CURRENT RATE MAKING PROCEDURES FOR AUTOMOBILE LIABILITY INSURANCE

BY

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This paper presents a description of basic procedures currently used in rate making for Automobile Liability Insurance. Like Mr. Marshall's paper on Workmen's Compensation Insurance Rate Making, this paper is directed at the student of casualty insurance. The presentation of the subject is purely descriptive and does not attempt any evaluation of the rate making procedures, nor does it contain any original research. Technical terms will be explained as they occur, and examples of the various steps involved in the rate making process will be illustrated by exhibits taken from the most recent rate revisions, primarily the most recent private passenger rate revision in New York.

In that state and in a limited number of other states, rates for automobile liability insurance are jointly developed by the National Bureau of Casualty Underwriters and the Mutual Insurance Rating Bureau. The rate making procedures used by the two organizations in these cooperation states are generally used by each Bureau in all other states. In some of the cooperation states, the rates developed by the National Bureau and the Mutual Bureau, upon approval from, or promulgation by, the rate supervisory authority, are applicable to all companies in that state. In other states, the rates developed jointly by the two Bureaus or separately by each Bureau are applicable, after approval, only to the members and subscribers of the National Bureau and the Mutual Bureau respectively.

RATE MAKING STATISTICS

Automobile liability insurance rates are based upon experience. Corresponding to the breakdown of the rate into the expense portion and the loss portion, separate statistics are compiled on expense experience and loss experience.

The basis for the expense experience is the Insurance Expense Exhibit which provides countrywide data by line of insurance including automobile bodily injury and property damage liability insurance. This paper will make only brief reference to this phase of the rate making process, in connection with the expense loading in manual rates.

The basis for the loss experience are the data reported by the companies under annual calls for experience. Such calls set forth the detail in which the experience is to be reported for the various groups of classifications, such as private passenger cars and commercial cars. Instructions for the recording and coding of the experience are contained in the statistical plan.

The importance of reliable statistics is recognized in the rate administration section of the Casualty Insurance Laws of the various states which provide that "the [commissioner] shall promulgate reasonable rules and statistical plans, reasonably adapted to each of the rating systems on file with him, which may be modified from time to time and which shall be used thereafter by each insurer in the recording and reporting of its loss and countrywide expense experience, in order that the experience of all insurers may be made available at least annually in such form and detail as may be necessary to aid him in determining whether rating systems comply with the standards set forth in Section 3."*

The insurance laws further provide that "the commissioner may designate one or more rating organizations or other agencies to assist him in gathering such experience and making compilations thereof," and that "such compilations shall be made available, subject to reasonable rules promulgated by the commissioner, to insurers and rating organizations." Accordingly, statistical plans have been promulgated or approved by the rate supervisory authorities in almost all states, and statistical agents have been appointed who collect and compile the loss experience which is to provide a basis for rate review and rate making.

The loss experience used in the rate making procedures described in this paper is generally the experience gathered by the National Bureau of Casualty Underwriters and the Mutual Insurance Rating Bureau. The Automobile Bodily Injury and Property Damage Liability Statistical Plan, jointly developed by both organizations and published by the National Bureau, is adapted to the rating systems in effect for the members and subscribers of the National Bureau and the Mutual Bureau, and the annual Calls for experience issued by both Bureaus provide for the reporting of loss experience in the detail required for the review of these rating systems.**

THE AUTOMOBILE BODILY INJURY AND PROPERTY DAMAGE LIABILTY STATISTICAL PLAN

Automobile liability insurance experience is compiled on a policy year basis§ which requires the recording of statistics on policies having

* Section 13 of the Casualty and Surety Rate Regulatory Bill (All-Industry Commissioners' Draft) which served as model for rate regulatory laws in most states.

**For companies which are neither members nor subscribers but report experience to either Bureau as their statistical agent, the Plan includes a provision for the identification and separate reporting of business not written in accordance with the definitions of coverages, classifications and territories set forth in the Automobile Casualty Manuals published by the National Bureau and the Mutual Bureau respectively.

§ Since January 1, 1953, the statistical plan provides also for the reporting of statistical detail for the compilation of private passenger and commercial non-fleet experience on a calendar-year-accident year basis. At the time of this writing, this method of compiling experience is in an experimental stage.

an effective date in a given calendar year separate and distinct from the statistics on policies with effective dates in other calendar years. By this method, exposures, premiums, losses and the number of claims for all policies with effective dates in the particular year are brought into direct relationship. This is accomplished by recording as the Policy Year on all entries for a policy, the year of the effective date of the policy.

The Plan contains instructions as to the detail in which experience is to be recorded. There are two basic characteristics of detail of experience: Classification and Territory.

With respect to classification detail, the statistical plan provides, with only minor exceptions, for separate codes for every manual# classification for which separate rates are established. For example, if there are 9 private passenger classifications for which rates are published, the statistical plan provides for as many statistical codes, viz:

Class	*Code*†
1A	1111
1B	1121
1C	1131
2A	1211
2C	1231
3	1301
1AF	1151
2AF	1251
2CF	1271

† These codes apply for cars insured for liability coverage only. Additional Codes are set forth in the statistical plan for private passenger cars to reflect inclusion of Medical Payments Insurance and the application of the multi-car discount.

For commercial cars, separate codes apply by rate class, size type and distance of operation, corresponding to the rating criteria in the manual. In addition, the plan at this time also provides for coding by commercial car use classification, corresponding to the use classification shown in the Commercial Section of the Automobile Casualty Manual. Similarly, separate codes are used for the various types of public automobiles, the divisions for garage liability, and various miscellaneous classifications and special types of coverages. Occasionally, the plan may require statistical detail greater than the detail reflected in the rating system, if such detail is required for analytical studies and if it can reasonably be obtained from the company records. For example, at the present time the statistical plan requires the coding and reporting of experience on Garages—Division 1 by indus-

The Automobile Casualty Manuals of the National Bureau of Casualty Underwriters and the Mutual Insurance Rating Bureau.

try classifications (New Car Dealers, Used Car Dealers, Service Stations, etc.) although no rate distinction is made between these classifications in the Automobile Casualty Manual. Other detail required for analytical studies is sometimes obtained from special calls for experience or sampling studies, such as the distribution of premiums by policy limits needed for the review of increased limits experience.

With respect to territory detail, the plan provides, again with minor exceptions, that all business shall be recorded by the territory codes established in the plan. There is a separate statistical code in the plan for every state (including the District of Columbia, Alaska, Hawaii and Puerto Rico); most states are further subdivided into statistical territories which are identified by distinct codes. For example:

Alabama—State Code 01	
Territory	
Birmingham	0104
Mobile and Montgomery	0194
Remainder of State	0196

Thus, exposures, premiums, losses and number of claims are recorded by the carriers in detail by statistical classification and territory. The Automobile Bodily Injury and Property Damage Liability Statistical Plan further provides for the separation of losses and number of claims incurred under the liability coverages and Medical Payments Insurance, and requires individual reports on each accident involving an incurred loss in excess of basic limits.

EXPERIENCE CALLS

The detail of reporting experience is set forth in the annual "Call" which is issued by the Bureaus early each year to all companies due to file experience. Under the present method of reporting, the requirements of the Call are partly met by transaction reports and partly by summarized reports by the companies. In order not to complicate the presentation in this paper, this detail will be disregarded and the Call will be described in terms of the end product it produces at this time. The annual calls for experience do not necessarily require the reporting of all the experience in all the detail in which it is recorded by the companies. For private passenger cars, which is the most important group of classifications in terms of premium volume, the experience is reported in full detail by classification within territory, and the reports include experience for the policy year ended December 31 of the preceding year; on the other hand, for classifications producing sparse volume, such as buses, experience may be reported on a statewide basis and only for a "complete" policy year. The determination of the detail of experience reports has to be governed by the rate making needs; due consideration, however, also has to be given to the value of the information to be obtained in relation to the expenditure in manhours and equipment it takes to produce the data, and the ability of the companies and the Bureau to produce and process the reported data within reasonable time limits. The result of this process of review and evaluation of current and prospective needs for rate making data is reflected in the statistical program. A typical statistical program can be reviewed from the 1956 Official Call for Automobile Liability Insurance Experience.

Experience under the 1956 Call was reported "as of December 31, 1955." This term denotes the valuation date of the policy year experience with respect to written exposures and written premiums. Incurred losses were compiled for each of the reported policy years valued as of March 31, 1956.

Under the policy year method of experience compilation, the experience for the policy year is not complete until all policies written during the year have expired. For example, as of December 31, 1955, the exposures and premiums on the unexpired policies, written during 1955, were subject to change due to cancellations and endorsements which may occur through the end of the following year. Additional accidents can be expected to occur on the policies which remain in force beyond December 31, 1955 resulting in additional incurred losses. Therefore, "Policy Year 1955, as of December 31, 1955" is an "incomplete policy year." It is also referred to as the "policy year as of 12 months," i.e. the experience for the policy year 12 months after the beginning of the year. Correspondingly, policy year 1954, as of December 31, 1955, is "as of 24 months," policy year 1953 "as of 36 months" etc.; these policy years are "complete policy years," as of December 31, 1955.

The detail in which the experience was reported is briefly outlined as follows:

PRIVATE PASSENGER CARS

The experience on private passenger cars was complied by class within statistical territory for each state, separately for bodily injury and property damage liability for policy years 1955, 1954 and for bodily injury only for policy year 1953. As noted above, policy year 1955 was an "incomplete" year, since policies written during 1955 were still in force as of its valuation date. Policy year 1954 was reported "as of 24 months," which was the second reporting for the policy year, the first reporting having been made under the 1955 Call. Bodily injury incurred losses and number of claims for policy year 1953 were reported by class and territory "as of 36 months," which was the third reporting on the same policy year. This requirement of reporting applies to private passenger non-fleets. Private passenger cars written in connection with fleets are reported only as of 24 months and as of 36 months, as are commercial fleets.

COMMERCIAL CARS

Commercial cars written on a specified car basis and not under a fleet plan are reported in the same manner as private passenger non-fleets. Experience on commercial cars written under a fleet plan is reported in the same detail except that no reporting is obtained as of

12 months. Because of the automatic coverage provision for newly added cars under the fleet plan and the effect of lay-up of trucks during the policy term, the exposures and premiums on fleet risks are not definitely known until the final audit is made after the expiration of the policy. Many companies do not even code their fleet business at the inception date of the policy, but do the coding upon final audit. It is, therefore, not feasible to compile fleet experience as of 12 months under the present method of operation. The first reporting on fleets is made as of 24 months; under the 1956 Call, commercial fleets were therefore reported for policy year 1954. A second reporting was obtained under that Call on policy year 1953, which is a reporting as of 36 months, in complete detail by class and territory, on exposures, premiums, incurred losses and number of incurred claims.

GARAGES

At the present time, garage liability insurance experience is reported separately for Division 1 and Division 2, by statistical territory, for all payroll classes combined. A first reporting is obtained as of 24 months and a second complete reporting as of 36 months since this is an audited line for which the final exposures and premiums are determined after the expiration of the policy.

PUBLIC AUTOMOBILES AND MISCELLANEOUS CLASSIFICATIONS

The more important classifications among the public automobiles are taxicabs, public livery and private livery. Experience on these Classifications is generally obtained by class and statistical territory as of 24 months and as of 36 months. The other classifications are generally reported statewide.

Each part of the experience has to be filed by the companies with the Bureau on or before specified dates set forth in the experience calls.

The foregoing is only a brief outline of the form in which automobile liability insurance experience is reported. The complete detail can be obtained by referring to the calls issued by either the National Bureau or the Mutual Bureau.

CONSOLIDATIONS OF EXPERIENCE

The experience filed by the companies is first reviewed by the Bureau for possible errors. Any errors which are found are corrected after correspondence with the company which filed the report. When all reports are in order, they are consolidated into a tabulation of the combined experience of the reporting companies, in the same detail as required by the Call. These tabulations are prepared in separate sections corresponding to the items of the Call, such as private passenger cars, commercial non-fleet, commercial fleet, etc. with separate tabulations for each state. A copy of each of these tabulations is filed with the respective state insurance department in fulfillment of the Bureau's obligation as an official statistical agent.

As an illustration of the form of such tabulation, there is shown on Exhibit A a page of the tabulations of private passenger experience for policy year 1953 for the state of New York, as compiled by the Mutual Insurance Rating Bureau. An inspection of this tabulation offers the opportunity to define commonly used terms which have not yet been explained in this paper.

The headings and the numerical designations on the left side of the tabulation identify the tabulation as to its content. They should be self-explanatory. The data are shown under the following headings:

WRITTEN EXPOSURE

For private passenger cars, the unit of exposure is "car year" that is one car insured for one year.* The same measure of exposure applies to all automobile liability insurance written on a specified car basis. Other types of exposure such as mileage, earnings, gross receipts are in use, depending upon the underwriting basis used for different types of insured hazards.

WRITTEN PREMIUM

The written premium reported is the total premium charged for the policy including the charge for increased limits. If medical payments insurance is provided, the premium for this coverage is included in the bodily injury liability premium. The written premium also reflects any modification resulting from the application of experience rating and schedule rating plans. It does not reflect, however, any adjustments resulting from the application of retrospective rating plans and premium discount plans and, with respect to policies written under a Fleet Plan, the premium reduction resulting from the Automobile Fleet Plan. These adjustments are recorded under separate codes.

INCURRED LOSSES AND NUMBER OF CLAIMS

As previously noted, the incurred losses and number of claims are reported separately for liability insurance and medical payments insurance. The reported losses include allocated loss adjustment expenses. Incurred losses include all loss payments and all reserves on claims not settled as of the valuation date of the reporting.

EXCESS LOSSES—EXCESS PORTION

An excess loss is defined as the total incurred loss (exclusive of loss adjustment expenses) in excess of basic limits of $5,000/10,000 for bodily injury and $5,000 for property damage liability†. Companies are required to file with the Bureau "Individual Reports of Excess Losses" on each accident involving an incurred loss in excess

* Exposures are reported in car months and converted before consolidation into car years and tenths of car years.

† In a few states, different basic limits apply for certain public automobiles.

of these basic limits, and the Bureau determines from these reports the amount of the excess portion.

The tabulations just described are the basic material needed for a review and eventual revision of rates. Before the actual review can begin, the data have to be arranged in suitable exhibits, and certain preliminary calculations are required. These preliminary steps will be dealt with next.

THE LOSS DEVELOPMENT FACTOR

In the outline of the statistical program above it was noted that bodily injury incurred losses are reported in classification and territory detail developed to 36 months. Although experience has shown that the 24 months losses are in the aggregate very close to the losses in the final reporting, provisions are made in the Bureau rate making procedure for the adjustment of the losses reported as of 24 months to an ultimate (36 months) basis for the states in which the experience of all companies or substantially all companies is used for rate making. This adjustment is made by the application of a Loss Development Factor based upon the loss development of prior policy years. The calculation of this Loss Development Factor used in the 1956 revision of rates for private passenger cars in the state of New York, is shown below:

(1) Policy Year	*Incurred Losses Basic Limits (2) as of 24 months*	*(3) as of 36 months*	*(4) Loss Dev. Factor (3) ÷ (2)*
1950	$57,876,322	$57,976,909	1.002
1951	67,961,788	67,798,198	.998
1952	66,584,059	65,568,694	.985
3 Year Mean			.995

In that revision, the Loss Development Factor of .995 was used, representing the mean of the loss development of the prior three policy years. Although it is desirable to maintain consistency in the rate making procedure, including consistency with respect to the calculation of the Loss Development Factor, circumstances may at times indicate the use of a shorter or longer experience period for the calculation of this factor.

The Loss Development Factor is applied to the Statewide incurred bodily injury losses for the year reported as of 24 months. No attempt is made to develop the losses by territory and class from 24 months to 36 months on the basis of this factor.

There is no need for a similar procedure with respect to property damage losses, since such losses can be settled more promptly than bodily injury losses; also, loss reserves on property damage claims open at the loss valuation date of the policy year reported as of 24 months are not subject to the uncertainties as to their final cost which are encountered on bodily injury claims.

