

These tables would recognize and reflect the basic differences in territory characteristics under discussion. Certainly it is intended that there should be only two or three tables per major classification type (e.g., private passenger cars). By periodic review every three or four years these assignment groupings could be kept current. Actually, this is not a new thought; however, it seems to be a field which could be investigated especially in this day of high claim settlement costs. Granted, there are many problems in this type of rating procedure and some may render the method completely impractical.

In summary, it is the writer's opinion that the use of 10/20 experience for territory rate development is certainly a step in the right direction but it is not the complete answer to the problem of establishing overall adequate rates for individual territories.

DISCUSSION OF PAPERS READ AT THE
NOVEMBER 1958 MEETING

THE ADVANTAGES OF CALENDAR-ACCIDENT YEAR
EXPERIENCE AND THE NEED FOR APPROPRIATE TREND
AND PROJECTION FACTORS IN THE DETERMINATION
OF AUTOMOBILE LIABILITY RATES

BY

PAUL BENBROOK

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DISCUSSION BY R. LINO

At a time when adverse underwriting results for automobile liability insurance, particularly for private passenger cars, are a subject of great concern to the insurance industry, Mr. Paul Benbrook's paper, "The Advantages of Calendar-Accident Year Experience and the Need for Appropriate Trend and Projection Factors in the Determination of Automobile Liability Rates" is indeed a welcome and timely addition to the *Proceedings* of the Casualty Actuarial Society.

Mr. Benbrook's diversified experience substantiates his qualifications to discuss this subject. His paper, which outlines the advantages to be realized by the use of calendar-accident year experience in lieu of policy-year experience, and which discusses the reasons why trend and projection factors are essential if rate levels are to be realistic for the period in which they are to apply, should be of particular interest

- (1) to the technicians of both insurance companies and ratemaking organizations who have the responsibility of developing rate-making systems for the establishment of adequate insurance rates;

- (2) to the technicians on the state supervisory level who have the responsibility of passing on rate proposals submitted to them by the industry ; and finally
- (3) to the students who are preparing themselves for the examinations of the Society.

The first section of Mr. Benbrook's paper contrasts the calendar-accident year and the policy-year methods of compiling automobile liability experience as regards their use in rate level determination and enumerates and analyzes the advantages of the accident-year method. The transition from a policy-year to a calendar-accident year basis has been made after careful and detailed studies by the National Bureau and the Mutual Insurance Rating Bureau. The superiority of accident-year experience has also been recognized by State Supervisory officials throughout the country in their acceptance of rate proposals developed on this basis.

Although accident-year statistics materially reduce the time lag between the experience period and the effective date of the rates, Mr. Benbrook notes that no system of gathering past experience can produce a realistic rate level unless it is adjusted to reflect current costs and to provide for a reasonable prediction of the losses that may be anticipated for the period during which the rates will apply. In the second section of his paper he illustrates this need by citing as an example, the Texas revision of private passenger car rates which became effective on August 1, 1958.

To the casual reader this example may appear to be somewhat involved in that a combination of accident-year experience through the first six months of 1957 for National and Mutual Bureau companies, and policy-year experience through 1956 for those companies reporting to the National Association of Independent Insurers was utilized in this rate level determination. This method was used because of the fact that the N.A.I.I. statistical plan was revised only recently to provide for the compilation of private passenger car experience on a calendar-accident year basis. For this reason it was necessary to develop separate trend and projection factors to apply to the accident-year and policy-year experience respectively to reflect:

- (1) the change in calendar-year paid claim frequencies through the year ended December 31, 1957; and
- (2) the change in the calendar-year average paid claim costs to August 1, 1958, the effective date of the revised rates.

To aid the reader, Mr. Benbrook has incorporated many detailed exhibits, clearly identified, which show the development of their trend and projection factors.

I do not believe that it is the reviewer's function to discuss the weaknesses, if any, in the ratemaking system employed in the Texas revision nor to refer to other alternate methods utilizing trend and

projection factors in rate level determination. These points may serve as a basis for future papers to the *Proceedings* of the Society. It is sufficient to say that the rate regulatory authorities in Texas have made an honest attempt to establish adequate rate levels in the state by taking cognizance of trends in costs and in frequencies.

