA.

Our initial review of the report was based on the premise that the proposed air carrier facility is designed to fulfill the needs of the Northern New Jersey-New York Metropolitan Area for a fourth jetport for New York. Our air traffic studies, including this one, have indicated that such a major jetport should preferably not be situated in central New Jersey due to current airspace consideration. After concluding our review, we met with the Governor's Economic Evaluation Committee, who assured us that the primary mission of this airport will be to serve the domestic and international air transportation needs of New Jersey.

In this context the FAA will work with the Committee and appropriate State and local officials if you decide to establish an airport to serve New Jersey. We will attempt to develop traffic patterns and create an enroute environment to accommodate the installation. In this respect, the air traffic capacity and the ultimate facility size and configuration contemplated would be that necessary to serve New Jersey air traffic. As you are aware, we cannot make any Federal commitments at this time relative to financial assistance, but it is our understanding you do not desire such assistance. Also, it should be understood that any actions relating to possible air carrier service are within the purview of the CAB; furthermore, the FAA cannot make any commitment concerning any possible designation of this airport as an airport of entry.

Sincerely,

93 A

/s/ D.D. Thomas

SENATOR STOUT: Mr. Gary, I think there might be a couple of questions on this letter, unless you feel that the next letter should be read in conjunction with it.

MR. GARY: They do tie in together and we do have a slide presentation which I hope will explain some of the items in here, if that is all right, Mr. Chairman.

SENATOR STOUT: Fine.

MR. GARY: The second letter is dated February 14, 1969, and is addressed to Mr. George Keck, President of United Airlines.

[Reading] Dear Mr. Keck:

This is in response to your letter of January 21, 1969, concerning a 4th jet airport to serve the Northern N.J.-N.Y. Metropolitan area.

In response to your specific request, the FAA has made no change in its basic position with respect to the airspace situation in the N.J.-N.Y. Region. We have repeatedly stated from an airspace standpoint that an airport site in the "Northwest Quadrant" is the most desirable. You also requested our views with regard to locating a facility in the vicinity of the existing Solberg Airport which is within the "Northwest Quadrant." It is our view that this site is a suitable location for the 4th jetport from an airspace standpoint.

With regard to specific capacity, we agree that a successful additional jetport serving the N.Y. Metropolitan Area must accommodate 110 operations per hour or more and at the same time not derogate the maximum capacity of the other airports in the N.Y. Metropolitan Area. The capacity of any new jetport will be dependent to a significant degree on the layout and configuration. In addition, our present efforts to streamline the use of airspace in this area can be adapted to accommodate a high activity jetport in the "Northwest Quadrant" And our expected future implementation of area navigation and the development and improvement of other navigation aids now under study by research and development should enhance the capability to meet this requirement in the Solberg area.

As you know, the FAA has conducted a number of studies and has analyzed many plans for providing air congestion relief in the New York Area. Governor Hughes recently asked for our evaluation of the N. J. Economic Evaluation Committee Report which recommended a central N. J. airport. Members of this Committee advised us that the primary mission of this airport was to serve the domestic and international air travel needs of New Jersey. It was not contemplated as the 4th New York Jetport. We have advised Governor Hughes that the air traffic capacity and the ultimate facility size and configuration of the airport would be that necessary to serve N. J. air traffic. In view of this recent correspondence with Governor Hughes, we want to be sure that there is no misunderstanding with the endorsement of an airport meeting New Jersey needs and our continued endorsement of the "Northwest Quadrant" for the New York Metropolitan 4th Jetport.

Please let us know if we may be of any further assistance, as we, like you, are very concerned over the need for additional airport capacity to serve the New York-Northern New Jersey area.

Sincerely,
D. D. Thomas, Acting Administrator
Federal Aviation Administration

Our major interest, Mr. Chairman, is the development of terminal and in-route traffic patterns and also the control of air traffic.

I thought it would be helpful to your Committee, sir, if we could show you just how complex the present situation is, and I have asked one of our experts Mr. Walter Kies, to show you just what this is.

Gentlemen, I don't know if you can see these charts or not. We have two charts. We will go over them briefly and if there are any questions, I'll be happy to answer them.

W A L T E R K I E S: Mr. Chairman, my name is Walter Kies. I am with the Air Traffic Division of the Eastern Region. We have two slides to show you today which may be helpful in making your determinations. They

concern the air space and air traffic control ramifications and airport locations.

Now this first one, if you will note the lines in the left, the northwest quadrant there. The northwest quadrant is defined as - starting at Summit, New Jersey, the apex at Summit, New Jersey, going northbound to Greenwood Lake, and then southwest bound to Stockton, New Jersey. Now Site No. 8 on that particular chart is the location of Solberg, and No. 17, the lower part, is McGuire Air Force Base in Central New Jersey.

Now we just show you this to give you some idea of the locations that questions have been raised on here today.

I would like now at this time to show the second slide and just touch on the highlots of the air space and air traffic control problems.

The chart you are looking at here shows you the intricate network of airways that serves an area that stretches from Delaware to the South, to Massachusetts to the North and Pennsylvania to the West. The lines on that chart are color-coded to denote airports of destination; for example, the red is Kennedy, and that is the first airport to be depicted.

Now if you will notice the large green lines are just the geo-political boundaries and in air traffic control and the operation of aircraft along these airways the geo-political boundaries really have little or no meaning.

The large red tubs you see there are holding patterns for the Kennedy Airport. Dimensionwise they are approximately 25 miles in width and 35 miles in length and they could hold

aircraft up to and including the altitude of 23,000 feet. So you can see that is quite a tall order there and we need a lot of geography to hold aircraft at those altitudes.

Now the airways we are talking about here, all those lines on that particular chart, are 8 nautical miles in width and, of course, they are dependent upon the situation of the navigational aids that serve those and comprise those airways - the distance between the navigational aids and the frequencies that are transmitted for that particular navigational aid.

I only raise this point to show that it's not a very easy job to modify or change.

Now located to the east out over the Atlantic Ocean you will see a hatched gray area. That is called "off-shore warning air space." The International Civil Aviation Organization, of which the United States is a member organization, defines this as domestic air space, and it's anything within 100 miles of the coast of a member State as defined as domestic air space. In this country, that particular air space is controlled by the Military, Department of Defense. In order to use that air space, the Military has to relinquish the air space and the State Department is involved. So, therefore, for all intents and purposes, that air space you see, along the Eastern Seaboard there, is unused air space and it's not available to us - with some minor exceptions; you will see some routes through there.

Now, today in the air traffic control system, we are almost totally reliant upon radar for the control of air

traffic, and when aircraft are approaching a major terminal from approximately 75 to 100 miles out, they begin their transition. So, therefore, this is where radar plays the major role, because we can get more airplanes into the system by using radar separation as opposed to using non-radar separation criteria. A basic example of this would be two aircraft on the same route doing 300 knots, which is five knots a mile - if we were using non-radar separation criteria, they would be separated by 10 minutes time, which is computed to be 50 nautical miles, so we would have two aircraft along 50 miles of air space. However, if we use radar separation, we can then reduce this and get more aircraft into the same air space. Now, with radar we could use 5 miles. There is another criteria that says we can use 3, but, using 5, it divides into 50 and we can have 10 aircraft in the same air space using radar as opposed to 2 using non-radar. So you can see why there is almost total reliance on radar in today's traffic control system.

Now, you've all heard, no doubt, the term "Northeast Corridor" mentioned most prominently. By and large, the Northeast Corridor has a southern terminus, Washington, D.C., and stretches up to Boston, Massachusetts. Now air traffic moving between those points - and New York saddled in the middle and Philadelphia as the major terminals - travels along airways being shown here which are the most heavily traveled airways in the world, the most densely traveled airways in the world. You will notice that the Central New Jersey area is sandwiched in between these heavily

traveled airways.

Now in that same particular area in question, we have McGuire Air Force Base, and 12 miles east of there we have the Naval Air Station Complex known as Lakehurst. Now between these two, they generate a total of 240,000 operations a year. As of December 31st that was the latest count. Now that can vary, depending on the military posture of the United States at any given time. Therefore, the Miltary has a great requirement for aviation operations in that particular area. Now between there is, of course, the Fort Dix military installation which has a requirement for a certain amount, a limited amount, of air space in the form of live ordnance firing during certain periods of the day and certain days of the week.

Suffice it to say there is a large number of military requirements for air activity in the Central New Jersey area.

Now, historically, traffic generated by the New York Metropolitan triplex of airports known as Newark, LaGuardia and Kennedy, proceeds on a 60-40 ratio; 60 per cent of the traffic operating to and from this triplex area operates to the west and the southwest; the other 40 per cent operates to the northeast and the east.

We believe that the Northwest Quadrant, from an air space viewpoint, is much better than a McGuire or Central Jersey location, and one reason is the 60-40 ratio, which indicates that traffic into and out of an airport located within that Quadrant would terminate and be on the ground before entering the already congested New York air space.

I believe on that point we can turn this over to Mr. Gary.

SENATOR STOUT: Thank you. Does the Military have a holding pattern for McGuire, or is that included in that red portion?

MR. KIES: It wasn't depicted on here.

SENATOR STOUT: They have one too?

MR. KIES: We hold several areas - one at Millville, for example, Atlantic City. It all depends on the traffic situation.

MR. GARY: I would suggest we keep that chart up there. We might want to refer to it.

In summary, I would like to say that if a major airport is to best serve the needs of Northern New Jersey and Metropolitan New York areas, we believe it should be situated in the Northwest Quadrant of the Metroplex. A Solberg, New Jersey, site would lie within that Quadrant; therefore, Solberg wuld be a suitable location for a fourth major airport from an airspace standpoint.

Recent FAA air traffic analyses have indicated that a major airport should preferably not be located in Central New Jersey, due to airspace limitations as we have just indicated.

If an airport were contemplated to serve a smaller volume of traffic for the needs of New Jersey alone, the FAA would attempt to develop traffic patterns and create an en route environment to accommodate such an installation.

The above summary is a result of years of study by air

traffic specialists and it represents the official FAA position on a possible site for a fourth airport to serve the New York-New Jersey Metropolitan Area.

We thank you, sir, for this opportunity and I am prepared to answer any questions you may ask.

SENATOR STOUT: Thank you for coming here today and for your patience.

Do you have any idea of how the traffic at McGuire, as a military base, might increase over the years?

MR. GARY: We understand that the traffic at McGuire will maintain itself at the present rate, which is a little over 100,000 operations at McGuire and about 130,000 operations at Lakehurst.

SENATOR STOUT: If a proposal or the proposal were solely for a major airport in Central Jersey, the McGuire area, let's say, I gather the FAA would put limitations on the number of flights and the amount of traffic, based on the present air patterns.

MR. GARY: I don't know that we would put limitations on it but there would be limitations imposed. There is just so much traffic that we can get through the Northeast corridor.

SENATOR STOUT: Now do the Philadelphia patterns - and I don't really understand those - the Philadelphia patterns are part of this thing as far as McGuire area is concerned -

MR. GARY: That is correct, sir. If an airport to serve the New Jersey needs were established in the vicinity

of McGuire, we believe we would have to put in a common IFR room; this is Instrument Flight Rules - it's the radar that Mr. Gach was talking about - to incorporate the air traffic for that airport if located in Central Jersey and the Philadelphia-Wilmington complex.

SENATOR STOUT: Are there any questions?

ASSEMBLYMAN WILSON: Mr. Gary, are you familiar with the letter that Mr. Thomas, the Acting Administrator of the FAA, sent to Governor Hughes concerning whether the State of New Jersey was interested -

SENATOR STOUT: He read that letter into the record. That's part of his presentation.

ASSEMBLYMAN WILSON: I'm sorry.

SENATOR STOUT: He read both the letters.

ASSEMBLYMAN WILSON: Did you read the portion about changing the pattern if we so desired?

MR. GARY: Yes.

ASSEMBLYMAN WILSON: O.K. I'm sorry, Mr. Chairman - sorry for not being here.

ASSEMBLYMAN AZZOLINA: If a jetport should be located at McGuire, would planes still land and take off at Lakehurst? Someone the other day mentioned there may be a conflict between McGuire and Lakehurst.

MR. GARY: Well, any additional activity in that area would have to be very carefully controlled from a safety standpoint. There is a saturation in this area. We have figured that we can possibly accommodate another hundred thousand operations in this area.

MR. RICHARDSON: Mr. Gary, how would you describe an inter-continental jetport?

MR. GARY: An inter-continental jetport? This would be one that would travel between continents primarily the overseas carriers.

ASSEMBLYMAN RICHARDSON: Would that be a jetport that would just serve a particular State?

MR. GARY: No, sir.

ASSEMBLYMAN RICHARDSON: Have you had an opportunity to see the Blomquist report?

MR. GARY: Yes, sir.

ASSEMBLYMAN RICHARDSON: Did that not refer to an inter-continental jetport?

MR. GARY: I believe so.

ASSEMBLYMAN RICHARDSON: How do we square that then with the fact that when they were speaking I assume in your office or to Mr. Thomas, that they talked only about a jetport that would serve New Jersey's needs? It appeared to me they had a report that said one thing and verbally they were talking about a jetport that was for another purpose.

MR. GARY: Mr. Thomas indicated that an airport to serve New Jersey's needs for domestic and international travel would be accommodated to the degree that we can from an air traffic standpoint.

ASSEMBLYMAN RICHARDSON: Would you describe the Blomquist Report as a description of an Intercontinental

Jetport?

MR. GARY: I believe the thrust of that report was to establish a major airport that could handle all types of traffic.

ASSEMBLYMAN WILSON: I would like to clarify that point. I would just like to know, Mr. Gary, what's the difference between international air transportation needs in New Jersey and an intercontinental jetport. I think we are just dealing with semantics on this. Don't they mean the same thing?

MR. GARY: Yes.

ASSEMBLYMAN WILSON: O.K. Thank you.

ASSEMBLYMAN AZZOLINA: Mr. Gary, you said the McGuire area could handle another hundred thousand operations. I assume you mean flights.

MR. GARY: Yes, sir.

ASSEMBLYMAN AZZOLINA: How many passengers would that encompass, approximately?

MR. GARY: Well, this depends upon the size of the aircraft, perhaps a hundred -

ASSEMBLYMAN AZZOLINA: Just strike an average.

MR. GARY: Probably closer to 75 per flight.

ASSEMBLYMAN AZZOLINA: Seventy-five what?

MR. GARY: Passengers per flight.

ASSEMBLYMAN AZZOLINA: That would be what? Seven and a half million passengers then?

MR. GARY: Yes.

ASSEMBLYMAN VREELAND: Mr. Gary, do you agree with the

assumption that was made a few moments ago pertaining to the percentage of movements which are domestic and overseas at about 92 per cent or something of that nature in the Metropolitan New York area?

MR. GARY: Yes, sir, that's correct.

ASSEMBLYMAN VREELAND: Then wouldn't it be possible, in your judgment, for JFK to accept the international or intercontinental movements - all of which are coming into this area - couldn't JFK handle those without any problem?

MR. GARY: Well, the problem is in the New York Metropolitan Area that we have saturation at the present time, at least in the summer, and the intercontinental flights are delayed. We are reaching a point where some relief has to be provided, and to have all such flights come into Kennedy this is a possibility, but more and more flights, if I understand it correctly, are diverting out of Kennedy to other places.

ASSEMBLYMAN VREELAND: Well, I get the feeling very strongly that this Northwest Quadrant concept seems to be the only logical solution, and it seems to me that if JFK then did accept all the international movements, if we were to transfer the domestic movements and further intercept those inbound before they penetrate the corridor, it would probably solve the problem for sometime to come. Is that correct, would you say?

MR. GARY: No, sir. This is a very complicated thing we are talking about. It has to do with the Civil Aeronautics Board and the fact that certain carriers are authorized into

certain areas, and this would be almost impossible.

ASSEMBLYMAN VREELAND: In other words, it is not flexible enough for immediate modification to accomplish what I have suggested.

MR. GARY: That's right, sir.

ASSEMBLYMAN VREELAND: Thank you.

SENATOR STOUT: Are there any further questions? Did you want to talk about noise?

MR. GARY: Yes, sir. We have our expert on that, Mr. Gach. He will be right with us.

Mr. Martin Gach is the Noise Abatement Officer of the Eastern Region of FAA. He's the gentleman who takes the 300 complaints every day from the public in the New York area, and I can assure you he is hignly qualified in this area. Marty?

SENATOR STOUT: He fills in on other duties, too, I notice - ballet.

M A R T I N G A C H: I'm a good pointer, too.

My name is Martin Gach; I'm the Noise Abatement Officer of the Federal Aviation Administration, Eastern Region. I would like to make a statement on the FAA policy on noise.

It has been stated that never in history has metropolitan America been so dependent on air transportation for its economic survival, and yet never before has metropolitan America been so apprehensive about the growth of aviation. One of the primary sources of apprehension has been the effect of aircraft noise on population centers. In response to public demand for steps to be taken in the field of noise

abatement at the federal level, the Congress enacted Public Law 90-411 last year, which added new Section 611 to the Federal Aviation Act of 1958. I might interject here that prior to this time the Federal Aviation Administration and no Federal agency had any responsibility for aircraft noise except in an advisory capacity and to take whatever procedural steps were necessary to effect a compatible situation between the airport neighbors and the airport. As of July last year, we first were given the responsibility by the Congress.