THE EARNED FACTOR

As previously set forth, the latest policy year used for rate making for private passenger and commercial cars (non-fleet) is an "incomplete policy year" reported as of 12 months. It is adjusted to an ultimate basis by Earned Factors calculated from the observed development of prior policy years from 12 months to an ultimate basis. The calculation of these factors in the latest New York rate revision for private passenger cars is shown as follows:

Bodily Injury—Basic Limits

(1) Policy Year	*No. of Written Car Years (2) 12 Months*	*(3) Final*	*Incurred Losses (4) 12 Months*	*(5) Final (a)*
1952	2,079,685	2,085,145	35,369,982	65,568,694
1953	2,177,435	2,168,448	39,145,075	72,632,151
1954	2,201,853		42,560,606	

(6) Policy Year	*Pure Premiums Basic Limits (7) 12 Mos. (4) ÷ (2)*	*(8) Final (5) ÷ (3)*	*(9) Ratio of Pure Premiums Basic Limits (7) ÷ (8)*
1952	17.01	31.45	.541
1953	17.98	33.49	.537
1954	19.33		
Two Year Mean			.539

Property Damage—Basic Limits

(1) Policy Year	*No. of Written Car Years (2) 12 Months*	*(3) Final*	*Basic Limits Incurred Losses (b) (4) 12 Months*	*(5) Final*
1952	2,074,593	2,080,666	13,901,622	24,068,484
1953	2,172,276	2,162,010	14,278,147	25,453,510
1954	2,199,574		14,752,184	

(a) The basic limits incurred losses for policy year 1952 are reported as of 36 months. The policy year 1953 losses of $72,997,137 reported as of 24 months were adjusted to an ultimate basis by the application of the loss development factor of .995.

(b) Incurred losses for policy years 1952 and 1953 reported as of 24 months.

(6) Policy Year	Pure Premiums Basic Limits (7) 12 Mos. (4) ÷ (2)	Pure Premiums Basic Limits (8) Final (5) ÷ (3)	(9) Ratio of Pure Premiums (7) ÷ (8)
1952	6.70	11.57	.579
1953	6.57	11.77	.558
1954	6.71		
Two Year Mean			.569

The above ratios of the pure premiums Col. (9) produced the earned factors, which in this case were based upon the mean ratios of policy years 1952 and 1953. The same procedure is used for the calculation of the Earned Factors in the other states where rates are based upon a substantial volume of experience. In states with a lesser volume chance fluctuations in the earned factors are reduced through the use of a formula by which earned factors are calculated as weighted averages of state and countrywide indications based on pure premium and claim frequency ratios. The calculation of Earned Factors by that formula method is demonstrated in the attached Exhibit B.

The earned factors so calculated are applied as multipliers to the written exposures and written premiums of the latest policy year reported as of 12 months; the results are earned exposures and earned premiums. Basically, the earned factor reflects the rate at which the written exposures and premiums are earned, but it also gives recognition to any development on reserves on claims outstanding as of 12 months and to any changes in claim frequency and average claim cost on accidents occurring between 12 months and 24 months after the beginning of the policy year. A significant increase in claim frequency or severity during the second half of the policy year compared with the first half will add a larger amount of losses or a larger number of claims during the second half than would correspond to the portions of the policy year exposures still in force if the claim frequency or severity had remained unchanged. This would produce a high pure premium as of 24 months, and a low earned factor. The reverse would occur if claim frequencies or average claim costs declined during the second half of the policy year. All other things being equal, the earned factor is expected to be reasonably stable from year to year, provided it is based upon a credible volume of experience. The Earned Factors for the incomplete policy year during the past five years in New York will serve as an illustration:

New York—Private Passenger Cars

"Incomplete" Policy Year	Earned Factors Bodily Injury	Earned Factors Property Damage
1950	.537	.562
1951	.511	.552
1952	.511	.561
1953	.525	.577
1954	.539	.569

Later on in this paper a modification of the bodily injury earned factor will be explained for application to 10/20 limits experience.

EXPERIENCE EXHIBITS

An important phase of the rate making process is the arrangement of all necessary data in such form that they can readily be used and reviewed. Each exhibit should contain as much information as is required in support of the specific step in the rate making process which it serves. One of the basic exhibits used for rate making is the exhibit of territory experience for the latest 5 policy years. Exhibit C presents 2 pages of the exhibit of New York private passenger experience for policy years 1950-1954 (Bodily Injury and Property Damage). This exhibit contains the combined experience of the members and subscribers of the National Bureau of Casualty Underwriters and the Mutual Insurance Rating Bureau, which is the experience now used in rate making for automobile liability insurance by both Bureaus in New York.* It shows, for each statistical territory, the experience by policy year for all private passenger classes combined. It will be noted that the policy year 1954 exposures and premiums are adjusted to an earned basis by applying the earned factors previously explained to the written exposures and premiums which are shown on the extreme right of the exhibit. The incurred indemnity losses are at basic limits, with the excess portion shown in a separate column. The claim frequencies, average claim costs, loss ratios and pure premiums are explained in the footnotes on the exhibit.

THE RATE FILING

The rate filing consists of a memorandum which explains the various steps in the development of the rate revision, supporting exhibits and an exhibit of proposed rates. It is submitted with a letter of transmittal which usually specifies the proposed effective date of the

* Prior to policy year 1949, the combined experience of all companies was used for rate making in New York. The experience used now in New York does not include that of non-Bureau companies, who do not use Bureau rates and have diverse classification systems.

revised rates. The major steps in the development of the rate revision are:

Determination of Statewide Rate Level
Development of Rate Level Changes by Territory
Calculation of Classification Rates

Generally, rate revision programs for any given year and group of classifications reflect a pattern which is followed in all states with such departures for individual states, territories or classes as are clearly indicated by circumstances. The pattern established for determination of the statewide rate levels in any given cycle of rate revisions, the formula used for the development of territory rate level changes, the method of evaluation of the experience through the use of credibility tables, all these and other steps in the rate making process have the objective of producing consistency in the interpretation of experience.

THE STATEWIDE RATE LEVEL

The first step in the determination of the indicated overall change in rate level is the selection of the experience period to be used. It is desirable to reflect in the rates to be established the most recent levels of claim costs and claim frequencies since the most recent past experience is most likely to give the most accurate estimate of current and prospective overall requirements. On the other hand, it is desirable to maintain a degree of stability, in order to avoid large fluctuations in rates from year to year. A balance between responsiveness and stability is found by using the experience of the two latest available policy years for the determination of the statewide rate level.

Several times during the years since World War II it was necessary, however, to supplement the available policy year experience in order to reflect in the rates more current conditions than are reflected in the policy year data. Automobile liability loss experience is influenced by changes in accident and claim frequencies, as well as changes in average claim costs; the latter reflect not only severity of accidents but also economic fluctuations which may be inflationary or deflationary. If changes in any one of the component parts of the pure premium occur rapidly, reliance upon policy year experience alone would result in rates which would be either inadequate or redundant, whichever the case may be.

In order to measure recent trends in the experience, calendar year average paid claim cost and frequency data are now reviewed by the Bureaus on a continuous basis. Trend and projection factors based upon average paid claim cost data were used particularly during the inflationary period following the outbreak of the Korean War. An example of a method used for the calculation of such factors during that period is included in an appendix to this paper.

The 1956 rate revisions for automobile liability insurance did not utilize trend or projection factors since the available data indicated a levelling off in the trend of average claim cost. The statewide rate level in the private passenger rate revision in New York was based upon the experience of policy years 1953 and 1954, reported as of December 31, 1954 which was the latest experience available at that time. The development of these rate level changes are shown on Exhibit 1.* It will be noted that separate rate level changes are developed on Exhibit 1 for New York City (the three boroughs of Manhattan, Brooklyn and the Bronx) and the balance of the state. Because of the large volume of experience in this state, with almost one third of the premiums in New York City, the city and the balance of the state are treated as separate entities for determination of the overall indicated change. In other states, the overall rate level change is based upon statewide experience.

Before proceeding with the explanation of this exhibit, another feature of the rate making process has to be explained which, at this time, applies only in New York.

It was previously noted that, in the consolidation of the experience (Exhibits A and C), the portion of the losses which is in excess over basic limits is shown separately and that pure premiums and average claim costs are calculated from basic limits losses. Bodily injury incurred losses above $5,000 per claim, or $10,000 for each accident involving two or more claimants, and property damage incurred losses above $5,000 per accident are excluded from the experience used in basic manual rate making. Accidents involving such losses are in the category of catastrophies, the effect of which upon the experience is limited by the exclusion of the excess portion of the loss. In New York State, the volume of experience is large enough to permit the inclusion of bodily injury[ϕ] losses up to 10/20 limits in the data used for the overall rate level determination without adverse effect upon the stability of the data. Since all insureds in New York carry at least 10/20 limits for bodily injury, it is possible to calculate premiums at 10/20 limits rates, thus maintaining the comparability of premiums and losses. (In states other than New York, where a large proportion of cars are insured at basic limits, this could not be done unless extremely burdensome and impractical additional detail were introduced in the reporting of experience.) Territory rate levels, which will be discussed later in this paper, continue to be based upon 5/10 basic limits, since the experience by territory is of relatively limited volume and, therefore, more subject to fortuitous fluctuations due to large losses.

In order to utilize the experience at 10/20 limits for bodily injury, it was necessary to calculate additional loss development factors and earned factors to be applied to the increments between 5/10 limits and 10/20 limits experience. These factors were calculated in the

* In states with limited volume, credibility factors are applied to the indicated rate level changes; the complement of credibility is given to the existing rate level.

ϕ Property damage losses in excess of basic limits are of no practical consequence.

same manner as the basic limits earned factor and loss development factor previously described, utilizing the losses between 5/10 and 10/20 limits. The calculation of these factors is shown on Exhibit D. The resulting bodily injury factors were as follows:

Loss Development Factor for the Increment:	1.118
Earned Factor for the Increment:	.409

The average of these factors with the factors for basic limits produced an Earned Factor of .521 to be applied to the bodily injury liability experience at 10/20 limits for policy year 1954.

The proposed rate level changes for New York City and New York State excluding New York City were based upon the comparison of the mean of the "loss ratio at present rates" for policy years 1953-1954 with the "expected loss ratios." The "loss ratio at present rates," i.e. the rates in effect at the time of the rate filing, is the ratio of the incurred losses to the premiums which would have resulted if the rates in effect at the time of the filing had been in effect also during policy years 1953 and 1954. These "premiums at present rates" are shown on Exhibit 1 in column 3 on a written basis and in column 4 on an earned basis (Earned Factors applied to policy year 1954). These premiums were calculated by multiplying the exposures for each class within each territory by the applicable manual rates, for each of the policy years 1953 and 1954. For bodily injury, the premiums thus calculated were increased to 10/20 limits by applying to it the Increased Limits Factor of 1.20.

The losses with which these premiums at present rates are compared are shown in column 5 on Exhibit 1 and the resulting loss ratios in column 6.

The "expected loss ratio" shown in column 8 represents the portion of the premium dollar available for losses (including allocated loss adjustment expenses) after the requirements for expenses, including a stated provision for underwriting profit and contingencies, are met. The expense requirements are determined on the basis of the countrywide expense experience of the members of the National Bureau of Casualty Underwriters, taken from the Insurance Expense Exhibit. Consolidations of the Insurance Expense Exhibits are reviewed periodically and such adjustments in the expense loading are made as are indicated by the expense experience. The provisions for losses and expenses underlying present rates in New York for private passenger cars and commercial cars are as follows:

Item	*Percent Distribution of Premium Dollar* *B.I.*	*P.D.*
Administration	5.37%	5.42%
Inspection, Audit, Bureau	.98	.99
Production Cost Allowance	25.00	25.00
Taxes, Licenses and Fees	4.72	4.00
Unallocated Loss Adjustment	6.00	8.88
Underwriting Profit & Contingencies	3.42	3.45
Total Expenses	45.49	47.74
Losses and Alloc. Loss Adjustment	54.51	52.26
Total	100.00	100.00

In most other states, "standard" provisions for losses and expenses apply as follows:

Item	*Percent Distribution of Premium Dollar Bodily Injury and Property Damage*
Administration	5.5%
Inspection, Audit, Bureau	1.0
Production Cost Allowance	25.0
Taxes, Licenses & Fees	3.00
Underwriting Profit & Contingencies	5.0
Total	39.5
Losses and All Loss Expense*	60.5
Total	100.0

The indicated and proposed rate level changes on Exhibit 1 are as follows:

	New York City
Bodily Injury	+ 5.7%
Property Damage	+ 0.8

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* A provision for unallocated loss adjustment expense is included with the provision for losses and allocated loss adjustment. Correspondingly, unallocated loss adjustment expenses are included with the losses, by applying the following factors to the reported incurred losses including allocated loss adjustment expenses:

B.I.	1.11
P.D.	1.17

The above factors are obtained from a supplement to the Insurance Expense Exhibit requiring the separate reporting of allocated and unallocated loss adjustment expenses.

Balance of N. Y. State	
Bodily Injury	+7.1%
Property Damage	+2.8

As a matter of information, there are also shown on Exhibit 1 the rate level changes for both coverages combined, and [footnote (b)] the statewide rate level changes.

DEVELOPMENT OF RATE LEVEL CHANGES BY TERRITORY

The rate level changes by territory are developed from the experience of all private passenger classifications combined. Basically, the rate level change in each territory is determined by comparing the average of the existing rates with the average rate indicated by the experience.

As noted above, New York City is treated as a separate entity. Although it consists of 3 statistical territories for which experience is compiled separately, the 3 statistical territories are traditionally combined into one rate territory.

The balance of the state consists of a number of statistical territories for which rates are developed in accordance with each territory's experience indications within the overall rate level change determined for all these territories combined. In this process of apportioning the overall rate level change among the territories, the influence of chance fluctuations due to the small volume of experience by territory is reduced through the use of a longer experience period than is used for the statewide rate level. In the latest New York rate revision for private passenger cars, the experience of the latest 3 years (policy years 1952-1954) was used for territory rate level determination. In states other than New York, and for other classifications in New York as well as in other states (commercial cars, garages, etc.) the experience of the latest five policy years is generally used for territory rate levels. Exhibit 2 shows the development of rate level changes by territory; sheets 1 and 2 present the calculations for bodily injury, sheets 3 and 4 for property damage. The filing contained also a sheet of explanatory notes. This sheet is not included in this paper since the exhibit will be explained in greater detail below.

Column (1) lists all statistical territories for New York State (excluding New York City). The number preceding the city or county name is the statistical territory number; the number following the name designates the rate territory for the city or county in the Automobile Casualty Manual.

Column (2) is explained by its heading.

Column (3) shows the average manual private passenger rate for each territory in effect at the time of the rate filing. The average rate is obtained by weighing the manual rate for each class by the number of cars written for the class in the territory, using the distribution for the latest available policy year. For example, if there are 3 rate classes, the average rate is computed as follows:

(1) Class	(2) Number of Written Cars	(3) Manual Rate	(4) (2) x (3)
1	3880	$35.00	$135,800
2	620	57.50	35,650
3	500	50.00	25,000
Total	5000	$39.29	$196,450

Dividing the total in column (4) by the total in column (2) above produces an average rate of $39.29. It will be noted that column (4) above produces the premiums at manual rates, based upon the distribution by class for the latest policy year. The sum of the premium at manual rates for all territories produces the statewide premium at manual rates referred to earlier in connection with the calculation of the statewide rate level.

The calculation of the average manual rates in the latest New York rate revision had to take into account two additional features not reflected in the above example.

1. The Preferred Risk Rating Plan in effect for private passenger cars in New York.
2. Changes in the private passenger classifications subsequent to 1954.

Under the Preferred Risk Rating Plan, cars are rated at the rates shown on the manual rate pages if the named insured was not involved in more than one accident involving property damage only; other cars are subject to surcharges of 10% or 20% depending upon their accident record during a period of 18 months prior to the effective date of the policy. The experience for policy year 1954 was reported in detail by these surcharge classes within each rate class:

A — No surcharge
B — 10% surcharge
C — 20% surchage

These surcharges were reflected in the calculation of premiums at manual rates and the resulting average rates shown in Column (3) of Exhibit 2.

Changes in the private passenger classifications will be explained in greater detail later on. For the calculation of average rates in Column (3) the following is noted: Experience for policy year 1954 was reported by the classifications in effect for most of that year, classes 1, 2 and 3. The manual rates in effect at the time of the rate filing were on the basis of a classification system which was a refinement of the 3 class plan, with 3 subclasses for class 1 and 2 subclasses for class 2. In order to be able to apply the rates for these subclasses to the exposures reported for policy year 1954 by the major classes then in effect, it was necessary to calculate averages of the rates for classes 1A, 1B and 1C, and for classes 2A and 2C, respectively. These average rates were calculated by first obtaining the percent distribution of cars for the subclasses 1 and 2 and then weighing the manual rates for the subclasses in each territory by their respective exposure distribution. The exposure distribution was obtained from reports of exposures and premiums by class and territory for the first quarter of policy year 1955*.