It may be of interest to the reader, however, if the reviewer briefly outlines the most recent ratemaking procedure adopted by the National Bureau and utilized in the revisions of rates for private passenger cars that became effective late in 1958 and early in 1959. The objective was to develop a rate revision program based on a review of the most recent available experience through accident-year 1957 that would produce an adequate level of basic limits rates for those policies effective during 1959 and in the early part of 1960. For the large premium volume states, in establishing statewide rate levels, full weight was given to the indications for the latest accident-year 1957; for those states having medium premium volume an 85% weight was assigned to accident-year 1957 and a 15% weight to accident-year 1956; for those states having more limited premium volume a 70% weight was assigned to accident-year 1957 and a 30% weight to accident-year 1956.

To meet the objective that rates be adequate for the period in which they are to apply, it was essential that recognition be given to the general upward trend in claim costs since the experience period under review. The average date of coverage represented by accident-year 1957 experience used for rate level in the large premium volume states was approximately July 1, 1957. The accident-year 1957 incurred losses were adjusted to reflect the eighteen months of subsequent change in the calendar year average paid claim costs or to approximately the effective date of the revised rates. These trend factors contemplated that the average rate of increase in average paid claim costs indicated by the line of best fit through the average paid claim cost data for each of the four latest available twelve-month periods, would prevail in the eighteen months subsequent to the experience used in the determination of the statewide rate level. The following table outlines the derivation of the trend factors used in the review of private passenger car rates in Pennsylvania that became effective in 1959 (See table on following page).

In the medium and small premium volume states where the rate level was based upon weighted averages of calendar years 1956 and 1957 loss ratios, the average date of coverage was approximately May 1957 and March 1957 respectively. The difference in the average date of coverage is due to the different weighting bases utilized. To adjust the weighted accident-year experience to approximately the effective date of the revised rates, 21 and 24 month trend factors were applied to the medium and small volume states respectively.

In conclusion, this reviewer would like to congratulate Mr. Benbrook for his excellent contribution to the *Proceedings* of our Society.

PENNSYLVANIA

AUTOMOBILE LIABILITY — PRIVATE PASSENGER CARS

Development of Factors to Adjust Accident Year 1957 for Subsequent Trend in Claim Costs (Based on Calendar Year Average Paid Claim Cost Data)

National Bureau Members & Subscribers

(1) Year Ended	(2) Paid Losses*	(3) Number of Paid Claims	(4) Average Paid Claim Cost Actual (2) ÷ (3)	(5) Line of Best Fit
<i>Bodily Injury (Basic Limits)</i>				
6/30/55	\$6,550,990	12,815	\$511	\$513.90
6/30/56	7,457,224	13,445	555	544.30
6/30/57	8,377,499	14,914	562	574.70
6/30/58	9,431,142	15,466	610	605.10
<i>Property Damage (Total Limits)</i>				
6/30/55	5,332,773	57,753	92	91.40
6/30/56	6,109,563	62,259	98	99.30
6/30/57	6,831,839	63,020	108	107.20
6/30/58	7,817,873	67,859	115	115.10
			<i>Bodily Injury</i>	<i>Property Damage</i>
(6)	Average Annual Dollar Change in Paid Claim Costs Based Upon Line of Best Fit		\$+30.40	\$+ 7.90
(7)	Average Dollar Change in Paid Claim Costs in 18-Month Period (Line 6 times 1.50)		\$+45.60	\$+11.85
(8)	Average Change in Paid Claim Costs in 18-Month Period Expressed as Percent [(7) ÷ Col. (5) for 6/30/58]		+ 7.5%	+10.3%
(9)	Proposed Factor to Adjust Accident-Year 1957 Losses to Reflect 18 Months of Subsequent Change in Average Paid Claim Costs:			
	1.0 + (8)		1.075	1.103

* Excluding all loss adjustment expenses.