Automobile Physical Damage Ratemaking, by LUTHER L. TARBELL, Jr.

The Automobile Physical Damage line of insurance embraces the more commonly known coverages of Automobile Fire, Automobile Fire and Theft, Automobile Comprehensive (which encompasses Fire and Theft plus additional coverages) and Automobile Collision. The manual rates for these coverages are made for a great majority of insurance companies by the National Automobile Underwriters Association. The present ratemaking procedure of the NAUA was established in 1952. Prior to its adoption, automobile physical damage rates had been developed under a so-called "50/50 formula" wherein all expenses (except claim expense which was handled as an element of loss) were stated as a percentage of the premium dollar and indicated state rate changes were developed by comparing a permissible loss ratio (50 %) with an experience loss ratio. This paper proposes to set forth the procedures now followed under the "needed premium revenue" method of ratemaking presently in effect. This paper illustrates with exhibits the steps which are involved in preparing an actual rate revision.

An Actuarial Note on the Credibility of Experience of a Single Private Passenger Car by ROBERT A. BAILEY and LEROY J. SIMON.

This note, which was an investigation preliminary to the "Two Studies in Automobile Insurance Ratemaking" published on pages 192-217 of Volume I, Part IV, of the ASTIN Bulletin, leads the authors to the following conclusions:

(1) The experience for one car for one year has significant and measurable credibility for experience rating.
(2) In a highly refined private passenger rating classification system which reflects inherent hazard, there would not be much accuracy in an individual risk merit rating plan, but where a wide range of hazard is encompassed within a classification, credibility is much larger.
(3) If we are given one year's experience and add a second year, we increase the credibility roughly two-fifths. Given two years' experience, a third year will increase the credibility by one-sixth of its two-year value.

Some Considerations on Automobile Rating Systems Utilizing Individual Driving Records, by LESTER B. DROPKIN.

The author points out that while in discussions of the distribution of risks by number of accidents it has been traditional to base such discussions on the Poisson frequency function, a test of the goodness of fit by the chi-square distribution will, however, often indicate that the frequency function known as the Negative Binomial distribution will give a better fit. If we assume that the distribution of the probability of having an accident is constant, then the distribution of risks by number of accidents follows the Poisson distribution; but if we assume that distribution of the probability of having an accident is a Pearson Type III curve, then the distribution of risks by number of accidents follows the Negative Binomial distribution.

The Actuarial Aspects of Blue Cross Plans, by J. EDWARD FAUST, Jr.

The Blue Cross plans provide insurance against hospital expenses for a large proportion of the population of the United States. Blue Cross contracts may differ in detail from one Blue Cross plan to another but all of them in essence have the following features: The charge of the hospital for a semi-private room is provided up to a specified number of days per hospital confinement or per contract year. Charges made by the hospital for other services such as X-ray, operating room, drugs, etc., are covered.

Blue Cross reimburses the hospitals for the care of their members on the basis of a predetermined reimbursement formula. In other words, benefit payments are not made to the policyholder.

Merit Rating in Private Passenger Automobile Liability Insurance and the California Driver Record Study, by FRANK HARWAYNE.

This study was based on data of the Department of Motor Vehicles in the State of California. A sample of approximately 100,000 individuals (1.3 % of all drivers) was selected for study and evaluation. It related the number of abstracts (records of convictions for traffic violations) in a driver's record and the number of accidents in which he was involved and established the correlation between the two.

Multiple Peril Rating Problems—Some Statistical Considerations, by ROBERT L. HURLEY.

In the past insurance in the United States has tended to separate the various insurance perils to a more marked extent than has been common in Europe. In fact for many years it was not possible to write first party (collision) automobile insurance in the same company as third party (liability) automobile insurance. Following the introduction of "multiple line" legislation in the various states some 15 years ago, the pendulum has now swung the other way and package policies providing a multitude of first and third party coverages are normal in a single contract. The first and most successful policy of this type was the Homeowners Policy. The author discusses how statistics should best be collected for rate making purposes, discusses the divisible and indivisible premium approaches, the interplay of experience under multiple peril and single peril policies, credibility and the distribution of multiple claims under Homeowners policies which follow the Poisson distribution closely.

OASDI Cost Estimates and Valuations, by ROBERT J. MYERS.

OASDI is an abbreviation of "Old-Age, Survivors and Disability Insurance" and is more generally referred to as Social Security. This system of Federal benefits applies to a large proportion of the population of the United States and is financed by employer and employee contributions. The author concludes his study with the following comment:

"Although in some quarters there has been considerable criticism of the fact that every two years since 1950 legislative action has liberalized the OASDI system, there is one important point that should be kept in mind. Each time there has been legislative activity, the Congress—particularly, the important, controlling legislative committees concerned—has very carefully considered the cost aspects of all proposed liberalizations. Any changes made have been carefully financed according to the best actuarial cost estimates available. Thus, Congress has attempted to keep the system on a self-supporting basis by keeping benefit costs very closely in balance with contribution income. The Committees have always been anxious to be