No useful purpose would be served by going into more detail with respect to the calculations which were necessary to reflect in the average rates these special conditions affecting the recent New York rate revision. The example previously shown explains the calculation of the average rate (and the premium at manual rates) under ordinary circumstances. It will be noted, however, that exceptions from the ordinary occur, and that such adjustments in the standard procedure have to be made as are indicated by the circumstances.

Column (4) presents, for each territory, the experience pure premium for policy years 1952-1954 combined. Although it is generally understood that pure premiums are calculated from basic (5/10/5) limits experience, this fact is specifically noted in the column heading for bodily injury liability in order to distinguish clearly between the 5/10 limits experience used for territory rate level development and the 10/20 limits experience used for statewide bodily injury rate level determination.

Column (5) presents the pure premiums underlying the manual rates (commonly referred to as "Underlying Pure Premium") which is the loss portion of the manual rates in effect at the time of review. The underlying pure premiums are calculated by multiplying the average rates in Column (3) by the expected loss ratio. As previously noted, the expected loss ratios in New York are now .5451 for bodily injury and .5226 for property damage liability.

The experience pure premiums and the underlying pure premiums will produce the formula pure premiums in column (9) by a process of weighting which will be explained later. First, however, the pure premiums in columns (4) and (5) are adjusted in columns (6) and (7) as follows:

Column (6): The experience pure premium in column (4) is adjusted to the proposed statewide (in New York—statewide excluding New York City) rate level on 1954 distribution. This adjustment is made

* Companies report written exposures and written premiums for private passenger and commercial cars by class and territory and policy year for each accounting quarter 60 days after the end of each quarter as part of the regular reporting procedure.

by applying to each of the experience pure premiums* in column (4) a factor determined as follows:

$$\frac{\text{Grand Total Column (2) x Grand Total Column (7)}}{\text{Sum of Col. (2) x Col. (4) } \textit{for each territory}}$$

The grand total in column (2) is the statewide (excluding N. Y. C.) total number of written cars for policy year 1954. The grand total in column (7) is the statewide (excluding N. Y. C.) proposed pure premium. Since the product of exposure and pure premium is equal to losses, the numerator in the fraction represents the number of dollars required for losses on the basis of the indicated statewide rate level. The denominator in the above fraction represents the aggregate number of loss dollars which would be reproduced by the pure premiums in column (4) if the business is distributed by territory as shown in column (2), which represents the exposure distribution for the latest policy year. Thus, the same distribution is reflected in the aggregate (statewide excluding N. Y. C.) experience pure premium as in the statewide (excluding N. Y. C.) proposed pure premium. The difference in the loss levels reflected in the numerator and denominator is the difference in the loss experience of the 2 year period used for statewide (excluding N. Y. C.) rate level and the loss experience of the period used for territory rate level. For bodily injury, it also reflects the difference between the 10/20 limits and the 5/10 limits experience used respectively for statewide and territory rate level determination in New York. The formula described above produced the following factors in the New York rate revision:

B.I.	1.0147
P.D.	1.0121

As noted above, these factors were applied to the experience pure premium in column (4) for bodily injury and property damage respectively, to produce the pure premiums in column (6).

Column (7) shows the underlying pure premiums adjusted to the proposed statewide (excluding N. Y. C.) rate level. No adjustment to the 1954 distribution is needed since the statewide (excluding N. Y. C.) average underlying pure premium was calculated from the 1954 distribution of exposures by territory. The adjustment to the proposed rate level is made by applying to each of the territory underlying pure premiums the "rate level factors" (1.000 + proposed percent change):

B.I.	1.071
P.D.	1.028

Column (8) shows the credibility assigned to each territory on the basis of its number of claims incurred during the experience period

* For combined territories, the average pure premium of the combination.

used in column (4). (Policy years 1952-1954 in this revision.) Through the application of credibility factors the credence given to the experience is expressed in numerical values. Thus, if full credence is given to the experience a credibility factor of 1.00 is applied, and factors below 1.00 are applied for less than full credence. The criterion upon which credibility is based is volume of experience. For liability insurance, number of claims has been used for many years as the measure of volume for the determination of credibility. For the automobile line of insurance full credibility is assigned to a volume producing 1084 claims or more during the experience period. The following table is used for the assignment of credibilities below 1.00.

Number of Claims	*Credibility*
0- 10	0
11- 42	.10
43- 97	.20
98- 172	.30
173- 270	.40
271- 389	.50
390- 530	.60
531- 693	.70
694- 877	.80
878-1083	.90
1084 and over	1.00

Territory Combinations. It seems appropriate at this point to comment on territory combinations before proceeding with the explanation of column (9). There are no rules or formulae from which it may be determined whether the experience for certain territories should be combined or used separately. The making of combinations is a matter of informed judgment. In combining territories for the development of a common schedule of rates, recognition may be given to such factors as: Geographic proximity and flow of traffic from one territory to the other; similarity of pure premiums of two or more territories, with slight fluctuations from year to year, e.g. of two territories, one may have a higher pure premium for two of five years, and a lower pure premium for the remaining three years; an apparent trend in the pure premium of two or more territories to converge during the more recent years, which is not yet fully reflected in the average pure premium for the experience period used.

Column (9): The "Formula Pure Premium" in column (9) is the proposed pure premium, i.e. the loss portion of the proposed average rate. The formula pure premium is the weighted average of the 1952-1954 mean experience pure premium and the underlying pure premium, both adjusted to reproduce the proposed statewide rate level. The weight applied to the experience pure premium is the credibility factor in column (8), and the complement of the credibility factor is the weight applied to the underlying pure premium:

Col. (6) x Col. (8) + Col. (7) x [1.0 — Col. (8)]

From the above it can be seen that the experience pure premium (adjusted) becomes the proposed pure premium for any territory which is assigned full credibility; if there were any territories with zero credibility*, the proposed pure premium would be the underlying pure premium adjusted to the proposed statewide (excluding N. Y. C.) rate level, so that such territory would receive the rate level change indicated by the statewide (excluding N. Y. C.) experience. For territories with credibilities between 0 and 1.00, the formula pure premium reflects the territory's own indication to the extent of its credibility, with the complement of the weight given to the indication of the statewide experience.

The formula pure premium in column (9) should reproduce in the aggregate the proposed statewide pure premium. The statewide average formula pure premium is determined by weighting the territory formula pure premiums by their respective written exposures. [Sum of Col. (2) x Col. (9) divided by grand total column (2)]. The introduction of credibility may cause the statewide average formula pure premium to depart from the proposed statewide pure premium. Usually, a small departure of not more than one percent is acceptable. Otherwise, an adjustment factor is applied to the formula pure premiums. No such adjustment factor was needed in Exhibit 2, since the formula pure premiums reproduced the proposed pure premiums within one tenth of one percent for B.I. (28.96 ÷ 29.00 = .999) and exactly for P.D.

Column (10) shows the percent change in rate level for each territory determined from a comparison of the proposed pure premium in column (9) with the pure premium underlying the rates in effect at the time of the filing as shown in column (5). The final rates for each territory are usually calculated from these proposed percent changes by applying the percent change for each territory to the respective private passenger class 3 rate; the rates for the other private passenger classes have a fixed relationship to the class 3 rate and are determined by applying to the class 3 rate the differentials expressing this relationship. In the 1956 private passenger rate revision in New York and other states, the relativity between classes was also revised. This change in classification relativities produced an increase which would have created an off-balance in the proposed rate level. In order to correct for this off-balance, so that the developed rates for all classes will reproduce the proposed average rate in each territory, correction factors were applied. The calculation of these correction factors will be explained in connection with the following section dealing with private passenger classifications.

* This is of no practical application for the major subdivisions of automobile liability. "Non-credibility classes" are frequently found in General Liability Insurance.

Column (11) shows the percent changes of column (10) after the application of the off-balance correction factor referred to above.

PRIVATE PASSENGER CLASSIFICATIONS AND DIFFERENTIALS

Reference was made in earlier parts of this paper to private passenger classifications and differentials. For a fuller understanding of the rate making process outlined above and the subsequent steps yet to be discussed, a review of the private passenger classification system in use for the past few years is in order.

During 1953 the National Bureau and Mutual Bureau introduced revised private passenger classifications in most states. In several states, these revisions were introduced during 1954—in September, 1954 in New York. These revised classifications represented a refinement of the classification plan then in effect under which private passenger cars were classified on the basis of use and the age of the operator of the automobile as follows:

Class 1—No business use, no operator under 25 years of age.

Class 2—Operator under 25 years of age—business and non-business use.

Class 3—Individually owned cars—business use—no operator under 25 years of age, and all corporate owned cars.

The bodily injury and property damage liability rates for private passenger cars reflected generally the following relationship.

Class	*Differential to Class 3*
1	.70*
2	1.15*
3	1.00

In 1953, refined classifications were established, providing for subdivisions within classes 1 and 2, but maintaining the major classes of the 3 class plan. The Mutual Bureau first introduced refined classifications in a number of western and midwestern states in May, 1953. Under that plan, major class 1 was subdivided into 2 classes, 1A and 1B, based upon the annual estimated mileage and number of operators; class 2 was divided into 3 subclasses 2A, 2B and 2C, based upon ownership, marital status and extent of operation of the automobile with respect to the drivers under 25 years of age. Subsequently, the National Bureau and the Mutual Bureau introduced a classification plan under which class 1 was divided into 3 subclasses 1A, 1B and 1C, based upon use of the automobile in going to and from work, and the mileage driven in such use; class 2 was divided into 3 subclasses 2A,

* Rates for cars owned by farmers were subject to a 15% reduction from the otherwise applicable rates. In New York, the differential for class 2 was 1.15 in New York City and 1.20 for the Balance of the State.

2B and 2C on the basis of the same principles used in the Mutual Bureau 6 class plan set forth above. This 7 class plan was developed by the National Bureau for introduction in all states, and by the Mutual Bureau for introduction in the states under its jurisdiction with the exception of the states in which the 6 class plan was already in effect.

Rates for the newly established classifications reflected differentials based upon judgment arrived at after an exhaustive study of the private passenger rating situation throughout the country. These differentials were as follows:

	Differential to Class 3	
Class	*6 Class Plan*	*7 Class Plan***
1A	.55	.60
1B	.70	.70ɸ
1C	*	.85

	Differential to Class 3	
Class	*6 Class Plan*	*7 Class Plan*
2A	1.05	1.10
2B	1.25	1.25
2C	1.50	1.50
3	1.00	1.00

Under both plans, a discount for cars owned by farmers was continued. (A classification symbol F was adopted for identification of the farmers rate class.)

The introduction of these revised classifications and differentials had the overall effect of a rate level reduction since reduced differentials outweighed increased differentials in terms of total premiums. In some states, the revised differentials were applied to the then existing class 3 rates which were maintained. This resulted in an overall reduction in rate level in those states. In other states, including New York, the plan was introduced on a balanced basis, which required the application of a balancing increase to the existing class 3 rates,

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* Not applicable.

** For New York City, the experience under the 3 class plan indicated a higher differential for class 1 than was indicated for the balance of New York State and other states. Accordingly, differentials of .68, .73 and .79 were introduced for New York City.

ɸ Class 1B rates in small city and rural rate territories were determined as .60 of the class 3 rate plus $3 for bodily injury and property damage combined. Small city and rural rate territories are generally territories in which no city has a population of over 40,000. The availability of public transportation was a criterion in establishing the dividing line.

in addition to any rate level change indicated by the then available experience.

The classification plan was modified in February 1955 as follows:

> A differential of .60 was adopted for class 1B in small city and rural territories.
>
> A new class 2D was established applicable to cars subject to classes 2A or 2B, if all operators under 25 years of age are female, with a differential of .85.
>
> Class 2B was combined with class 2A, with the new class 2A applicable to male underage operators only.
>
> A "driver training discount" of 10% was introduced, granted to cars classified as 2A, 2C or 2D, if all underage operators provide proof of successful completion of an accredited driver training course meeting stated minimum requirements.

A further change was introduced in February 1956, when class 2D was discontinued, and class 2C was re-defined to be applicable only if the insured automobile is owned or principally operated by a male driver under 25 years of age. Henceforth, the age of female operators is not a rating criterion.

These changes in the private passenger classifications required adjustments in the classification experience for policy year 1954, before this experience could be utilized for a review of indicated classification differentials. Such review was made late in 1955, and resulted in a revision of the private passenger differentials which was included in the 1956 private passenger rate revisions in most states, including New York. These revisions of differentials were based upon the combined classification experience of the National Bureau and the Mutual Bureau for all states where the 7 class plan was in effect during the entire year 1954. A summary of this experience is shown on the attached Exhibit 3. Since coding by the revised classifications in New York started with January 1, 1955, Exhibit 3 does not include any New York experience*. As experience becomes available for subsequent years, it will be possible to include additional states in the experience used for classification review. It is desirable to base such review upon the broadest possible basis of experience for the development of countrywide uniform differentials in order to minimize chance fluctuations in the differentials from state to state, and from year to year in the same state.

The following is with respect to the summary of the classification experience shown on Exhibit 3:

The data are shown by the rate classes in effect at the time of the revision, adjusted for changes in the rating system since 1954.

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* Exhibit 3 includes the National Bureau experience in 26 states and the Mutual Bureau experience in 22 states. The states of California, Idaho, Missouri and Montana are not included for the Mutual Bureau since it does not function as a rating organization in these 4 states.

The experience was segregated not only for class 1B between large city territories and small city territories, for which the differentials prior to the revision varied, but also for all other classes.

Basic limits loss and loss adjustment ratios are shown for each class based upon the basic limits losses of the class (including all claim expenses) and premiums at manual class 3 rates. (The rates of the Mutual Bureau and National Bureau vary in the states in which the two Bureaus do not cooperate. The same differentials, however, are reflected in the rates of both Bureaus in all states included in the experience on Exhibit 3. For the purpose of this exhibit, National Bureau rates were applied. Since these loss ratios are used for relativity review only, it is immaterial what level of rates is used, as long as the distribution of exposures by class of either Bureau does not vary significantly.)

From these loss ratios, indicated differentials were calculated for each class from the relationship of the loss ratio of the class to the class 3 loss ratio. Thus, for class 1A, large city territories, the experience shows that if all class 1A had been written at class 3 rates a loss ratio of .392 would have resulted. Since the loss ratio for class 3 is .579, the indicated differential is .68 (.392 $\div$ .579 = .68). At this indicated differential, class 1A would produce the same loss ratio as class 3.

For the calculation of indicated differentials for classes 2A and 2C adjustments were required based upon the assumption set forth in note (1) on Exhibit 3, and the following assumption as to expected exposure distribution:

Present Class 2A = 70% of former class 2A + 75% of former class 2B = 71% of combined 2A and 2B
Present Class 2C = 80% of former class 2C

The differential indications were developed from the experience for bodily injury and property damage combined, although the experience was also reviewed for each coverage separately. Uniform differentials for both coverages were decided upon, since the indications for each coverage separately did not seem to warrant a departure from past practice.

The breakdown of the experience into large city and small city territories revealed significant differences in the indicated differentials for the two types of territories. This was found to be consistent with the results of other studies which point in the same direction*.

The proposed differentials are shown in the last column of Exhibit 3. They were selected from the indicated differentials by making adjustments in the direction of the indications without going to the full extent of the indications. Thus, judgment was superimposed on the experience results in order to temper the changes in differentials. For New York City, separate differentials were selected for classes 1A,

* Experience on commercial cars also indicates a narrower range in the differentials for large cities than for other territories.

1B and 1C, because of the significant difference of the exposure distribution and the overall indication for major class 1 for New York City compared with the other territories. The proposed differentials for New York City are shown on Exhibit 3 (a).

Exhibit 3 (a) also presents the calculation of the effect on rate level due to the introduction of the revised differentials, for New York City and the balance of New York State. The percent change is calculated by comparing the average of the proposed differentials for all classes with the average of the differentials in effect before the revision. The average was obtained by weighing the differential for each class by the respective percent exposure distribution. This calculation provided the basis for the adjustment of the proposed territory percent change in Exhibit 2 referred to in the preceding section. The following example will illustrate this adjustment.

