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PUBLIC MEETING

before

SENATE SPECIAL COMMITTEE ON AUTOMOBILE INSURANCE REFORM

on

AUTOMOBILE INSURANCE REFORM

March 10, 1986
Room 334
State House Annex
Trenton, New Jersey

MEMBERS OF COMMITTEE PRESENT:

- Senator Daniel J. Dalton, Chairman
- Senator Carmen A. Orechio
- Senator Christopher J. Jackman
- Senator Lee B. Laskin
- Senator Leonard T. Connors, Jr.
- Senator Raymond J. Zane
- Senator John A. Lynch

New Jersey State Library

ALSO PRESENT:

- Dale C. Davis, Jr.
- Office of Legislative Services
- Aide, Senate Special Committee
- on Automobile Insurance Reform

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M E M O R A N D U M

March 5, 1986

TO: Members of the Senate Special Committee
on Automobile Insurance Reform

FROM: Laurine Purola

SUBJECT: Committee Meeting

The Senate Special Committee on Automobile Insurance Reform will meet on Monday, March 10, 1986 at 9:30 a.m. in Room 334 of the State House Annex. The committee will discuss risk classifications.

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mjz: 1-52

SENATOR DANIEL J. DALTON (Chairman): We're going to get the meeting started. Since the meeting is being transcribed, we have decided to go ahead. If the members come in late, they will obviously have access to the transcript.

The first meeting, if you will recall, dealt with rate development as it pertains to the companies. The second meeting dealt with that same subject, only from the perspective of the Insurance Department. Today we are going to get into the issue of rate classification. Our first speaker is Walter Bliss. Mr. Bliss is the former Deputy Commissioner of Insurance. Walter, I want to welcome you here today. Thank you for coming.

W A L T E R B L I S S: Thank you, Mr. Chairman, members of the Committee, Senators. For those of you who have been alumni of the system, I don't have to describe what a pleasure it is for me to be back and to have the chance to talk briefly on a subject which, while I was at the Department of Insurance, was an integral and inescapable part of my daily existence.

I am now an attorney in Princeton, New Jersey, but during the years 1978 to January of '82 I was Deputy Commissioner in the second Byrne Administration.

SENATOR LASKIN: Doesn't that automatically disqualify you because you are a lawyer? (laughter)

MR. BLISS: On the issue of the threshold, which we are not discussing today, I would, I'm sure, surprise you with some of my thoughts. Unfortunately, I am not going to get a chance to reach them, but point well taken.

During that second Byrne Administration, if you recall, we had double-digit inflation. We had rates that were rapidly escalating. We had availability of insurance rapidly shrinking. And, in that context, we looked upon the rate structure which generated extreme differences in rates among insureds and thought that at the very least they were worthy of very close scrutiny.

At the time, there was an industry plan led by the Insurance Services Office -- promulgated by the Insurance Services Office -- representing about 70% of the market, which consisted of 217 primary classes, a variety of secondary classes, and 27 rating territories, all of which yielded some 234,000 and more rates for the same coverage. Those facts caused us to think that at least we should take a second look, and so we did.

There were hearings conducted for an entire year in 1979 by the Commissioner of Insurance, covering some 80 and more hearing days. It took another year -- the entire year of 1980 -- to wade through the evidence and to compile a report which ultimately came to 750 pages -- 292 separate findings and conclusions -- leading to a variety of what were then very controversial conclusions. I am told, given the complete absence of movement on the subject since then, it is still a very controversial subject.

Following the issuance of the report in April of '81 and the Commissioner's directive which, among other things, abolished age, sex, marital status, and good student discounts, and ordered the revision of a whole host of rating variables, including territories, the industry participants in the hearing, which had included the rating bureau -- as I said, representing most of the market, the Insurance Services Office, from whom you will hear today, otherwise known as ISO -- Allstate, State Farm, The Hartford, Travelers, Colonial Penn, and others, appealed the decision to the Appellate Division and the report, until recently -- until this past year -- has been lodged in the Appellate Division with no further action.

In the last year, the decision was finally remanded to the Department of Insurance, given the passage of time, and the Department was directed, essentially, to reconsider -- effectively to reconsider the opinion, and the Department of Insurance, as I understand it, has now created, or is in the

process of creating, a commission which will again take up this 750-page report and the issues addressed in it, and attempt to determine what still makes sense and what still needs to be done in the classification area.

Just briefly on the conclusions of the report, as I said, it abolished age, sex, marital status, and good student discounts. It abolished a classification for youth known as Principal/Occasional Operator Distinctions. It required a whole host of pricing errors to be corrected; for example, discrepancies between class average prices and class average costs, the manner in which rating factors are combined, the so-called multiplicative additive issue, and the way expenses are loaded. Now, I'm using all sorts of buzz words. This is a huge topic and it is very difficult to do justice to it quickly. But I'm using the buzz words for the simple reason that it helps to point out what has changed since 1981. Specifically, the Legislature has adopted a variety of reforms, incorporated into what I have always called loosely "the Adubato legislation."

Those reforms have addressed a number of the points in the 750-page report, specifically the manner in which expenses are loaded or put into premium. The merit rating system -- it is required that flat dollar amounts be charged for traffic convictions. It has also directed companies, to the extent that companies choose to use accidents in rating; that is, whether or not somebody has had an accident, as a basis for a surcharge. That surcharge must be in flat dollar amounts. The Adubato bill also mandated a 5% reduction in senior citizen premiums. It capped certain class and territorial differentials. It provided that the so-called primary variables -- age, sex, marital status -- cannot generate a differential greater than 2.5 to the base class, to the adult driver, and no territory can be more than 1.35, or 35%, above the statewide average.

So those Aduvato reforms effected a substantial narrowing of some of the vast disparities, so that whereas in the old days you could have -- on the basis of age alone -- a rate differential of, say, four to one, under the Aduvato reforms, you couldn't have a differential of greater than two and a half to one. Now, when you combine those differentials with territories, of course, and you combine them with secondary rating factors, you still get rates much greater, or much more disparate than the mere two and a half to one. For example, the old four to one ratio, when combined with other factors, could get you up to a ten to one spread in rates. A two and a half ratio leads to a more modest spread in rates, but nonetheless a very large one. I don't have a number at my fingertips, but substantially greater than two and a half to one.

There is a very intense controversy in the subject, and unlike the one you are used to in the verbal threshold and rate level issues, it is not between the lawyers and the industry. It is between the industry and the regulators. The industry and the regulators come at the issue of classifications from entirely different directions, and I think that explains the reason for the controversy. To the industry, the classification systems, that is, how you classify insureds, by age, sex, marital status, territory, and the like, are really just an extension of their ordinary customer selection competition. In the insurance business, the name of the game is to come up with the best book of business, to come up with the best book of insureds, as you define them. And typically defined in socioeconomic terms, they are typically suburban, adult, and, if you will excuse the expression, youth with parents, that is, youths whose parents are paying the premiums, as opposed to youths who pay their own premiums.

The regulator, on the other hand, looks at it quite differently. The system is part of the overall compulsory

insurance system, which, as I am sure you have been reminded on many, many occasions-- Compulsory insurance is, in effect, a State-mandated tax on the privilege of driving, the privilege of using public highways. It is a highly regressive tax, to the extent that insurance rates vary inversely with socioeconomic status and income, which they tend to do. And it is also a very onerous tax. When you look at the vast rate disparities among insureds, and when we look at the issue, rate disparities of up to ten to one, where youths in urban areas were looking at premiums in excess of \$2000, the amount of the tax, in absolute terms, certainly dwarfed anything feasible or comprehensible under the State income tax, and is certainly in the opposite direction from anything imposed under a, at least theoretical, progressive State income tax.

So, the regulator approaches the classification issue much the same as a court would approach the even-handedness or fairness of any State-sponsored system. It is not merely a private system. Near private competitive considerations are not enough to justify the classification system and, indeed, as we found as regulators looking at the system, even private competitive considerations don't necessarily justify this system. It is a system in which everyone is locked in. Rules have evolved since the 1950s, where with each generation of rule changes, the classification systems have become more and more intricate, more and more refined. Once one carrier makes a change which effectively increases the classification, reduces the rate for some drivers, and increases the rate for the others, the assumption is that the drivers for whom the rate has been reduced are the desired customers, and the drivers for whom the rate has gone up are the less desired customers. As soon as one company makes that change and begins creaming off the lower-rated drivers, then the other companies have to follow suit, and they all get locked into the same game. Once the refinement is established -- once the system is

established -- no carrier can really leave the system by itself. It must go with everyone else. The rules of the game, in other words, must change for everyone at once, or certain carriers would be put at a disadvantage. In other words, there is no premium on innovation when it comes to less refinement in the classification system.

The classifications, too, by way of background, are not -- and we found this repeatedly -- the product of neutral scientific study. When carriers were asked for the various empirical reports, the various studies that we expected we would be buried in which would justify the establishment of the classifications and the establishment of the territories, we found there were none, absolutely none, that these classifications in territories had evolved as an extension of underwriting judgments, and had simply been put in on an experimental ad hoc basis, with changes over time, and those changes simply stuck.

You will hear, too, again by way of background -- I am going to get into the specific subject matter quickly-- You will hear, too, much discussion of the significance of competition. After all, this is an issue between regulators and industry. To what extent is there too much regulation? That is an issue that you have to address in the classification context.

Under pure economic theory -- and this is addressed in the report -- one might argue that free competition assures the most efficient allocation of resources. In fact, industry witnesses would argue that by permitting an uncontrolled degree of refinement of classifications, an uncontrolled degree of spread in premium differentials up to, say, ten to one, that you effectively create the most efficient allocation of resources because you are pricing drivers off the road. If the high risk drivers at the extreme ends of the spectrum are, in fact, undesirable, then by pricing them out of the market you

have devoted your available insurance resources to the best drivers, the ones likely to generate the least losses, the ones likely to take up the least commitment of insurance capital, so that you have, it would be argued, a more efficient system that permits unconstrained refinement in pricing drivers out.

SENATOR LASKIN: Also the ones with the lowest premiums.

MR. BLISS: The ones with the lowest premiums would remain in the system, that's right.

The regulator looks instead-- I would submit that the Legislature really has to look instead at the whole system; that is, although it may satisfy private objectives to price certain insureds out of the market, from a public standpoint you cannot segregate the insurance system from the overall system of highways and motor vehicle operation in the State. That is, drivers who are forced out of the insurance mechanism will, in all probability, still drive. Indeed, at least the least responsible of the drivers forced out of the insurance mechanism will still drive. So, as a Legislature and as a regulator, one would have to look at the overall system. It is not enough simply to say that the insurance mechanism, per se, is more efficient if we get rid of the bad apples, or those rated highly.

I have distributed a four-part exhibit, which consists of nothing more than tables taken from the large report. The first one describes for you common classification variables in use in 1981, and I submit that with almost no exceptions, they are still in use today. Keep in mind first that the insurance follows the car. Okay? So anyone who drives that car is covered. The policy follows the car. So, the classification of the rates charged for insurance covering that car should be determined by the risks which affect that car -- how well it is driven, how often or how much it is driven, and where it is driven.