This section provides that the Administrator of the FAA, after consulting with the Secretary of Commerce, shall prescribe standards for the measurement of aircraft noise and sonic boom, and shall prescribe such rules and regulations as he may find necessary to provide for the control and abatement of aircraft noise and sonic boom, including the application of such rules and regulations in the issuance, amendment, modification, suspension or revocation of any certificate authorized by this title.

In plain words, we were then given the responsibility to certify aircraft for noise. Previously we were certifying aircraft for airframe performance and standards, engines - in that category.

In the above connection I would like to relate since July last year three categories with which we are very closely involved in this field.

The first phase relates to the certification program which is presently underway for the new family of aircraft

presently being produced, such as the Boeing 747, the Lockheed 1011, and the Douglas DC-10. Initial observations, and my personal conversations with people on the west coast, indicate that the first flights of the 747 have resulted in a quieter aircraft as compared to the present family of the air carrier jet fleet. This appraisal is an initial one since it is based solely upon the experiences released from the first test flights of this aircraft. It is expected that the subsequent test program up to the time of certification will finalize the earlier appraisal.

The second phase under Public Law 90-411 is presently underway and this is the beginning of the initial studies for the economic reasonableness of retrofit for the present family of aircraft. Coincident with the flight tests, it is expected that industry and concerned government agencies will be holding discussions on the practicability of such a retrofit program subsequent to the completion of these tests.

The current program of the FAA, as Item No. 3, in concert with NASA and industry is appraising any operational concepts such as curved approach paths to instrument landing systems in order to avoid populated areas in the vicinity of airports, and standard takeoff procedures. We also cannot undervalue the importance in new airport construction of adequate noise buffer zones at the end of runways.

I would like to say a short word about the sonic boom since there has been so much conversation and so much publicity about the sonic boom. Specifically, a major question in the development of supersonic aircraft has been the public reaction

to sonic boom as a pressure pattern created by an aircraft flying faster than the speed of sound. On the ground, one can get an indication of the experience by likening it to the surprise of hearing a clap of thunder from a cloudless sky. Like that sound, the onset of a boom is very sudden and it lasts only a fraction of a second. In the development of the supersonic aircraft, it has never been the intention of the aerospace industry to create an aircraft that would continuously fly at supersonic speeds. Therefore, all transport supersonic aircraft presently being evaluated, U.S. and foreign, will fly at subsonic speeds similar to the speeds of our present jet fleet in the takeoff and landing phase and in the vicinity of terminal areas. This will cause no audible sonic boom at any time during this phase of flight. The FAA has publicly stated that until it can be determined with precision what the physical and psychological effects of the sonic boom are, a final decision will not be made concerning the use of the supersonic transports operating at supersonic speeds over the domestic United States, and that if the aircraft creates a boom adversely affecting population or property on the ground, operations over populated areas at supersonic speeds will not be permitted.

That's the end of my statement, gentlemen.

SENATOR STOUT: Thank you, Mr. Gach.

Tell me, is there a relationship between the rate of climb of an aircraft or the takeoff and the sound, and do the new aircraft climb faster -

MR. GACH: Is this in relation to the sonic, the subsonic?

SENATOR STOUT: Just noise.

MR. GACH: The faster an aircraft can climb, the quicker the noise lessens to those who are on the ground, the effect of the noise on those persons.

SENATOR STOUT: Well, the new family of aircraft you are talking about, do they climb fast or do they lumber along?

MR. GACH: Oh, no, they are powered by a new family of engines and can climb faster.

SENATOR STOUT: Then the length of the noise would be lessened, is that correct?

MR. GACH: The interval of noise as far as persons on the ground are concerned should be lessened, and I might point out that these are new designed engines which were designed with one of the primary engineering aspects being creating a quieter engine. Previous engines are being considered with respect to "What will we do with them now that we have them?" The initial design - - or one of the precepts of the design of these engines was to make a quieter engine.

SENATOR STOUT: Senator Olsen?

SENATOR OLSEN: Mr. Gach, in connection with the second phase of the program under P.L.90-411, is this basically concerning the commercial jets or will it take into consideration corporate aircraft and private jet aircraft as well?

MR. GACH: Initially the commercial fleets first and the corporate fleets will also come into the picture subsequently.

SENATOR STOUT: Thank you very much.

Mr. Gary, do we have another gentlemen?

MR. GARY: No, sir, just a quick clarification. We discussed previously the continental, intercontinental, and international airports. I would like to clarify that. We in FAA are not concerned with what you call an airport. We are charged with the number of operations that can be accommodated, whether they be an intercontinental type aircraft or even a small airport that needs to use one of these major airports.

SENATOR STOUT: Let me ask you another question: You indicated in your statement that the FAA was concerned with an additional 800 airports in the country.

MR. GACH: Yes, sir.

SENATOR STOUT: Now will the location of a major jet airport affect your planning for additional airports in the New Jersey area, for example?

MR. GACH: Yes, sir.

SENATOR STOUT: Is this based on flight patterns, or service, or accessibility? What's the basis of the consideration?

MR. GACH: Airspace consideration. If we establish another general aviation airport which has essentially different traffic patterns, we must be sure we can handle the number of aircraft anticipated at the airport in concert with the air carrier operations.

SENATOR STOUT: Any further questions? [No questions]

Thank you very much, Mr. Gary. Thank you for coming.

MR. GARY: It's a pleasure.

SENATOR STOUT: We have another witness.

Mr. I. Irving Pinkel.

Incidentally, for the benefit of everybody here, our next hearing will have to be announced through the press and through notices to those who have asked to be heard. It probably won't be for a couple of weeks now because of the legislative schedule and other committee hearings.

Mr. Pinkel?

I. I R V I N G P I N K E L: Thank you very much, Mr. Chairman. My name is Irving Pinkel. I am Director of the NASA Aerospace Safety Research and Data Institute; I have been associated with aviation research for about twenty-nine years. I am a Professional Engineer of the State of Ohio, by training a physicist. I am here largely to develop certain technical facts in the matter of air pollution and transportation, and not to be a party to the issues which are presented here. I have long been interested in the matter of air pollution and have sponsored much of the early work that has been done, both in automotive air pollution and by aircraft engines. My sponsorship is not a matter of record but only through the committees on which I served.

I would like to give an abridged version of the statement that you have regarding this matter of air pollution in view of the time, simply to develop only the necessary ingredients by which one makes up his mind in the matter of air pollution-

SENATOR STOUT: We will include your statement in the record.

MR. PINKEL: Thank you very much.

I know this matter is an emotional one and I know that very often information regarding air pollution is given in terms of pounds of pollutants per hour being generated per day, and so on, and I find that very few people can make any judgment, using those numbers. And I will try to avoid numbers like these. However, I would like to make certain observations by which you can judge the matter of air pollution and the major issues involved.

Item No. 1 is this: All humans have some tolerance to pollutants and this was exploited when factories which emit pollutants do so through very high stacks with a view to having the air dilute the pollutant before it reaches ground level where people reside. I think the rule here is something like this: The solution to pollution is through dilution. That's the principle.

The other principle that is involved simply is this, that if one must be exposed to pollution which is above human tolerance, he must maintain a low frequency of such exposure. This is the difference between a person who smokes very little and has tolerance to the smoking he does and the person who oversmokes and suffers irreparable damage to health.

Now the other fact is this, that if we are to accept the fact that we are going to move people and goods by some mode of transportation, we have to make a comparison between the pollution we get to move these people and goods by air as compared to moving them on the ground. And it is to this point I would like to make some remarks.

I would like to find out first the origin of pollutants and make the general observation that both with aircraft and

with automotive equipment which operates on the ground, we burn about the same kind of fuel derived from petroleum. These are hydrocarbons. If these fuels were purely hydrocarbons, in other words, made up of molecules that have only carbon and hydrogen in them, and if we burned them efficiently we would have as our resulting product carbon dioxide and water. These are the very materials that we exhale with each breath and are benign in reasonable quantities. We have a large tolerance to carbon dioxide.

The unfortunate facts are these, however: Most of our engines don't burn these fuels cleanly, and the fuels themselves have constituents other than hydrocarbons.

Now I would like to show, for example, a cross section of an automobile, a gasoline engine. And may I have the second slide, please.

Now I would like to show the origin of the pollutants. Now this is a gasoline engine (indicating on slide shown) - the main block is the largest dark body you see, on which I show one part of a multi-cylinder engine. On the top of that block is the air intake and carburetor, and the lower portion of the block is the exhaust manifold and exhaust pipe. Now, unfortunately, the printing is too small to see, but I would to find out that we are dealing with exhaust products coming out of the exhaust pipe, which are carbon monoxide, nitrogen oxide, nitrogen dioxide, unused hydrocarbons, hydocarbons which have combined with some of the nitrogen dioxide, and I might find out this, that the hydrocarbons that issue as hydrocarbons unburned from the engine are less objectionable than those

which are combined with nitrogen dioxide, and to find out also that these compounds are formed when the exhaust is exposed to sunlight. The sun is a factor in the creation of the most objectionable compounds that you see.

I won't detail all the other compounds there but simply point out lead chloride bromine, shown on the figure, is a lead compound which is present in the exhaust because automotive fuels for gasoline engines are leaded.

Now of the materials shown in the figure coming out of the exhaust, the nitrogen dioxide is highly poisonous, and the lead compounds are highly poisonous, and these compounds are present in quantities that are easily measured. In some cities we are approaching about half of the human tolerance to some of these compounds.

Now why are they formed? Why doesn't our fuel burn cleanly, just simply to carbon dioxide and water which we find? The reason is this, that in the cylinder of an automobile engine, more fuel is injected into the engine than there is air present in the engine to burn it. This is done so the engine operates smoothly with good anti-knock quality. The lead is also introduced into the fuel to give this anti-knock quality, so we get high power small engines. This is a fact of life with automobile engines.

Now the nitrogen oxide which is converted into nitrogen dioxide on exposure to the air, with the help of sunlight sometimes,- this is the highly-poisonous constituent that comes out of the exhaust pipe and accounts for the brown haze that exists around our cities. This is the haze you see in the early morning

or toward sunset when the sunlight comes in slantwise or as you fly over a city the brown haze on the horizon. That brown haze is really beyond the horizon but it actually engulfs the entire city.

Incidentally, the automotive industry is doing its level best to reduce the amount of carbon monoxide and some of the other pollutants that issue from automobile engines. They find themselves in the very awkward situation that if they would wish to reduce the carbon monoxide coming from the engine by operating the engine in a somewhat different way, by the very act of reducing the carbon monoxide they increase the nitrogen dioxide, another point in its constituent and in some respects far more undesirable then carbon monoxide.

And, just to use a number, the amount of carbon monoxide issuing from automobiles, say, in the Los Angeles area, which area has been so heavily studied, amounts to about 10,000 tons a day.

This represents then a real goal for the automotive people to shoot at.

Now, the point I am trying to make is this: If we don't fly these passenger and cargo loads over our cities, those same passenger and cargo loads will travel our highways and the pollutants that issue from the automotive equipment that moves all of this traffic will appear at our level. In contrast to this, the airplanes that fly overhead, they put their pollutants high up. A large percentage of these pollutants don't get to the ground but spread and dilute and, in the subsequent rains that wash our atmosphere, they find their way to the ground in highly-diluted form.

Now let me now turn our attention to the jet engine combustion and note the difference for aircraft engines, and I'll stick to the jet as the principal engine of the future, even for smaller aircraft which now use gasoline engines and are subject to the same remarks I just made.

Now within the jet engine is a burner which burns continuously, very much like the burner in a furnace that serves the heating system of a house. The combustion takes place

within the inner liner which you see there which is shown in dash lines, at the left-hand end where I show an injector through which fuel enters the left-hand end of that combustor. Here an excess of fuel is injected as compared with the air that flows through the same space at the dome end, the left-hand end of that combustor, in an effort to burn the fuel in a fuel rich atmosphere and, unfortunately, rich enough so that not all of the fuel burns there. However, the combustion is quite efficient and only a small fraction of the fuel remains unburned.

Now it is in this zone, this high-temperature zone, where most of the combustion takes place, that the carbon you see issuing from the tail of the jet engine is formed. The jet engine in use now spewing the carbon wake that you see issuing from the engine is a jet engine that was designed largely for military use and has been adopted by the air lines because it was such a good engine. The enrichment of the combustion which accounts for the formation of that carbon is done principally to allow a re-light of the engine in the event the flame should go out under altitude flight. Military aircraft fly at such high altitudes that they require more enrichment than is necessary for a commercial jet airplane. And so new combustors have now been devised which reduce the fuel enrichment in the jet engine combustors and have reduced the amount of carbon that forms.

A certain amount of nitrogen dioxide is formed in this environment, far less than the reciprocating engine or the diesel engine; a certain amount of unburned hydrocarbons are formed which are again far less than in an equivalent automotive engine,

and the opportunity to improve both matters in the jet engine in regard to pollution is far greater in a jet engine than exists in the automotive engine. And it is for this reason that all of the principal automobile manufacturers look to the application of a turbine engine, one which would burn fuel in the way I have described here for automotive purposes in an effort to solve their pollution problem.

Now the last slide - incidentally, that effort was not successful and for the most part the automobile manufacturers have given up on the turbine engine except for the long-range truck on the highways.

Now in an effort to show you what the pollution problem is for a 4-engine jet transport, I have a last figure. On the left column you see several types of airplanes listed. I would suggest that you look on the third row down under the words Departure-Fan-Jet-TF-33.That's a large engine and for a departure and flight to 2500 feet - that's about half a mile - that engine releases 8 pounds of carbon monoxide. Nitrogen dioxide, which is a principal pollutant and highly objectionable, 5.2 pounds. Unused hydrocarbons 12 pounds. And you will see "Particulates"- 3.4 pounds. This is for all four engines. When you look at the exhaust coming from such a 4-engine airplane and see the black clouds, you think that that stuff coming out is carbon - the black cloud is coming out by the tons - but the total amount is approximately small. It's objectionable mostly aesthetically. If it were pure carbon, it would be benign entirely. Unfortunately it absorbs a certain amount of the hydrocarbons and, as called in the column, Aldehydes, and comes out somewhat

contaminated. It appears as a dense smoke because it is finely divided and, being finely divided, most of it stays in the upper atmosphere. If I were to compare for you the total pollution provided by 500 four-engine jets coming and going in an airport of a large city, as for example Los Angeles, you would find that all the pollutants, which are far less harmful than those coming from automotive engines - all the pollutants coming from a four-engine airplane making 500 arrivals and departures would account for only one-tenth of one per cent of the pollution provided by automobiles only. This doesn't include pollution provided by factories, pollution provided by homes which burn fuel oil for heat.

I'll say this for those who are concerned about the particulate matter that comes from jet engines which appears so undesirable, and is, aesthetically, that if they were to group the chimneys on their street from the homes that use fuel oil to heat those homes, they would see the same thing. What they wouldn't see would be the sulphur compounds which are far more toxic than most of the items indicated here - sulphur dioxide and sulphur trioxide - which are present in home-heating fuels and are in far higher concentration than the aviation industry allows in the highly-refined turbine fuels that they use.

These are the points I would like to raise. Thank you.

SENATOR STOUT: You mean the jet engine doesn't spew the dangerous pollutants that the automobile engine does,

Is that what you are really saying?

MR. PINKEL: That's right. The types and quantities are far more preferable from a jet engine than they are from automobile engines.

I remind you that there is no lead in turbine fuels for aircraft, and the lead pollution is one of the principal hazards to health that is associated with automotive use.

SENATOR STOUT: Thank you.

ASSEMBLYMAN AZZOLINA: That is very interesting.

[Statement presented by Mr. Pinkel appears on Page

SENATOR STOUT: Now we have one more witness, Captain Flournoy.

R I C H A R D C. F L O U R N O Y: I have a prepared statement.

SENATOR STOUT: Where do you want the airport?

CAPT. FLOURNOY: Well, actually I should have my Warren County, Hunterdon County and Somerset County badge on because I have lived in all three of them. I presently live in Somerset County.

SENATOR STOUT: You don't want it there. Right?

CAPT. FLOURNOY: No, sir. Actually, as I have my statement I would just like to enter the statement into the record and you can read it at your convenience. If you have any questions, I am here speaking for the Air Line Pilots Association.

On January 16, 1969, we adopted a resolution. It is included in the statement and it simply says that we want an airport and are not particular where it is. It would appear that the Solberg site would gain the support of the FAA, the Air Lines and the financing agencies. The Port Authority suggested they would like to do it. I understand that they perhaps, as a New Jersey agency, might have an interest in this also.

So if you have any questions or anything about this statement, I would be very glad to try to answer them.

SENATOR STOUT: I have one. I have a lot of air line pilots in Monmouth County. I see them once in a while, usually at a party, and they buttonhole me and indicate that

the congestion is such they are all beginning to get worried about it. Is that a fair statement that they are making?