The proposed rate level change for Monticello, bodily injury is +14.3% (Exhibit 2, Sheet 1, first line.) The Monticello territory is in the group of small city territories, for which the effect of the revised differentials is a rate level change of +2.5%. The percent change for class 3 in this territory is, therefore, $1.143 \div 1.025 = 1.116$ or + 11.6%.

No correction was made in this revision for the off-balance in level due to the 10% driver training credit on class 2A and 2C risks, and for the 25% discount introduced in November 1955 for multicar risks. The effect of the driver training discount is estimated to be very small, and no provision has been made for the reporting of data from which the effect may be calculated. Separate experience will be available in the future on multicar risks subject to the 25% discount, at which time the discount will be reflected in the premium at manual rates.

Development of Classification Rates

PRIVATE PASSENGER CARS

The proposed rates for class 3 were determined as follows:

(1) For New York City, by applying to the class 3 rates in effect at the time of the revision the proposed rate level changes shown on Exhibit 1 modified by the off-balance shown on Exhibit 3 (a).

(2) For other territories, by applying to the class 3 rates in effect at the time of the revision the percent changes shown in column (11) of Exhibit 2.

The class 3 rates so developed were rounded to the nearest dollar. The proposed rates for the remaining classes were obtained by applying the proposed differentials to the proposed class 3 rates and rounding the results to the nearest dollar.

CLASSIFICATIONS RELATED TO PRIVATE PASSENGER RATES

Automobile liability insurance rates are developed in relationship to private passenger rates for certain classifications having an exposure hazard which can be related to that of private passenger cars. These relativities are usually determined from countrywide experience and are reviewed periodically, at less frequent intervals than are common for the major classification groups.

*School Buses**

Rates for school buses are determined by applying the following ratios to the private passenger class 3 rates:

School Bus Type	*Ratios to Private Passenger Class 3 Rates*
Private Passenger	1.00
Commercial or Bus	
0—30 passenger	.90
31—60 passenger	1.10
over 60 passenger	1.30

*Funeral Cars**

Rates for Funeral cars are 110% of the private passenger class 3 rates for bodily injury, and equal to the private passenger class 3 rates for property damage.

Hired Cars

Rates for private passenger hired cars are 2% of the private passenger class 3 rate, rounded to the nearest five cents.

Non-ownership Class 1

The rates for this class are determined as 7% of the private passenger Class 3 rates, rounded to the nearest fifty cents for both bodily injury and property damage and subject to a minimum rate of $2.00 for bodily injury and $1.00 for property damage. (Rates for non-ownership class 2 are uniform countrywide.) In the last New York rate revision, no changes were made in the Hired Car rates and the rates for non-ownership Class 1, so that the present rates do not reflect the above relationships.

The rate filing includes an exhibit showing the proposed rates for every territory for the classes under review. As an illustration, there is attached one page of the exhibit of proposed rates (Exhibit 4, Sheet 2) from the 1956 New York rate revision. This revision was accepted by the New York Insurance Department and the revised rates became effective June 27, 1956 as filed with only minor modifications reflecting limitations on some of the rate increases.

* Because the volume of experience on school buses and funeral cars for New York City is not as sparse as for other territories, it has been customary to develop rates for these classifications for New York City from their own experience in that territory. In the last revision, no change was made in the rates for these classifications for New York City.

Commercial Cars and Garages

The rate making procedure for commercial cars and garages is basically the same as that for private passenger cars; the detail in which experience is compiled for these classifications requires, however, certain modifications in the process which are explained below.

Commercial Cars

In the discussion of the experience calls it was noted that the experience on commercial non-fleets is reported in the same manner as private passenger automobile experience, while commercial fleets are not reported for the incomplete policy year, but only for the policy year as of 24 months and as of 36 months. The experience for the latest available two policy years, therefore, consists of fleet and non-fleet experience for the older of the two policy years, and only non-fleet experience for the latest year. The statewide rate level is determined from the mean of the loss ratios at manual rates for the two policy years, giving equal weight to the indications of each year, although the volume of experience is quite different for each of the two years. On a broad countrywide basis, the volume of commercial fleets is about equal to that of non-fleets so that the older of the two years represents approximately twice the volume of that for the latest year.

The premium at manual rates is determined by extending the written exposures in each territory for each class by the respective manual rates, for commercial rate classes 3, 4 and 5. (Commercial rate classes 7 and 8 were established in 1955, and no experience was yet available for these classes during 1956. Class 6 is treated separately, as will be explained later on.)

For commercial fleets, the written exposures are adjusted to reflect the Automobile Fleet Plan Reduction Percentages based on size of fleets. (See Manual Rule 72.) Average "Fleet Discounts" are determined for each state periodically from calls issued by the National Bureau of Casualty Underwriters and the Mutual Insurance Rating Bureau from which the fleet adjustment factors are obtained. Thus, the exposures on commercial fleets reflect the same reduction as is reflected in the actual premium charged to fleet risks.

Territory relativities for commercial cars are determined in the same manner as for private passenger cars.

Classification relativities for commercial cars have two component parts:

1. The assignment of commercial use classifications to rate classes.
2. The relativities of the rate classes to each other.

The commercial section of the Automobile Casualty Manual enumerates the various commercial use classifications, indicating for each of these the applicable rate class. The assignment of these use classifications to rate classes was last reviewed and revised by the National Bureau and Mutual Bureau during 1955 based upon the experience by use classifications for policy years 1946-1949. Experience in use classification detail is compiled on a periodic, discontinuous basis; companies are required to record and report this detail for a number of years, after which the detail is reduced to reporting by rate class within statistical territory. Such a period of reduced detail of reporting were the years 1950-1955; effective January 1, 1956, companies resumed the reporting of commercial fleet and non-fleet experience in complete detail by use classification within statistical territory.

The relativities between commercial rate classes were revised in most states during 1956, in connection with a countrywide program of the National Bureau and the Mutual Bureau. In the states in which no rate revision for commercial cars was introduced during 1956, the rate class relativities will be revised in connection with the next rate revision. For the purpose of determining indicated rate class differentials for commercial cars, the combined countrywide* experience of the National Bureau and Mutual Bureau for policy years 1950-1953 was utilized. Loss and loss adjustment ratios at manual class 5CA rates were determined for each rate class, and the indicated differentials were expressed as ratios to Class 5CA, which is the commercial car rate class producing the largest volume. The experience indications are shown on the attached Exhibit 5, Sheets 1 and 2, separately for major cities and the balance of the country; (the experience for New York City was reviewed separately, but is not included here).

The revised differentials and their derivation are shown on the attached Exhibit 5, Sheet 3, for classes 3, 4 and 5, CA and CB. In this first review of commercial car rate class differentials in a number of years, a formula was utilized which produced differential changes in the direction of the indications without creating extreme fluctuations in the resulting rates.

For classes 7 and 8, the differentials were continued which were used at the time these rate classes were established in 1955.

Rates for class 6 had been determined in the past as the lower of the private passenger class 3 rates and the commercial class 5CA rates. A new relationship was introduced at 15% below the rates for class 8CA. In view of the generally favorable experience on class 6, however, this formula is not applied where its application would result in an increase of existing class 6 rates.

GARAGES

The Garage Liability Policy affords broad coverage for all premises and operation exposures of the garage, including Product Liability and Defective Workmanship coverage; under Division 1 of the policy, coverage is included for the automobile liability exposure of all automobiles owned by the garage as well as non-owned automobiles; under Division 2, automobiles owned by the garage are not covered.

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* This experience included all states in which the reassignment of use classifications to rate class, referred to above, was introduced.

Manual rates apply separately for Division 1 and Division 2. For both, the basis of exposure is the garage payroll. For Division 1, there are three payroll classes, viz.

Class (a)—clerical office employees

Class (b)—proprietors, partners, officers, salesmen, general managers, service managers and chauffeurs

Class (c)—all other employees

Rate making data for Garages—Division 1 are reported for all payroll classes combined for each statistical territory. In order to calculate premiums at manual rates, an average rate for the three payroll classes has to be calculated for each statistical territory which is applied to the written exposures for the three classes combined. This average rate, at present, is determined from the distribution of exposures by payroll class which was last obtained for policy year 1950. A typical distribution of payroll by class, and the calculation of the average rate, is shown below for a statistical territory:

Payroll Class	*Written Exposures*	*Present Rate*		*Premium at Present Rate*
Non-Minimum Premium Policies				
a	549,734	$ .12	discounted rate*	$ 670
b	1,604,983	1.50		24,075
c	4,401,847	.48		21,129
Minimum Premium Policies				
a	—	.13	manual rate[ϕ]	—
b	40,494	1.66		672
c	32,757	.53		174
Total	6,629,815	.79		46,720

The Automobile Bodily Injury and Property Damage Liability Statistical Plan requires, effective January 1, 1956, the separate reporting of experience for Garages—Division 1 by industry classification as follows:

* Manual rates are adjusted to reflect the premium reduction based on size of payroll, (Manual Rule 52) in a manner similar to that used for Commercial Fleets.

ϕ Premium reduction based on size of payroll not applicable. Incurred losses are not reported by payroll class so that the propriety of the class relativities can not be tested against actual loss experience. Rate review is directed, at the present time, at the review of statewide and territory rate levels. The review of rate relativities by payroll class would require that each loss is assigned to the payroll class causing the loss; it is believed that such classification of losses could not be accomplished with any degree of accuracy because of the nature of garage operations.

Franchised Dealers (Sales Agencies)
Non-Franchised Dealers (Sales Agencies)
Repair Shops
Service Stations
Storage Garages and Public Parking Places
Equipment and Implement Dealers

When experience in this detail becomes available, beginning with the 1958 Call for experience, it will be analyzed for significant differences in the rate indications for each of these industry classifications. The National Bureau and the Mutual Bureau are also obtaining new distributional data on exposures by payroll class under a special call beginning with January 1, 1957. Since these distributions will be reported by the industry classifications referred to above, substantially more statistical detail will be available for analysis of garage liability experience than had been available in the past.

CONCLUSION

The foregoing description of current rate making procedures for automobile liability insurance dealt primarily with the mechanics of rate making. The subject was presented in an elementary fashion; an attempt was made to explain terms and procedures in such manner that they can be understood without prior knowledge of the subject. A considerable portion of this paper was devoted to the source from which the material used in rate making flows: the statistical plan and calls for experience.

In the course of this presentation, when the opportunity offered itself, attention was called to the utilization of judgment in rate making. Although this paper deals basically with the formula approach, which in fact is extensively used in rate making, sight should not be lost of the role judgment plays, which is superimposed upon and sometimes used in lieu of the formula. The determination of the appropriate method of rate making under any given set of circumstances must ultimately be governed by the requirement of the rating laws which prescribe that rates shall be adequate, not excessive and not unfairly discriminatory.

MUTUAL INSURANCE RATING BUREAU

☒ AUTOMOBILE LIABILITY INSURANCE EXPERIENCE

19 55 CALL FOR

☐ GENERAL LIABILITY INSURANCE EXPERIENCE

STATE OF NEW YORK STATE (EXCL. N. Y. CITY)

EXHIBIT A

ITEM 1 PRIVATE PASSENGER BY NON FLEET BY STATISTICAL TERRITORY BY CLASSIFICATION

MEMBERS & SUBSCRIBERS

STATE	COVER.	ITEM	TERRITORY	CLASS	POLICY YEAR	WRITTEN EXPOSURE	WRITTEN PREMIUM (a)	LOSSES INCURRED (b) LIABILITY	LOSSES INCURRED (b) MEDICAL *	NO. OF CLAIMS INCURRED LIABILITY	NO. OF CLAIMS INCURRED MEDICAL *	EXCESS LOSSES (EXCESS PORTION) LIABILITY	EXCESS LOSSES (EXCESS PORTION) MEDICAL *
						CAR YEARS & TENTHS OF CAR YEARS							
51	1	01	31: 01	1000	1953	19 2	1376	604		1			
1	1	01	31: 01	1005	1953	2 0	150						
51	1	01	31: 01	1111	1953	3870 6	300520	112453	297	141	5	11850	
51	1	01	31: 01	1112	1953	5825 1	508388	204711	20423	206	131	18549	1044
51	1	01	31: 01	1121	1953	72 6	6137	298		2			
51	1	01	31: 01	1122	1953	111 9	10850	2333	227	5	3		
51	1	01	31: 01	1130	1953	4 0	355						
51	1	01	31: 01	1131	1953	4 6	440						
51	1	01	31: 01	1132	1953	12 2	1246	23802	1000	2	2	12500	
51	1	01	31: 01	1200	1953	7 2	652	9350		3			
51	1	01	31: 01	1211	1953	513 9	64038	46587		37		5000	
51	1	01	31: 01	1212	1953	569 6	79019	56324	3005	51	25	10000	
51	1	01	31: 01	1221	1953	6 2	912						
51	1	01	31: 01	1222	1953	16 3	2368	2483	915	2	6		
51	1	01	31: 01		1953								
51	1	01	31: 01	1232	1953	3 9	665						
51	1	01	31: 01	1300	1953	37 1	2612	60					
51	1	01	31: 01	1311	1953	361 2	43710	3202	11	8	1		
51	1	01	31: 01	1312	1953	515 5	67127	14360	777	24	12		
51	1	01	31: 01	1321	1953	7 4	1041						
51	1	01	31: 01	1322	1953	13 5	1765	8					
51	1	01	31: 01	1332	1953	4 0	796	18575	1900	2	4	10000	500
51	1	01	31: 01	1430	1953	2 7	282	19					
1	1	01	31: 01	1500	1953	8 2	982	270	40	2	1		
51	1	01	31: 01	1611	1953	59 0	3759	1037		2			
51	1	01	31: 01	1612	1953	86 6	6493	3285	-506	2	3		
51	1	01	31: 01	1622	1953	1 0	104						
51	1	01	31: 01	1711	1953	10 5	1143	5919		5			
51	1	01	31: 01	1712	1953	14 7	1783						
						12160 7	1108713	505680	29101	495	193	67899	1544
51	1	01	31: 08	1000	1953	66 7	3914	14080		4		2500	
51	1	01	31: 08	1005	1953	2 0	65						
51	1	01	31: 08	1111	1953	12273 4	706237	300654	3084	351	13	13614	
51	1	01	31: 08	1112	1953	12195 0	782136	265500	32872	307	272	32211	622
51	1	01	31: 06	1121	1953	203 3	12942	8344	1272	10	4		
51	1	01	31: 08	1122	1953	197 1	14002	2295		6			
51	1	01	31: 08	1130	1953	11 2	874	2016		5			
61	1	01	31: 08	1131	1953	21 7	1464						
51	1	01	31: 08	1132	1953	22 7	1837						
51	1	01	31: 08	1200	1953	29 5	2483	2048		9			
1	1	01	31: 08	1211	1953	2099 8	196910	96039	20	143	1	3333	
51	1	01	31: 08	1212	1953	1269 5	134406	32421	3249	63	28		CR 500
51	1	01	31: 08	1221	1953	20 4	2099	781		2			
51	1	01	31: 08	1222	1953	40 8	4838						
51	1	01	31: 08	1231	1953	5 3	393						

(a) WRITTEN PREMIUMS INCLUDE CHARGE FOR EXCESS LIMITS.
(b) LOSSES INCURRED INCLUDE EXCESS LOSSES AND ALLOCATED CLAIM EXPENSES.
* MEDICAL PAYMENTS COVERAGE.