The industry variables address, in part, those considerations. To the extent they address only in part is to some extent the problem. The first category of classification variables has to do with driver characteristics. You've heard it many, many times -- age, sex, marital status. There is a resident student status rule that has to do with students who live away from home, as a discount. There is a good-student discount for students who maintain a B or better average. There is a driver training discount for students who have had a driver training course, if it is an approved course. There is an experience or years licensed surcharge that is imposed on the youngest single male principal operators; that is, if they have been licensed for less than three years, they pay a surcharge over and above being a youth -- over and above the ordinary differential for youth. There is a rating based on accident record, although not all carriers surcharge based on accident record. And there is now a conviction record scheme that is applied universally by statute, involving flat dollar surcharges administered by the Division of Motor Vehicles. That is part of the Aduato bill.

The second category of driver characteristics has to do with the use of the car, the type of use -- pleasure, commute, long commute, short commute, how many miles annually it is driven -- although the major rating bureau in the State, Insurance Services Office, representing 70% of the market, doesn't use mileage at all. Travelers, however, uses mileage, and I believe State Farm, and under the old Allstate system mileage is used. The number of cars under the same policy is considered, whether it is single car or multi car and, also, territories.

The final group of classification variables goes to the type of the car, the retail price, and the age of the car, being principal, especially -- excuse me -- for your physical damage coverages and your collision and comprehensive; age and

value of the car if you are determined critical; and, various select physical characteristics, performance ratings, and so forth.

The third category is type of car. The third cluster of variables was not addressed in the classification opinion. That opinion was confined to the first two clusters. Effectively, if you want to go down again to catalog what the opinion attempted to do, it attempted to eliminate age, sex, marital status, your first three. As to resident student status, it said, "Fine, resident student status rules are okay as long as they include all situations in which the youth is away from home." It abolished good-student status and it abolished occasional/principal operator distinctions because they were without definitions and impossible to operate -- to apply.

Let me explain quickly what that means. There was a vast rate difference created for youthful drivers, depending on whether they were the principal operator of the car or whether they were an occasional operator of the car. But whether they are principal or occasional under the ISO rules is essentially not defined by any criteria and, frankly, it defies definition and is essentially a judgmental consideration. Here is a classic case of how the industry and the regulator look at something from entirely opposite directions.

For a company to delegate to an agent discretion as to how that agent rates the driver -- and the agent has a lot of discretion because he can make a discretion call as to whether to call that driver a principal operator or an occasional operator -- is very easy to do. A company can make that delegation if a company is confident that the agent can make an effective business judgment as to how to rate the insured. But that kind of discretion, in a system of State-mandated insurance, is very difficult for a regulator to tolerate. Because it is a State-mandated system -- I'm getting back again

and again, I think, to that central theme; this is a State-mandated, compulsory system -- under that system, subjecting the system to the kinds of judicial scrutiny that State-sponsored programs are subject to routinely, causes the regulator to have great difficulty with an open-ended discretionary rating principle, such as the occasional/principal operator distinction.

The next variable, experience, years licensed. The Department said, "Fine, the number of years licensed is a valid basis for classifying insureds and differentiating rates, but it is certainly unfair to impose an experience surcharge on top of a youth surcharge.

SENATOR DALTON: When you say-- May I interrupt you there, Walter?

MR. BLISS: Sure.

SENATOR DALTON: When you say an experience surcharge, do you mean that there is a surcharge applied per number of years that one is driving, or conversely, the less years one has driven, the more of a surcharge that person receives?

MR. BLISS: I think it-- No. If you have been licensed for less than three years--

SENATOR DALTON: Right.

MR. BLISS: --you get the same surcharge. Is that right? (Witness addressing someone in audience, but reply is indiscernible.) If you are licensed for less than three years, you get the same surcharge. What is it, about 40%? (answer from audience indiscernible) Flat dollars now, okay. That's right; now it's flat dollars, okay. It used to be -- and it is still a substantial surcharge -- 40% of the base rate. That is over and above the youthful differential.

Now, that gets me to some of the difficult empirical questions that are raised. If you take data -- insurance data -- and compare the losses of an inexperienced operator versus an experienced operator, you will find large differences, or

significant differences, and by inexperienced I mean number of years licensed. If you look at youth data, that is, accident data for certain youth categories versus accident data for certain adult categories, you will see significant differences. The question raised here is, is there any study that compares youths licensed for less than three years with adults licensed for less than three years, which takes into account both the inexperienced component and the youthful component to the extent they can be severed? And the answer is no. The variables are rated independently, and then they are combined judgmentally. Data is examined to establish rough cuts between primary variables, and then, through a judgmental process, they are combined into 234,000 separate rating cells. Now, incidentally, those rating cells have been diminished under the Aduato legislation.

SENATOR DALTON: Generally, what do we have right now? You used to have 234,000 before the Aduato--

FROM AUDIENCE: Some of the differentials are actually collapsed together, but as to actual rating classifications, you didn't lose that many.

MR. BLISS: There are still 234,000 rating classifications, but many of them have merged rates.

FROM AUDIENCE: Basically, it varies now from 17 to 21, and they probably all have the same rates.

SENATOR DALTON: So, roughly our present system is based upon approximately 200,000 different categories of rates that can be developed. Is that an average--

MR. BLISS: Yes, based on type of car and driver characteristic. If you add in -- excuse me -- use of car and driver characteristic. If you add in type of car, you're getting close to a million rating possibilities for the same coverage.

SENATOR DALTON: It's an extremely simple system then, right? (laughter)

MR. BLISS: I'm afraid the intricacy of the system, if not the complexity, has caused me to wander a bit.

The second sheet in the exhibit has to do with rating territories. Again, I assume the outlines of these territories may be very familiar to you already, but I think a basic point to keep in mind on the territories is: First, they were established in 1946 and they haven't been changed since. They were established as part of the rating process. They are not incorporated in any regulation or any rule, and a private carrier has the right to change these territories, with the approval of the Commissioner of Insurance, at any time. So, they are not etched in stone, as it were.

Now, each of those territories generates a base rate, based, more or less, on the loss experience for the adults in that territory. However, some of the territories are so small that there is not enough data to generate credible rates, and various judgmental or statistical estimation techniques are used to approximate. Then, under the old system, the driver characteristics and use of car variables would be multiplied times the territory base rate to determine a rate for the vehicle.

The classification issues, again, are not complex perhaps, but they are intricate, and it is very difficult for you, as a legislative Committee, to address many of them. The various issues addressed in the 1979 hearings included choice of variable; that is, is age an okay variable to use, or isn't it? Is sex an okay variable to use, or isn't it? And what about mileage, what about merit rating, what about number of operators, what about multi-car discounts? Do these variables pass muster under the statute which prohibits the Commissioner from approving them if they are unfairly discriminatory among insureds? So, choice of variable is issue number one.

SENATOR LASKIN: More basic than that, what business is it of ours? I mean, Dan Dalton is probably the only real

expert in the business here because that is his business. What does the Legislature know about all these intricate things that you are describing? Should we say, "Business take care of yourself. Fight each other, lower rates, have competition"? What do I know about establishing territories?

MR. BLISS: I'm not sure that I'm here to really recommend to you that the Legislature take up the issue of territories.

SENATOR LASKIN: I'm not asking you that.

MR. BLISS: I think it is a regulatory issue, very much so. Competition-- The extent or effect of the competitive pressures in the State are reflected in the fact that these territories, notwithstanding the vast demographic changes in the State, have not changed in 40 years.

SENATOR DALTON: But doesn't it seem if you are going to encourage competition-- What you are saying is, in many cases you become -- many of the companies become locked into these determinants, these factors, and, as a result, if you are going to encourage competition, isn't there some basic fundamental changes that have to be made in this classification component of the auto insurance system?

MR. BLISS: The approach taken by the Commissioner of Insurance in 1981 was to abolish certain variables, propose the modification of other variables, if the industry chose to continue to use them, and propose the substitution of new variables which would be acceptable, if the industry chose to use them. So, there was left open a whole range of choices, and essentially it is the regulator's job only to rule out certain choices. It is the industry's job still, and will always be, which variables to choose, provided they fall within the perimeters of acceptable variables. That was the approach in 1981.

For example, the age variable. Age is largely a proxy, is another way of measuring the number of years

licensed. It is also another way of measuring the number of operators on the car. A key factor you ought to keep in mind is, insurance follows the car. It is the rating characteristic of the highest rated operator in the family which determines the rate of the car. For example, if you have three adults in the family and one 17 year old, the car will be rated a 17-year-old car. All the loss experience for that car will go into the 17-year-old class, even if the accidents are caused by the adults in the family. So, if father has an accident in a 17-year-old rated car, the loss experience goes to the youth. So, by definition, to the extent that youths have parents, in many cases -- that is, parents on the same car -- youth cars have, by definition, more operators than adult cars. So, age is a proxy for the number of operators, in addition to years licensed.

Sex is a-- Gender distinctions are, by study, determined to be proxies, largely for mileage, at least in the early -- in the derivation of the studies connected with-- In the early days of the variable, it was determined that young males drive about twice as much as young females, and keep in mind, incidentally, that all of these variables we are talking about apply only to youths, for the most part. For example, in the ISO system, there are 217 primary classes -- age, sex, marital status, good student, and so forth, 202 of which apply to under-30 drivers; that is, drivers under the age of 30, and the balance apply to the balance of the population. So, almost all of your refinement is addressed to the youths, and that is where the great differentials come from. Sex is a proxy for mileage, as is marital status. Sex is predicated-- The official rationale for sex as a basis for rating is that young males are less mature than young females. Young males tend to go out at night, and young females tend to stay at home. Typically, married youth are more responsible than single youth, and so forth.

Another anomaly you ought to be aware of, and another reason why it is very difficult for a Legislature to effectively address some of these rating problems, has to do with the data used to evaluate differences in sex, marital status, age, and so forth. Under the marital status classification, the largest differentials based on single against married, are in the 17- to 20-year-old group. Now, as a practical matter -- and, Senator, I'm sure you can confirm this -- any youth who is married before he or she is 20, can probably not get insurance, probably cannot meet most underwriting tests. Keep in mind, though, companies have the right to refuse any insured they want, for any reason undisclosed.

The differences that show up in the data between married and single in the pre-20 group really have to do with the differences between policies having full-time youths and youths who are away at college. Under the data-keeping system that is used, resident students, that is, students away from home at college more than 100 miles, who live there during the year, are considered married for rating purposes. So, if there is a family with a student away at school, the car will be treated as a married car -- a youth married car -- and if somebody has an accident on the car -- it doesn't matter who it is -- that accident will be charged to the married class, the 17 to 20, even though the youth involved is single. So, it is very, very difficult to find any justification whatsoever for distinctions on marital status per se.

Incidentally, among the other anomalies, there is a similar limitation on the data used to distinguish sex or gender. Single females -- excuse me, married females, regardless of age, are treated as adult. So, if an 18-year-old female gets married, any car rated according to her characteristic will be treated as an adult car, so it means she can get insurance, whereas a single male is always a single male.

SENATOR DALTON: We're going to ask you to start wrapping it up, and then I would like you here and available for questions.