CAPT. FLOURNOY: When you say "worried about it," they are not worried about the safety of the separation standards, as they are pretty well established. It is simply the indefinite delays that we get involved in, where we have to change our destination and go to alternate airports or we are unable to anticipate what the delays may be so we can fuel up sufficiently to be prepared for it always. We are not concerned about running airplanes together. Under the separation standards the FAA has and they maintain, we are not concerned about running together - it would only be if an airport were located in a place where the FAA couldn't maintain the same separation standards that they insist on and they were forced to lower the standards some way.

SENATOR STOUT: Well, you are satisfied with their standards, but in order to maintain the standards they mess up your schedule. Is that right? Is that what you're saying?

CAPT. FLOURNOY: Yes.

SENATOR STOUT: And our schedules too.

CAPT. FLOURNOY: Indeed they do.

SENATOR STOUT: Are there any further questions?

ASSEMBLYMAN VREELAND: Captain, you say that the frequency of getting beneath those separation standards is now eliminated completely?

CAPT. FLOURNOY: There is no tolerance to the standards as they are established. As the FAA radar man said,

they are now operating as close as they can possibly operate with the technology that they have with their radar equipment, and they just can't place airplanes any closer than they are, and we are satisfied they are not going to lower that standard unless the airport is placed some place that they would be unable to utilize it and they would have to make revised procedures of some kind, which we would then have to resist.

ASSEMBLYMAN VREELAND: Then it would normally follow, I presume, that as more aircraft was added into the area it naturally would go up and the delays would increase proportionately. Is that what you are saying?

CAPT. FLOURNOY: That's the way we look at it.

ASSEMBLYMAN OLSEN: There is something you just said there brought a question in my mind when you referred to the radar situation and the stacking of planes. Supposing in clear weather, or weather conditions permitting, you used visual means rather than instrument, would you be able to increase the frequency of landing and takeoff operation?

CAPT. FLURNOY: No, sir. We don't feel that the visual concept can be used any further in any way, shape or fashion even around an airport where they ask you, "Do you see the airplane ahead of you? Follow that airplane in to land." We don't like that concept. We like to have positive instrument control for all operations from takeoff to landing.

ASSEMBLYMAN OLSEN: Then basically it is your position that it would not be able to increase the frequency.

CAPT. FLOURNOY: That's right. In fact, the Boeing man this morning and Mr. Pinkel both distressed me somewhat

by indicating they are taking away one of our best ways to see the other airplanes now with the removal of the smoke. We see the smoke generally before we see the airplane.

SENATOR STOUT: Well, the position of your Association is if a proposed new airport and the site meet all the standards of the FAA and the air lines, you would go along with it?

CAPT. FLOURNOY: Well, we would, sir, up to the point - where I make reference to the Dulles Airport again. It was a beautiful airport arbitrarily placed which we by-passed on a daily basis and saw it lying there unused - we certainly would be distressed to see New Jersey build another beautiful airport such as this and have the air lines or the FAA refuse to cooperate and integrate it into the system, as many air lines have refused to integrate Dulles in for reasons they say are uneconomical. We would certainly not favor an airport that was going to be built any place that the air lines were not going to use.

SENATOR STOUT: And you live in Somerset County.

CAPT. FLOURNOY: Yes, sir.

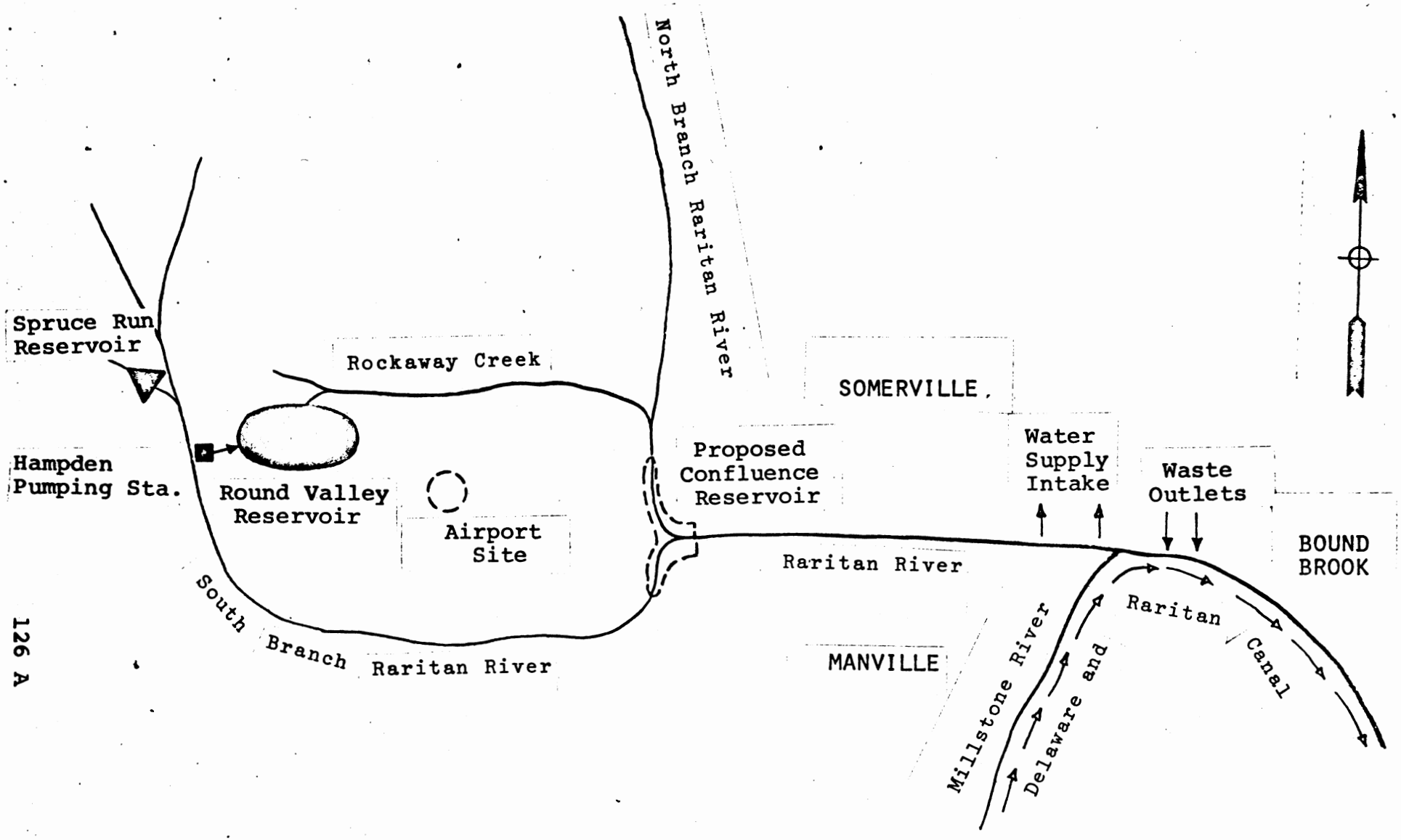
SENATOR STOUT: Are there any further questions?

If not, thank you very much, Captain. Thank you for your patience and for submitting your statement.

I think that ends the hearing for today. We will announce the next hearing. It will probably be in two weeks.

Thank you all for your patience, and I want to thank the Committee members for being so faithful in their attendance.

[Hearing Adjourned]



SCHEMATIC PLAN OF UPPER RARITAN RIVER SYSTEM

THE PORT OF NEW YORK AUTHORITY
111 Eighth Avenue - at 15th Street, New York, N.Y. 10011

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Office of the Chairman Telephone 620-7271

October 4, 1968

Hon. Richard J. Hughes
Governor
State House
Trenton, New Jersey

My dear Governor:

In accordance with your request, The Port of New York Authority has reviewed the consultants' reports prepared for the Economic Evaluation Committee and transmitted to you on September 10 to determine whether they cast any new light on the feasibility of sites in the McGuire Air Force Base vicinity for a new major airport to serve the New Jersey-New York Metropolitan area.

Your Excellency will recall that sites in the McGuire vicinity were exhaustively analyzed and, as a result, were rejected in the Port Authority reports of 1959, 1961, 1963 and 1966 and in the Federal Aviation Agency studies of 1961 and 1963. Those reports analyzed McGuire Air Force Base itself and a number of other sites in the Burlington-Ocean County area, and concluded, in each case, that the site "does not meet the airspace requirements necessary for an independent commercial IFR operation which is essential for a new major airport." The sites other than McGuire itself were found to have the additional disadvantage of "requiring the elimination of McGuire Air Force Base to serve even as a limited capacity airport."

Since that time, the Department of Defense has repeatedly stated that the McGuire Base "will be continued to be required by the Department of Defense for the foreseeable future." This position, which was reiterated by the Department of Defense as recently as September 3, 1968, precludes further consideration of McGuire Air Force Base itself as a site for a commercial airport. It also means that no other site in the vicinity can be considered because, as pointed out previously, such use would impose the most severe limitations on McGuire. Even if such were not the case, a site in the vicinity of McGuire cannot be considered for several other compelling reasons.

From the standpoint of accessibility, our past studies have found that each site in the vicinity of McGuire "is remote from the region's traffic generating centers and would result in a critical reduction in use by the region's potential air passengers." The negative conclusions with

regard to airspace and accessibility led inevitably to the conclusion that each of these sites could not meet the all-important test of economic feasibility. It is obvious that any site which cannot accommodate the expected volume of air traffic and which cannot generate sufficient passenger volume can never justify the investment of hundreds of millions of dollars of public funds.

The consultants' reports submitted to you on September 10 recommend such an expenditure for construction of a major airport in the McGuire-Lakehurst area. We have therefore reviewed those reports from the standpoint of the three essential criteria which must apply to any viable airport site, namely, accessibility to the region's population centers, availability of adequate airspace, and economic feasibility.

As a result of this review, and as explained in detail in subsequent pages of this letter, we find:

- the consultants have offered no valid reason for changing previous conclusions that an airport in the McGuire vicinity would be remote from the traffic generating centers and would result in a critical reduction in use by the region's potential air passengers.

- the McGuire area is a poor location from the standpoint of airspace, and any airport located there would be severely limited in capacity. The consultants' reports contain no effective solution for this critical problem.

- the proposed airport in the McGuire area would not be economically feasible because it would be a tremendously expensive facility which people would not use and airlines could not use.

In addition, our review of the consultants' reports indicated major errors in their descriptions of aviation technology and in their conclusions concerning airport land requirements. In the following paragraphs we will review these fallacious assumptions which virtually dictated their proposed location for the airport.

AIRPORT LAND REQUIREMENTS

In Port Authority reports of 1961 and 1966, we pointed out a new major airport would require a maximum runway length of 12,000 feet, a total of four runways, and a land area of about 10,000 acres, about half of which was included to provide sufficient noise buffer zones. The consultants' reports before you now, on the other hand, contemplate an airport which would have runways up to 17,000 feet long, 10 runways instead of four, and 22,000 acres of land. In addition, the consultants suggested that the airport would affect, and therefore require "some kind of land-use control" over an additional area of 170,000 acres.

In effect, therefore, the reports are proposing that an area equivalent to all of Hudson and Passaic Counties combined be taken from existing political jurisdictions and controlled for airport purposes. There is absolutely no basis in logic or aviation technology for such a fantastic proposal. The consultants do not explain how the figure of 170,000 acres was arrived at, nor do they show its configuration.

The facts with respect to runway length requirements, optimum airport layout and total land area requirements are as follows:

Runway length. The consultants' assertion of a need for 17,000-foot runways is not supported by any information on the runway requirements of future aircraft. They jump from figures on the size and weight of such aircraft to the flat statement that the airport must provide runways "long enough, approximately 17,000 feet, to provide at least a 25% reserve over design take-off and landing requirements." (Page VI-7).

This ignores the fact that the aviation industry has recognized the fact that it has reached the end of the road as far as runway requirements are concerned because most major airports in the world cannot possibly provide longer runways.

Therefore, the Boeing 747 (the so-called "Jumbo Jet") and the Supersonic Transport have as one of their basic design criteria the ability to use existing runways at existing airports. In the latter case, the take-off requirement is even less critical than that of subsonic aircraft since the thrust needed by supersonic aircraft to pass through the transonic range is even greater than that required for take-off, with the result that the SST will have an excess of thrust which can be utilized to reduce take-off distances. Even the Lockheed C5A, the largest aircraft in the world, weighing three quarters of a million pounds and now undergoing its first flight tests, will be able to operate fully loaded from runways 7,500 feet long. The commercial version would require less than 10,000 feet.

According to FAA standards, the most demanding commercial aircraft in use today would require a runway length of no more than 12,000 feet for operation at the altitude and weather conditions which would exist at an airport in the McGuire area. These FAA standards include a wide safety margin above the length actually required for normal take-offs and landings. At Kennedy Airport, for example, there is only one runway longer than 12,000 feet. It was extended to 14,600 feet to enable planes to start their take-offs further from communities near the end of the runway and thus fly higher over those communities. Any airport with adequate noise buffer zones such as those contemplated for any new major airport would not require runways longer than 12,000 feet.

The same length will most certainly be adequate for all future commercial aircraft because if they were to require longer runways, they would be able to serve so few airports in the world that they would be economically impossible for airlines to buy or for manufacturers to produce.

Number of runways. Although it might seem to the layman at first thought that an airport with more runways can accommodate more aircraft movements, this is not always the case. Kennedy International Airport was originally designed as a 12-runway airport in the early 1940's. This concept was abandoned more than 15 years ago because it was determined that the airport could operate more efficiently with four runways arranged in a dual parallel system. The question of whether a third set of runways at that airport could actually provide significant additional capacity is so complicated as to require a year-long simulation study by the FAA, which is now under way.

A new airport to be constructed in the McGuire area, for reasons pointed out in our discussion of accessibility, would not have enough traffic to justify a four-runway airport, let alone one with ten runways.

And even if the need were established, it would have to be shown that the airspace in the area could safely handle the planes going to and from three parallel runways -- let alone six parallel runways as proposed by the consultants. As will be indicated in the discussion of airspace below, the area is not considered suitable for even a four-runway airport in conjunction with the continued operation of McGuire Air Force Base. Ten additional runways in the area would be unthinkable.

Total land area. The consultants justified the 22,000-acre figure they used for the area required for full airport use on the basis of their inflated ideas regarding number and length of runways.

The only justification presented for their 170,000-acre figure for the area to be adversely "affected" are general statements that:

> "Some kind of land-use control must be exercised over sizable areas that will lay under the approach and departure patterns serving all runways. . . . Exhibit VI-3 identifies the typical patterns that must be considered. The noise impact area extends in decreasing levels more than 15 miles along the departure paths, and to some degree the air pollution patterns generated by the aircraft parallel the paths of the most intrusive noise, which extends about 18 miles out." (Page VI-9)

The exhibit referred to has a separate page for each site, consisting of a map labeled "Existing Transportation Facilities New Jersey and Environs." The maps shown no transportation facilities but do show each site as a shaded rectangular area surrounded by three additional rectangles labeled "5 miles," "10 miles," and "15 miles." These areas seem to have no relation to the "170,000 acres" referred to, but, when taken in conjunction with the text, the maps seem to imply that the largest rectangle shown depicts the "areas that will lay under the approach and departure patterns serving all runways."

The map for "McGuire-Lakehurst I," the site the consultants called "ideal," shows this area extending from Lakewood to Moorestown and from the Atlantic Ocean to west of the Delaware River so that it includes virtually all of Burlington and Ocean Counties, parts of Middlesex and Mercer, and a small part of Bucks County, Pennsylvania.

Land-use control over the areas around an airport is generally recognized as a desirable measure, but there would be no justification for extending it to such extremes. It is ridiculous to claim that even a 10-runway airport in the McGuire vicinity could have any substantial adverse effect on such a large area, and no proof is presented to support this statement.

The traffic patterns in the reports are shown only schematically rather than on a map of the area (Exhibit VI-9), and it is therefore impossible to assess their impact on surrounding areas -- even if one were willing to grant the necessity or practicability of setting up patterns for simultaneous operations on six parallel runways at one airport.

In this connection, it should be noted that we now have assurance that the noise levels of future aircraft will be no greater than those of aircraft now in use and may very well be less. Legislation passed by Congress this summer directs the FAA to set noise standards for aircraft. This landmark legislation, which the Port Authority strongly supported, is a major step forward in the area of aircraft noise reduction. For the first time, the Federal Aviation Administrator is specifically empowered to certify new aircraft on the basis of noise, as well as to require the retrofitting of existing aircraft to reduce noise. In addition, it confirms the FAA's right to prescribe operational techniques for noise reduction.

The Federal Aviation Administration is moving to implement this bill and will take the first step this fall with a notice of proposed rule-making that will set noise standards for new jet aircraft seeking certification. The objective will be to reduce airplane noise by 10 "perceived noise decibels" (PNdb). This would be the equivalent of cutting the present airplane noise in half.

Thus there is no reason to believe that future aircraft, because they may be larger, will impose greater noise problems and increase the land area requirements for buffer zones.