Exhibit 8
Sheet 1

Mutual Insurance
Rating Bureau

PENNSYLVANIA AUTOMOBILE LIABILITY

Calculation of Earned Factors to Apply to Written Exposures and Premiums
for Policy Year 1954 as of December 31, 1954

All Companies Reporting to M.I.R.B. — Private Passenger Cars - Statewide

Policy Year	Written Exposure as of 12 Mos.∮	Written Exposure as of 24 Mos.	Basic Limits Losses Incurred* as of 12 Mos.	Basic Limits Losses Incurred* as of 24 Mos.**	No. Claims Incurred as of 12 Mos.	No. Claims Incurred as of 24 Mos.*	Pure Prem. as of 12 Mos.	Pure Prem. as of 24 Mos.*	Claim Freq. as of 12 Mos.	Claim Freq. as of 24 Mos.*	Pure Prem. Ratios 12 Mos. to 24 Mos. (SPP)	Cl. Freq. Ratios 12 Mos. to 24 Mos. (SF)
						Bodily Injury						
1951	270,079	270,858	1,400,809	2,524,313	2,822	4,858	5.22	9.32	1.04	1.79	.560	.581
1952	288,140	289,196	1,626,681	3,187,287	3,282	5,102	5.65	11.02	1.14	1.76	.513	.648
1953	224,839	226,997	1,362,502	2,490,022	2,342	3,949	6.06	10.93	1.04	1.74	.554	.598
Mean											.542	.609
						Property Damage						
1951	269,998	270,600	1,301,870	2,386,067	15,507	27,019	4.82	8.82	5.74	9.98	.546	.575
1952	288,047	289,099	1,562,036	2,537,877	17,157	27,016	5.42	8.78	5.95	9.34	.617	.537
1953	224,691	226,815	1,206,661	1,994,001	12,157	19,978	5.37	8.79	5.41	8.81	.611	.614
Mean											.591	.609

Formula∮ Earned Factor for Annual Policies $= SF \times V \times \left\{\frac{SPP}{SF} \times V + \frac{CWPP}{CWF} \times (1.0 - V)\right\} + CWPP \times (1.0 - V)$

B.I. $.609 \times .90 \times \left\{\frac{.542}{.609} \times .90 + \frac{.573}{.609} \times .10\right\} + .573 \times .10 = .55$

P.D. $.609 \times 1.00 \times \left\{\frac{.591}{.609} \times 1.00 + 0\right\} + 0 \qquad = .59$

* Including allocated loss adjustment expenses.
** Policy year 1951 and 1952 bodily injury losses are as of 36 months.
∮ See Sheet 2 for explanations of symbols.

Mutual Insurance
Rating Bureau

Exhibit B
Sheet 2

AUTOMOBILE LIABILITY INSURANCE

Calculation of Countrywide Pure Premium and Claim Frequency Ratios
Based upon Policy Year 1952

All Companies Reporting to M.I.R.B.

Private Passenger Cars - Countrywide

Written Exposure (1) as of 12 Mos.	Written Exposure (2) as of 24 Mos.	Basic Limits Losses Incurred (3) as of 12 Mos.	Basic Limits Losses Incurred (4) as of 24 Mos.	No. of Claims (5) as of 12 Mos.	No. of Claims (6) as of 24 Mos.	Pure Premium (7) as of 12 Mos.	Pure Premium (8) as of 24 Mos.	Claim Frequency (9) 12 Mos.	Claim Frequency (10) 24 Mos.	(11) Pure Prem. Ratio (7)÷(8) CWPP	(12) Claim Freq. Ratio (9)÷(10) CWF
				Bodily Injury							
2,488,797	2,582,573	22,557,576	40,833,555	35,676	60,704	9.06	15.82	1.43	2.35	.573	.609
				Property Damage							
2,561,614	2,579,005	13,903,475	23,331,999	136,039	229,311	5.43	9.05	5.31	8.89	.600	.597

Credibility Table for State Earned Factor Calculations

No. of Claims	Volume Index	No. of Claims	Volume Index	No. of Claims	Volume Index
0 - 24	0	1,225 - 1,599	.35	4,900 - 5,624	.70
25 - 99	.05	1,600 - 2,024	.40	5,625 - 6,399	.75
100 - 224	.10	2,025 - 2,499	.45	6,400 - 7,224	.80
225 - 399	.15	2,500 - 3,024	.50	7,225 - 8,099	.85
400 - 624	.20	3,025 - 3,599	.55	8,100 - 9,024	.90
625 - 899	.25	3,600 - 4,224	.60	9,025 - 9,999	.95
900 - 1,224	.30	4,225 - 4,899	.65	10,000 & Over	1.00

Explanations of Symbols:

V = Volume Index, for table above, based upon 1951-53 number of claims as of 12 months.
SSP = Ratio of statewide pure premium as of 12 months to statewide pure premium as of 24 months.
SF = Ratio of statewide claim frequency as of 12 months to statewide claims frequency as of 24 months.
CWPP = Ratio of countrywide pure premium as of 12 months to countrywide pure premium as of 24 months.
CWF = Ratio of countrywide claim frequency as of 12 months to countrywide claim frequency as of 24 months.

MUTUAL INSURANCE RATING BUREAU

AUTOMOBILE LIABILITY INSURANCE EXPERIENCE

POLICY YEARS 1950 - 1954

NEW YORK

EXHIBIT C
Sheet 1

MEMBERS AND SUBSCRIBERS OF M.I.R.B. AND N.B.C.U.

PRIVATE PASSENGER CARS - ALL CLASSES COMBINED - BY STATISTICAL TERRITORY

BODILY INJURY

POLICY YEAR	EARNED NUMBER OF CARS	EARNED PREMIUM *	LIABILITY INCURRED LOSSES BASIC LIMITS	LIABILITY INCURRED LOSSES EXCESS	NUMBER OF CLAIMS	MEDICAL PAYMENTS INCURRED LOSSES	CLAIM FREQUENCY †	AVERAGE CLAIM COST ††	LOSS RATIO **	PURE PREMIUM ††	1) '54 WRIT. CARS 2) '54 WRIT. PREM.
3128 34 BINGHAMTON											
50	27754	933412	521995	72051	601	64659	2.2	869	.71	18.81	
1	28748	1101120	564979	124385	662	53807	2.3	853	.67	19.65	
2	28524	1258494	529109	118021	543	68014	1.9	974	.57	18.55	
53	30139	1546673	576823	96126	631	70007	2.1	914	.48	19.14	1) 31,059
54	16730	861820	340741	77676	380	44449	2.3	897	.54	20.37	2) 1,598,924
	131895	5701519	2533647	488259	2817	300936	2.1	899	.58	19.21	
3129 14 GLOVERSVILLE											
50	8216	436284	305686	29433	355	21789	4.3	861	.82	37.21	
1	8528	516858	324768	29082	369	29406	4.3	880	.74	38.08	
52	8234	583678	311142	52628	300	32980	3.6	1037	.68	37.79	
53	8150	700834	264391	33855	295	27191	3.6	896	.46	32.44	
4	4562	390905	173018	11067	170	17304	3.7	1018	.52	37.93	1) 8,464
	37690	2628559	1379005	156065	1489	128670	4.0	926	.63	36.59	2) 725,242
3135 7 AMSTERDAM											
50	8377	524772	328163	153735	359	30481	4.3	914	.98	39.17	
1	7804	557286	356682	40921	367	36577	4.7	972	.78	45.71	
52	7123	601256	262646	63086	251	25361	3.5	1046	.58	36.87	
53	6410	619993	213782	16350	225	24983	3.5	950	.41	33.35	
54	3326	322552	105459		109	9320	3.3	968	.36	31.71	1) 6,171
	33040	2625859	1266732	274092	1311	126722	4.0	966	.64	38.34	2) 598,427
3136 29 GLENS FALLS											
50	8940	468954	311978	52547	374	16222	4.2	834	.81	34.90	
51	9048	591796	349435	55849	325	26107	3.6	1075	.73	38.62	
52	8978	660043	386445	170960	322	30129	3.6	1200	.89	43.04	
53	9438	708050	284378	60281	322	26779	3.4	883	.52	30.13	
54	5381	403345	193763	23565	212	17021	3.9	914	.58	36.02	1) 9,982
	41785	2832168	1525999	363202	1555	116258	3.7	981	.71	36.52	2) 748,321
3137 12 OSWEGO											
50	7738	378928	260601	24823	328	22466	4.2	795	.81	33.68	
51	8077	432603	243396	49784	340	19017	4.2	716	.72	30.13	
2	7791	495851	227476	29316	306	26256	3.9	743	.57	29.20	
3	7925	660806	264385	21482	325	31738	4.1	813	.48	33.36	
54	4260	355932	142708	12488	167	9792	3.9	855	.46	33.50	1) 7,904
	35791	2324120	1138566	137893	1466	109269	4.1	777	.60	31.81	2) 660,357
3140 17 ROCHESTER											
50	82864	4001353	2059415	146107	2779	129454	3.4	741	.58	24.85	
51	87627	4711140	2235356	287030	2831	158319	3.2	790	.57	25.51	
52	90034	5408550	2446003	448999	2686	177540	3.0	911	.57	27.17	
53	91658	5964252	2659658	410379	2882	204321	3.1	923	.55	29.02	
54	50878	3343577	1527253	199185	1751	105264	3.4	872	.55	30.02	1) 94,394
	403061	23428872	10927685	1491700	12929	774898	3.2	845	.56	27.11	2) 6,203,297
3147 13 SYRACUSE											
50	49003	2419492	1449689	156809	2040	107012	4.2	711	.71	29.58	
51	51434	2812685	1742121	242849	2099	139528	4.1	830	.76	33.87	
52	50378	3206346	1486241	208200	1835	129796	3.6	810	.57	29.50	
53	54335	4017827	1657955	248620	2015	142795	3.7	823	.51	30.51	
54	30119	2230879	1012120	173905	1232	98792	4.1	822	.58	33.61	1) 55,879
	235269	14687229	7348126	1030383	9221	617923	3.9	797	.61	31.23	2) 4,138,922

* PREMIUMS INCLUDE CHARGES FOR EXCESS LIMITS (FOR BODILY INJURY THEY ALSO INCLUDE PREMIUMS FOR MEDICAL PAYMENTS COVERAGE.)

† CLAIM FREQUENCIES ARE PER 100 CARS.

** TOTAL LIMITS.

†† BASIC LIMITS.

NOTES:

1. THE 1954 POLICY YEAR EARNED NUMBER OF CARS AND EARNED PREMIUMS ARE CALCULATED BY APPLYING THE FOLLOWING FACTOR(S) TO THE WRITTEN NUMBER OF CARS AND WRITTEN PREMIUMS. .539
2. THE INCURRED LOSSES INCLUDE AL[redacted] CLAIM ADJUSTMENT EXPENSES.
3. CLAIM FREQUENCIES, AVERAGE CLAIM COSTS AND PURE PREMIUMS ARE FOR LIABILITY COVERAGE ONLY. LOSS RATIOS ARE FOR LIABILITY AND MEDICAL PAYMENTS COVERAGE COMBINED.

MEMBERS AND SUBSCRIBERS
OF M.I.R.B. AND N.B.C.U.

PRIVATE PASSENGER CARS - ALL CLASSES COMBINED - BY STATISTICAL TERRITORY

PROPERTY DAMAGE

Policy Year	Earned Number of Cars	Earned Premium *	Liability: Incurred Losses: Basic Limits	Liability: Incurred Losses: Excess	Liability: Number of Claims	Medical Payments Incurred Losses	Claim Frequency †	Average Claim Cost ††	Loss Ratio **	Pure Premium ††	1) '54 Writ. Cars 2) '54 Writ. Prem.
3128	34 BINGHAMTON										
50	27381	371260	307582		3359		12.3	92	.83	11.23	
51	28610	394504	330610		3136		11.0	105	.84	11.56	
52	28483	451035	288929		2756		9.7	105	.64	10.14	
53	30313	606738	323845		2812		9.3	115	.53	10.68	
54	17620	359825	196805		1681		9.5	117	.55	11.17	1) 30,966
	132407	2183362	1447771		13744		10.4	105	.66	10.93	2) 632,382
3129	14 GLOVERSVILLE										
50	8200	145702	111474		1112		13.6	100	.77	13.59	
51	8522	158361	116787		1118		13.1	104	.74	13.70	
52	8206	171090	105179		878		10.7	120	.61	12.82	
53	8124	207365	102002		889		10.9	115	.49	12.56	
54	4612	122120	64011		496		10.3	129	.52	13.38	1) 8,457
	37664	804638	499453		4493		11.9	111	.62	13.19	2) 214,623
3135	7 AMSTERDAM										
50	8353	147797	110669		1046		12.5	106	.75	13.25	
51	7727	149368	115502		932		12.1	124	.77	14.95	
52	7155	154368	89746		717		10.0	125	.58	12.54	
53	6396	161648	83959		673		10.5	125	.52	13.13	
54	3507	88705	42947		359		10.2	120	.48	12.25	1) 6,162
	33138	701886	442823		3727		11.2	119	.63	13.36	2) 155,897
3136	29 GLENS FALLS										
50	8862	143527	104325		927		10.5	113	.73	11.77	
51	9034	161562	142777		1029		11.4	139	.88	15.80	
52	8960	171214	109182		835		9.3	131	.64	12.19	
53	9441	191207	120366		860		9.1	140	.63	12.75	
54	5680	115032	67790		460		8.1	147	.59	11.93	1) 9,985
	41977	782542	544440		4111		9.8	132	.70	12.97	2) 202,166
3137	12 OSWEGO										
50	7706	144504	100639		954		12.4	105	.70	13.06	
51	8060	155675	105726		953		11.8	111	.68	13.12	
52	7790	166559	96669		784		10.1	123	.58	12.41	
53	7905	203565	110698		798		10.1	139	.54	14.00	
54	4493	114918	67260		460		10.2	146	.59	14.97	1) 7,895
	35954	785221	480992		3949		11.0	122	.61	13.38	2) 201,964
3140	17 ROCHESTER										
50	82635	1505877	967691		11237		13.6	86	.64	11.71	
51	87423	1633919	1013773		10930		12.5	93	.62	11.60	
52	89884	1826347	981402		9605		10.7	102	.54	10.92	
53	91404	2132226	1070261		9829		10.8	109	.50	11.71	
54	53650	1255559	682710		5852		10.9	117	.54	12.73	1) 94,288
	404996	8353928	4715837		47453		11.7	99	.56	11.64	2) 2,208,606
3147	13 SYRACUSE										
50	49517	946446	668495		7185		14.5	93	.71	13.50	
51	51349	1032034	715024		6584		12.8	109	.69	13.92	
52	50396	1101664	659299		5547		11.0	119	.60	13.08	
53	54232	1331521	692216		5865		10.8	118	.52	12.76	
54	31689	779436	423490		3433		10.8	123	.54	13.36	1) 55,692
	237183	5191101	3158524		28614		12.1	110	.61	13.32	2) 1,369,835

* PREMIUMS INCLUDE CHARGES FOR EXCESS LIMITS (FOR BODILY INJURY THEY ALSO INCLUDE PREMIUMS FOR MEDICAL PAYMENTS COVERAGE.)
† CLAIM FREQUENCIES ARE PER 100 CARS.
** TOTAL LIMITS.
†† BASIC LIMITS.

NOTES:

1. THE 1954 POLICY YEAR EARNED NUMBER OF CARS AND EARNED PREMIUMS ARE CALCULATED BY APPLYING THE FOLLOWING FACTOR(S) TO THE WRITTEN NUMBER OF CARS AND WRITTEN PREMIUMS: .569
2. THE INCURRED LOSSES INCLUDE ALLOCATED CLAIM ADJUSTMENT EXPENSES.
3. CLAIM FREQUENCIES, AVERAGE CLAIM COSTS AND PURE PREMIUMS ARE FOR LIABILITY COVERAGE ONLY. LOSS RATIOS ARE FOR LIABILITY AND MEDICAL PAYMENTS COVERAGE COMBINED.

Exhibit D

NEW YORK - AUTOMOBILE LIABILITY INSURANCE
1956 PRIVATE PASSENGER RATE REVISION

Calculation of Bodily Injury Loss Development
Factor to Apply to Policy Year 1953

Members & Subscribers of N.B.C.U. & M.I.R.B.

Policy Year	Incurred Losses Basic Limits at 24 Mos.	Incurred Losses Basic Limits at 36 Mos.	Loss Devel't Factor Basic Limits	Incurred Losses for Increment between 5/10 and 10/20 Limits at 24 Mos.	Incurred Losses for Increment between 5/10 and 10/20 Limits at 36 Mos.	Loss Development Factor for Increment Between 5/10 and 10/20 Limits
1950	57,876,322	57,976,909	1.002	4,616,061	5,295,367	1.147
1951	67,961,788	67,798,198	.998	8,131,413	8,633,703	1.062
1952	66,584,059	65,568,694	.985	8,790,749	10,062,257	1.145
Selected Factor (3yr. mean)			.995			1.118

Calculation of Bodily Injury Earned Factor to Apply to
10/20 Limits Experience for Policy Year 1954

A. Earned Factor For Increment

(1) Policy Year	Number of Written Cars (2) 12 Months	Number of Written Cars (3) Final	Incurred Losses-Increment Between 5/10 and 10/20 Limits (4) 12 Months	Incurred Losses-Increment Between 5/10 and 10/20 Limits (5) Final
1952	2,079,685	2,085,145	4,175,587	10,062,257
1953	2,177,435	2,168,448	4,681,868	11,630,506(a)
1954	2,201,853		5,401,442	

(6) Policy Year	Pure Premium for Increment (7) 12 Months (4)÷(2)	Pure Premium for Increment (8) Final (5)÷(3)	Ratio of Pure Premiums for Increment (7)÷(8)
1952	2.01	4.83	.416
1953	2.15	5.36	.401
1954	2.45		
Two Year Mean			.409

(a) The incurred Losses as of 24 months of $10,402,957 were developed to 36 months by applying the Loss Development Factor of 1.118.