MR. BLISS: Okay. To take a step back, if I may quickly, go to the third page of the exhibit. You'll hear a lot about whether or not different rating characteristics generate differences in the average loss experience of different groups. And, of course, you'll hear again and again that the extent of the difference will depend, in large measure, on how those groups are defined. No matter what you do, no matter how you define them under the current system, the issue is whether or not those classifications developed produce homogeneous classes as opposed to heterogeneous classes. Even if a class is capable of generating a class average difference with some other class, the critical question is whether or not, within that class, the class average fairly represents the people in the class. Figures 3 and 4 taken from the report are purely hypothetical, but they, in fact, reflect the nature of the distribution of risks within classes in the New Jersey system.

Class A is a hypothetical class with a \$150 class average. Class B is a hypothetical class with a differential two times -- with a rate twice as large, \$300 at the class average. If the class were homogeneous -- if the two classes were homogeneous, you would find, as in the figure at the bottom, a two class-- You'll notice the dotted line reflects the class mean. You'll find that the class mean of \$150 and \$300 represents most of the risks in the class. The risks are clustered about the mean, as you can see. In fact, however, the actual classes look more like the figure on the top, Figure 3, where even though you have differences in class mean, you have substantial numbers of risks in each class which have better experience than the risks in the other class.

And, skipping over a whole host of stuff, let me just give you a summary of some of the numbers taken from the study. As to the highest rated males in the State, 13% were found to have lower expected costs than the average for the lowest rated adults. So 13% of your highest rated have better experience than the average for the lowest rated adults in the State. Twenty-five percent of those highest rated youths have -- this is even assuming you have more operators on their cars than the others-- Twenty-five percent have better experience than 20% of the lowest rated adults. For the females, the numbers are more striking. Of the highest rated females, one-third have expected losses below the average for the lowest rated adults; 10% have expected losses above the average for the highest rated males; and, 54% have expected losses below 20% of the lowest rated adults.

What I am trying to say is, there is substantial overlap among the classes. The innovation that is contained in this report and this hearing had to do with statistical techniques used to look within or behind class means and to examine the distribution of risks within those classes. A great deal of heterogeneity was found. There was a standard used in the hearing called "Explanatory Power." It was determined that overall, notwithstanding 234,000 and more rating differentiations-- All of those differentiations served to explain no more than 25% of the total risk variation in the population at large. That means that three-quarters of all the risk variation in the population are left unexplained by this highly intricate system.

SENATOR DALTON: For this system with over 200,000 rates?

MR. BLISS: That's right. Now, the significance of that, and last but not least -- and I promise, this is my conclusion-- The last exhibit, and again it is a hypothetical, shows you what is at stake in the classification process. If

there is no classification -- and here's the hypothetical -- if there is no classification, and you have a population of two kinds of risks, low risk and high risk-- Say you have 90 low risks, 90% low risks, and 10% high risks; say the expected costs of the low risks are \$150 a year, the expected costs of the high risks are \$450 a year, three times as much. If you put all of those folks in one class, you would come up with a class average rate of \$180. That means that those low risks who are in the class with the high risks, all mixed together, are going to pay \$30 more than their true risk. The high risks are going to pay \$270 less than their true risk, if you put them all together. However, if you split them up into classes, typically you come up with a factor that works. It cuts off some of the high risks, and it segregates some of the high risks. You still have an imperfect process that leaves some of the low risks mixed in with the high risks, and some of the high risks mixed in with the low risks. So, you get the situation on the right-hand side of the exhibit, where risk classification segregated 85 of the low risks in the low risk class, but failed to eliminate five of the high risks. The new rate is \$167, so for all of this classification, the low-rated risk is now saved \$23 -- excuse me, \$13. The rate goes down \$13, but for the high risk, in the high-rated class-- Excuse me. For the low risks who are lucky enough to get into the low-rated class, the rate goes down \$13. For the low risks who, through imperfections in the classification system, are left trapped in a class with high risks, their rate goes from \$180 to \$300, an increase of \$220 -- excuse me, \$120.

So, your trade-off is that. As your classifications become more and more refined, the accuracy improves to some statistically measurable extent, but the overcharges, or the price penalties paid by good drivers trapped in classes with bad drivers, or high risk drivers, increases, to the extent -- to a level of pain that in 1981, at least, was entirely intolerable.

I thank you for your time.

SENATOR DALTON: Okay, Walter, thank you. Why don't we open it up for questions from the Committee now. Senator Zane?

SENATOR ZANE: Yeah. Preliminarily, I have two questions for you. With the information you have given us today, what would you suggest-- What direction, from what you are suggesting, if any at all, would you have this Committee make or take as a result of the problem you recognize, or that you highlighted, or do you think it should be left entirely to the regulators to resolve this?

MR. BLISS: Frankly, I think it is almost entirely a regulatory issue, with exceptions going to choice of variable. I frankly think that sex and marital status variables have long ago outlived their acceptability in the State. They are marginally legal even under the existing laws. I think, too, that the Legislature has to, as always, prod the regulator, and has to make sure that the job gets done. The territory situation is one that is long overdue -- 40 years overdue. It must be addressed in ways that create statistically supportable differences.

SENATOR ZANE: Okay. Another question I have is, it has been suggested at prior meetings of this Committee that other states have had other experiences because of less regulation overall. What would be your thoughts about if the State of New Jersey were regulating the industry less from the standpoint of competition, from the standpoint of putting a product out and saying to the public, "This is it. This is what it would cost," and the State really sort of out of it, if you will? I guess what I am suggesting is something similar to what we have been told exists in California. What do you think would happen here if that happened?

MR. BLISS: I think deregulation would help certain classes of motorists and would severely hurt others.

SENATOR ZANE: Would it be something that you would recommend or recommend against New Jersey even considering?

MR. BLISS: I certainly would, yes.

SENATOR ZANE: Certainly would what?

MR. BLISS: Would recommend against it.

SENATOR ZANE: Okay. My last question-- Based upon your experience, looking at various insurance programs, and looking at what, to me, appears to be an absolute mess in this State, if you were going to -- if you had the power to come up with a program in this State for insurance, what would you be recommending to the Legislature? If we said to you, "You know more about it than anybody," what would you be recommending to us that we have as an insurance program for the State of New Jersey?

MR. BLISS: Well, first of all, you have to look--

SENATOR ZANE: I could probably take you through categorically what I am talking about. Would that help?

MR. BLISS: Sure.

SENATOR ZANE: Let's say verbal threshold as opposed to doing away with no-fault.

MR. BLISS: I think the verbal threshold -- and I lobbied for three years for the verbal threshold in the Legislature -- is absolutely essential, or some other perhaps more intelligent approach -- and I am not aware of one -- to limit the flow of relatively meaningless soft tissue lawsuits. You know the ones, they go for about-- They go for anywhere from 2500 bucks apiece to 7500 bucks apiece routinely, just by virtue of filing a complaint. As has been observed, every lawsuit is worth something, and the nuisance values of the low value soft tissue suits are such that the PIP-- Let me back up a little bit.

SENATOR DALTON: Wait a minute. If we are going to do this-- The problem I have with doing this -- and I have no problems with your expressing your opinion-- The problem I

have is, I just want to keep it at Senator Zane asking the questions, because I can see we are going to go down component by component, and you are going to have seven guys coming at you here. So, can we limit the Committee to Senator Zane asking these questions at this point? I mean, he is going down-- Otherwise, we are going to be here until 11:30, and we've still got ISO to hear from yet.

MR. BLISS: Just backing up on the verbal threshold, you ought to know, one, that I do personal injury work, and I do it largely from the defense side, so you know where I am coming from. I do most -- almost all of my personal injury work in soft tissue cases--

SENATOR ZANE: You represent insurance carriers.

MR. BLISS: That's right, valued at under \$15,000. There are two areas of the premium cost picture which will be impacted in a major way by a verbal threshold. One is the BI component, which has been debated endlessly; the other is the PIP component. All of the specials that are used to build up general damage claims are financed by the PIP dollar. It is an empirical reality that in those suits where PIP coverage is not applicable, the specials -- that is, the medical bills -- somehow miraculously come out less in most cases.

The savings you would have under a verbal threshold would go then both to saving your BI component and to your PIP component. Your PIP is probably your fastest growing component.

SENATOR ZANE: Let me take you to another category. What would you recommend be done with PIP? Do you think New Jersey should remain with unlimited, do you think there should be some limitation, do you think there should be a limitation with an option to buy whatever you want to buy? What do you think would be best for the motorists of this State?

MR. BLISS: I really think that the PIP -- and this goes to the center of the no-fault debate -- no-fault insurance is a major social breakthrough. Let me begin with that. There

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are all sorts of people who are made whole from a medical point of view under PIP, who wouldn't get a nickel under the old system, and wouldn't get a nickel under a system that does away with PIP.

I think the heart of the whole verbal threshold debate is preserving PIP. We have to preserve the no-fault system and pay the price that it takes to do that. I would not limit PIP.

SENATOR ZANE: You would not? You would still continue to mandate PIP with unlimited medical expenses as we have today?

MR. BLISS: Yes, although we have a capping arrangement today for financing purposes; that is, PIP is capped at \$75,000, and losses above that amount are spread throughout the market through the Unsatisfied Claim and Judgment Fund. Perhaps the cap isn't high enough, or isn't low enough. That is something that can be debated, but I think from a societal standpoint, that PIP, in an unlimited way, makes us a unique State, and is something that we ought to fight to protect.

SENATOR ZANE: I think those are the two main items. I don't want to dominate this, but I think basically what you have said is that you would recommend a verbal threshold or some alternative that would preclude those claims in the \$2500 to \$7500 range, or limit them somehow. Is that correct?

MR. BLISS: Yes.

SENATOR ZANE: And, do you have any--

MR. BLISS: Scheduling of recoveries netting out attorneys' fees might be a useful mechanism, too, although not as dramatic.

SENATOR ZANE: I'm sorry, what was the last comment?

MR. BLISS: Scheduling recoveries, that is, certain types of soft tissue injuries, would generate an automatic scheduled recovery of a certain dollar amount. One of the problems you have in the State is that if you sprain your neck

in Middlesex County, it is worth more than if you sprain it in Hunterdon, and so forth.

SENATOR ZANE: Let me ask you a question. You do a lot of defense work. Of those claims that are filed and that come into your office, what percentage do you try?

MR. BLISS: A very, very small percentage.

SENATOR ZANE: That's right. Less than 5%, am I right?

MR. BLISS: Yes.

SENATOR ZANE: So, if we are going to -- and I find myself doing this all the time, by inclination wanting to defend the lawyers somewhat-- If you are settling 95%, and you are only trying 5% or less, who then is really setting the recoveries? Isn't it the insurance industry? Isn't it your client?

MR. BLISS: The single-- Obviously, the single biggest reason forcing settlements is the nuisance value of the case. For example, it takes \$1000 to get a doctor to the courtroom. It takes several thousand dollars to try a case in legal fees, to the extent there is any complexity involved at all. Heck, in Middlesex County, we can spend several days just waiting in the corridor for a judge, all on the clock.

Then, when it is all over, when you have invested all those sums that typically exceed the amount that you are willing to settle for, on top of it all, you go to a jury and you are throwing dice as to how the jury is likely to come out on valuing an injury, which is, by all admissions, highly unscientific. So, in a certain dollar range -- and I think I have identified it, the \$2500 to \$7500 case -- it is folly to go to a jury with the costs involved.