The matter of airport size is important and basic because so many of the conclusions in the consultants' reports (including all of those with respect to the suitability of the Northern New Jersey sites discussed) were reached by starting with the completely unwarranted assumption that an airport must have 22,000 acres and control another 170,000 acres.

ACCESSIBILITY

An analysis of the suitability of the McGuire area for a new major airport must be appraised from the standpoints of accessibility, airspace and financial feasibility. Although the reports mention four specific sites in the McGuire area, they are so close to one another that the same considerations would apply. We will therefore confine our analysis to the "McGuire-Lakehurst I" site, which the consultants call "ideal."

The accessibility of the McGuire site to the traffic-generating areas of Northern New Jersey and New York, involves a location which is:

- due east of northern Philadelphia
- a lot closer in travel time to Philadelphia than it is to Newark or to the heavily populated areas of Bergen, Essex, Hudson, Passaic and Union Counties.
- about as close to Wilmington, Delaware, as to New York City.

Even after highway improvements programmed for 1980 are completed, a McGuire airport would be further away, in point of time, than Kennedy Airport from the most heavily populated areas of New Jersey. Carteret, Linden, Cranford, Springfield, Madison and Morristown and all points north of them would still be closer to Kennedy Airport than to the new airport supposedly built to serve them. This would apply to all of Bergen, Essex, Hudson and Passaic Counties as well as large parts of Morris, Sussex and Union Counties. People in these areas now consider Kennedy Airport to be too far away. But McGuire would be even further.

This lack of accessibility to the New Jersey-New York Metropolitan area is critical despite the consultants' claim that an airport in the McGuire area would serve a four-state market stretching from Wilmington, Delaware, to New Haven, Connecticut. By their own admission, 73 to 88 per cent of the traffic would be passengers who would normally use the existing airports in the Northern New Jersey-New York Metropolitan area.

Access by highway. Estimates of travel times between the McGuire site and various localities within the region were made as a part of the Port Authority's 1961 airport requirements and sites study. They were based upon the then-existing Master Plan of highways for New Jersey, including both existing and programmed highway facilities. In that study, travel time by highway between McGuire and Newark, for example, was estimated to be one hour and 35 minutes. The time to New York City was estimated at more than one hour and 40 minutes.

There have been a number of changes in the State's highway plans since 1961, but estimates of travel times to McGuire based on the State's current plans result in travel time estimates about the same as the 1961 estimates.

The consultants' reports, on the other hand, claim that it would be possible to reach the site by highway from Manhattan in 76 minutes. In order to accomplish this, one would have to travel over a new highway system, much of which is not a part of the State's 1968 Master Plan, at average speeds that would be excessive, given the prevailing traffic conditions that would be likely to arise.

Travel times by highway must be based upon realistic considerations, taking into account time of day in which the travel takes place, lower average speeds through urban areas, time delays involved in moving through interchanges and toll plazas, the influence of commercial vehicles on the traffic stream, etc. These factors are of considerable significance and must be reflected in calculations of average speed, which in turn determines travel time.

The consultants state that the travel times they give are based with few exceptions "on present and projected routes and speeds generally 5 miles below the speed limits." This is over-optimistic for most times of the day. For example, the speed limit on Route 22 in built-up areas is 50, but anyone who uses the route knows how difficult it is to average 45. Our estimates assumed an average speed of 30 along that highway.

As far as travel to the Northern New Jersey-New York Metropolitan Region is concerned, the most important new highway proposal in the consultants' reports would be a new 15-mile extension of the New Jersey Turnpike from Hightstown to the vicinity of the site. This, it is claimed, would reduce the highway distance between Manhattan and the McGuire site from about 75 to 65 miles. On the basis of realistic average speeds, this reduced mileage would result in a travel time for autos, taxis and similar vehicles of about 90 minutes to Manhattan, as against the consultants' estimate of 76 minutes. Such important Northern New Jersey air travel generators as Newark and Morristown are 56 and 64 miles respectively from the airport site, involving travel times of 79 and 88 minutes.

If we apply the same realistic travel time criteria to all other traffic-generating centers, we find that less than 15 per cent of the people living within the 23 counties comprising the New Jersey-New York Metropolitan Region would be within 60 minutes' travel time of the McGuire site. A labyrinth of extremely costly new roads not even provided for in the State's existing master plans would be necessary to achieve even this unacceptable condition.

Access by Rail. The proposals of the consultants for rail facilities to the site are so unrealistic as to completely negate the conclusions that the airport could be well served by high-speed rail. The report proposes direct rail service from Manhattan to the site, via the Penn-Central Mainline to Trenton and various branch lines to the airport. In 1961, prior to the development of plans for high-speed rail service in the Northeast Corridor, rail travel time between Penn Station, New York and the McGuire site was estimated to be 110 minutes along an 85-mile route, an identical route to that presently proposed. Even with high-speed rail service on the Penn-Central, running time for the 58-mile trip between Manhattan and Trenton would be approximately 52 minutes, representing an average speed of 67 miles per hour. If it is assumed that the rail link from Trenton to the McGuire site, a distance of 27 miles, is upgraded and rebuilt to the same standards, which would be required for this type of high-speed rail service, the total travel time by high-speed rail from New York would be approximately 78 minutes. The consultants concluded that travel time by rail would involve 47 minutes, representing an average speed of 110 miles per hour. This is manifestly impossible, except at a prohibitive cost.

In 1964, Louis T. Klauder, a well-know rail consultant, reported to the U. S. Department of Commerce that it would cost $700 million, or approximately $3.1 million per mile, to rehabilitate the Penn-Central Railroad between New York and Washington in order to accommodate the top speed of 150 miles per hour necessary to achieve an average speed of 115. The famed Tokaido Line in Japan, opened in 1964, requires a top speed of 155 miles per hour in order to average 107. That facility in Japan, with its far lesser unit costs of construction, involved an expenditure of $1 billion for 320 miles of track, or approximately $3.3 million per mile. If rail services capable of Tokaido line speeds were to be developed between Manhattan and a McGuire site, a capital investment of $200-300 million more than that contemplated in the Northeast Corridor program would probably be required. The consultants also propose a rail distribution system to and from the McGuire site which would also include subsequent construction of some 250 miles of rail connections to Port Newark, Staten Island, Atlantic City, Phillipsburg and other places, an estimated 25 miles of loops at the proposed site, and connections at Wilmington, Philadelphia International and Newark Airports. No further comment is necessary concerning these proposed elaborate rail systems and connections except that airport passenger volumes would come nowhere near the magnitude necessary to justify the capital expenditure required for such airport rail system and millions of dollars of operating subsidies would be required to support such a rail access system to an airport in the McGuire vicinity.

It must, therefore, be concluded that the consultants have offered no valid reason for changing our previous conclusions that an airport in the McGuire vicinity would be remote from the region's traffic generating centers and would result in a critical reduction in use by the region's potential air passengers.

This conclusion is further supported by the similar conclusion of the airlines, as expressed in the letter dated October 2, 1968 to Your Excellency from Mr. George Keck of United Air Lines, speaking on behalf of all major airlines serving the New Jersey-New York Metropolitan Region. As you will recall, Mr. Keck stated that:

> "We feel it is our duty at this time, however, to record our strong opposition to the McGuire-Lakehurst sites or an area slightly north thereof proposed by the Economic Evaluation Committee. We respect the civic motives of the committee in proposing the McGuire site. Nevertheless, we must state that a new airport at or near the McGuire site would not serve the air passengers of the northern New Jersey region nor of the New York portion of the metropolitan area, and for that reason we cannot support it."

AIRSPACE

As indicated above, all our previous studies of sites in the McGuire area have concluded that such sites would be severely limited from an airspace standpoint because of the existence of McGuire Air Force Base and its flight patterns and because of conflict with the heavily traveled Northeastern Corridor (Washington-New York-Boston) airways directly overhead. The question before us now is whether the consultants' reports offer any new ideas or cast any new light on this problem to justify a change in the previous conclusions.

The general discussion of this problem in the basic report of the consultants consists of a two-page section entitled "Possible Systems Developments in Air Traffic Control." (Section VIII) This consists of a short description of the existing air traffic control system, as an introduction to the following suggestions:

> "The basic problem is essentially to develop an automatic and more precise use of air space, which will permit a tripling of peak hour traffic into the major terminal areas, and the incorporation of more terminals into the system.
>
> "More traffic moving under control through the region requires a much more efficient use of airspace, with the space allotted to each aircraft materially reduced, and major increases in air space incorporated into the system.
>
> "This can be achieved by reorganization and closing up of the air tracks, and by putting the vast areas of air space off shore to use.
>
> "These off shore areas can serve both oceanic and domestic flights as inbound and outbound organization areas serving Long Island and New Jersey terminals.
>
> "It is believed that the avigation and air traffic control equipment in operation or test today will provide the system components needed to implement a new high density air traffic control system."

When analyzed, this is not a new suggestion. The FAA is certainly aware of the fact that more air traffic could be handled in any area if airways could be moved closer together -- but their spacing is dictated by safety considerations and the consultants do not explain how the spacing could be reduced safely. The suggestion for use of off-shore areas has also been considered innumerable times before and found to be unfeasible because of the difficulty of placing navigational aids and because vast portions of those off-shore areas are closed to commercial traffic for reasons of national defense.

It is nice to suggest "improvements" that everyone concerned with air traffic control has been striving to attain for years -- but the suggestion is useless if it is a mere declaration of desirability with no details on how the improvements are to be accomplished. In today's congestion crisis at the country's major airports, the FAA would certainly put more planes into the available air space if it could do so safely. Instead, the FAA proposes to limit flights in and out of the major airports in peak hours.

If it were possible, as the consultants assert, to triple peak hour capacity in the New York-New Jersey terminal area and to incorporate more air terminals in the system, a fourth major airport would not be needed for years. And if and when it were needed, it would be possible to build it in easily accessible locations such as the Lower Bay or Matawan. Similarly, if the consultants' assertions regarding air space and air traffic control were valid, Chicago, Los Angeles, San Francisco, Boston, and London would not be having problems finding suitable sites for the additional airports they so desperately need.

As mentioned above, the air traffic patterns which the consultants propose are shown only in a diagram without reference points and there are no maps which would show their relationship to communities or to other air traffic. There are no separate maps for each site, but the patterns are discussed in the text analysis of each site.

The discussion for their preferred site, McGuire-Lakehurst I, inferentially recognizes the problem of conflict with other airways by suggesting that all of the approach and departure patterns be kept at low altitudes -- without saying how low for most of the directions. The extent of the problem is indicated, however, by the one pattern for which an altitude is specified. It is suggested that "the track pattern for the rare easterly landings or westerly take-offs would extend as far as the Delaware River. Traffic in this area would be at low altitudes (1,000 to 3,000 feet)." (Page VI-41)

The site is 18 to 22 miles from the Delaware River, and it is absurdly impracticable from the standpoints of noise and efficiency to suggest that large jet aircraft be kept at altitudes of 1,000 to 3,000 feet for such a long distance.

The consultants' statement that movements in this direction would be "rare," is also questionable. At Kennedy and LaGuardia Airports, for example, 60 to 67 per cent of the air carrier movements are to and from the southwest, west or northwest, and it can be assumed that any new airport serving the same travel markets would have a similar pattern.

Most of the other patterns suggested are too vaguely delineated to permit a meaningful analysis of their safety, practicability or compatibility with other air patterns.

It is concluded, therefore, that the McGuire area is a poor location, from the standpoint of airspace, and that any airport located there would be severely limited in capacity. The consultants' reports contain no effective solution for this critical problem.

ECONOMIC FEASIBILITY

Having determined that the proposed airport in the McGuire area would be too inaccessible to serve the New Jersey-New York Metropolitan Area and that it would be impracticable from an airspace standpoint, it becomes almost academic to discuss whether such an airport would be economically feasible.

Even if we were to ignore these facts, however, it can be demonstrated that the proposal is not economically possible. The consultants suggest the airport would cost about $660 million "excluding cargo terminals and exclusive airline and other corporate structures." This figure also fails to include the ground transportation facilities, such as roads and rail lines, which the State does not plan to build and which would be required only to serve the airport. These costs should be considered as part of the airport costs and would probably raise the construction costs to well over a billion dollars.

Such costs would be greater than those which we found would be necessary when we studied the Bearfort and Bowling Green sites in 1964. It will be recalled that the Port Authority found then that an airport which would cost about $820 million would require "a lump sum capital subsidy of $300 to $400 million, or annual operating subsidy of comparable proportions." The proposed McGuire airport would not only be far more costly, but would generate less traffic to provide necessary revenues.

It is useless to try to quantify the deficits which would be involved. The proposed McGuire airport would be the most expensive airport which has ever been built - more than double the cost of Kennedy. And it is obvious that an expensive airport which people would not use and scheduled airlines could not use cannot conceivably be economically feasible.

In summary, after a thorough review of the consultants' reports to the Governor's Economic Evaluation Committee, we must conclude that the reports' findings offer no solution to the critical problems facing the State of New Jersey as a consequence of the inability to provide adequate air transportation facilities to the people of New Jersey and to the entire New Jersey-New York metropolitan area.

The Port Authority agrees with the Committee that "the ever-worsening crisis in air transportation is a painful reminder about the need for a solution to one of the most challenging problems of our times." The Port Authority also agrees that "each day the economy of the whole region faces a greater threat of strangulation" and "each day reasonable men realize more fully that something must be done now." However, it would be of no benefit to the people of New Jersey and indeed would be an inexcusable waste of public funds to attempt to create an airport where it would not work and could not meet the problem.

Respectfully submitted,

James C. Kellogg III

James C. Kellogg III
Chairman

AIR POLLUTION BY JET AIRCRAFT

I. Irving Pinkel
Director, Aerospace Safety Research and Data Institute

The role of jet aircraft in air pollution can be appreciated best by a brief review of the total air pollution problem. This discussion describes the principal sources of city air pollution and compares the pollution contribution provided by jet engine exhaust.

City Air Pollution - What Is It?

In most cities air pollutants are derived from the following principal sources:

I. Combustion of fuels
   - A. Petroleum products in cars, trucks, factories, home heating systems.
   - B. Coal in house and factory heating systems.
   - C. Natural gas in house and factory heating systems.

II. Chemical processing
   - A. Petroleum refining, shipping and storage.
   - B. Solvents and paints.
   - C. Metallurgy.

Humans, in common with all animals, can tolerate some pollutants without injury to health. Most pollutants become a nuisance before they reach concentrations which threaten health. These nuisance factors are odor, eye irritation, and reduced visibility (haze).

The principal pollutants in cities have been identified and measured. This information is summarized in Table I. The data of this chart (rows I and II)

show that all the nuisance factors are raised by the organic and inorganic pollutants, which are derived mostly from the combustion of fuels and the use of chemical solvents. The inorganic gases present the greatest health hazard (column 7). The famous killer smogs of Donora, Pennsylvania and London, England were made lethal by the high concentrations of sulphur dioxide (SO_2) and sulphur trioxide (SO_3) from industrial smokes. Carbon monoxide is the well-known poison in automobile exhausts. Eighty percent (80%) of the carbon monoxide (CO) in city air comes from automobiles.

Many of the nuisance pollutants are formed in the atmosphere after the primary pollutants, such as the hydrocarbons and nitric oxide, are released. Sunlight stimulates further reaction between the primary pollutants with each other and with the oxygen of the air to form compounds which are more objectionable than the primary pollutants. Primary pollutants which undergo such "photochemical" reactions are indicated by an asterisk in Table I.

Aerosols, rows III and IV of Table I, are particles of liquids or solids which produce haze that reduces visibility. These pollutants are often visible as smokes and clouds from chimneys or engine exhausts. Many are produced by invisible gas pollutants which absorb moisture from the atmosphere to form misty clouds of fine droplets. Also, clouds of small solid particles are formed by the condensation of metal vapors expelled from metallurgical process plants.

Pollution from Airplane Engines - How Bad Is It?

In order to place the pollution attributable to airplane operation in proper prospective it is necessary to compare it with other pollution which

is part of our common experience. Pollution from automotive equipment which burn petroleum derived fuels (hydrocarbons) in common with aircraft engines is a suitable comparison base. It is instructive to review the origin of pollutants from automotive engines, principally gasoline, by reference to an engine schematic shown in Figure 1.

Because the gasoline engine ingests more fuel than can be burned by the air in the cylinder, combustion of the gasoline is incomplete. This accounts for the formation of carbon monoxide and the oxidized hydrocarbon molecules ($C_r H_s O_t$) which are highly objectionable. The sulphur in the gasoline is oxidized to sulphur dioxide, some of which converts to sulphur trioxide upon contact with the air after leaving the exhaust pipe. Nitrogen in the engine cylinder air combines with oxygen to form nitric oxide (NO) at the elevated temperatures accompanying fuel combustion. Further oxidation of NO to NO_2 (nitrogen dioxide) takes place in the atmosphere after leaving the exhaust pipe. Nitrogen dioxide is a highly toxic brown gas which produces the redish-brown haze visible around large cities on calm days. With the exception of water vapor and carbon dioxide all of the effluent from gasoline engines is poisonous. Lead in high octane gasoline is particularly objectionable. Fortunately, at the present time, these appear in our city atmospheres in tolerable concentrations for health, but sometimes above the nuisance tolerance threshold.