B. Earned Factor for 10/20 Limits

(1) Policy Year	Ratios of Pure Premium (2) Basic Limits	Ratios of Pure Premium (3) Increment	Ratios of Pure Premium (4) Average .862x(2)+.138x(3)*
1952	.541	.416	.524
1953	.537	.401	.518
Mean	.539	.409	.521

* Weights based on Policy Year 1953 pure premium for basic limits ($33.49) and increment ($5.36):

$$33.49 \div (33.49+5.36) = .862$$
$$5.36 \div (33.49+5.36) = .138$$

NEW YORK

Exhibit I

AUTOMOBILE LIABILITY INSURANCE - 1956 PRIVATE PASSENGER RATE REVISION
Development of Proposed Rate Level Changes

Policy Years 1953 and 1954 as of December 31, 1954

(1) Coverage	(2) Pol. Year	10/20/5 Limits Premium at Present Rates (3) Written	(4) Earned(a)	(5) 10/20/5 Limits Losses Incurred Including Allocated Loss Adjustment Expenses	(6) Loss Ratio at Present Rates (5)÷(4)	(7) Pol. Yr. 1953-54 Mean L.R. Derived from Col. (6)	(8) Expected Loss and Allocated Loss Adj. Ratio	(9) Indicated and Proposed Percent Change [(7)÷(8)]-1.0(b)
New York City								
B.I.	1953	$42,174,557	$42,174,557	$23,547,860(c)	.5583			
	1954	42,402,790	22,091,854	13,108,242	.5934	.5759	.5451	+5.7%
P.D.	1953	10,386,786	10,386,786	5,495,378	.5291			
	1954	10,456,522	5,949,761	3,121,551	.5247	.5269	.5226	+0.8
B.I. & P.D.								+4.7
Balance of State								
B.I.	1953	107,930,642	107,930,642	60,714,797(c)	.5625			
	1954	110,170,136	57,398,641	34,753,806	.6055	.5840	.5451	+7.1%
P.D.	1953	37,150,533	37,150,533	19,958,132	.5372			
	1954	38,051,888	21,651,524	11,630,633	.5372	.5372	.5226	+2.8
B.I. & P.D.								+6.0

Experience of Members and Subscribers of the National Bureau of Casualty Underwriters and the Mutual Insurance Rating Bureau.

(a) Policy Year 1954 calculated on an earned basis by the application of the following factors to written premium: B.I., .521; P.D., .569.

(b) The indicated percent change for New York State Entire is B.I. +6.7%, P.D. +2.4%, B.I. & P.D. Combined +5.7%.

(c) Loss Development Factors applied to Policy Year 1953 B.I. losses were: .995 for $5,000/10,000 limits; 1.118 for increment to $10,000/20,000 limits.

Exhibit 2
Sheet 1

NEW YORK
AUTOMOBILE LIABILITY - 1956 PRIVATE PASSENGER RATE REVISION
Development of Proposed Rate Level Changes by Territories
for New York State Excluding New York City

Members and Subscribers of N.B.C.U. and M.I.R.B. Bodily Injury

(1) Territory	(2) No. Cars Written (Policy Year 1954)	(3) Pres. Avg. Rate	Pure Premiums Including Allocated Loss Adjustment (5/10 Limits) (4) Pol.Yrs. 1952-54	(5) Underly.	Pure Prems. Adjusted to Proposed Rate Level on 1954 Distribution (6) Pol. Yrs. 1952-54	(7) Underly.	(8) Credibility	(9) Formula Pure Prem.	(10) Proposed Rate Level Change	(11) Percent Change Applied to Class 3 Rates
63 - Monticello (25)	5,499	76.79	47.88	41.86	48.58	44.83	.80	47.83	+14.3	+11.6
61 - Queens (2)	21,993	75.16	43.17	40.97	43.80	43.88	1.00	43.80	+ 6.9	+ 0.8
23 - Saratoga Springs (4)	7,614	64.36	40.27	35.08	40.86	37.57	.80	40.20	+14.6	+11.8
55 - Queens Sub. (3)	218,943	64.09	38.63	34.94	39.20	37.42	1.00	39.20	+12.2	+ 5.8
01 - Albany (8)	42.061	65.40	36.67	35.65			1.00			
89 - Troy (42)	17,358	64.81	35.77	35.33			1.00			
Sub-total	59,419	65.23	36.41	35.56	36.95	38.08	1.00	36.95	+ 3.9	- 2.0
36 - Glens Falls (29)	9,982	59.69	32.79	32.54	33.27	34.85	.80	33.59	+ 3.2	+ 0.7
88 - Schenectady (6)	36,344	55.92	32.64	30.48	33.12	32.64	1.00	33.12	+ 8.7	+ 2.5
29 - Gloversville (14)	8,464	62.20	32.48	33.91	32.96	36.32	.80	33.63	- 0.8	- 3.2
83 - Nassau County (20)	233,531	54.97	31.74	29.96	32.21	32.09	1.00	32.21	+ 7.5	+ 4.9
86 - Utica (18)	21,649	56.58	31.92	30.84			1.00			
24 - Rome (19)	7,307	56.55	28.90	30.83			.70			
Sub-total	28,956	56.57	31.16	30.84	31.62	33.03	1.00	31.62	+ 2.5	- 3.3
99 - Suffolk County (32)	90,360	51.50	31.05	28.07	31.51	30.06	1.00	31.51	+12.3	+ 9.6
08 - Buffalo (9)	137,177	54.65	30.62	29.79	31.07	31.91	1.00	31.07	+ 4.3	- 1.6
35 - Amsterdam (7)	6,171	70.59	30.61	38.48	31.06	41.21	.70	34.11	-11.4	-13.5
98 - Rensselaer County (38)	7,612	53.39	29.95	29.10	30.39	31.17	.70	30.62	+ 5.2	+ 2.7
87 - Putnam County (40)	6,839	56.52	29.05	30.81	29.48	33.00	.70	30.54	- 0.9	- 3.3
37 - Oswego (12)	7,904	53.74	28.85	29.29	29.27	31.37	.80	29.69	+ 1.4	- 1.0
47 - Syracuse (13)	55,879	50.68	28.11	27.63	28.52	29.59	1.00	28.52	+ 3.2	- 2.7
52 - Ft.Plain & Herkimer (43)	12,551	52.51	27.80	28.62	28.21	30.65	.90	28.45	- 0.6	- 3.0
56 - New York City Sub. (5)	132,439	44.86	26.91	24.45	27.31	26.19	1.00	27.31	+11.7	+ 9.0
40 - Rochester (17)	94,394	43.43	25.89	23.67	26.27	25.35	1.00	26.27	+11.0	+ 4.7
65 - Ossining (24)	26,738	41.77	25.59	22.77	25.97	24.39	1.00	25.97	+14.1	+11.4
81 - Buff. Sub. & N.F.Sub.(30)	28,912	41.38	25.82	22.56			1.00			
76 - Niagara Falls (15)	30,810	45.21	23.13	24.64			1.00			
Sub-total	59,722	43.36	24.43	23.64	24.79	25.32	1.00	24.79	+ 4.9	- 3.7

See Sheet 5 for notes.

NEW YORK
AUTOMOBILE LIABILITY - 1956 PRIVATE PASSENGER RATE REVISION

Development of Proposed Rate Level Changes by Territories
for New York State Excluding New York City

Members and Subscribers of N.B.C.U. and M.I.R.B. — Bodily Injury

(1)	(2)	(3)	Pure Premiums Including Allocated Loss Adjustment (5/10 Limits)		Pure Prems. Adjusted to Proposed Rate Level on 1954 Distribution		(8)	(9)	(10)	(11)
Territory	No. Cars Written (Policy Year 1954)	Pres. Avg. Rate	(4) Pol. Yrs. 1952-54	(5) Underly.	(6) Pol. Yrs. 1952-54	(7) Underly.	Credibility	Formula Pure Prem.	Proposed Rate Level Change	Percent Change Applied to Class 3 Rates
62 - Kingston (27)	17,848	47.91	25.52	26.12			1.00			
20 - Newburgh (27)	12,672	48.95	22.88	26.68			.90			
Sub-total	30,520	48.34	24.42	26.35	24.78	28.22	1.00	24.78	- 6.0	- 8.3
92 - Staten Island (10)	25,467	47.68	24.15	25.99	24.51	27.84	1.00	24.51	- 5.7	- 8.0
27 - Elmira (11)	13,052	51.59	24.11	28.12	24.46	30.12	.80	25.59	- 9.0	-14.2
79 - Syracuse Suburban (22)	13,949	37.59	24.00	20.48	24.35	21.93	.90	24.11	+17.7	+14.9
67 - Northern Counties (46)	89,054	43.28	23.53	23.59	23.88	25.26	1.00	23.88	+ 1.2	- 1.2
59 - Catskill & Columbia Co. (33)	17,964	41.62	23.03	22.69	23.37	24.30	.90	23.46	+ 3.4	+ 0.9
58 - Dutchess Co. Rem. (23)	15,127	39.51	25.09	21.54			.90			
21 - Poughkeepsie (44)	16,686	41.48	21.09	22.61			.90			
Sub-total	31,813	40.54	22.99	22.10	23.33	23.67	1.00	23.33	+ 5.6	+ 6.4
68 - Rockland County (28)	20,065	35.66	22.90	19.44	23.24	20.82	1.00	23.24	+19.5	+16.6
Territory 54 (36)	29,061	40.69	22.35	22.18			1.00			
60 - Genesee County (31)	9,081	40.51	21.89	22.08			.70			
80 - Rochester Suburban (35)	4,581	40.01	20.93	21.81			.40			
Sub-total	42,723	40.58	22.10	22.12	22.42	23.69	1.00	22.42	+ 1.4	- 1.0
64 - Middletown (26)	20,565	36.96	21.71	20.15	22.03	21.58	1.00	22.03	+ 9.3	+ 6.7
69 - Central Counties (45)	91,255	34.42	21.48	18.76			1.00			
Territory 57 (41)	36,474	35.20	21.24	19.19			1.00			
25 - Auburn (21)	8,462	34.96	20.09	19.06			.70			
53 - Cortland-Ithaca (16)	13,614	38.79	19.67	21.14			.80			
28 - Binghamton (34)	31,039	36.50	17.44	19.90			1.00			
Sub-total	180,844	35.29	20.54	19.24	20.84	20.61	1.00	20.84	+ 8.3	+ 6.8
22 - Watertown (37)	8,614	40.43	19.80	22.04	20.09	23.60	.70	21.14	- 4.1	- 6.4
66 - Western Counties (47)	74,582	33.50	19.30	18.26			1.00			
26 - Jamestown (39)	12,821	35.01	17.92	19.08			.70			
Sub-total	87,403	33.72	19.10	18.38	19.38	19.68	1.00	19.38	+ 5.4	+ 2.3
Grand Total	1,850,564	49.61		27.04	28.96	28.96		29.00		

See Sheet 5 for notes.

Exhibit 2
Sheet 3

NEW YORK

AUTOMOBILE LIABILITY - 1956 PRIVATE PASSENGER RATE REVISION

Development of Proposed Rate Level Changes by Territories
for New York State Excluding New York City

Members and Subscribers of N.B.C.U. and M.I.R.B.

Property Damage

(1) Territory	(2) No. Cars Written (Policy Year 1954)	(3) Pres. Avg. Rate	Pure Premiums Including Allocated Loss Adjustment (4) Pol. Yrs. 1952-54	(5) Underly.	Pure Prems. Adjusted to Proposed Rate Level on 1954 Distribution (6) Pol. Yrs. 1952-54	(7) Underly.	(8) Credibility	(9) Formula Pure Prem.	(10) Proposed Rate Level Change	(11) Percent Change Applied to Class 3 Rates
63 - Monticello (25)	5,488	27.08	13.87	14.15	14.04	14.55	1.00	14.04	- 0.8	- 3.2
61 - Queens (2)	21,911	25.75	13.65	13.46	13.82	13.84	1.00	13.82	+ 2.7	- 3.2
55 - Queens Suburban (3)	220,057	24.34	13.03	12.72	13.19	13.08	1.00	13.19	+ 3.7	- 2.2
01 - Albany (8)	41,976	24.48	12.87	12.79			1.00			
89 - Troy (42)	17,328	24.26	12.38	12.68			1.00			
Sub-total	59,304	24.42	12.73	12.76	12.88	13.12	1.00	12.88	+ 0.9	- 4.9
08 - Buffalo (9)	136,469	22.49	12.56	11.75	12.71	12.08	1.00	12.71	+ 8.2	+ 2.0
83 - Nassau County (20)	233,773	23.82	12.52	12.45	12.67	12.80	1.00	12.67	+ 1.8	- 0.6
37 - Oswego (12)	7,895	22.81	11.79	11.92	11.93	12.25	1.00	11.93	+ 0.1	- 2.3
24 - Rome (19)	7,300	21.03	11.68	10.99			1.00			
86 - Utica (18)	21,636	21.03	11.48	10.99			1.00			
Sub-total	28,936	21.03	11.53	10.99	11.67	11.30	1.00	11.67	+ 6.2	+ 0.1
47 - Syracuse (13)	55,692	21.43	11.17	11.20	11.31	11.51	1.00	11.31	+ 1.0	- 4.8
29 - Gloversville (14)	8,457	20.10	11.02	10.50	11.15	10.79	1.00	11.15	+ 6.2	+ 3.7
56 - New York City Sub. (5)	132,246	20.49	11.00	10.71	11.13	11.01	1.00	11.13	+ 3.9	+ 1.4
88 - Schenectady (6)	36,320	21.23	10.92	11.09	11.05	11.40	1.00	11.05	- 0.4	- 6.1
87 - Putnam County (40)	6,833	20.24	10.88	10.58	11.01	10.88	1.00	11.01	+ 4.1	+ 1.6
35 - Amsterdam (7)	6,162	21.99	10.80	11.49	10.93	11.81	1.00	10.93	- 4.9	- 7.2
81 - Buff.Sub. & N.F.Sub.(30)	28,877	19.10	10.70	9.98			1.00			
76 - Niagara Falls (15)	30,798	21.51	10.55	11.24			1.00			
Sub-total	59,675	20.34	10.62	10.63	10.75	10.93	1.00	10.75	+ 1.1	- 7.2
36 - Glens Falls (29)	9,983	21.52	10.50	11.25	10.63	11.57	1.00	10.63	- 5.5	- 7.8
52 - Ft.Plain & Herkimer (43)	12,544	19.36	10.33	10.12	10.45	10.40	1.00	10.45	+ 3.3	+ 0.8
25 - Saratoga Springs (4)	7,604	21.73	10.32	11.36	10.44	11.68	1.00	10.44	- 8.1	-10.3
92 - Staten Island (10)	25,418	18.74	10.19	9.79	10.31	10.06	1.00	10.31	+ 5.3	+ 2.8

See Sheet 5 for notes.