SENATOR ZANE: I don't want to dominate, but I could go on all day on this one.

MR. BLISS: May I add one thing, Senator? You asked me about competition, and I would like to qualify my competition statement. I predicate my feelings on that point

on recognition that we have a compulsory insurance regime in this State, and I think if you are going to look at the ideal insurance system, you have to look at compulsory insurance. Is there a way to make insurance other than compulsory? California does not have compulsory insurance.

If you can do away with compulsory insurance, then you can begin to talk about permitting the private market to have its say, provided you take care of the motorists in the State and make sure they have protection from the irresponsible driver and the other driver who is likely to pile into them. I mean, you are going to have to come up with an alternate insurance mechanism.

So, at best, you are going to come up with a mechanism that is half free and half regulated, or State-financed to control.

SENATOR DALTON: I am going to be a little more stringent with the other questioners. I want to stay--

SENATOR LASKIN: On his issue.

SENATOR DALTON: Yeah, on this issue of rate classification. So, with that, are there any other questions for Walter? Lee?

SENATOR LASKIN: I have a lot of questions on the classification system, but I am not going to go into them because I think your explanation of the classification system points out just how ambiguous and complex our system is. The comments you made most recently are the ones that impressed me more than the explanations of the regulations, which I think are horrible, as a general rule.

The point you're making -- the point you are finally making -- is, if you are going to address the insurance problem, you have to address the whole problem; that is, mandatory insurance should be considered; PIP has to be considered; catastrophic illness and injury has to be considered; the whole thing. What scares me is when I hear

somebody testify before this Committee, or any committee, and a newspaper reporter writes down the three sentences that they really want to hear, and forgets about every other bit of the complexity of the problem. That is what scares me.

So, I'm glad you talked about classification. To me, it just points out how utterly ridiculous our system is, because each witness we've had has talked about his or her own topic, and his or her own topic has been shown to be horrible, complex, and incomprehensible. The bottom line of this Committee is, we've got to look at the whole issue of automobile insurance, not one -- not a verbal threshold, not classification, not this or that. It's the whole overall picture. I really have a good feeling that this Committee is going to do that.

SENATOR DALTON: Len?

SENATOR CONNORS: Go ahead.

SENATOR DALTON: One question I want to ask is, you indicated that the whole issue of classification should be left to the regulators -- insurance companies and regulators. My problem with that is that the recommendations that you made in 1980 -- which I believe, in many cases, were regulations that were meritorious-- We are no further along to reaching those changes that you recommended than we were back in 1980. We have left it to the regulators. Where have we gotten as far as these changes are concerned?

MR. BLISS: Well, I did recognize the need to prod. That is certainly a very important role, to prod the issue along. Frankly, I am dismayed at the extent to which my knowledge of this very intricate system is still current six years later, as little of it as I remember.

SENATOR DALTON: Well, my concern is that you can come back here, Walter, five years from now, and you are still going to be current. If you take a look at the whole issue of classification, if you testified in the late 1940s, and you

came in and explained basically those territories, it is my understanding that your information would still be current. Is that correct?

MR. BLISS: That's right.

SENATOR DALTON: Okay. And that's my point. We have left it to the regulators, and we have left it to the courts, in this case. The Appellate Division sounds like they really made a decision that will provide them with a chapter in "Profiles in Courage." They remanded it back to the Department. We are no further along now as far as these changes are concerned.

When you are talking about classification components that have no factual basis, and then you're saying that the Legislature shouldn't be involved, you know, my feeling is, "Hey, we gave you guys your shot, and nothing has happened to make a more fair and equitable system."

MR. BLISS: I certainly can't think the Legislature has a role in ruling certain variables out. I underscored sex and marital status.

SENATOR DALTON: Okay.

SENATOR CONNORS: What would that do for the price of insurance?

MR. BLISS: It would probably do very little. The cost component, which I am sure you have to be concerned with-- Most of the classification issues have to do with moving dollars around, as opposed to producing absolute levels of cost. There are only two cost-implicated issues that are in the report. One, there is a tendency, for competitive reasons, to overprice the highest rated risks and to underprice the lowest rated risks. Thus, to the extent each year the industry is concentrating more and more on underwriting just the lower rated risks and not writing at all the higher rated risks, you have a rate deficiency developing with time; that is, the assumption of the classification system is that the companies

will write all the risks, and that the high-priced risks will pick up the excess from the low-priced risks. The dollars will simply be spread around.

But if you have an underpricing of the lowest rated risks and overpricing of the highest rated risks, you have to make sure that those overpriced risks get written to pick up the tab for the lowest rated risks, who are underpriced. If the companies are not writing both kinds of risks, and they are only writing underpriced lowest rated risks, then you have rate deficiencies developing that help promote -- and I am not sure how significant it is -- repeated rate requests.

The second cost issue is the nature of your variables. To the extent you turn more to behavior-oriented variables -- driving record, mileage, number of operators, and so forth, variables that drivers have some control over -- they have the opportunity to conserve; that is, to conserve their utilization of the automobile in a way which impacts on their rate, and that would affect costs. To the extent they have no control over the rating characteristics -- age, sex, marital status, what have you -- they not only can't conserve their insurance usage to result in lower insurance costs, but in addition, they develop a certain cynicism about the rate-making process, which promotes some of your excesses in the litigation context, and so forth.

SENATOR CONNORS: May I continue?

SENATOR DALTON: I want to just interrupt. Do you know of any other state that provides the consumer -- I don't know if provides is the right word -- with over 200,000 rates?

MR. BLISS: In most other states, ISO has reduced its class plan from 217 to 202. This is a refinement that has not been visited upon New Jersey, perhaps because the issue has been so hotly contested in the State that the industry is essentially stepping back and waiting to see what happens before it makes any changes on its own. But there have been

scaled down degrees of classification refinement in other states. I would doubt there are many states with more than 234,000. Is that fair? (Witness consults with someone in the audience, but exchange is inaudible since they are not speaking into a microphone.)

SENATOR LASKIN: What states are they? (Inaudible response from audience.)

SENATOR DALTON: Go ahead, Senator Connors.

SENATOR CONNORS: If the classification process is 202 or 234,000-- That was established by the industry, am I right?

MR. BLISS: Yes.

SENATOR CONNORS: That was established by the industry and accepted by the regulator?

MR. BLISS: Yes. It came in increments. Back in the early '50s, of course, you had a four- or five-class plan, and it grew over time. When it came in, in the early '60s, the big 260-class plan by the Insurance Services Office, it was viewed as a very progressive change -- in the early '60s -- before its full implications were known.

SENATOR CONNORS: And as broad as it is, with 234,000, or 202,000-- It seems to me that a system that broad with classifications, the insurance company can do pretty much whatever it wants to do with any individual driver.

MR. BLISS: There is a great deal of discretion in the system, that's right, as to which box an insured fits into. That's right.

SENATOR CONNORS: And so--

MR. BLISS: From a business standpoint, that isn't bad, but from a regulating standpoint, it's intolerable. Therein lies some of the conflict.

SENATOR CONNORS: I am just going to get off that subject for a minute. In your opinion-- You talked about the threshold, and you said you thought it would have significant importance to the PIP section of the policies that the

policyholders have. In your opinion, what would be the difference between the verbal threshold and the \$1700 threshold, in terms of dollars and cents?

MR. BLISS: The one problem-- The \$1700 threshold would probably simply cover more injuries, therefore permit more suits than the verbal. But over and above that, the \$1700 threshold provides a target for litigants to shoot at, all financed by the PIP dollar. So, whereas in the existing system you could get a soft tissue suit into court by just running up \$200 in medical bills, now you have to run up \$1700 in medical bills, and that isn't all that tough to do.

SENATOR CONNORS: I'll just go with one final question here. How much do you see in saving as a PIP dollar that the verbal threshold will bring about, as opposed to the \$200 or the \$1700 thresholds?

MR. BLISS: Unfortunately, I have no quantitative estimates whatsoever. We used to go with \$50 a car on just the BI side, back in 1981, but that didn't include the PIP because the PIP is all guess work.

SENATOR CONNORS: You know, everybody we've asked what the projections are here, it's been like gossamer; it's very flimsy, very nebulous. You can't get a hold of it. Nobody comes up with a-- But yet, when we talk about something that is way, way out, the figures are right there. I don't understand that. It would certainly seem to me that the industry, or the regulators, or someone, could say, "If you put it in a verbal threshold, you will cut your premium dollars by so much" -- period, that's it.

SENATOR DALTON: Walter, in fairness to you, I mean, you've been out-- You are no longer a regulator, and for the last several years you have been in a law practice. So, I mean, those figures wouldn't be obviously available to you as readily. I just wanted to point that out to the members of the Committee.

MR. BLISS: Right, but I am recalling. I'm answering as if I were sitting here in 1981, and I would have told you in 1981 \$50 a car on BI only, but I cannot tell you how much savings there would be on PIP because it is all judgmental.

SENATOR CONNORS: Understand, that is not a criticism of you, sir.

MR. BLISS: I understand. It is a problem with the subject.

SENATOR CONNORS: It is a question that keeps popping up here.

MR. BLISS: It's a problem with the subject, that's right.

SENATOR CONNORS: Nobody seems to be able to say, with any measurable authority, "This is what you are going to save if that is the direction you are going to go, and that is what the percentage of the policy is going to be. Various territories might be influenced by a different amount, but here is what the overall picture, the average motorist--" I haven't heard that yet.

MR. BLISS: See, you can go on the BI side of the verbal threshold question. You can go back into your data and determine what judgments -- what your structure of judgments was based on amounts of medical bills and whether they were soft tissue, hard tissue, and so forth. But you can't go back into PIP and guess how, if you changed the rules on PIP, people would not take the incentive to run up medical bills. You can only guess that there would be a diminished incentive to do that; therefore, a diminished expenditure of PIP. You can't begin to guess how much.

SENATOR DALTON: The whole issue of verbal threshold-- I mean, we haven't even gotten to it yet, as far as this Committee's considerations are concerned. So, I suspect that when we do get to it, we will hopefully get more concrete answers to our questions. But I want to stay on the subject, if I can, and turn to Senator Orechio.

SENATOR ORECHIO: Yes. Mr. Bliss, at present we have two monetary thresholds, the \$200 and the \$1700. Some are advocating that we include the verbal threshold as another option. How do you react to that in terms of-- Would there be any impact or significance of any rate reduction?

MR. BLISS: You can't-- The irony of the last round -- the \$200 to \$1700 choice given consumers -- is that we won't have data on that for another year or two. So, it is impossible to guess how a third option would impact, if we don't know what the first two did, although, again, empirically, that is, day-to-day experience, tells me that a disproportionately few people are taking that \$1700 threshold. Certainly there is not-- There has been, frankly, resistance among the bar, and I believe resistance among producers, to selling clients -- by producers I mean agents and brokers -- on the wisdom of the \$1700 threshold. I see an awful lot of inertia favoring that old \$200 threshold still in the system. That is subjective.

SENATOR ORECHIO: Is it mandatory-- I mean, would an option to have a voluntary threshold as a choice compare with having it as a mandatory choice -- or rather no choice -- as exclusive? In other words, with a mandatory verbal threshold versus options with monetary thresholds-- I don't see where that mix would be beneficial. So my real question to you is, do you see a verbal threshold working at all unless it is mandatory?