About 17% of the objectionable automobile hydrocarbon vapors evaporate from fuel in the tank and carburetor, and warm oil in the crankcase. Automobiles do not have to be in operation to pollute the atmosphere.

In the city of Los Angeles 3-1/2 million autos produce 1930 tons of pollutants per day. An additional 300 tons of pollutants of related types are provided by industrial solvents and drying paints, for a total of 2230 tons of pollutants per day. These pollutants are produced at ground level where people reside.

The total pollutants in the city of Los Angeles, taken here for example only, are considerably greater. However, the value of 2230 tons of pollutants will be used to compare with aircraft engine pollutants.

Pollution from Jet Aircraft

The pollution provided by jet aircraft in flight from an altitude of 2500 feet to landing, and from take-off to 2500 feet altitude is given in Table II. This table shows that a large four-engine jet airplane produces about 70 pounds of pollutants for the combined landing and take-off. This pollution is distributed through the 2500 foot altitude range. Only 20 percent of these pollutants would be found at ground level (below 250 feet). Each combined landing and take-off would provide 14 pounds of pollutants (0.2 x 70) below 250 feet (the height of a 20-story building). If one assumes 500 large jet transport (four engines) landings per day, the total contamination from this source is 7000 pounds or 2.5 tons. This amounts to one-tenth of one percent (0.1%) of the 2230 tons of pollution provided by automobiles, solvents and paints.

Since jet engine fuels contain no lead compounds and only negligible amounts of sulphur jet engine exhausts do not have the highly objectionable pollutants formed from these elements. For this reason, they do not appear in Table II which lists the principal jet engine pollutants. Notice, also, that

only a small quantity of carbon monoxide (CO) is exhausted from jet engines.

A minor constituent, carbon, of jet engine exhaust is largely harmless, but aesthetically unpleasant. It is listed in Table II as particulate matter. This carbon appears as a dark trail behind the jet airplane. It is formed in the combustor of the jet engine in the zone adjacent to the dome where fuel is injected (Figure 2). This zone operates fuel-enriched for easy relighting at very high altitude in case the flame should blow out. New combustors will operate with less enrichment. Carbon smoke trails should be eliminated in new jet engines. Conversion of the present jet engines with new combustors under development will produce a marked reduction in these smoke trails.

Very little of the carbon in the jet engine exhaust reaches the ground near the airport. The carbon particles are extremely fine and are suspended for a very long time in the air. Normal motion of our atmosphere carries these particles far away. Air turbulence mixes additional air into the carbon particle trail to dilute it very rapidly to inconsequential concentrations.

All of the evidence gathered from many city pollution studies conclude that air pollution by jet aircraft is inconsequential, particularly when it is compared with pollution from other sources. Further, aircraft engine exhaust is diluted very rapidly in the atmosphere and appears at ground level in negligible concentrations. The highly objectionable lead compounds in automobile exhausts are not produced by jet engines since jet fuel contains no lead. The aesthetically objectionable smoke trails behind jet aircraft will disappear in the next several years with the introduction of modified engine combustors.

Table 1. AIR CONTAMINANTS IN LOS ANGELES COUNTY, THEIR PRINCIPAL SOURCES AND SIGNIFICANCE (JANUARY 1964)

Emitted contaminant	Principal sources	Significant effects					
		Plant damage	Eye irritation	Oxidant formation	Visibility reduction	Danger to health	Other
Organic gases							
Hydrocarbons							
Paraffins	Processing and transfer of petroleum products; use of solvents; motor vehicles		X	X	X		
Olefins	Processing and transfer of gasoline; motor vehicles	X	X	X	X		
Aromatics	Same as for paraffins	X (Atypical)	X	X	X		Odors
Others							
Oxygenated hydrocarbons (Aldehydes, ketones, alcohols, acids)	Use of solvents; motor vehicles		X	X	X		
Halogenated hydrocarbons (Carbon tetrachloride, perchloroethylene, etc)	Use of solvents		X	X	X		Odors
Inorganic gases							
Oxides of nitrogen (Nitric oxide, nitrogen dioxide)	Combustion of fuels; motor vehicles	X	X	X	X	X	
Oxides of sulfur (Sulfur dioxide, sulfur trioxide)	Combustion of fuels; chemical industry	X (Specific type)	X		X	X	
Carbon monoxide	Motor vehicles; petroleum refining; metals industry; piston-driven aircraft					X (Occasionally)	
Aerosols							
Solid particles							
Carbon or soot particles	Combustion of fuels; motor vehicles				X	X (Under special circumstances)	
Metal oxides and salts	Catalyst dusts from refineries; motor vehicle exhaust; combustion of fuel oil; metals industry				X		
Silicates and mineral dusts	Minerals industry; construction				X		
Metallic fumes	Metals industry				X		
Liquid particles							
Acid droplets	Combustion of fuels; plating; battery manufacture				X		
Oily or tarry droplets*	Motor vehicles; asphalt paving and roofing; asphalt saturators; petroleum refining				X		
Paints and surface coatings	Various industries						Property damage

* Many of these contaminants undergo chemical reactions after they are released to the atmosphere. Sunlight stimulates these reactions; hence, they are called "photochemical" reactions.

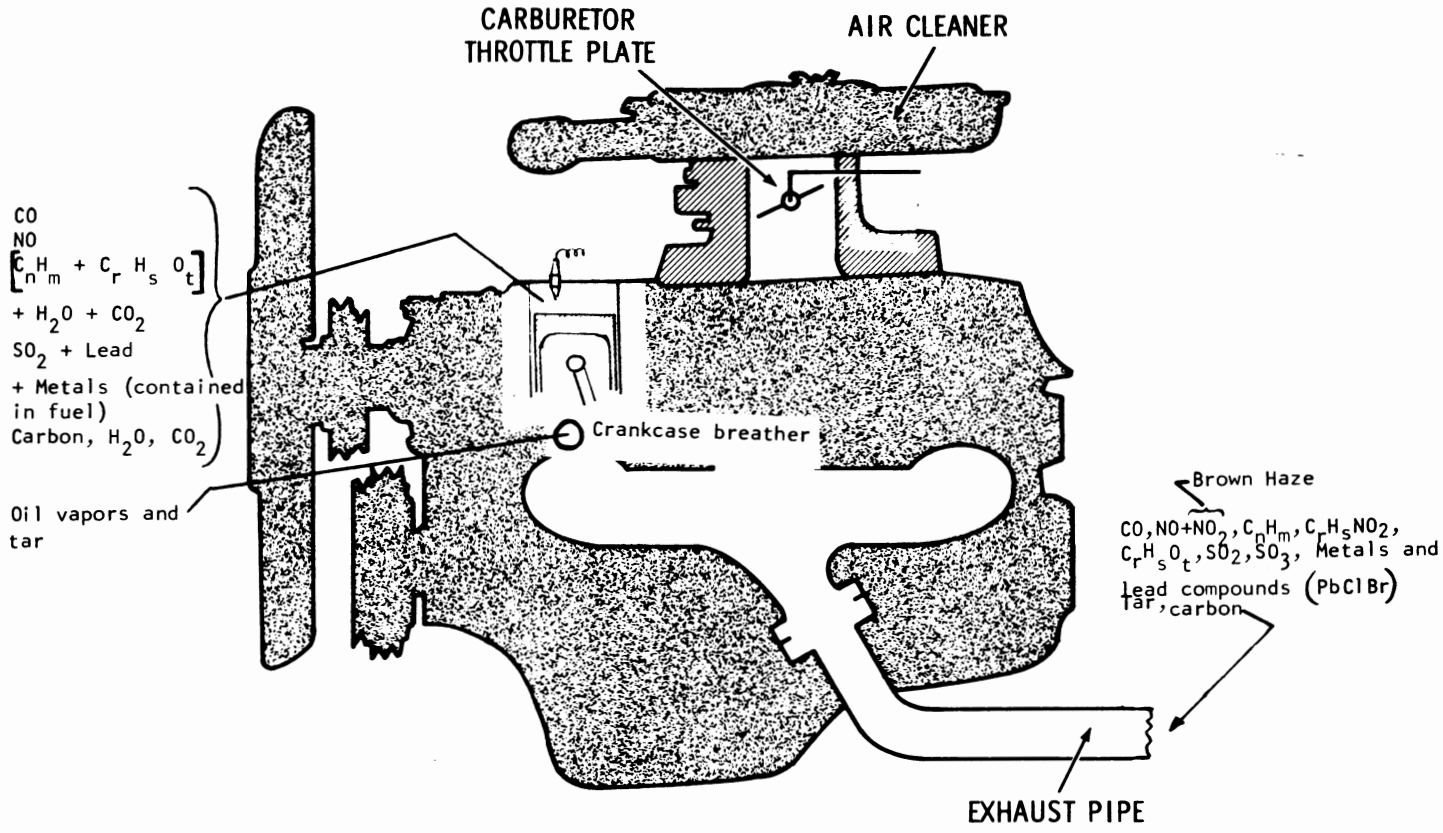
Journal of the Air Pollution Control, June 1968, p. 394

Table II Estimated Pollution Emissions from Jet Aircraft Operations

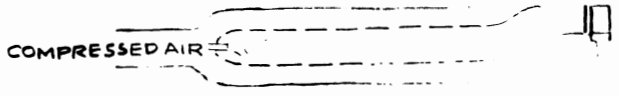
	Pollutant[a] (lb)				
	CO	Nitrogen oxides (as NO_2)	Hydrocarbons (as CH_4)	Aldehydes (as HCHO)	Particulates
Departure					
Turboprop, T-56	2.4	1.9	1.0	0.14	
Conventional jet, J-57[b]	8.4	9.9	3.0	0.19	
Fan-jet, TF-33	8.0	5.2	12.0	1.00	3.4
Arrival					
Turboprop, T-56	3.5	2.2	1.2	0.13	
Conventional jet, J-57	15.2	10.7	3.8	0.25	
Fan-jet, TF-33	12.6	4.0	17.0	1.20	4.0

[a] For four-engine aircraft; for three-engine aircraft, multiply these data by 0.75; and for two-engine aircraft multiply these data by 0.5.

[b] No water injection during take-off.



Exhaust Recirculation System for Nitric Oxide Emission Control



JET ENGINE COMBUSTOR

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PASSAIC VALLEY CITIZENS PLANNING ASSOCIATION

Statement of

Jetport Study Committee

March 18, 1969

The Jetport Study Committee of the Passaic Valley Citizens Planning Association has reviewed, in detail, "A Future System of Airports for New Jersey" prepared for the Governor's Economic Evaluation Committee for an Intercontinental Jetport for New Jersey by Albert E. Blomquist. This report was dated July 1968.

The Study Committee has met with Mr. Blomquist, consultant to the Governor's Economic Evaluation Committee, and with others having an interest in the location, construction and operation of a fourth Jetport to serve the New York-New Jersey Metropolitan area. The committee has reviewed correspondence pertinent to the proposed Jetport, the applicable legislation introduced in Trenton and other documents that have a bearing on our conclusions.

As a result of this concerted effort over the last few months, the Jetport Study Committee will prepare a report to the PVCPA Board of Directors and this report will contain the following conclusions:

1. A fourth Jetport to serve the New York-New Jersey Metropolitan Area is desperately needed and plans for land acquisition and the implementation of construction should be commenced immediately.
2. The jet airport should be located in the State of New Jersey since comparable land of size, accessibility and site preparation cost is not available elsewhere within the region that the airport would serve.

3. The concept of an international jetport for New Jersey as proposed by Mr. Blomquist in his July 1968 report to the Governor's Economic Evaluation Committee is accepted in principle, subject to the stipulations as noted below.

4. The Study Committee is in agreement that the maximum amount of land should be acquired for both present and future needs. If it is conceivable that 22,000 acres may ultimately be utilized, this acreage should be obtained immediately. The Committee strongly supports the concept of developing an area of controlled land use surrounding the Jetport.

5. Senate No. 377, an Act to create an Airport Authority, is endorsed in principle.

6. The acceptance by the Study Committee of the Blomquist report is contingent on the following:

   a) A detailed economic survey should be conducted by the proposed Authority resulting in an evaluation of a financial feasibility for constructing the Jetport at a location to be determined by the Authority. This economic evaluation should concern the manner of financing during the period of land acquisition and airport construction (prior to the receipt of revenues) and the financing during operation of the Jetport considering realistic revenue projections.

   b) A detailed engineering study (including cost estimates) should be undertaken by the Authority embracing all technical aspects of the proposed facility. This should include, but not be limited to, location and size of airport, runway lengths, number of runways, land access by highway and rail, and air traffic patterns.

   c) A concentrated study should be made by the Authority of the influence of the proposed Jetport to adjacent existing airfields, principally such military installations as McGuire Air Force Base and Lakehurst Naval Air Station and the effect on the Department of Defense programs by taking portions of military reservations, such as Fort Dix.

7. If the foregoing studies prove that the New Jersey Jetport Authority cannot assume the financial and technical responsibility for the construction and operation of the proposed Jetport, the Committee recommends that the planning, development and operation of the proposed airport be under the jurisdiction of another governmental or semi-governmental body that would have the financial capability to produce this required facility and to insure that the jet airport will be constructed at a location in the State of New Jersey at the earliest practicable date.

Joseph S. Ward, P. E., Chairman
I. Lloyd Gang, Esq.
Austin E. Ganly
David Krugman

Statement delivered by I. Lloyd Gang at public hearing before the Senate and Assembly Transportation Committees March 18, 1969. Mr. Gang is a Passaic attorney and a resident of Montclair. He is a former president of the Passaic Valley Citizens Planning Association and now serves as a member of the Executive Committee, Jetport Study Committee and Board of Directors.

The Passaic Valley Citizens Planning Association is a private, non-profit organization devoted to promoting sound planning. It has been in existence since 1948. The membership is made up primarily of business firms and industries who are interested in making planning a part of the day-to-day operations of local, county and state government. Arthur Rigolo, A.I.A., of Clifton is president. The staff of eight is headed by Grace C. Harris, executive director.

PRESENTATION OF FINDINGS AND REMARKS

by

R. DIXON SPEAS, PRESIDENT
R. DIXON SPEAS ASSOCIATES

before the

NEW JERSEY JOINT LEGISLATIVE COMMITTEE

on

TRANSPORTATION AND PUBLIC UTILITIES

150 A

R. DIXON SPEAS ASSOCIATES
March 18, 1969

TABLE OF CONTENTS

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SOLBERG AND McGUIRE PASSENGER FORECASTS

****

In considering the forecast of passengers who might be expected to use a new major airport in New Jersey it was assumed that two possible areas existed - namely, Solberg or the McGuire sites. There have been a number of forecasts made of passenger traffic to be expected to utilize a new major airport in New Jersey and for purposes of the analyses made here, a starting base of forecasts made by the Port Authority was utilized. Modifications were then made to these forecasts to determine analytically what utilization could be expected if a commercial airport were to be built at a McGuire site instead of Solberg.

In these analyses it was assumed that traffic would flow into McGuire from Ocean County and Burlington County in addition to those counties designated for Solberg. As to counties south of Burlington it is assumed that the Greater International Philadelphia Airport, Atlantic City Airport and Cape May Airport would accommodate the southern New Jersey need for service. Such an assumption is supported by the excellent service available at Philadelphia International Airport. As to the future of this airport, Mr. Robert C. Foldwell, who appeared in behalf of the Delaware Planning Commission at the March 11 Joint Senate/Assembly Hearing at Trenton, indicated that with the planned expansion of Philadelphia International Airport, complete use of the capacity of that airport was not expected until 1976-1980 - and planning is going forward for the period beyond.

Examination of the ground transportation system as it relates to a choice between use of Philadelphia International and McGuire would strongly support the position that there would be as many or more passengers and cargoes which would flow out of Burlington and adjacent counties into the Philadelphia and Atlantic City Airports as would flow from Camden and Atlantic City northward to McGuire. Under these circumstances, the forecast of McGuire traffic has assumed that McGuire Airport would draw what traffic it could from Burlington County, Ocean County and counties to the north.

Traffic flows into McGuire Air Force Base from the remaining counties of New Jersey were estimated in accordance with the relative convenience and attractiveness of travel to and from an airport at McGuire compared to one at Solberg as part of an airport system serving Metropolitan New Jersey-New York area.

Figures I and II give a graphic presentation of the forecast 1980 passenger distribution were Solberg developed as a major airport or if McGuire was developed as a commercial airport - respectively.

Figure III shows the summary of these passengers and Figure IV gives a tabular listing of originating passengers by county.