AUTOMOBILE LIABILITY - 1956 PRIVATE PASSENGER RATE REVISION

Development of Proposed Rate Level Changes by Territories
for New York State Excluding New York City

Members and Subscribers of N.B.C.U. and M.I.R.B. Property Damage

(1) Territory	(2) No. Cars Written (Policy Year 1954)	(3) Pres. Avg. Rate	Pure Premiums Including Allocated Loss Adjustment (4) Pol. Yrs. 1952-54	(5) Underly.	Pure Prems. Adjusted to Proposed Rate Level on 1954 Distribution (6) Pol. Yrs. 1952-54	(7) Underly.	(8) Credibility	(9) Formula Pure Prem.	(10) Proposed Rate Level Change	(11) Percent Change Applied to Class 3 Rates
20 - Newburgh (27)	12,615	20.28	10.94	10.60			1.00			
62 - Kingston (27)	17,840	19.85	9.51	10.37			1.00			
Sub-total	30,455	20.03	10.10	10.47	10.22	10.76	1.00	10.22	- 2.4	- 4.7
40 - Rochester (17)	94,288	17.73	10.07	9.27	10.19	9.53	1.00	10.19	+ 9.9	+ 3.6
98 - Rensselaer County (38)	7,611	20.85	9.98	10.90	10.10	11.21	1.00	10.10	- 7.3	- 9.5
22 - Watertown (37)	8,614	17.57	9.87	9.18	9.99	9.44	1.00	9.99	+ 8.8	+ 6.2
99 - Suffolk County (32)	90,187	18.62	9.70	9.73	9.82	10.00	1.00	9.82	+ 0.9	- 1.5
79 - Syracuse Sub. (22)	13,928	17.58	9.42	9.19	9.53	9.45	1.00	9.53	+ 3.7	+ 1.2
68 - Rockland County (28)	20,209	16.71	9.41	8.73	9.52	8.97	1.00	9.52	+ 9.0	+ 6.4
64 - Middletown (26)	20,549	17.38	9.26	9.08	9.37	9.33	1.00	9.37	+ 3.2	+ 0.7
65 - Ossining (24)	26,707	16.75	9.21	8.75	9.32	9.00	1.00	9.32	+ 6.5	+ 3.9
Territory 54 (36)	29,031	18.51	9.39	9.67			1.00			
80 - Rochester Sub. (35)	4,581	16.12	8.80	8.42			.80			
60 - Genesee County (31)	9,076	18.44	8.68	9.64			1.00			
Sub-total	42,688	18.24	9.18	9.53	9.29	9.80	1.00	9.29	- 2.5	- 4.8
25 - Auburn (21)	8,450	16.39	9.71	8.57			1.00			
53 - Cortland-Ithaca (16)	13,611	18.14	9.62	9.48			1.00			
69 - Central Counties (45)	91,231	16.12	9.31	8.42			1.00			
28 - Binghamton (34)	30,966	17.83	9.11	9.32			1.00			
Territory 57 (41)	36,442	16.51	8.60	8.63			1.00			
Sub-total	180,700	16.66	9.17	8.71	9.28	8.95	1.00	9.28	+ 6.5	+ 5.0
27 - Elmira (11)	13,025	18.61	9.06	9.73	9.17	10.00	1.00	9.17	- 5.8	-11.2
58 - Dutchess County (23)	15,122	17.52	9.03	9.16			1.00			
21 - Poughkeepsie (44)	16,650	18.65	8.86	9.75			1.00			
Sub-total	31,772	18.11	8.94	9.46	9.05	9.72	1.00	9.05	- 4.3	- 3.5
67 - Northern Counties (46)	89,022	18.17	8.93	9.50	9.04	9.77	1.00	9.04	- 4.8	- 7.1
26 - Jamestown (39)	12,817	23.35	10.78	12.20			1.00			
66 - Western Counties (47)	74,579	16.13	8.27	8.43			1.00			
Sub-total	87,396	17.19	8.64	8.98	8.74	9.23	1.00	8.74	- 2.7	- 5.5
59 - Catskill & Columbia Co. (33)	17,953	16.26	8.28	8.50	8.38	8.74	1.00	8.38	- 1.4	- 3.8
Grand Total	1,849,871	20.57		10.74	11.04	11.04		11.04		

See Sheet 5 for notes.

AUTOMOBILE LIABILITY INSURANCE-1956 PRIVATE PASSENGER RATE REVISION

Exhibit 3

Classification Experience Under the Seven Class Plan

Policy Year 1954 as of December 31, 1954
Bodily Injury and Property Damage Combined

Members & Subscribers of N.B.C.U.
All Companies Reporting to M.I.R.B.

22 States for M.I.R.B. and 26 States for N.B.C.U.(a)

Territory	Classification	Basic Limits Earned Premium at Present N.B.C.U. Class 3 Rates	Basic Limits Incurred Losses(b)	Number of Claims	Loss & Loss Adjustment Ratio at Present N.B.C.U. Class 3 Rates	Differentials to Class 3		
						Present	Indicated	Proposed (e)
Rural and Small Cities	1A	$20,092,104	$7,704,704	31,458	.383	.60	.62	.60
	1B	18,780,329	7,416,548	29,842	.395	.60	.64	.60
	1C	2,275,955	1,223,492	4,094	.538	.85	.87	.85
	2A-2B(c)	5,153,641	3,618,489	12,786	.702	1.10	1.13(d)	1.15
	2C	2,043,862	2,572,411	7,287	1.259	1.50	2.03(d)	2.00
	3	3,554,707	2,205,478	8,006	.620	1.00	1.00	1.00
Large Cities	1A	25,507,347	9,989,435	40,626	.392	.60	.68	.65
	1B	32,632,430	13,661,655	53,176	.419	.70	.72	.70
	1C	2,245,340	1,343,395	4,303	.598	.85	1.03	.95
	2A-2B(c)	5,889,365	4,398,814	15,458	.747	1.10	1.29(d)	1.25
	2C	2,570,460	2,552,455	8,426	.993	1.50	1.72(d)	2.00
	3	6,907,379	4,000,047	15,736	.579	1.00	1.00	1.00

(a) The experience available under the 7 Class Plan in all states where the plan was effective during all of 1954 for the National Bureau and the Mutual Bureau and where either or both bureaus are licensed as a rating organization for automobile liability insurance.

(b) Including all loss adjustment; factors of 1.11 for bodily injury and 1.17 for property damage were applied to the losses and allocated loss adjustment expenses to include unallocated loss adjustment expenses.

(c) Class 2B was discontinued in February 1955 and risks in this class were transferred to Class 2A or Class 2D. Class 2D was subsequently eliminated in February 1956.

(d) The experience coded under Class 2 includes the experience developed for female operators under the age of 25. The age of female operators as a rating criterion was discontinued earlier this year with such insureds being classified under Class 1 or 3, whichever is applicable. The indicated differentials for Classes 2A and 2C for male operators only are shown below on the assumption that the indicated differentials for the female operators are equal to the weighted average of the indicated differentials shown above for Classes 1A, 1B and 1C:

Indicated Differentials for Classes 2A and 2C-Male Operators

Class	Rural and Small Cities	Large Cities
2A	1.33	1.53
2C	2.38	1.97

Exhibit 3a

AUTOMOBILE LIABILITY INSURANCE - 1956 PRIVATE PASSENGER RATE REVISION
DEVELOPMENT OF THE PERCENT CHANGE DUE TO THE INTRODUCTION OF THE
REVISED CLASSIFICATION DIFFERENTIALS

(1) Present Rate Classification	First Quarter Policy Year 1955 Bodily Injury Exposure Distribution(a)			Differentials to Rate Class 3					
		New York Excluding New York City		New York City		New York Excluding New York City			
						Rural, Small Cities		Large Cities	
	(2) New York City	(3) Rural & Small Cities	(4) Large Cities	(5) Present	(6) Proposed	(7) Present	(8) Proposed	(9) Present	(10) Proposed
1A	65.4%	40.7%	39.3%	.68	.75	.60	.60	.60	.65
1B	15.1	31.0	40.9	.73	.80	.60	.60	.70	.70
1C	3.7	6.5	3.5	.77	.85	.85	.85	.85	.95
1AF	- (b)	6.5	0.6	.54	.60	.48	.48	.48	.52
2A	3.3	5.5	5.0	1.10	1.25	1.10	1.15	1.10	1.25
2C	1.3	2.5	2.6	1.50	2.00	1.50	2.00	1.50	2.00
2AF	- (b)	0.7	0.1	.88	1.00	.88	.92	.88	1.00
2CF	- (b)	0.2	- (b)	1.20	1.60	1.20	1.60	1.20	1.60
3	11.2	6.4	8.0	1.00	1.00	1.00	1.00	1.00	1.00
Total	100.0	100.0	100.0	.751	.822	.687	.704	.730	.774

Percent Change Due to Introduction of
Revised Classification Differentials

New York City = .822 ÷ .751 = 1.095 or +9.5%
Rural and Small Cities = .704 ÷ .687 = 1.025 or +2.5%
Large Cities = .774 ÷ .730 = 1.060 or +6.0%

(a) This exposure distribution is based on the combined experience of National Bureau and Mutual Bureau Member and Subscriber companies for the first quarter of 1955. The reported exposures have been adjusted to reflect the recent transfer of young female operators from Class 2 to Class 1 or Class 3.
(b) The number of cars in this class is negligible.

Note: Large city differentials were applied in Queens, Queens Sub., Schenectady, Albany, Buffalo, Elmira, Syracuse, Niagara Falls, Rochester, Utica, Rome, Buffalo Sub., Niagara Falls Sub., Jamestown and Troy; the rural-small city differentials were applied to all other territories except New York City.

Where a rural or a small city territory was combined with a large city territory for rate making purposes, a weighted average of the above two percentages was used.

Exhibit, 4

NEW YORK

AUTOMOBILE LIABILITY INSURANCE - 1956 PRIVATE PASSENGER RATE REVISION

Proposed Rates

Type and Class	Terr. 5 N.Y.C. Sub. B.I.	Terr. 5 N.Y.C. Sub. P.D.	Terr. 6 Schenectady B.I.	Terr. 6 Schenectady P.D.	Terr. 7 Amsterdam B.I.	Terr. 7 Amsterdam P.D.	Terr. 8 Albany B.I.	Terr. 8 Albany P.D.
Private Pass.								
Class 1A	$41.	$17.	$51.	$18.	$53.	$18.	$56.	$20.
Class 1B	41.	17.	55.	19.	53.	18.	60.	22.
Class 1C	58.	24.	74.	26.	75.	26.	82.	29.
Class 2A	78.	32.	98.	34.	101.	35.	108.	39.
Class 2C	136.	56.	156.	54.	176.	60.	172.	62.
Class 3	68.	28.	78.	27.	88.	30.	86.	31.
Farmers								
Ind. Owners†								
Class 1AF	33.	14.	41.	14.	42.	14.	45.	16.
Class 2AF	62.	26.	78.	27.	81.	28.	86.	31.
Class 2CF	109.	45.	125.	43.	141.	48.	138.	50.
Funeral Car	75.	28.	86.	27.	97.	30.	95.	31.
School Buses:								
Priv. Pass......	68.	28.	78.	27.	88.	30.	86.	31.
Comm. or Bus:								
0-30 Pass......	61.	25.	70.	24.	79.	27.	77.	28.
31-60 Pass......	75.	31.	86.	30.	97.	33.	95.	34.
Over 60 Pass....	88.	36.	101.	35.	114.	39.	112.	40.

† Including family co-partnerships or corporations, the members of which reside on a farm and are not engaged in any occupation other than farming.

Mutual Insurance
Rating Bureau

Exhibit 5
Sheet 1

AUTOMOBILE LIABILITY - 1956 COMMERCIAL CAR RATE REVISION
COMMERCIAL CAR EXPERIENCE BY RATE CLASS

All Companies Reporting
to N.B.C.U. and M.I.R.B.

Major Cities ∅

Policy Years 1950-53

(1) Rate Class	(2) Policy Year 1950-53 Basic Limits Earned Premium at Present Class 5CA Rates	(3) Policy Year 1950-53 Basic Limits Incurred Losses (Including all loss adjustment)	Policy Year Loss and Loss Adjustment Ratios at Class 5CA Rates (4) 1950	(5) 1951	(6) 1952	(7) 1953	(8) 1950-53	(9) 1952-53 Mean	Differentials * to Rate Class 5CA Indicated by (10) 1950-53	(11) 1952-53 Mean
			Bodily Injury							
3CA	$ 1,342,115	$ 1,317,681	.988	.851	1.116	.905	.982	1.011	1.55	1.64
CB	232,416	334,406	.806	1.639	2.107	.783	1.439	1.445	2.27	2.35
4CA	7,757,846	6,116,140	.657	.884	.861	.685	.788	.773	1.24	1.26
CB	659,819	780,449	1.110	1.581	.896	2.023	1.183	1.460	1.87	2.37
5CA	16,151,117	10,221,981	.578	.680	.661	.569	.633	.615	1.00	1.00
CB	922,491	730,878	.873	.640	.885	.591	.792	.738	1.25	1.20
			Property Damage							
3CA	1,387,576	1,360,205	.970	1.016	.983	.829	.980	.908	1.67	1.60
CB	220,915	287,265	1.118	1.267	1.664	.736	1.300	1.200	2.22	2.12
4CA	8,251,500	6,171,192	.679	.813	.772	.694	.748	.733	1.28	1.30
CB	778,801	832,408	1.078	1.267	.899	1.159	1.069	1.029	1.82	1.82
5CA	16,364,627	9,594,390	.562	.616	.599	.533	.586	.566	1.00	1.00
CB	797,467	739,149	.816	.990	.935	1.368	.927	1.152	1.58	2.04

∅ Those Cities with a population of 500,000 or more, excluding New York City and those territories in which the countrywide Commercial Automobile Business and Use Classification Rule was not in effect.

* The indicated differentials have been obtained by dividing the appropriate loss and loss adjustment ratio for each class by the corresponding ratio for class 5CA.

Mutual Insurance
Rating Bureau

Exhibit 5
Sheet 2

AUTOMOBILE LIABILITY - 1956 COMMERCIAL CAR RATE REVISION

COMMERCIAL CAR EXPERIENCE BY RATE CLASS

All Companies Reporting to N.B.C.U. and M.I.R.B. Countrywide∅ Policy Years 1950-1953

(1) Rate Class	(2) Policy Year 1950-53 Basic Limits Earned Premium at Present Class 5CA Rates	(3) Policy Year 1950-53 Basic Limits Incurred Losses (Including all Loss Adjustment)	Policy Year Loss and Loss Adjustment Ratios at Class 5CA Rates						Differentials* to Rate Class 5CA Indicated by	
			(4) 1950	(5) 1951	(6) 1952	(7) 1953	(8) 1950-53	(9) 1952-53 Mean	(10) 1950-53	(11) 1952-53 Mean
			Bodily Injury							
3CA	$ 5,082,360	$ 6,466,296	1.114	1.336	1.330	1.437	1.272	1.384	2.10	2.30
CB	1,065,954	2,185,879	1.925	2.016	2.094	2.552	2.051	2.373	3.38	3.95
4CA	29,291,613	23,988,372	.764	.810	.868	.884	.819	.876	1.35	1.46
CB	3,179,906	4,088,440	1.123	1.388	1.245	1.777	1.286	1.511	2.12	2.51
5CA	75,839,395	45,972,914	.572	.638	.613	.588	.606	.601	1.00	1.00
CB	4,801,606	5,112,049	1.060	1.121	.999	1.186	1.065	1.093	1.76	1.82
			Property Damage							
3CA	5,563,450	5,932,835	.964	1.102	1.158	.999	1.066	1.079	1.92	1.93
CB	1,054,351	1,561,068	1.365	1.471	1.557	1.712	1.481	1.635	2.66	2.92
4CA	31,821,628	24,919,811	.717	.826	.806	.786	.783	.796	1.41	1.42
CB	3,597,759	4,080,098	1.009	1.223	1.119	1.345	1.134	1.232	2.04	2.20
5CA	77,074,135	42,890,572	.519	.584	.539	.549	.556	.559	1.00	1.00
CB	4,386,816	4,370,790	.904	1.028	1.030	1.168	.996	1.099	1.79	1.97

∅ Excluding cities with a population of 500,000 or more and Massachusetts and other states in which the countrywide Commercial Automobile Business and Use Classifications Rule was not in effect.

* The indicated differentials have been obtained by dividing the appropriate loss and loss adjustment ratio for each class by the corresponding ratio for Class 5CA.