MR. BLISS: Basically, Senator, no. I think it has to be mandatory to work.

SENATOR DALTON: Senator Jackman?

SENATOR JACKMAN: I come down to just one subject matter, and I hope you don't think I am trying to be facetious when I say this. When I deal with the constituency back home in my hometowns, or in the district I am privileged to represent, they ask a couple of questions: How much will I

have to pay for my insurance, and how much am I covered for? Simple questions. Legislatively, based upon your information, we don't set the rates. Even legislatively we couldn't do it because that gets too cumbersome to some degree.

Well, let me go back and ask you one question. How many insurance companies, to date, have gone into bankruptcy on the basis of the insurance they have been giving to the people in the State of New Jersey? How many insurance companies, to your knowledge, went into bankruptcy?

MR. BLISS: Well, none, based on rate deficiency.

SENATOR JACKMAN: None on rate--

MR. BLISS: There are--

SENATOR JACKMAN: Now, when I go in and buy insurance, and I'll use myself as an example-- I'm 70 years old and I am going to buy insurance. You have already established what I am going to pay, is that right, in the book?

MR. BLISS: Yes.

SENATOR JACKMAN: So, legislatively, there is nothing we can really do about reducing the actual cost of insurance to the average person back home, is there?

MR. BLISS: Incidentally, in the book-- The book can be used in many ways, so there are judgmental aspects to find the rules in the book.

SENATOR JACKMAN: Yeah.

MR. BLISS: So, it is not guaranteed that two identical people walking into two different agents, or even the same agent, are going to come out with the same rate.

SENATOR JACKMAN: Even though they are both the same age?

MR. BLISS: Yeah, it's according to how the rules are applied. For example, the principal/occasional operator distinction, whether or not there is a B average, or a B-, or a C+ average at school, whether the school--

SENATOR JACKMAN: Who sets the B pluses and the C minuses? What--

MR. BLISS: The rule book says if you have a B average--

SENATOR JACKMAN: Oh, the rule book. Who made the rule book?

MR. BLISS: The rule book is made by the carriers.

SENATOR JACKMAN: The insurance carriers?

MR. BLISS: Yes.

SENATOR JACKMAN: So, in essence, no matter what we say or do, it's your book. And when you make your book, you're making your price. Is that true or isn't it?

MR. BLISS: The book is-- Any price in the book has to be approved by the Commissioner of Insurance. That is what produced this 750-page report.

SENATOR JACKMAN: Forty years have gone by, and we haven't done anything.

MR. BLISS: The Commissioner of Insurance and the Deputy Commissioner -- that includes me -- directed that territories be overhauled. We made that direction in 1981.

SENATOR JACKMAN: In 1981, but, to date, they still have not been overhauled.

MR. BLISS: It has been in the Appellate Division for four years, and has just now been remanded to the Department of Insurance for reconsideration.

SENATOR JACKMAN: Again, the only question-- When you talk about rates, legislatively we can't make rates.

MR. BLISS: That's right.

SENATOR JACKMAN: The average person in the street either goes shopping-- For example, is there a possibility that one insurance company will give a lower rate than another? If a guy went shopping, for example, if he went to Allstate in West New York and then he went to Allstate in Atlantic City, could there be a possibility that he could get a different rate from the same insurance company?

MR. BLISS: There is a small number of carriers with independent filing systems -- Travelers, State Farm immediately come to mind-- Almost 70% of the market is written under the same rules, the ISO rules.

SENATOR JACKMAN: Seventy percent under the same rules?

MR. BLISS: Seventy to eighty percent.

SENATOR JACKMAN: Okay, that's all. Thank you.

SENATOR DALTON: Thank you very much, Walter, for the amount of time you spent.

The next speaker will be Mr. Leroy Boison -- and I hope I am not mispronouncing your name -- from the Insurance Services Office.

H O W A R D W A L K E R: Good morning. My name is Howard Walker.

SENATOR DALTON: Good morning.

MR. WALKER: I am counsel for ISO. As you noted, our speaker on the issue of classification systems today is Leroy Boison, an actuary. I am here as counsel, but also as a historian because I was at the same 85 days of hearings with Walter Bliss back in 1979 and 1980.

SENATOR DALTON: I think if I am correct, we have an 11:30 quorum call that the Committee has to make, so we are going to try to move you along as quickly as possible, Mr. Boison, okay?

L E R O Y B O I S O N: I have a very brief statement to read. My name is Leroy Boison. I am the manager and actuary of the Personal Lines Actuarial Division at Insurance Services Office, which is heretofore known as ISO. I am a fellow of the Casualty Actuarial Society and a member of the American Academy of Actuaries.

During the course of my presentation, I will describe the rating criteria which are used by ISO for the personal automobile coverages, and will also explain the reason for classification rating and why it is essential for automobile

and other lines of insurance. In addition, I will describe the principles to which any classification system must conform in order to be effective. I will also distribute a pamphlet on the "Principles of Insurance Classification" which, although prepared in 1983, is still relevant to the subject which we are addressing today.

Risk classification may be defined as the process of identifying like kinds of insureds with similar loss characteristics and the charging of separate rates for these homogeneous groups based upon each group's expected loss potential. Classification rating, therefore, accomplishes what is known as cost base pricing. In other words, the price for the product is directly related to the expected loss potential of the insured, hence the cost of the service provided.

Cost base pricing is an economic necessity for any company. Risk classification assures that all of a company's potential customers would be equally attractive as business opportunities. Also, without matching the cost of insurance to the true expected loss potential of individual insureds, availability problems would arise. The insurance business is extremely competitive. Insurers are motivated to identify, and thus voluntarily write, those insureds where the prices are set relative to their expected loss potential. Any insureds who are undercharged will have difficulty in acquiring insurance. In fact, in those states where restrictions have been placed on a company's ability to base prices on cost, the resultant effect has been a large increase in risk placed into those states' respective residual market mechanisms.

However, unfeathered competition works to ensure that each group's rates are based upon their expected costs, such that there exists no identifiable pockets of undercharging or overcharging. It is important to realize that it is actually in the insured's own interest that the price of insurance is related to cost. Although it appears noble to reduce a certain

class's rate through the tampering or elimination of their variable and subsidizing the differences through the rates of others, the resultant effect is to place that class into a situation where they are undesirable and cannot find insurance except in a shared market.

The rating variables in classes which are used have to be consistent with the nature of insurance and fair and equitable in a competitive environment. Accordingly, certain guidelines should generally be followed in the selection of these variables, namely: The first one, homogeneity. Similar insureds should be assigned to the same class for each variable. Conversely, dissimilar insureds should be assigned to different classes so no clearly identifiable groups with significantly different loss potential or expected loss are in the same class.

Second, loss related. The characteristics used to identify insureds as similar should reasonably relate to the potential for or hazard of loss. Third, it should be complete. Each insured should belong to one, and only one, class for each rating variable. Fourth, it should be clearly defined. There should be a clear and objective definition of classes with no ambiguity about which class an individual insured belongs to. Fifth, varifiable. Insureds should not be able to easily misrepresent or manipulate their classifications. Sixth, it should be cost-effective. The cost of administering a rating variable should be reasonable in relation to the benefits received. And last, it must be measurable. Differences in losses between classes should be susceptible to measurement by actual experience data.

The types of rating characteristics that are used for personal automobile -- I hope not to be too redundant with what Mr. Bliss said -- can be divided into four major categories, namely: The characteristics of the drivers of the car; the characteristics of the car itself; the characteristics of the

particular use of the car; and, the area in which the car is operated. Clearly, these four criteria influence the loss potential of the particular risk. As for the first variable, the characteristics of the drivers of the car, the classification plan which is used by ISO differentiates based upon the age and sex of the driver, marital status, driver training, driver record, and experience of the operator.

As to the characteristics of the car itself, our rating plan recognizes the age of the automobile, the specific type of vehicle, and the relative performance of that vehicle. With respect to the use of that automobile, our plan recognizes whether it is used for pleasure, farm, business, or commutation purposes. Also, our plan recognizes whether or not it is a single car or a multi-car policy. Lastly, with respect to the area in which the car is operated, our rating plan recognizes the difference between geographic areas. Different territories are given different rates, depending upon their actual loss experience. This would reflect each territory's population density, vehicle density, claim frequency, cost levels, theft experience, etc.

Each combination of the above defines a specific class of drivers. The rate charged to this specific class would thus be directly related to the expected loss potential of the group. The classification system is reviewed each year by ISO to assure that the criteria are actuarially valid as rating criteria, and also to determine whether the rating differentials between classes should be revised. As I indicated previously, it is both in the insureds and the insurers best interest that the rates for automobile insurance be related to their true loss potential. True cost base pricing assures fair treatment of policyholders from both a pricing and an availability prospective.

For the insurance company, cost base pricing allows each company to freely underwrite any distribution of risk

without fear that its portfolio is underpriced or overpriced. Should classification plans be suppressed, subsidation of individual cells would result. If individual risks are not cost base price, each company would need to place restrictions on the percentage of types of risks written. This is certainly not desirable from either a social or economical point of view.

SENATOR JACKMAN: Mr. Boison?

SENATOR DALTON: Senator Jackman?

SENATOR JACKMAN: With all your statement and everything -- no disrespect again -- what can you tell me about how to reduce the cost of insurance?

MR. BOISON: In answer to your question, let me speak for myself, and not for my organization. Clearly, in order to effect any reform as to the actual price of automobile insurance, one would have to go into the actual cost of the services provided, which would get into tort reform, changes to the no-fault law, restrictions placed on labor costs, car parts prices, etc. This is how you would effect a revision toward the overall cost of the services.

SENATOR DALTON: Okay, let's try to stay on the classification.

SENATOR JACKMAN: That is part of the classification rating, isn't it?

MR. BOISON: I have one last paragraph to read.

SENATOR JACKMAN: No, oh, I thought so, didn't you? (an aside to someone not identified)

MR. BOISON: Let me conclude by stating that classification rating is a constantly evolving system. As the nature of risks themselves change and as competitive forces surface -- other homogeneous classes with distinct loss characteristics -- classification plans must respond.

I would be happy to answer any questions at this time.

SENATOR DALTON: Thank you. Questions from members?

SENATOR ORECHIO: I have a question.

SENATOR DALTON: Senator Orechio?

SENATOR ORECHIO: You mentioned as a variable in the cost process the term "relative performance." Presumption is that the vehicle, no matter what description, meets the standards established by the Division of Motor Vehicles. Can you elaborate on the term used?

MR. BOISON: Okay. This would not be determined by the Division of Motor Vehicles. Rather, individual filers file with the Commissioner of Insurance a rating plan which distinguishes between cars, based upon their horsepower to weight ratio. This is filed-- There are three various groupings: low performance, medium performance, and high performance. This was the plan that was devised in the '60s when there was a great range of high horsepower cars. It is being studied at this point in time to see if it should be reevaluated, given that the actual size of engines has changed since the gasoline restrictions back in the early '80s.

SENATOR ORECHIO: General Motors, specifically Cadillac, came out with a four, six, eight Cadillac, which is no longer manufactured and, of course, they had some problems with that vehicle in terms of cutting out and so forth. Could that, in any way, have been evaluated in terms of cost of the premiums -- insurance premiums -- in terms of the performance of that car?