FIGURE I

ORIGIN OF PASSENGERS SERVED

SOLBERG AS A MAJOR AIRPORT

1980 PASSENGER DISTRIBUTION - THOUSANDS

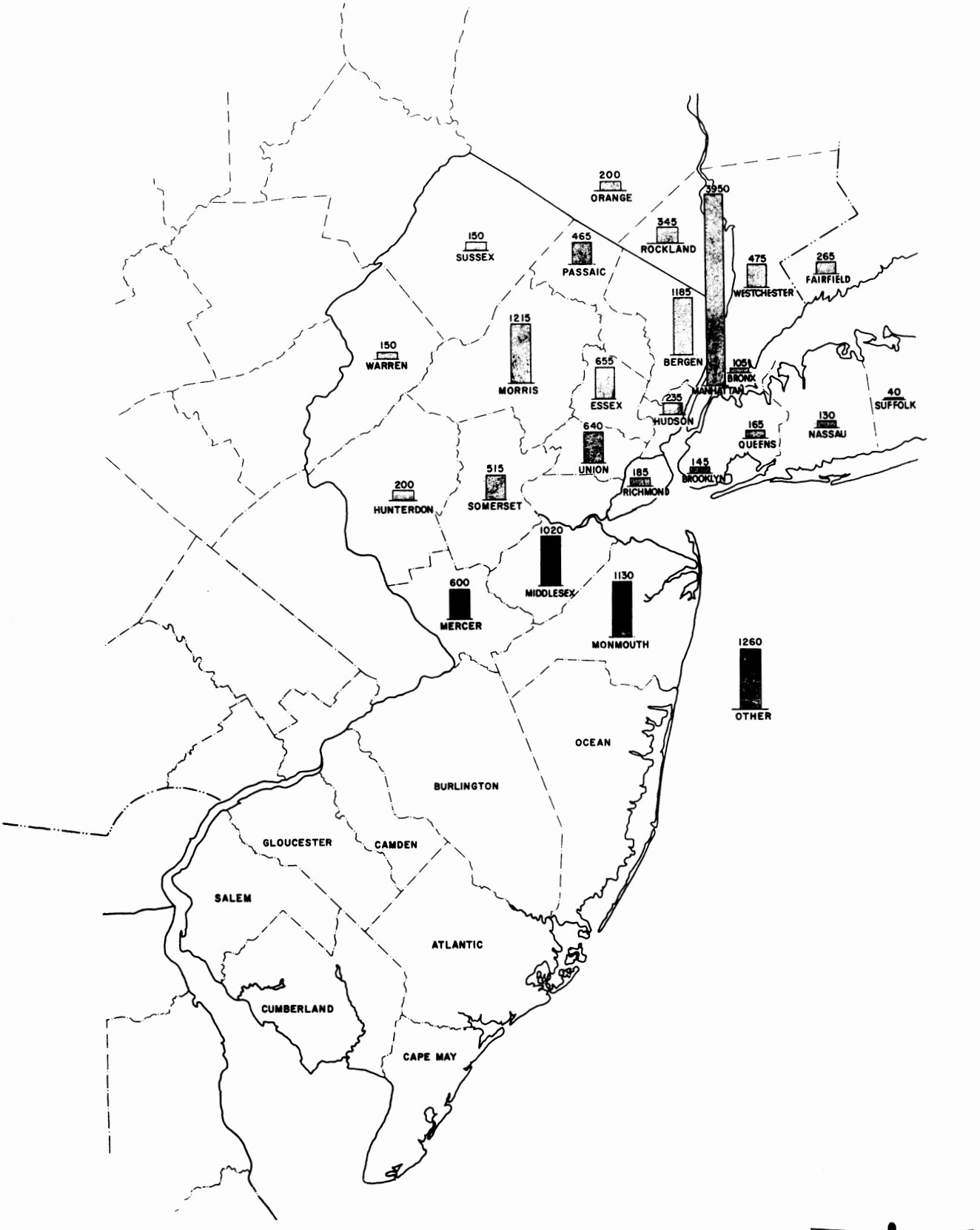


FIGURE II

ORIGIN OF PASSENGERS SERVED

MC GUIRE AS AN AIRPORT

1980 PASSENGER DISTRIBUTION - THOUSANDS

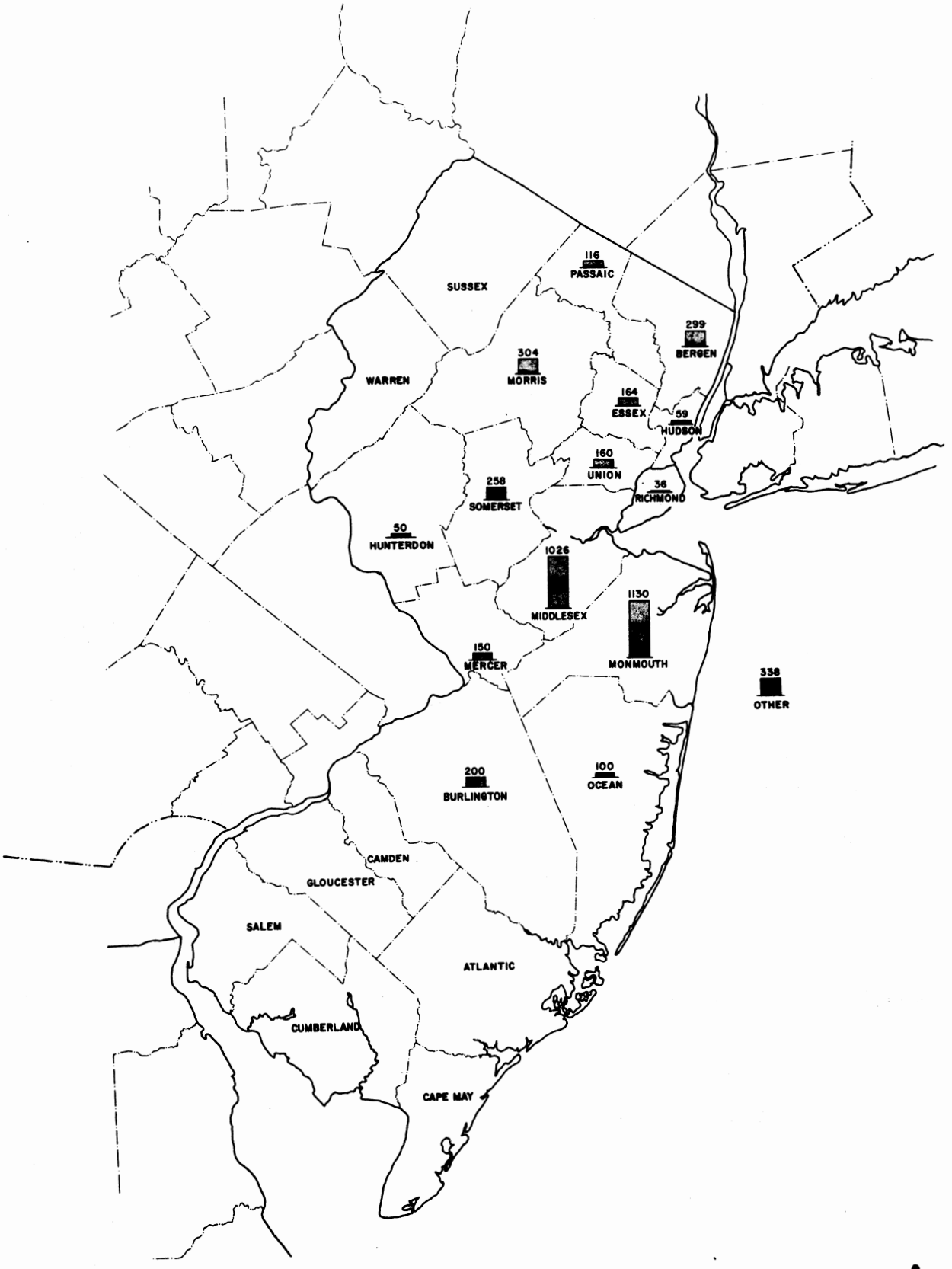
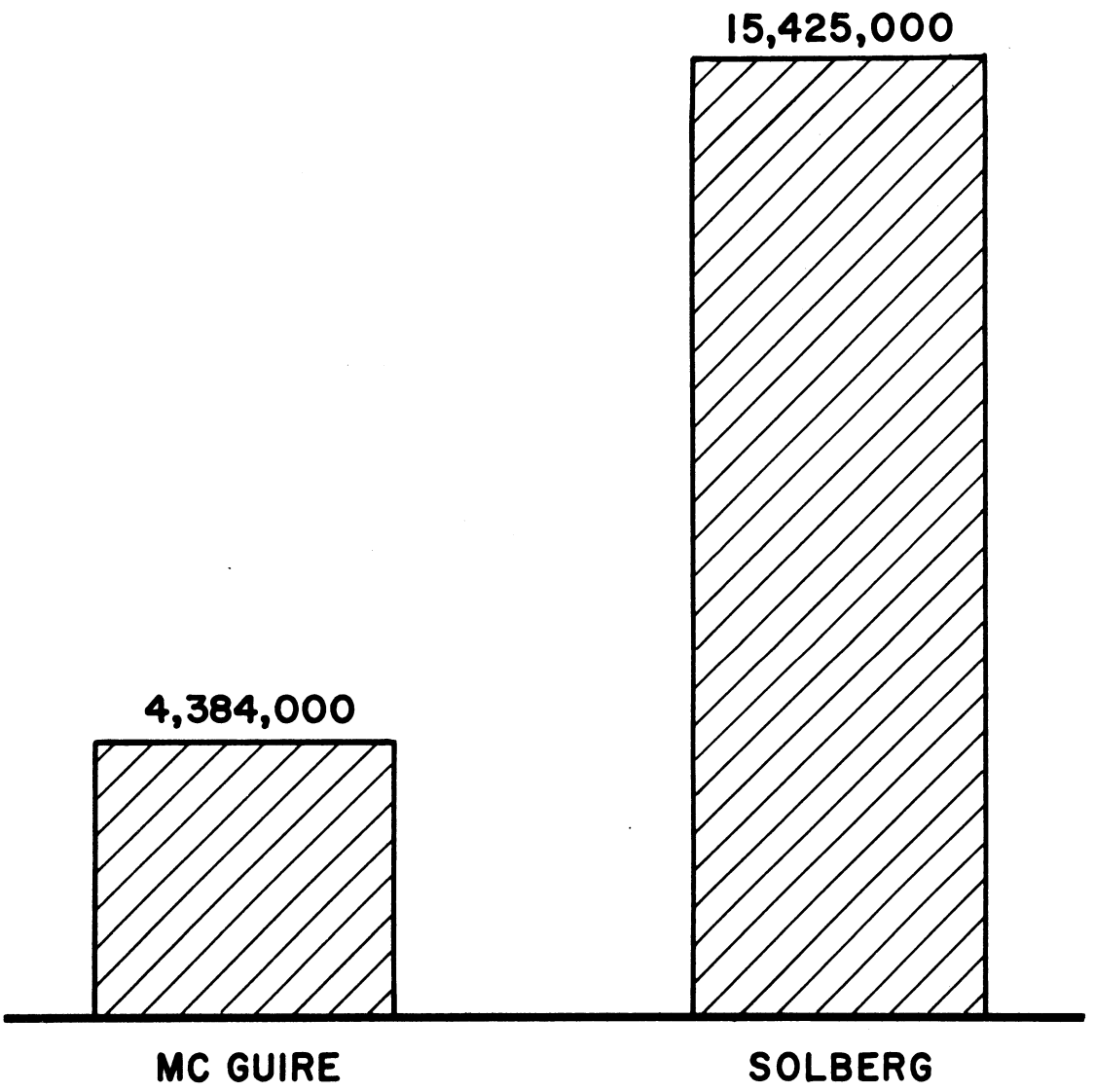


Figure III

1980 FORECAST PASSENGER DEMAND

SOLBERG VS MC GUIRE



DOES NOT INCLUDE 4,450,000 TRANSFER PASSENGERS

Figure IV

TABULAR LISTING OF ORIGINATING PASSENGER DEMAND

BY COUNTIES FOR SOLBERG AND McGUIRE

County	1980 Forecast Passenger Demand (Thousands) Solberg	McGuire
East of Hudson River		
Manhattan	3,950	
Bronx	105	
Brooklyn	145	
Queens	165	
Nassau	130	
Suffolk	40	
Westchester	475	
Fairfield	265	
West of Hudson River		
Union	640	160
Essex	655	164
Hudson	235	59
Richmond	185	36
Bergen	1,185	299
Passaic	465	116
Morris	1,215	304
Somerset	515	258
Middlesex	1,020	1,020
Monmouth	1,130	1,130
Orange	200	--
Rockland	345	--
Hunterdon	200	50
Warren	150	--
Sussex	150	--
Mercer	600	150
Burlington	--	200
Ocean	--	100
Other	1,260	338
TOTAL	15,425 1/	4,384

1/ Does not include 4,450,000 transfer passengers.

AIRPORT ACCESSIBILITY TO INDUSTRIES OF NEW JERSEY

****

A function of a major airport is the service it provides to industries of a state. The utility of an airport in this function is determined largely by its location and accessibility. The passenger travel of employees and customers, cargo deliveries and mail services are all dependent upon convenience of location. In focusing on the New Jersey situation, the map showing the location of major industries as presented in the Blomquist report of July 1968 (II-2) has been utilized for comparison purposes. Figures V and VI show the geographic relationship of New Jersey industries to Solberg and McGuire sites, respectively. It can be clearly seen that the Solberg site effectively serves the concentration of industries located in the northeast portion of the state where additional airport capacity is so urgently needed, whereas the McGuire site favors those industries currently accommodated by the Philadelphia International Airport. As has been previously stated, Philadelphia is undertaking an airport expansion program which promises to provide adequate capacity for years to come. The location comparisons of Figure VII graphically show the contrast between industry accessibility characteristics of the two site locations.

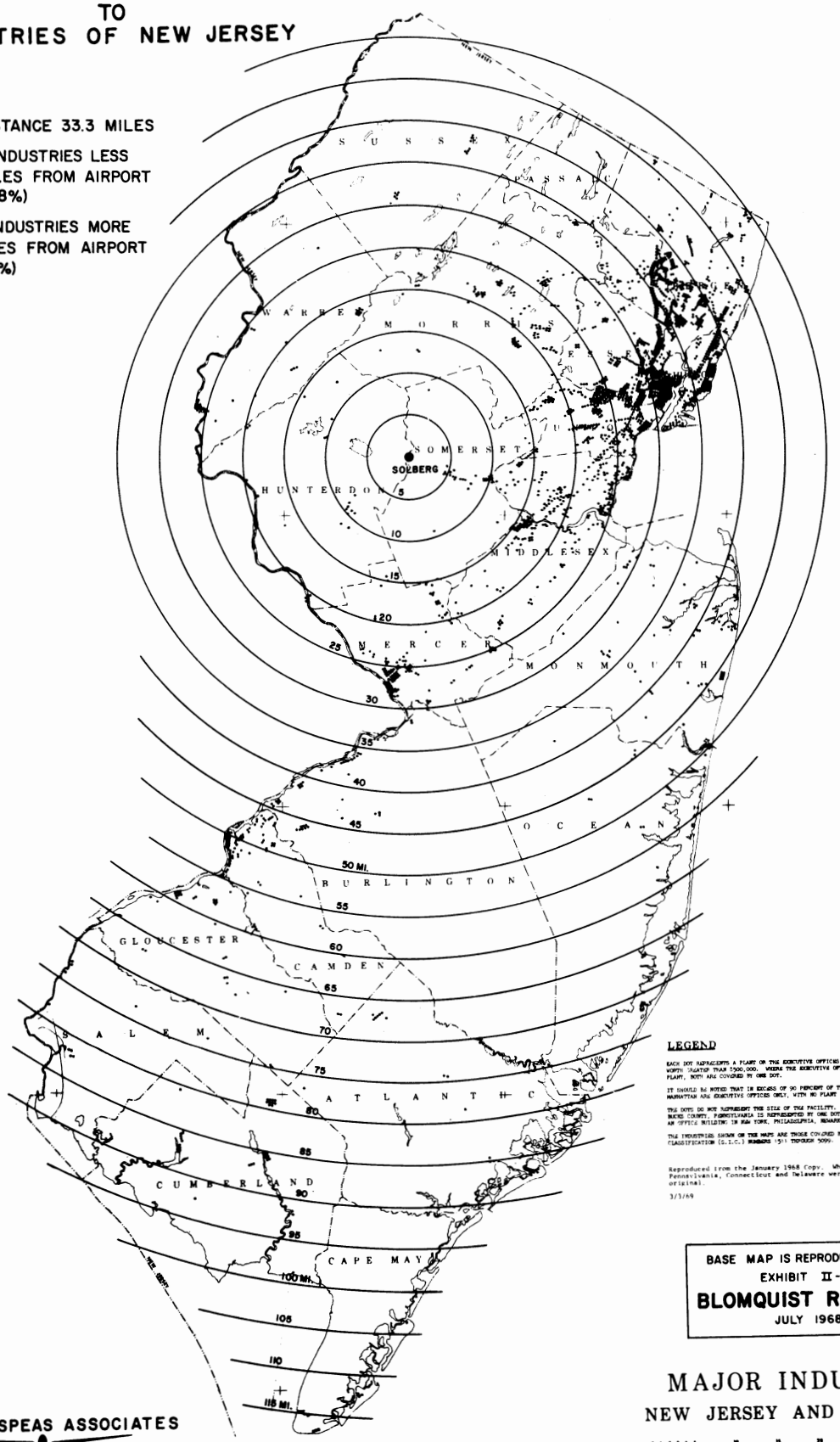
FIGURE V

SOLBERG AIRPORT ACCESSIBILITY TO INDUSTRIES OF NEW JERSEY

AVERAGE DISTANCE 33.3 MILES

NUMBER OF INDUSTRIES LESS THAN 35 MILES FROM AIRPORT SITE-1228 (58%)

NUMBER OF INDUSTRIES MORE THAN 50 MILES FROM AIRPORT SITE- 164 (8%)



LEGEND

EACH DOT REPRESENTS A PLANT OR THE EXECUTIVE OFFICES OF AN INDUSTRY WITH A NET WORTH GREATER THAN $500,000. WHERE THE EXECUTIVE OFFICES ARE LOCATED WITHIN A PLANT, BOTH ARE COVERED BY ONE DOT.