AB-56-441

Mutual Insurance
Rating Bureau

Exhibit 5
Sheet 3

COUNTRYWIDE∅
AUTOMOBILE LIABILITY - 1956 COMMERCIAL CAR RATE REVISION

Present and Proposed Differentials to Rate Class 5CA

(1) Type and Class	Average Differentials to Class 5CA										(12) Proposed B.I. & P.D. Differentials to Class 5CA+
	Present		Indicated by *				Middle of Present, 4 Year and 2 Year Indicated Differentials		Halfway between Present and Middle		
			Policy Yrs. 1950-53		Policy Yrs. 1952-53 Mean						
	(2) B.I.	(3) P.D.	(4) B.I.	(5) P.D.	(6) B.I.	(7) P.D.	(8) B.I.	(9) P.D.	(10) B.I.	(11) P.D.	
Major Cities											
3CA	1.93	1.94	1.55	1.67	1.64	1.60	1.64	1.67	1.79	1.81	1.80
3CB	3.64	4.15	2.27	2.22	2.35	2.12	2.35	2.22	3.00	3.19	3.10
4CA	1.18	1.18	1.25	1.28	1.26	1.30	1.25	1.28	1.22	1.23	1.25
4CB	2.44	2.70	1.87	1.82	2.37	1.82	2.37	1.82	2.41	2.26	2.35
5CA	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5CB	2.01	2.30	1.25	1.58	1.20	2.03	1.25	2.03	1.63	2.17	1.90
Balance of Country											
3CA	1.82	1.92	2.10	1.91	2.30	1.[illegible]5	2.10	1.92	1.96	1.92	1.95
3CB	3.54	4.13	3.38	2.66	3.95	2.92	3.54	2.92	3.54	3.53	3.55
4CA	1.16	1.18	1.35	1.41	1.46	1.42	1.35	1.41	1.27	1.30	1.30
4CB	2.32	2.70	2.12	2.04	2.52	2.20	2.32	2.20	2.32	2.45	2.40
5CA	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5CB	1.99	2.25	1.76	1.79	1.82	1.96	1.82	1.96	1.96	2.11	2.00

Note: It is proposed to maintain the same rate relationships for Rate Classes 7 and 8 initially adopted in most jurisdictions in 1955 since no experience for these rate classes is yet available. The relationships for these classes are as follows:

Class	Relationship	Proposed Differentials to Class 5CA: Major Cities	Proposed Differentials to Class 5CA: Bal. of Country
7CA	Class 4 plus 15%	1.45	1.50
7CB	Class 4 plus 15%	2.70	2.75
8CA	Class 5 less 15%	.85	.85
8CB	Class 5 less 15%	1.60	1.70

∅ Excluding New York City and Massachusetts and other states in which the countrywide Commercial Automobile Business and Use Classification Rule was not in effect.
* From Columns 10 and 11 of Exhibit 3, sheets 1 and 2.
+ Mean of B.I. & P.D. Differentials in columns 10 and 11, rounded to nearest .05.

Appendix

Trend Data Supplementing Policy Year Experience for Automobile Liability Insurance

Policy year experience is supplemented by calendar year trend data which are used to measure the change in the loss level between the period of the latest available policy year experience and the time this experience is used for rate making. Calendar year data are suitable for this purpose because they can be compiled for more recent periods than policy year experience, and they can be used for short intervals, such as monthly or quarterly periods of experience.

In the rate making procedures of the National Bureau and the Mutual Bureau, calendar year average claim cost trend data have been used in recent years to supplement policy year experience. Trends in claim frequencies are reviewed, but they have not actually been used recently, except during the years following World War II.

Calendar year loss experience, at the present time, is obtained from the transaction reports filed by the companies every month on all automobile liability paid losses. From these reports, the National Bureau and the Mutual Bureau summarize the amount of the paid losses and the number of paid claims for each state, separately for bodily injury liability, property damage liability and medical payments.

The method in which average paid claim costs trend factors are calculated from these paid losses is demonstrated below, from the Mutual Bureau's 1954 revision of garage liability rates in the state of Florida. In that revision, the statewide rate level was based upon the experience for policy years 1950 and 1951, which was the latest policy year experience available at that time*.

The average paid claim costs for bodily injury liability were consolidated as follows:

Calendar	*Florida*		
Year Ended	*Paid Losses*	*No. of Claims*	*Avg. Pd. Claim Cost*
12/31/50	$2,321,143	3,970	$585
12/31/51	4,055,706	6,370	637
6/30/52	4,836,673	7,312	661
12/31/52	5,713,903	7,836	729
6/30/53	5,940,703	7,331	810

It is noted that the latest period for which the above data were available was the period ending June 30, 1953. Thus, the year beginning July 1, 1952 and ended June 30, 1953 was the latest calendar year. Assuming that losses are paid at an even rate throughout the year,

* The experience was reported under the 1953 Call, consolidated and reviewed late in 1953, rate filings in almost all states were made early in 1954.

the average claim cost for the year ended June 30, 1953, represents the loss cost at the middle of the period, or January 1, 1953. This average loss cost is compared with the loss costs prevailing during calendar years 1950, 1951 and 1952:

1. Factor to adjust calendar year 1950 to 1/1/53 level: $\$810 \div \$585 =$	1.385
2. Factor to adjust calendar year 1951 to 1/1/53 level: $\$810 \div \$637 =$	1.272
3. Factor to adjust calendar year 1952 to 1/1/53 level: $\$810 \div \$729 =$	1.111

The above calculations show that the loss cost on January 1, 1953 was 38.5% higher than the average for 1950, 27.2% higher than the average for 1951 and 11.1% higher than the average for 1952.

This information can be used for an estimate of the average claim cost for policy year 1950 (the older of the two policy years used for rate level in that revision) on January 1, 1953 loss level. In this connection it is recalled that the incurred losses for policy year 1950, reported "as of December 31, 1952" consist of losses which were paid during the period January 1, 1950 through March 31, 1953 and the losses which were outstanding as of March 31, 1953. The losses paid during the period January 1, 1950 through December 31, 1950 were paid at the loss level then prevailing. If they had been paid at the loss level existing on January 1, 1953, they would have been 38.5% higher. Correspondingly, the policy year 1951 losses paid during the period January 1, 1951 to December 31, 1951 and January 1, 1952 to December 31, 1952 would have been higher by 27.2% and 11.1% respectively if they had been paid at the loss level existing on January 1, 1953.

From distributions of paid losses it was determined that the incurred bodily injury losses for a policy year reported as of 36 months are distributed as follows:

Paid during first calendar year period	12.5%
Paid during second calendar year period	47.5%
Paid during third calendar year period	25.0%
Outstanding as of 36 months	15.0%

Averaging the increases in average paid claim costs during each of the calendar year periods of policy year 1950 reported as of 36 months and using as weights the distribution of loss payments during each period, produces the average increase for the policy year. In this connection, it was assumed that the losses outstanding as of March 31, 1953 needed no adjustment, so that a factor of 1.000 was applied to the outstanding portion of the incurred losses. The average increase is calculated as follows:

$$.125 \times 1.385 + .475 \times 1.272 + .250 \times 1.111 + .150 \times 1.000 = 1.205$$

In the rate revision, a factor of 1.20 was used in lieu of the indicated factor of 1.205, which was a maximum limitation used in the rate program.

Since this trend factor adjusted the experience only to the January 1, 1953 level, while the filing was made early in 1954 for rates to be effective about the middle of 1954, a further adjustment was necessary. This further adjustment is referred to as projection; it is based on the assumption that the increase in average paid claim costs observed for the past periods for which experience is available continued in some measure for the period immediately following. In this case it was assumed that claim cost continued to rise at a rate one half of that prevailing during the latest year, ended June 30, 1953. It was further assumed that this adjustment would reflect the level prevailing on July 1, 1954, the approximate effective date of the rate revision. The calculation of this projection factor is as follows:

$$1.000 + \tfrac{1}{2}\ \frac{\$810 - \$661}{\$661} = 1.113$$

This factor, however, was limited to a proposed maximum projection factor of 1.05.

The product of the projection factor of 1.05 and the trend factor of 1.20 produced the factor of 1.260 to adjust policy year 1950 to the July 1, 1954 loss level.

The same procedure was used to adjust policy year 1951 to the loss level of July 1, 1954 using the appropriate corresponding calendar year periods and distribution of paid losses for a policy year reported as of 24 months.

The factors based upon the experience in the state were further modified by averaging them with corresponding factors calculated from countrywide experience. The weights applied were the credibility given to the state experience and the complement of that credibility given to the countrywide experience. The attached Exhibit I shows the complete calculation of these factors; also shown is the credibility table for use in connection with paid claim cost trend data. The policy year experience is adjusted by multiplying the policy year incurred losses by the respective factors, and these adjusted losses are used for the calculation of the statewide rate level loss ratios.

MUTUAL INSURANCE
RATING BUREAU

FLORIDA

Exhibit I
Sheet 1

AUTOMOBILE LIABILITY - 1954 GARAGE RATE REVISION
Development of Factors to Adjust Policy Year
Incurred Losses to 7/1/54 Loss Level
Based upon Calendar Year Average Paid Claim Cost Data

Bodily Injury (Excluding Medical and All Loss Adjustment Expenses)

Combined Experience of Mutual
Bureau and National Bureau (a)

All Types of Cars

Calendar Year Ended	State			Countrywide Excluding Massachusetts		
	Paid Losses	No. of Claims	Avg. Pd. Claim Cost	Paid Losses	No. of Claims	Avg. Pd. Claim Cost
12/31/50	$ 2,321,143	3,970	$ 585	$ 125,800,403	208,471	$ 603
12/31/51	4,055,706	6,370	637	195,026,884	307,791	634
6/30/52	4,836,673	7,312	661	227,078,423	340,965	666
12/31/52	5,713,903	7,836	729	249,475,662	354,535	704
6/30/53	5,940,703	7,331	810	250,729,426	343,372	730

Policy Year	Percent of Policy Year Incurred Losses			
	Paid in Calendar Year Period			Outstanding
	1950	1951	1952	
1950	12.5%	47.5%	25.0%	15.0%
1951	xxx	12.5	47.5	40.0

	State	Country-wide	Formula Factor
Weights Based on States Credibility (See Exhibit II, Sheet 3)	.85	.15	xxx
Factor to Apply to Policy Year 1950 Incurred Losses			
1. Factor to adjust Cal. Yr. 1950 to 1/1/53 Loss Level (b)	1.385	1.211	xxx
2. Factor to adjust Cal. Yr. 1951 to 1/1/53 Loss Level (b)	1.272	1.151	xxx
3. Factor to adjust Cal. Yr. 1952 to 1/1/53 Loss Level (b)	1.111	1.037	xxx
4. Trend Factor to adjust Pol. Yr. 1950 to 1/1/53 Level: [.125 x (1) + .475 x (2) + .250 x (3) + .150 x 1.000]	1.20*	1.107	xxx
5. Factor to Project from 1/1/53 to 7/1/54: $1.000 + 1/2 \frac{[6/30/53 - 6/30/52]\ (c)}{[6/30/52]\ (c)}$	1.05∅	1.048	xxx
6. Factor to adjust Pol. Yr. 1950 to 7/1/54 Loss Level [(4)x(5)]	1.260	1.160	1.245
Factor to Apply to Policy Year 1951 Incurred Losses			
7. Factor to adjust Cal. Yr. 1951 to 1/1/53 Loss Level (b)	1.272	1.151	xxx
8. Factor to adjust Cal. Yr. 1952 to 1/1/53 Loss Level (b)	1.111	1.037	xxx
9. Trend Factor to adjust Pol. Yr. 1951 to 1/1/53 Level [.125 x (7) + .475 x (8) + .400 x 1.000]	1.087	1.036	xxx
10. Factor to Project from 1/1/53 to 7/1/54 (same as line 5 above)	1.05∅	1.048	xxx
11. Factor to adjust Pol. Yr. 1951 to 7/1/54 Loss Level [(9)x(10)]	1.141	1.088	1.153

(a) Maximum experience reported for each year.
(b) Ratios of average paid claim costs for year ended 6/30/53 to average paid claim costs for the particular calendar year.
(c) Average paid claim costs for year ending on dates shown.
* Limited to a maximum factor of 1.20.
∅ Limited to a maximum factor of 1.05.

MUTUAL INSURANCE RATING BUREAU — FLORIDA — Exhibit I Sheet 2

AUTOMOBILE LIABILITY - 1954 GARAGE RATE REVISION
Development of Factors to Adjust Policy Year
Incurred Losses to 7/1/54 Loss Level
Based upon Calendar Year Average Paid Claim Cost Data

Property Damage (Excluding All Loss Adjustment Expenses)

Combined Experience of Mutual Bureau and National Bureau (a) — All Types of Cars

Calendar Year Ended	State			Countrywide Excluding Massachusetts		
	Paid Losses	No. of Claims	Avg. Pd. Claim Cost	Paid Losses	No. of Claims	Avg. Pd. Claim Cost
12/31/50	$ 2,050,006	27,095	$ 76	$ 103,404,980	1,391,071	$ 74
12/31/51	2,624,420	31,635	83	122,839,896	1,468,341	84
6/30/52	3,091,966	35,545	87	141,541,682	1,606,578	88
12/31/52	3,399,123	37,534	91	151,053,845	1,640,347	92
6/30/53	3,318,075	35,115	94	144,466,156	1,497,367	96

Policy Year	Percent of Policy Year Incurred Losses			
	Paid in Calendar Year Period			Outstanding
	1950	1951	1952	
1950	27.5%	57.5%	10.0%	5.0%
1951	xxx	27.5	57.5	15.0

	State	Country-wide	Formula Factor
Weights Based on States Credibility (See Exhibit II, Sheet 3)	1.00	0	xxx
Factor to Apply to Policy Year 1950 Incurred Losses			
1. Factor to adjust Cal. Yr. 1950 to 1/1/53 Loss Level (b)	1.237	1.297	xxx
2. Factor to adjust Cal. Yr. 1951 to 1/1/53 Loss Level (b)	1.133	1.143	xxx
3. Factor to adjust Cal. Yr. 1952 to 1/1/53 Loss Level (b)	1.033	1.043	xxx
4. Trend Factor to adjust Pol. Yr. 1950 to 1/1/53 Level: [.275 x (1) + .575 x (2) + .100 x (3) + .050 x 1.000]	1.145	1.168	xxx
5. Factor to Project from 1/1/53 to 7/1/54: $1.000 + 1/2\ \frac{[6/30/53 - 6/30/52]\ (c)}{[6/30/52]\ (c)}$	1.040	1.045	xxx
6. Factor to adjust Pol. Yr. 1950 to 7/1/54 Loss Level [(4)x(5)]	1.191	1.221	1.191
Factor to Apply to Policy Year 1951 Incurred Losses			
7. Factor to adjust Cal. Yr. 1951 to 1/1/53 Loss Level (b)	1.133	1.143	xxx
8. Factor to adjust Cal. Yr. 1952 to 1/1/53 Loss Level (b)	1.033	1.043	xxx
9. Trend Factor to adjust Pol. Yr. 1951 to 1/1/53 Level [.275 x (7) + .575 x (8) + .150 x 1.000]	1.056	1.064	xxx
10. Factor to Project from 1/1/53 to 7/1/54 (same as line 5 above)	1.040	1.045	xxx
11. Factor to adjust Pol. Yr. 1951 to 7/1/54 Loss Level [(9)x(10)]	1.098	1.112	1.098

(a) Maximum experience reported for each year.
(b) Ratios of average paid claim costs for year ended 6/30/53 to average paid claim costs for the particular calendar year.
(c) Average paid claim costs for year ending on dates shown.

Mutual Insurance
Rating Bureau

Exhibit I
Sheet 3

AUTOMOBILE LIABILITY

1954 GARAGE RATE REVISION

Credibility Based on Paid Losses

Year Ended 6/30/53 Bodily Injury Paid Losses	Credibility	Year Ended 6/30/53 Property Damage Paid Losses
0 - 18,749	0	0 - 2,499
18,750 - 74,999	.05	2,500 - 9,999
75,000 - 168,749	.10	10,000 - 22,499
168,750 - 299,999	.15	22,500 - 39,999
300,000 - 486,749	.20	40,000 - 62,499
486,750 - 674,999	.25	62,500 - 89,999
675,000 - 918,749	.30	90,000 - 122,499
918,750 - 1,199,999	.35	122,500 - 159,999
1,200,000 - 1,518,749	.40	160,000 - 202,499
1,518,750 - 1,874,999	.45	202,500 - 249,999
1,875,000 - 2,268,749	.50	250,000 - 302,499
2,268,750 - 2,699,999	.55	302,500 - 359,999
2,700,000 - 3,168,749	.60	360,000 - 422,499
3,168,750 - 3,674,999	.65	422,500 - 489,999
3,675,000 - 4,218,749	.70	490,000 - 562,499
4,218,750 - 4,799,999	.75	562,500 - 639,999
4,800,000 - 5,418,749	.80	640,000 - 722,499
5,418,750 - 6,074,999	.85	722,500 - 809,999
6,075,000 - 6,768,749	.90	810,000 - 902,499
6,768,750 - 7,499,999	.95	902,500 - 999,999
7,500,000 and over	1.00	1,000,000 and over