MR. BOISON: That would not come into play with respect to the performance of the car, since even though it was a four, six, eight cylinder engine, it did have a peak horsepower, which would have been utilized in the definition of the performance car. As to the actual experience of that individual car itself, under the Vehicle Series Rating Program, which is used for the physical damage coverages, experience would be gathered for that particular automobile, and then compared to the average experience for other cars in that type of class. If this particular Cadillac had worse experience

than the average, it would get a higher rate based on its own experience.

SENATOR ORECHIO: Thank you.

SENATOR DALTON: The overall criteria-- You mentioned seven components, overall criteria for developing classifications. In your opinion, how does the New Jersey classification system rank, given those seven components, generally speaking?

MR. BOISON: It's not a question of ranking per se to the guidelines. These are seven guidelines that a class plan should have.

SENATOR DALTON: Overall, how does New Jersey relate to these overall guidelines, our classification system?

MR. BOISON: Well, the actual classification plan does conform to all seven of these guidelines. The only restriction that has been placed in the New Jersey class plan is the 2.5 limitation on the actual reading of the risk. The classes themselves conform to these characteristics. In other words--

SENATOR DALTON: Clearly defined?

MR. BOISON: Clearly defined.

SENATOR DALTON: Okay.

MR. BOISON: And I'm glad you mentioned that. One of the questions that was asked of Mr. Bliss seemed to indicate that the agent himself has a wide range of classes to play around with, in which to slot a risk that comes in the door. The true purpose behind the class plan is that it should not be that way. Each risk belongs to one class, and one class only, and it should not be up to anybody's judgment as to where to slot that risk.

SENATOR DALTON: College students away at school in New Jersey are rated as married whether they are married or not -- okay? -- in New Jersey.

MR. BOISON: That is correct.

SENATOR DALTON: There is a perfect example of it not being clearly defined. A college student has to be rated as married whether that college student is married or not. Does that make a lot of sense?

MR. BOISON: If I could explain this. The purpose of that discount -- let me call it -- is that youthful operators are given a higher rate relative to adults, you know, based on the fact that their actual loss experience does show they have this higher loss potential. Now, if a college student is away from home attending a university, which is defined specifically as greater than 100 miles, that person would not be at home driving the automobile. Hence, a discount is given to the rate in order to allow for the fact that that youthful operator is not in residence at the actual house 365 days a year, and as such, would not contribute to the higher loss potential for that car.

So, the actual definition is clear. It specifies that it has to be a college student living a stipulated distance away from the house. Again, the purpose there is not to treat him as married; it is to give him a discount, to recognize the fact that that risk is not on the automobile all year long.

SENATOR DALTON: Do you feel that age and sex are legitimate components in this whole classification scheme?

MR. BOISON: Yes, sir, I do.

SENATOR DALTON: Do you feel sex is?

MR. BOISON: Yes, I do.

SENATOR DALTON: Okay. On what basis?

MR. BOISON: On the basis that all the data which I have analyzed in the course of my 15 years -- and I have testified in other states with respect to classification plans, and hence investigated many sorts of data as to the appropriateness of individual rating variables-- The data analyzed both insurance data and Division of Motor Vehicle data, and showed that females do have better experience than

males, when looked at separately by year of age. This is despite the fact -- even if you factor out the mileage variable. Studies done based on California Department of Motor Vehicle data show that for each category of mileage, female accidents per mile are much lower than males.

SENATOR DALTON: Female accidents per mile are much lower than males?

MR. BOISON: That is correct. Other accident involvement data produced in various state Departments of Motor Vehicles continue to show that females do, indeed, have better experience than males and, as such, to deny this existence and not to rate for it, in my opinion, is inappropriate.

SENATOR DALTON: Okay. There is no way you could eliminate age and sex and still come up with determinants that would reflect the potential of loss?

MR. BOISON: That is correct.

SENATOR DALTON: In other words, you would have a gender neuter, if you will, auto insurance classification. In other words, it wouldn't be relevant -- one's gender.

MR. BOISON: Well, you mentioned age and gender, and now you are saying gender only.

SENATOR DALTON: Okay.

MR. BOISON: But, to respond to the question, if you went to a sexless, genderless system, notwithstanding the age question, you would be losing an important rating variable, and mileage or any other variable which has been suggested as an alternate variable would not pick up that difference. So you would definitely be losing the increase refinement and creating subsidization by eliminating that variable.

With age, you've got a somewhat better replacement with respect to the actual number of years and experience, but even that doesn't totally capture everything that is captured in age because studies have proven that inexperienced operators at higher ages have better experience than inexperienced operators at lower ages.

SENATOR DALTON: Governor Thornburgh, I suspect, would disagree with what you said about sex as a determinant, since it is my understanding that he just had legislation before him which would have, I guess, maintained sex as a determinant in Pennsylvania. He rejected that legislation -- something to that effect.

MR. BOISON: I think the question that has been raised the most with respect to sex in automobile insurance is not necessarily that it is not a proper rating criteria in the sense that it is statistically supported. It is, rather, as a social statement, political statement, whether or not this should be allowed to remain as a rating variable. It's really one where various Legislatures have taken action to not utilize it. Nevertheless, with respect to the actual treatment and rating of automobile insurance, it is statistically valid. Most of the various insurance laws in states across the country indicate that the rates should not be unfairly discriminatory. I guess the emphasis there is on the words "fairly discriminatory." It is not bad to discriminate if there is a foundation for that discrimination; hence, if actual loss statistics indicate that a rate preference should be given, then it should be given.

I myself do not believe that rating based on sex is unfairly discriminatory.

SENATOR DALTON: Any further questions?

SENATOR LASKIN: Yeah.

SENATOR DALTON: Lee?

SENATOR LASKIN: I am going to quote something you said which strikes a responsive chord with me. You said that the insurance business is extremely competitive. That was part of your prepared remarks. I assume you were talking about all states but New Jersey.

MR. BOISON: I think that would be a fair representation, yes, sir.

SENATOR LASKIN: Okay, because I don't want anybody misled by that. It is not competitive in New Jersey.

MR. BOISON: Unfortunately, that is correct.

SENATOR LASKIN: All right. That is the only question I have.

SENATOR DALTON: Senator Orechio and then Senator Zane.

SENATOR ORECHIO: There is a distinction between the marital and the single person status, right? A person who is married pays less of a premium than a person who is single.

MR. BOISON: That is correct with respect to youthful operators.

SENATOR ORECHIO: Now, what about people who are living together who are not married? Are they considered married? Secondly, are they -- whether they are married or unmarried-- If that particular relationship ends, are the insureds at that point duty bound to report to the company the change in status? And if they don't, are they penalized?

MR. BOISON: There is no rating discount for people living together outside of the marital state. One has to be married in order to be eligible for the discount.

SENATOR ORECHIO: And yet you have another standard, though, when you refer to college students. Even though they are not married, they are treated as if they are. How does that jibe?

MR. BOISON: Well, as I indicated before, the discount for college students is a function of the fact that the youthful operator would not be home driving the automobile; hence, the exposure is not there from the youthful operator. The purpose for the marital status discount is, again-- Let me perhaps back up a little bit further. The youthful operator classes are, indeed, the highest rated classes. As such, they were the focus of additional studies to determine whether or not there could be any further refinement to that cell in order to, again, not overcharge an identifiable, homogeneous group.

In the analysis of the youthful operator classes, statistics were compiled that showed youthful operators who were married did have better experience than unmarrieds, the rationale for this being the fact that married people stay at home more, less exposure -- I mean, less mileage; hence, better experience. I don't know of any studies that have been done as to people living together but not married. They are really two different ratings. I'm not sure if I answered your question, but I would be happy to take another stab at it if you could qualify it.

SENATOR ORECHIO: The other part of the question is, what happens when a marriage ends, in terms of the rate? And secondly, if there is a change in the rate where a personality now will be treated as a single person and paying more, does the insured have an obligation under the contract to report to you if something in that status changes? If not, what is it going to do?

MR. BOISON: I'm not sure if it is a specific requirement in the policy. Upon renewal, when information is sent out to an individual applicant, that insured has an obligation to report the correct information which would indicate whether or not there was a change to his or her marital status. I would have to consult the rules in New Jersey. I know different insurance carriers utilize different rules as to what happens in the event of a divorce or a death. I believe -- and I can double check -- that a lot of companies will give the marriage credit to the divorced parent or widow/widower if children are in the custody of that parent.

I would be happy to double check how it operates in New Jersey for you.

SENATOR ORECHIO: Thank you. That's okay.

SENATOR DALTON: Ray?

SENATOR ZANE: Yeah. Sir, as I understand your company's function, you present a service to insureds'

companies, in that you appear before the regulatory bodies of the various states representing them and striking their rates. Isn't that correct?

MR. BOISON: That would, of course, vary by individual state. There are basically two types of states, prior approval and open competition. We are a statistical agent and rating bureau that puts together composite insurance statistics. In an open competition state, we would not be going in front of any regulatory body per se. Rather, we would issue advisory loss information to the individual companies to assist them in making their own pricing decisions.

SENATOR ZANE: Okay. Let me cut you there. Of the 50 states, how many of the states are similar to ours, where you represent clients and assume a capacity as you would in New Jersey?

MR. BOISON: I don't have the exact count, or know it offhand.

SENATOR ZANE: Is it 20%, 10%?

MR. WALKER: Perhaps 15 states.

SENATOR ZANE: Fifteen states where you perform basically the same service as you perform for a client in this State. Is that correct?

MR. WALKER: It depends entirely on the line of insurance. For instance, even in this State, in the commercial lines of insurance, our function is different than it is with personal lines of insurance, according to the statute.

SENATOR ZANE: We're talking about auto insurance. Are there 15 states similar to New Jersey where you represent clients on auto insurance?

MR. WALKER: I'm drawing a blank right now on the exact count.

SENATOR ZANE: I don't care about the exact count; I have a point to make. The count is irrelevant, unless we are the only one.

MR. WALKER: Yes, there are a number of states in which we do file for prior approval and represent our insurers in the same fashion as we do in New Jersey.

SENATOR ZANE: I'm sorry?

MR. WALKER: There are a number of states in which we do the same as we do in New Jersey.

SENATOR ZANE: Okay. I guess what you have to do is look at the regulations in those states -- whether it's 10, 12, 15, 16, or what -- and determine what the rate will be that you will go in for on behalf of your companies -- your clients. Is that correct?

MR. BOISON: And we will file a rate, or publish rates based upon the composite industry statistics. Then each company can decide whether or not they can utilize that rate or deviate from it. But that rate would be available for the companies to utilize.

SENATOR ZANE: Somehow I have the feeling we are not talking the same language. Are there companies-- Just you and I will have a conversation now. There are other states that you go into -- we have established that -- where you are providing essentially the same service as you provide in New Jersey.

MR. BOISON: That is correct.

SENATOR ZANE: And in those other states where you go in and provide essentially the same service, you have to look at the individual state, I guess, as to what that state requires in striking a rate-- I'm assuming that's correct.

MR. BOISON: That is correct.