IT SHOULD BE NOTED THAT IN EXCESS OF 90 PERCENT OF THE 2954 INDUSTRIES SHOWN FOR MANHATTAN ARE EXECUTIVE OFFICES ONLY, WITH NO PLANT FACILITIES.

THE DOTS DO NOT REPRESENT THE SIZE OF THE FACILITY. THE FAIRLESS STEEL WORKS IN BUCKS COUNTY, PENNSYLVANIA IS REPRESENTED BY ONE DOT AS ARE EXECUTIVE OFFICES IN AN OFFICE BUILDING IN NEW YORK, PHILADELPHIA, NEWARK OR OTHER CITIES.

THE INDUSTRIES SHOWN ON THE MAPS ARE THOSE COVERED BY STANDARD INDUSTRIAL CLASSIFICATION (S.I.C.) NUMBERS 151 THROUGH 5099.

Reproduced from the January 1968 Copy. When reproduced, New York, Pennsylvania, Connecticut and Delaware were blanked out of the original.

3/3/69

BASE MAP IS REPRODUCTION OF EXHIBIT II-2 **BLOMQUIST REPORT** JULY 1968

MAJOR INDUSTRIES
NEW JERSEY AND ENVIRONS

SCALE IN MILES

R. DIXON SPEAS ASSOCIATES

MARCH 10, 1969

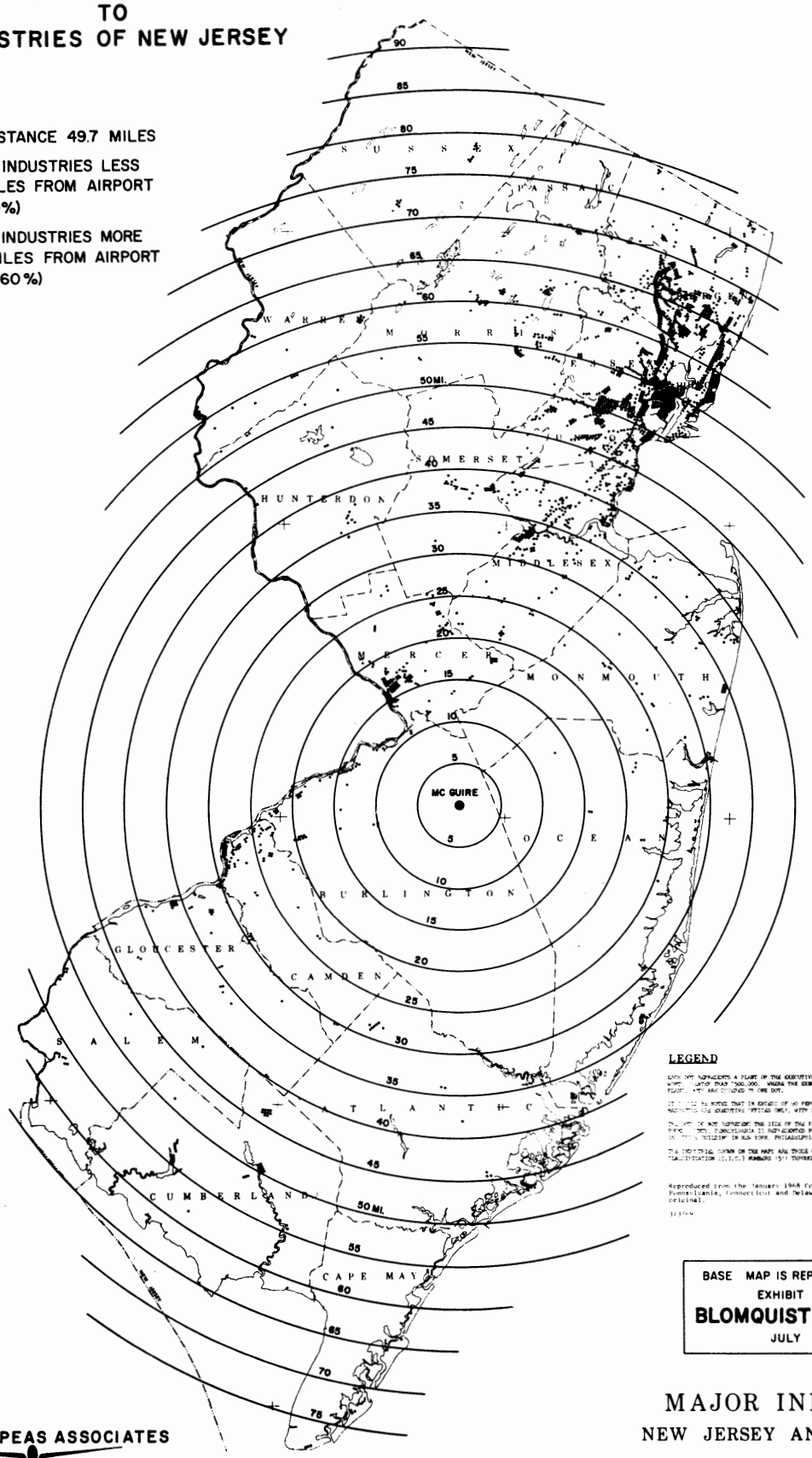
FIGURE VI

Mc GUIRE AIRPORT ACCESSIBILITY TO INDUSTRIES OF NEW JERSEY

AVERAGE DISTANCE 49.7 MILES

NUMBER OF INDUSTRIES LESS THAN 35 MILES FROM AIRPORT SITE - 406(19%)

NUMBER OF INDUSTRIES MORE THAN 50 MILES FROM AIRPORT SITE - 1273 (60%)



LEGEND

EACH DOT REPRESENTS A PLANT OR THE EXECUTIVE OFFICES OF AN INDUSTRY WITH A NET WORTH ... LATION OF OVER $500,000. WHERE THE EXECUTIVE OFFICES ARE LOCATED WITHIN A PLANT, THEY ARE COUNTED IN ONE DOT.

IT SHOULD BE NOTED THAT IN EXCESS OF 40 PERCENT OF THE 2254 INDUSTRIES SHOWN FOR NORTHERN NEW JERSEY EXECUTIVE OFFICES ONLY, WITH NO PLANT FACILITIES.

THE DOT DO NOT REPRESENT THE SIZE OF THE FACILITY. THE FAIRLESS STEEL WORKS IN BUCKS COUNTY, PENNSYLVANIA IS REPRESENTED BY ONE DOT AS ARE EXECUTIVE OFFICES IN NEW YORK, PHILADELPHIA, WILMINGTON OR MANY OTHER CITIES.

THE INDUSTRIAL GROUPS ON THE MAPS ARE THOSE DEFINED BY STANDARD INDUSTRIAL CLASSIFICATION (S.I.C.) NUMBERS 191 THROUGH 309.

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1/15/69

BASE MAP IS REPRODUCTION OF
EXHIBIT II-2
BLOMQUIST REPORT
JULY 1968

MAJOR INDUSTRIES
NEW JERSEY AND ENVIRONS

SCALE IN MILES

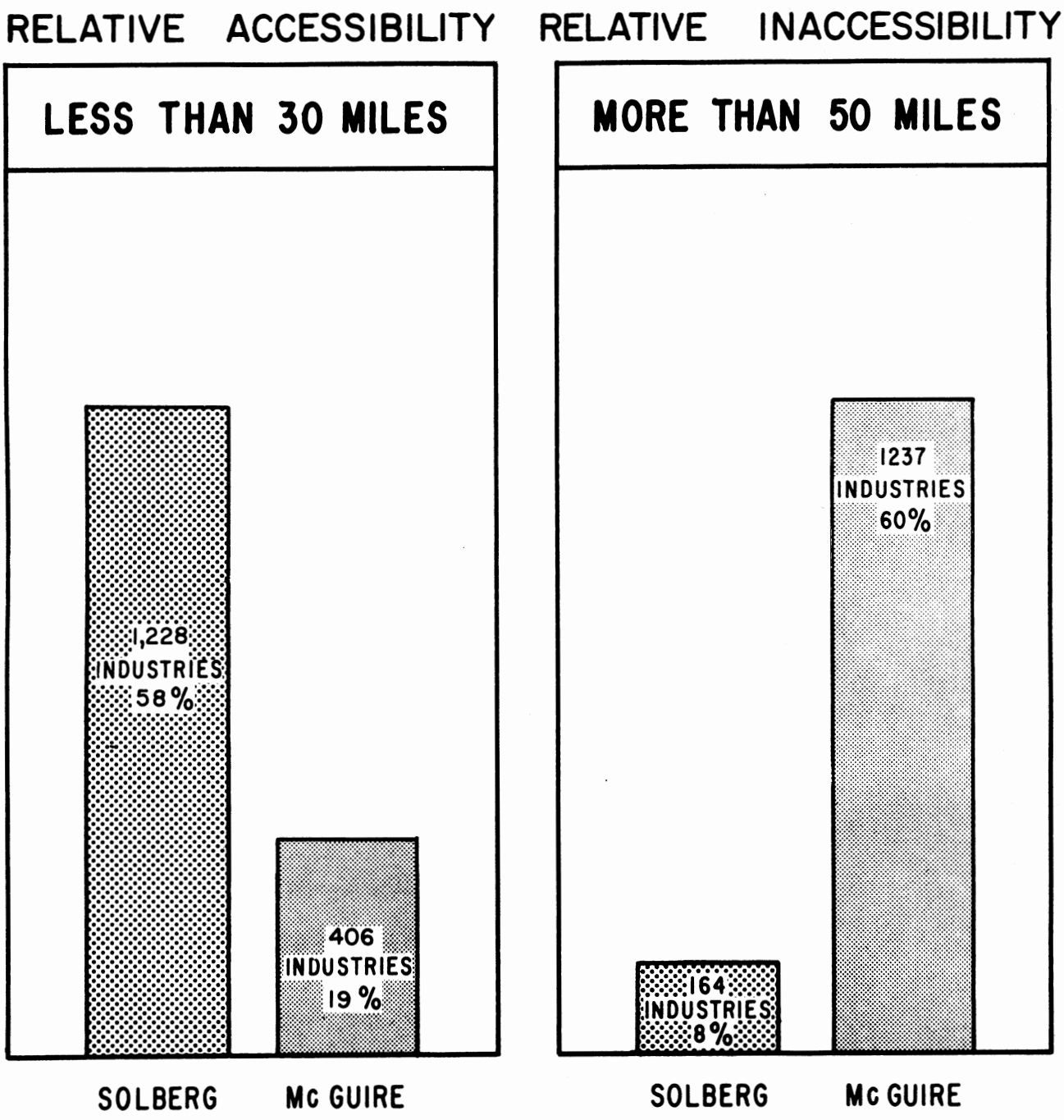
NEW JERSEY TRANSPORTATION RESEARCH

R. DIXON SPEAS ASSOCIATES

MARCH 10, 1969

FIGURE VII

AIRPORT ACCESSIBILITY TO INDUSTRIES OF NEW JERSEY



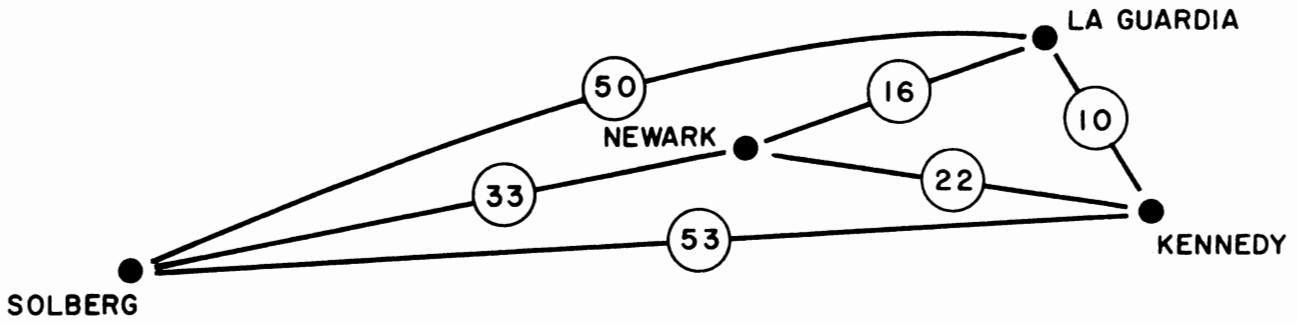
GEOGRAPHIC RELATIONSHIPS
of
MAJOR AIRPORT SYSTEMS

****

The airports serving a metropolitan terminal area have requirements which recommend the most compact geographic relationship possible. Presently the three major airports serving Metropolitan New Jersey-New York are relatively convenient in their inter-relationships. The transfer of connecting passengers and cargo, the alternative use of airports because of weather, and terminal systems administrative factors are among the reasons which favor the closest possible geographic relationships. With Solberg integrated into the airport system serving Metropolitan New Jersey-New York there is a substantial extension of the system as shown on Figure VIII. Also, the inter-airport relationships are doubled from three to six by expanding the terminal system from three to four airports. With respect to utilization of one of the McGuire sites for an additional airport in the system, however, there is the added complexity of adding an airport to the system which is beyond practical reason of distances between airports (see Figure IX) of a common system.

FIGURE VIII

GEOGRAPHICAL RELATIONSHIPS METROPOLITAN NEW JERSEY - NEW YORK AREA AIRPORTS SOLBERG SITE



LEGEND

10

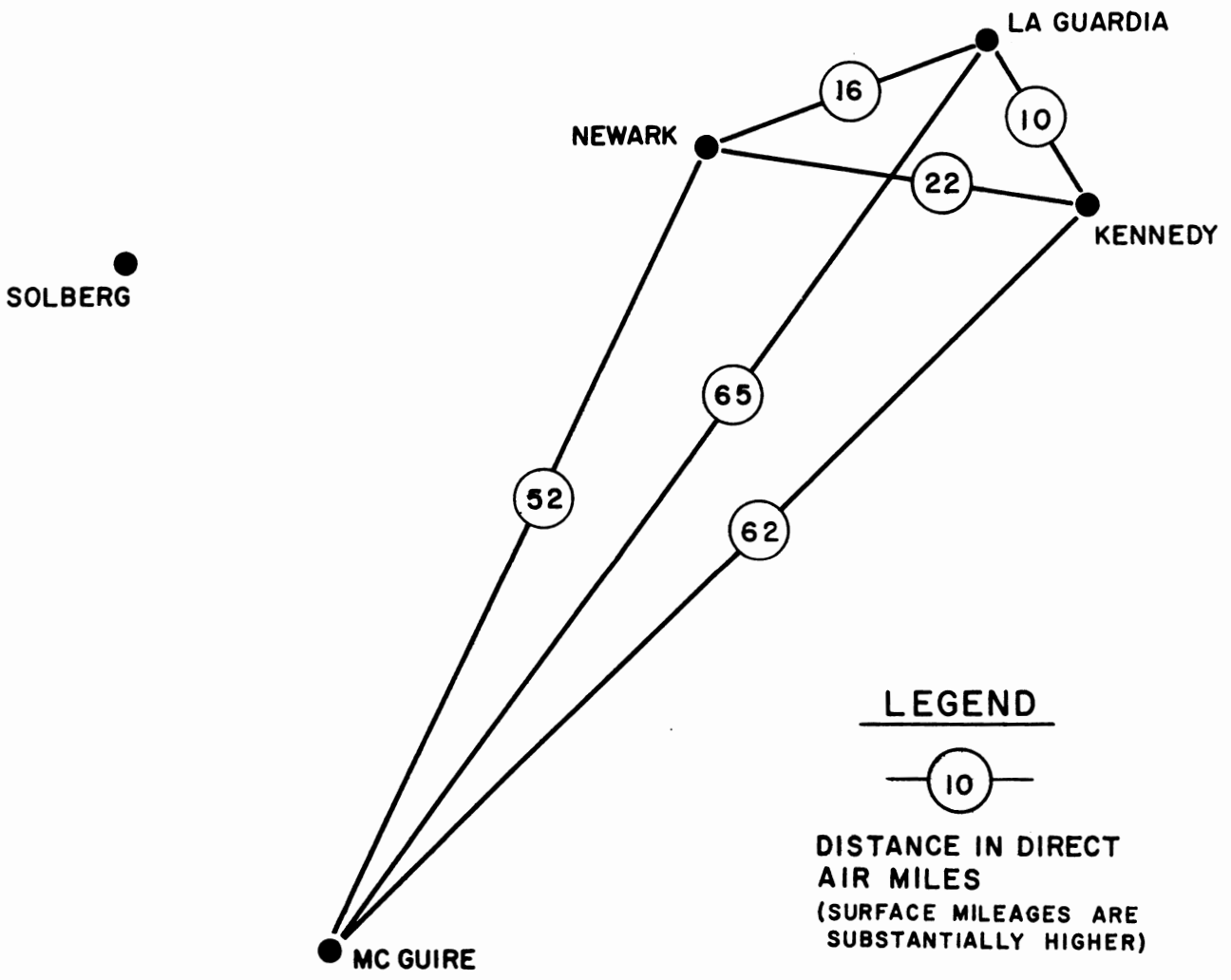
DISTANCE IN DIRECT AIR MILES

(SURFACE MILEAGES ARE SUBSTANTIALLY HIGHER)

MC GUIRE

FIGURE IX

GEOGRAPHICAL RELATIONSHIPS METROPOLITAN NEW JERSEY - NEW YORK AREA AIRPORTS Mc GUIRE SITE



INDUSTRIAL IMPORTANCE TO THE STATE OF NEW JERSEY

ACCOMMODATION OF AIR TRANSPORT REQUIREMENTS

****

Industries of New Jersey participate heavily in the nation's transport production programs through sub-contracts. A survey accomplished on this subject with the five primary manufacturers of transport aircraft and engines in this country - namely, Boeing, Douglas, General Electric, Lockheed and Pratt & Whitney - showed the following circumstances to exist:

1. One of the manufacturers has a current New Jersey backlog of $42,770,000.

2. Another placed orders with New Jersey manufacturers during 1968 alone for $15,900,000.

3. A third anticipates placing orders in 1969 among New Jersey industries for $33,000,000 and in 1970 for $31,000,000.

4. A fourth manufacturer issued 2,645 purchase orders in 1968 to 128 New Jersey located suppliers.

All told it can be expected that if the air transport industry continues to grow at its present rate, New Jersey industries will benefit from production orders to be filled in the '70s, to the extent of $150-200,000,000.