SENATOR ZANE: Okay. So you have that ingredient. And I think it is fairly clear from what we're seeing that ours ends up being the highest rate that you would be petitioning the regulatory bodies -- the most expensive state. Is that correct? The rates that you would be coming for in New Jersey are higher than the other states. Is that correct?

New Jersey State Library

MR. BOISON: I'm not sure, quite frankly, to the extent that the published data that I have seen -- as published by A. M. Best -- calculates an average rate which does show New Jersey as the highest average rate in the country. But there are a couple of considerations that should be looked at in evaluating this. I know, comparing New York to New Jersey-- For example, the State of New York is broken down into a large metropolitan downstate region and a relatively rural upstate region. So when you factor out the territory differences, I'm not sure if New Jersey really has a higher rate or not. And, of course, you also have other considerations with respect to the type of no-fault law in effect in the state.

SENATOR ZANE: Well, it's been said before our Committee that New Jersey has the highest rate of insurance, and whatever. I'm assuming that that statement made by others was correct.

What in New Jersey, from your standpoint, do you have to look at, that you don't have to look at in other states, that makes us the highest? I'm looking for your comparison of, what are we doing that makes us so expensive, as opposed to some other states where you have clients in similar settings to ours, where their rates are less. What is the difference?

MR. BOISON: Well, the fact of the matter is, in evaluating the rates in New Jersey versus any other state, what is done is an actual evaluation of what the losses are for the state. And the fact is that New Jersey does have higher losses per premium than any other state.

SENATOR ZANE: Okay. So, are you then saying that that is probably the biggest single contributing factor?

MR. BOISON: There are a lot of reasons why the losses are there, but clearly the rates should be based upon the losses themselves.

SENATOR ZANE: Now, are those losses-- I guess losses just really means dollars, doesn't it?

MR. BOISON: Dollars of loss, right.

SENATOR ZANE: And, is there any factor that goes into that based upon the amount of insurance we require in this State versus other states, and the types of coverage?

MR. BOISON: The types of coverage, certainly. The number of insureds factors out. What one does in actually calculating the indicated rate for a given policy or exposure, would be to take the dollars of losses divided by the number of insureds. So, the number of insureds in and of themselves is not relevant as to the cost of a policy, but certainly the types of coverages offered and the manner in which they are offered would influence the rate in a given state.

SENATOR ZANE: Mr. Chairman, I have a few (indiscernible).

SENATOR CONNORS: Mr. Chairman?

SENATOR DALTON: Senator Connors has a question.

SENATOR CONNORS: I just have a couple of quick questions that might give me some information on this. My understanding now with this classification is that all insurance carriers place all insured motorists into certain classifications, such as age, sex, marital status, etc., etc., etc. Right?

MR. BOISON: All companies have a classification plan. The plan that I described today is the plan serviced by Insurance Services Office. Other companies might have some slight variations with respect to that.

SENATOR CONNORS: Now, what happens to a motorist who can't buy insurance in the regular market and goes into the Joint Underwriting Association? How is he classified?

MR. BOISON: Well, the Joint Underwriting Association utilizes the rates of Insurance Services Office, so they would be subject to the same classification plan.

SENATOR CONNORS: So, then, it's the Joint Underwriting Association that makes the classification?

MR. BOISON: The actual insured, when he applies to the company for insurance and is placed with the JUA-- They would need to make the determination as to what class that insured belonged. I believe it would be the agent of the company still.

SENATOR CONNORS: You don't know?

SENATOR DALTON: The agent makes the initial classification when you walk into the agency and you fill out the application. That application is then checked by a company rep within the JUA.

MR. BOISON: I guess it would be subject to the checking of the JUA--

SENATOR DALTON: That's right.

MR. BOISON: --and would actually vary also if it was a direct mailing type company as well.

SENATOR CONNORS: Can you tell me, then, why are there a million and a half drivers in the JUA, if the companies have these people all categorized and classified, and presumably they're happy with their rates as being shown? Of course, in my individual opinion, 234,000, or 202,000, whichever number you want to pick, certainly seems a very broad classifying field, to where they can stick them wherever they want to stick them to achieve those highest rates -- the higher rates that the companies would look at. But that is an aside.

The point is, why are there companies now telling motorists, "We don't care what kind of experience you've got, we don't care where you came from, how old you are, whether you're married" -- or any of these other things here -- "We don't want your business. You have to go into the JUA." Why is that?

MR. BOISON: There are several reasons, more than several reasons, why an insured might wind up in a shared market mechanism. In New Jersey, we're talking about the JUA.

SENATOR CONNORS: First of all, do you dispute that statement? I have had people come to me and say, "I tried to get insurance and they pushed me into JUA," like assigned risk.

MR. BOISON: Well, the Joint Underwriting Association in New Jersey has a very, very large majority of the risk in the State, which means that it is symptomatic of some problem. I am going to describe three reasons that I think are the prime reasons why business might be placed in this residual market mechanism, and it is probably a combination of the three for the State of New Jersey.

SENATOR DALTON: We are going to have to wrap it up on this point, too. Will you remain around, Mr. Boison, for Senator Jackman. Just remain around. Other members may have questions for you. We have a quorum call. Okay?

MR. BOISON: Very good.

The three reasons would be any restrictions placed on the individual class variables or territory rates within the State. This is what I alluded to in my statement. In other words, for New Jersey, case in point, if your highest territory can only be charged 35% higher than your lowest territory, but the real range in loss potential is in excess of that 35%, it would presuppose that certain territories are not going to be paying what their true loss potential is. Hence -- and this is only one of the considerations -- people in the territory who are not paying their true indicated expected loss cost, would probably have problems finding insurance voluntarily, and there is a real good chance they would wind up in the Joint Underwriting Association.

The second reason would be as to the adequacy of the voluntary rate itself. If the voluntary rates are not adequate, then again, companies would be not as inclined to write everybody who walks in the door, since the rates aren't right for the totality, and they would be more discriminating as to the individual types of insurers that they want to keep on their own voluntary books.

The third would be any sort of restrictions which are placed on cancelling a certain insured or risk. If there is a very rigid anti-cancellation law, which is in effect in New Jersey, such that once you write a risk you are more or less stuck with that risk, regardless of what that risk turns out to be -- even if he has five accidents in the next year, you can't get rid of him unless he fails to pay his premium -- you are going to be a little, again, more discriminating as to what type of risk you are evaluating and whether or not you want to keep it.

So, those would be the three prime reasons and, as I indicated, I think New Jersey has a certain combination of those three.

SENATOR DALTON: Thank you very much. The next meeting is going to be on open competition.

Mr. Boison, if you would stay around, I think both Senator Jackman and Senator Orechio have some questions.

(HEARING CONCLUDED)

APPENDIX

TABLE 2

Common Classification Variables

1. Driver Characteristics

age
sex
marital status
resident student status (student away from home)
good student status
occasional/principal operator
driver training
experience (years licensed)
accident record
conviction record

2. Use of Car

type of use (pleasure, commute, etc.)
mileage
number of cars (single-car or multicar)
territory

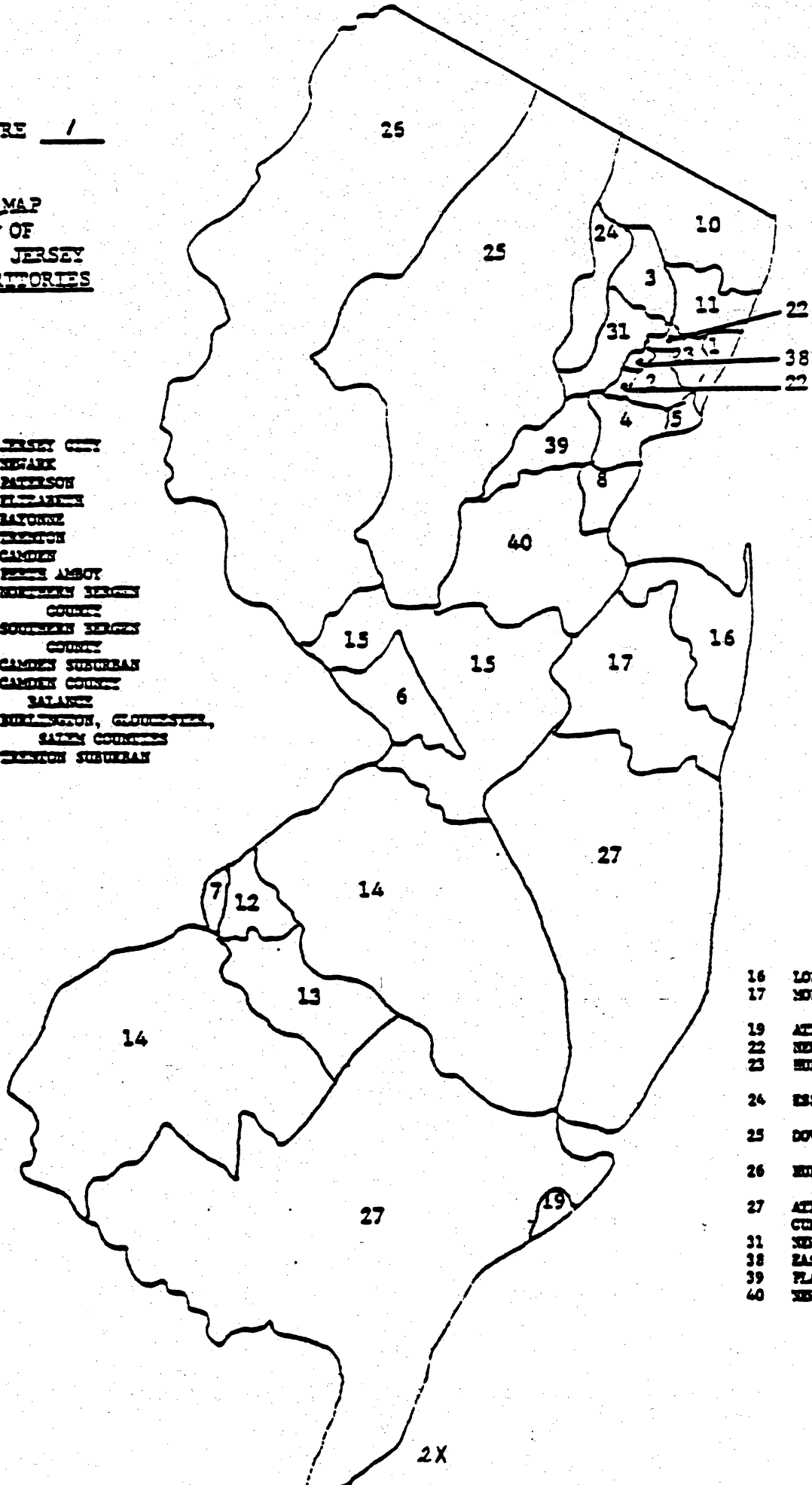
3. Type of Car

retail price (new)
age
select physical characteristics
performance rating

FIGURE 1

MAP OF NEW JERSEY TERRITORIES

- 01 JERSEY CITY
- 02 NEWARK
- 03 PATTERSON
- 04 ELIZABETH
- 05 RAYMOND
- 06 TRENTON
- 07 CAMDEN
- 08 FREEHOLD
- 09 NORTHERN BERGEN COUNTY
- 10 SOUTHERN BERGEN COUNTY
- 11 CAMDEN SUBURBAN
- 12 GARDEN COUNTY
- 13 BURLINGTON, GLOUCESTER, SALLEN COUNTIES
- 14 MONTICELLO SUBURBAN