These plans for the manufacture of air transport products are based on assumptions of unimpeded airline development. This development is highly sensitive to the accessibility of air transportation services. If passengers and shippers do not find air transportation convenient to use they simply will resort to other modes or reduce the absolute amount of their traveling and shipping. Less travel will be used - perhaps through greater dependence upon telephones and correspondence; less shipping will be accomplished - possibly at the expense of broader coverage of the market potential.

One out of every five passengers on the domestic airlines of the United States departs or arrives at one of the airports serving Metropolitan New Jersey-New York. If these passengers can no longer be effectively accommodated they will not be able to do as much flying - and in the long run the respective businesses will be compelled to move out of the area. Obviously, the ability for New Jersey to attract new industries would be severely handicapped.

The present free competitive forces cause the airlines to adapt their services to the demands of passengers and shippers and the extent to which airlines can accomplish this is in large measure a determining factor in the success and growth of air transportation. If the growth of air transportation is thwarted in the New Jersey-New York Metropolitan area there will be a corresponding slow down in the demands for air transport products manufactured in New Jersey.

ECONOMIC CONSEQUENCIES TO STATE OF NEW JERSEY

of

ADDITIONAL AIRPORT ACCOMMODATIONS

****

In addition to the primary contribution of transportation service to people in industry, an airport brings substantial related income from its operating activities. Salaries to airport employees - both those required to operate the airport and those required to operate airline services and maintenance facilities, salaries of flight crews living in the area, payments to airport support services including ground transportation, banks, hotels and other such facilities all contribute financially to immediate and surrounding localities. The State of New Jersey has benefited from the location of Newark Airport. Calculations have been made to estimate the loss to the State of New Jersey that would be represented were the proposed additional Metropolitan New Jersey-New York airport not located in New Jersey. A summary of the results of the calculations are as shown on Figure X. The indirect effects shown in this summary do not include consideration of losses which would be suffered by the industries of New Jersey because of their inability to compete with industries conveniently located to adequate air transportation hubs.

Figure X

ESTIMATED ANNUAL ECONOMIC LOSSES TO NEW JERSEY
IF MAJOR NEW JERSEY AIRPORT NOT ESTABLISHED
CONVENIENT TO METROPOLITAN NEW JERSEY-NEW YORK

	1975	1980
Annual passengers lost	11,237,000	16,525,000
Employee earnings lost annually		
Airport employees	$148,000,000	$218,000,000
Other airline employees	66,500,000	97,000,000
Air transport related employees	260,000,000	382,000,000
Total employee earnings	$474,500,000	$697,000,000
Potential spending of air travelers	128,000,000	188,000,000
ANNUAL TOTAL LOSS	$602,500,000	$885,000,000

MANHATTAN, N. Y. BRANCH OFFICE
CHANIN BUILDING
122 EAST 42ND STREET — SUITE 1017-19
NEW YORK, N.Y. 10017
(212) 661-8757

AFFILIATED WITH A.F.L.-C.I.O.

March 18, 1969

Subject: Appearance before the New Jersey Senate to support the selection of a site for a "fourth airport".

Identification: Captain Richard C. Flournoy, Vice President of the Air Line Pilots Association for Region I (Northeast United States). Resident of New Jersey, Somerset County, Montgomery Township.

Qualification: In addition to ALPA activity, a full time Captain with 24 years experience for a major International United States airline. Regularly flying Boeing 707 flights into J. F. Kennedy. Have flown flights from the three New York airports for the past 28 years. This covers the time before Idlewild was an operational commercial airport, the period of time when Newark was closed completely, more recently during the time when La Guardia was closed completely. This period includes "Black Friday" and the infamous "Northeast Blackout", in addition to some of the more spectacular delays of 1968. In summary, one who has observed the increasing need for an additional airport.

Background Information: The Air Line Pilots Association has refrained from establishing an official position for the fourth airport in the New York-New Jersey metropolitan area. This failure to establish an Association position stems from the fact that we have no desire to participate in a political controversy. We have in the past expressed the opinion that there was a clear and pressing need for an additional airport, we now propose to support the Hunterdon-Solberg site to further this need.

While the Association has generally remained out of the political arena, we have observed that the site selection has now become less and less a product of political pressures and is becoming more and more of a rational study of the alternatives. We do not wish to intrude into the specific site selection at this time, we simply want to support a position which appears to have a good chance to provide the much needed facility.

We are fully aware of the many considerations which must be accommodated by the community and the surrounding area when a site is eventually selected. At the present time it appears that the Hunterdon-Solberg site is the most acceptable alternate. It is our understanding that substantial agreement has

been reached with reference to this site by the airlines, who agree to use this airport, by the Federal Aviation Administration, who agree to integrate this major addition into the metropolitan traffic complex, and by the Port of New York Authority, who express a willingness to finance, construct and operate this airport.

We observe with dismay the result of arbitrary site selection in the instance of the Washington Dulles airport. The coordination and cooperation between the airlines, the FAA and the airport operator must be assured to justify the construction of an airport on any site.

We note the lack of enthusiasm which the Governor of the State of New Jersey has expressed toward this intrusion into one of the states most unspoiled areas. We, in fact, have many of our members who have chosen to live in this generally rural area in the central part of the state. They and many of the other residents consider the prospect of a major airport in their community as a most unwelcome intrusion. Fortunately, the state does have other similarly unspoiled areas, which offer the benefits of rural living, while not constituting such an adequate location for an airport.

It is our sincere belief that not only a fourth but a fifth airport must be constructed if the industry is going to achieve the ordered progress so necessary to a rapidly growing industry. This imperative observation leaves us little alternative but to support what we believe is a most suitable site from an operational point of view.

Bearing in mind the foregoing, the Executive Committee of the Air Line Pilots Association in session in Washington, D. C. on the 16th of January, 1969 adopted the following resolution by unanimous vote:

Resolution:

Whereas the Air Line Pilots Association has viewed the fourth New York airport as a much needed facility, and

Whereas the Air Line Pilots Association has refrained from taking any official position on the many sites which have been proposed, and

Whereas there now seems to be general agreement between the airlines, the Port of New York Authority and the Federal Aviation Administration for the Hunterdon-Solberg site, and

Whereas this agreement appears to insure a successful airport, and

Whereas the governing bodies of the State of New Jersey have not supported this site selection:

Now Therefore Be It Resolved that the Air Line Pilots Association endorse and support the selection of the Hunterdon-Solberg site, and

Be It Further Resolved that the responsible governing bodies of the State of New Jersey be advised that while we have no desire to participate in the site selection, that the Hunterdon-Solberg site is most adequate from an operational point of view, and

Be It Further Resolved that they be advised that the Air Line Pilots Association has taken this position for the professional consideration that we must have adequate facilities to maintain the level of performance which we accept as our responsibility, and

Be It Finally Resolved that we request their support to help us fulfill this responsibility.

The motto of the Association is "Schedule with Safety", this is our ultimate goal.

Sincerely,

Richard C. Flournoy

Richard C. Flournoy
Vice President
Air Line Pilots Association
Region I

ampl

UNITED AIR LINES

Mailing address: P.O. Box 66100, O'Hare International Airport, Chicago, Illinois 60666 Phone: Area Code 312, 625-1400

OFFICE OF THE PRESIDENT

October 2, 1968

The Honorable Richard J. Hughes
Governor of New Jersey
State House
Trenton, New Jersey

Dear Governor Hughes:

After consulting with other major air carriers serving the New Jersey-New York Metropolitan Area, I wish to express our appreciation for the efforts you are making to find an acceptable site for a new commercial airport to serve this area. As you know, the airline industry is in complete agreement on the urgent need for a new airport for this region.

We feel it is our duty at this time, however, to record our strong opposition to the McGuire-Lakehurst sites or an area slightly north thereof as proposed by the Economic Evaluation Committee. We respect the civic motives of the committee in proposing the McGuire site. Nevertheless, we must state that a new airport at or near the McGuire site would not serve the air passengers of the northern New Jersey region nor of the New York portion of the metropolitan area, and for that reason we cannot support it.

The proposed sites are too far from the major passenger market of New Jersey in the northern part of the State, and from the New York Region. The majority of people whom we serve would not use an airport in such a remote location and therefore we could not afford the enormous investment which the airlines would have to make in terminal facilities at a new airport. Thus, any proposed airport in the area of McGuire Air Force Base would fail on the basis of economic consideration since it would not be acceptable to the market it is intended to serve. Such an airport could not meet the pressing need of the northern New Jersey-New York Region for increased air transportation facilities nor would it reduce the severely

Location: Elk Grove Township, Illinois, on Route 62, one-half mile west of Route 83

congested air and ground traffic conditions at existing airports. As airline operators faced with the realities of air transportation requirements, we must serve the public where the people are and not where the Committee, however civic its motivation, may wish them to be.

We feel obliged, therefore, to advise you of these grave inadequacies in the site proposed by the Economic Evaluation Committee. The air transportation requirements of the people of your State and of the region make inescapable the conclusion that the northwestern part of New Jersey is the only feasible location for the airport. The airlines are conferring now on this matter and will make their recommendation to your Excellency in a very short time.

This statement has been endorsed by the following airlines serving the New Jersey-New York Metropolitan Region:

American Airlines, Inc.
Braniff International Airways
Delta Air Lines, Inc.
Eastern Air Lines, Inc.
Flying Tiger Line, Inc.
Irish International Airlines
Lufthansa German Airlines
Mohawk Airlines, Inc.
National Airlines, Inc.
Northeast Airlines, Inc.
Pan American World Airways, Inc.
Scandinavian Airlines
Seaboard World Airlines, Inc.
Trans World Airlines, Inc.
United Air Lines, Inc.

Sincerely,

G. E. Keck

GEK:ml

UNITED AIR LINES

Mailing address: P.O. Box 66100, Chicago, Illinois 60666 Phone: (312) 437-2300

OFFICE OF THE PRESIDENT

February 20, 1969

The Honorable Richard J. Hughes
Governor of New Jersey
State House
Trenton, New Jersey

Dear Governor Hughes:

In my letter to you of October 2, 1968, I stated that the airlines would shortly make a recommendation to your Excellency as to the proper location for the development of a suitable airport to serve the Northern New Jersey - New York Metropolitan Area. Our response has been somewhat delayed as we felt it incumbent upon our industry to carry out our commitment to you in the most responsible fashion.

It is our firm conclusion that the proper location for the major facility to serve the aforementioned area is that location in the vicinity of the existing Solberg Airport. Our conclusion is based on the following factors:

1. An airport at the Solberg location would serve the tremendous, expanding public transportation needs concentrated in the northern counties of New Jersey and the Metropolitan Area.

2. The all-important factor is the airspace situation. You will find attached my letter of enquiry dated January 21, 1969, to FAA Acting Administrator Thomas and his reply (2/14/69) in which he concludes unequivocably that the proper location for a major facility adequate to serve the public need must be within the Northwest Quadrant which by definition is that area "north and west of a line running roughly from the Village of Stockton on the Delaware River to Summit, New Jersey, and thence to Greenwood Lake." Solberg lies within that area.

3. The Solberg location has adequate land area for the development of the type of facility to meet the service needs of the public; it is served by a network of highways, now in being or under construction; and it lies adjacent to the main line of the Central Railroad of New Jersey over which fast rail service to Newark and Manhattan could be provided.

Location: Elk Grove Township, Illinois, on Route 62, one-half mile west of Route 83

I speak for our industry in reiterating the position set forth in my letter of October 2, 1968, that the site locations recommended by the N. J. Economic Evaluation Committee cannot meet the requirements of the public, and that accordingly we could under no circumstance support such an airport. We are convinced that the domestic and international air transportation needs of New Jersey are inseparable from those of the New Jersey - New York Metropolitan Area. They are one and the same and cannot be served from central New Jersey, but only from the northern New Jersey site at Solberg. I am sure you noted the FAA's significant statement in their January 14, 1969 letter that their air traffic studies have indicated that a major jetport should not be located in central New Jersey due to airspace considerations. This position is made clear in their letter to me of February 14th: "It is our view that this site (Solberg) is a suitable location for the fourth airport from an airspace standpoint."

In summary, in my capacity as spokesman for the air line industry, and as Chairman of the Aviation Development Council, I would urge your Excellency to take appropriate action to ensure the immediate construction of an airport at Solberg adequate to meet the critical needs of the citizens of the New Jersey - New York Metropolitan region.

Sincerely,

G. E. Keck

GEK:ml

Attachments

UNITED AIR LINES

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OFFICE OF THE PRESIDENT

January 21, 1969

Mr. David D. Thomas
Acting Administrator
Federal Aviation Agency
800 Independence Avenue
Washington, D.C. 20590

COPY

Dear Dave:

I am certain you are aware of the long standing need to provide a new major international airport (with a minimum capacity of 110 peak-hour aircraft movements) in the northern New Jersey - New York metropolitan area. The absence of such a new airport is becoming an increasingly severe burden to the national air transportation system, with delay and congestion and economic repercussion extending internationally.

You are probably also aware of the recommendations made by the New Jersey Economic Evaluation Committee to locate the new airport in the vicinity of McGuire Air Force Base (including the so-called Allentown sites). After evaluating the report of the committee, the airline industry advised the Governor by letter of October 2, 1968 (copy attached) that the committee's proposal would only permit an airport operation which would fall far short of the need.

As we pointed out in our letter, detailed analyses show that a substantial demand for air service exists in the northern New Jersey metropolitan region. They also indicate that this area will be expanding rapidly in the next decade and into the 1980s. We are therefore convinced that the most suitable remaining area in New Jersey for the location of the new airport is in northern New Jersey in the vicinity of the existing Solberg Airport. We are in agreement with the Port of New York Authority that the Solberg site is in fact adequate for the development of a major airport facility with the aforementioned capacity.

Of prime importance is the matter of the adequacy of air space. The FAA has stated that a major New Jersey airport must be located from the air space standpoint, within the "northwest quadrant" i.e., north and west of a line

running roughly from the Village of Stockton on the Delaware River to Summit, New Jersey and thence to Greenwood Lake. The Solberg area is within the northwest quadrant.

The studies of the Port of New York Authority and our own examination of this matter, have reenforced the conclusion that a site in the northwest quadrant is most suitable from an air space standpoint. We understand that the FAA's continuing studies confirm the validity of this conclusion. In view of the critical importance of the decisions which must be made in this matter, the airlines request that the FAA confirm that there has been no change in its basic position with respect to the air space situation in the New Jersey - New York region, and that from an air space standpoint a new airport with a minimum capacity of 110 peak-hour movements cannot be located in any area in New Jersey outside of the northwest quadrant, and that a facility with this capacity can be located in the vicinity of the existing Solberg Airport.

We would appreciate prompt action on this request because we are committed to Governor Hughes to advise him of the air carrier industry's recommendation concerning the location of an airport facility to meet the requirements of the citizens of New Jersey. We are anxious to move forward immediately and resolve this long standing problem which affects the nation's air commerce so grievously.

Sincerely,

G. E. Keck

DATE DUE

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