- 16 LONG BRANCH
- 17 MORMONTH COUNTY BALANCE
- 19 ATLANTIC CITY
- 22 NEWARK SEMI-SUBURBAN
- 23 HUDSON COUNTY BALANCE
- 24 ESSEX COUNTY BALANCE
- 25 DOVER, MORRISTOWN, SOMERVILLE
- 26 HUNTERDON, WARREN, SUSSEX
- 27 ATLANTIC, CAPE MAY, CUMBERLAND, OCEAN
- 31 NEWARK SUBURBAN
- 38 EAST ORANGE, ORANGE
- 39 PLAINFIELD
- 40 NEW BRUNSWICK

FIGURE 3

HETEROGENEOUS RISK CLASSES

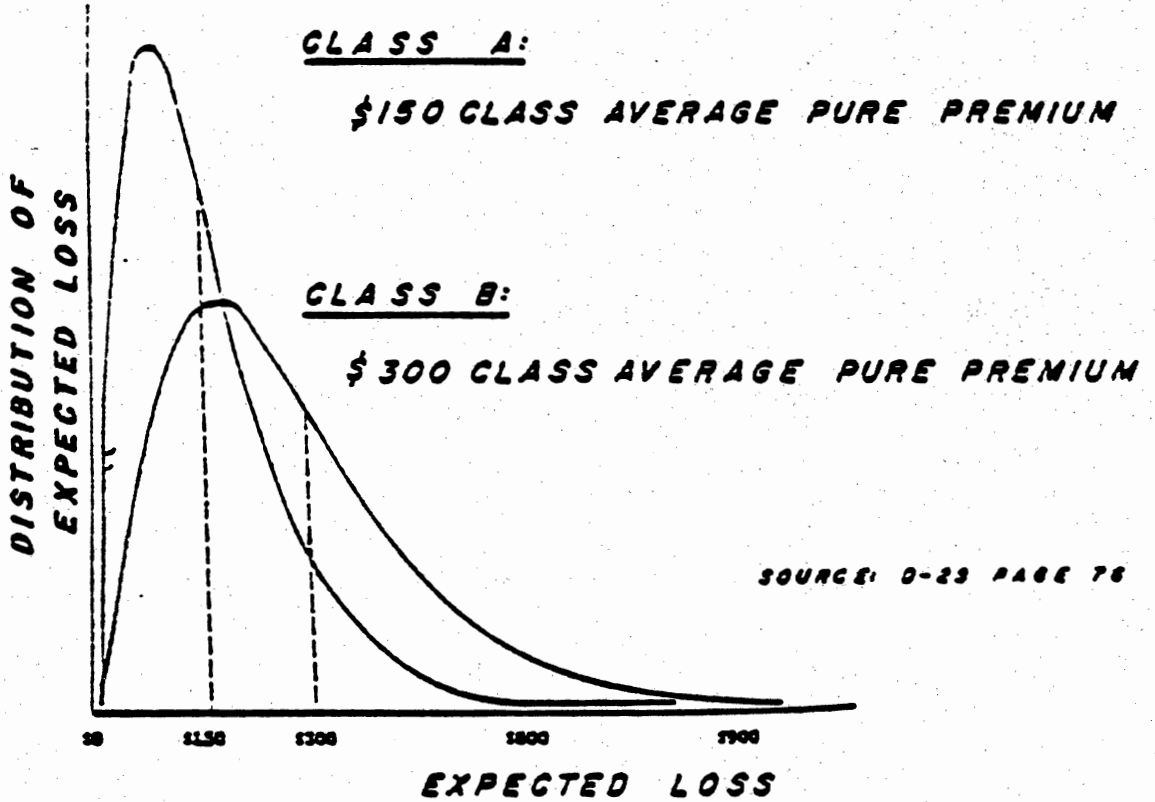


FIGURE 4

HOMOGENEOUS RISK CLASSES

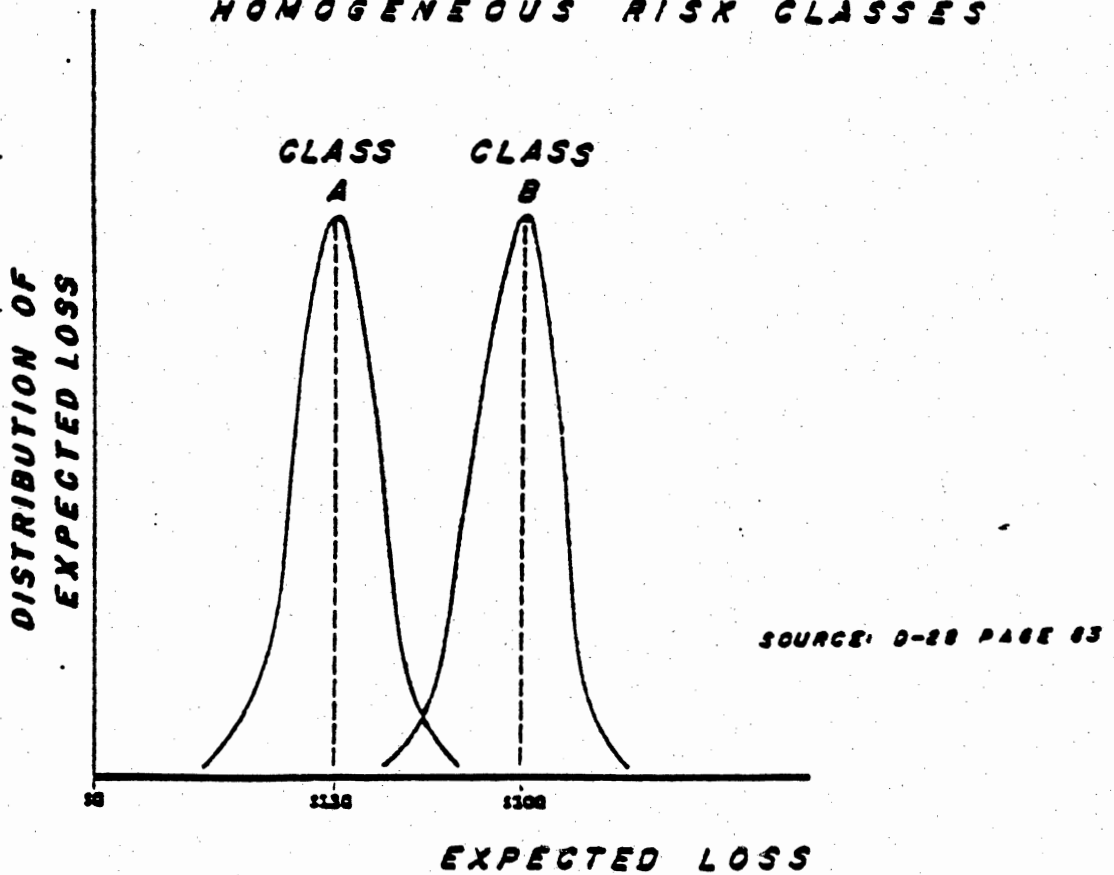
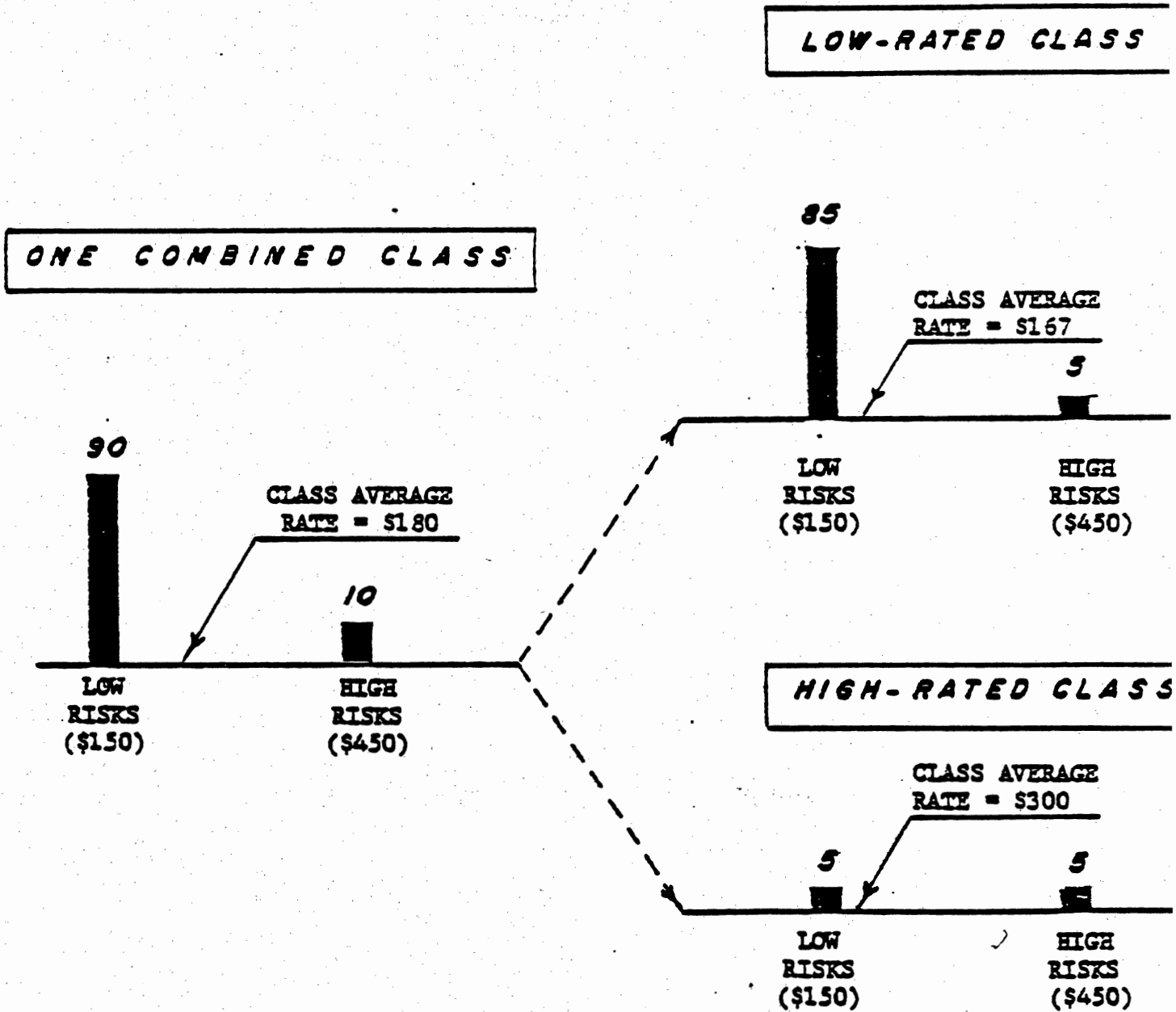


FIGURE 5

THE IMPACT OF CLASSIFICATION REFINEMENT ON THE DISTRIBUTION OF PRICING ERRORS:

TWO-CLASS HYPOTHETICAL



SOURCE: O-33