

Liability Insurance for the Nuclear Energy Hazard, by RICHARD H. BUTLER.

The author points out that fundamentally most of this insurance is only an extension of lines that have been written by companies for many years—premises-operations and products liability and general liability, together with transportation exposures. Nevertheless there are five factors involved that have led to the development of a bewildered set of policy forms, rating procedures and mechanics.

1. The potential catastrophe hazard which is without parallel in past experience.
2. The demand for much higher liability limits than have been written in the past and a system of government indemnity on top of these limits.
3. The intermeshing of a liability policy with a federal law establishing the form and amount of financial responsibility of the operator.
4. The possible slow emergence of claims.
5. The unreasonable concern of many persons about the possibilities of radiation injuries.

The author describes the stock and mutual nuclear liability insurance pools and methods of operation and the policy forms used. The premiums charged are higher than it is hoped will be proved to be necessary and provision is made for the return to the insured of the excess premiums paid after a period of ten years.

Some Further Notes on Estimating Ultimate Incurred Losses in Auto Liability Insurance, by FRANK HARWAYNE.

This paper is mainly a study in curve fitting. The author examines the proportion of claims paid in the interval t between the time of the accident and the time of review which he assumes to be of the form $[1 - e^{-(1+k)t}]$. From this he develops formulae suitable for application to policy year loss experience and shows that a close fit is obtained between calculated and observed results.

Notes of Some Actuarial Problems of Property Insurance, by L. H. LONGLEY-COOK.

The author discusses some of the current problems on fire insurance rate making in the U.S. and makes suggestions on modifying certain of the techniques used so that rates may be more accurate in the future.

Ocean Marine Rate Making, by D. DOUGLAS ROBERTSON.

A brief discussion of methods used to develop rates for cargo and hull insurance.

A Review of the Experience of Massachusetts Workmen's Compensation Experience Rated Risks, by WALDO A. STEVENS.

Experience rating plans for Workmen's Compensation insurance have been in effect in Massachusetts since 1916 and the present plan has been in use without substantial review since 1940. In recent years there has been a change in the underwriters' approach to the acceptance of risks, it being now generally considered that risks which develop a debit rating are less likely to prove profitable. The concept that it is safer to write credit risks

stems from the fact that in any rating making procedure, past experience suitably adjusted and projected, if necessary, is used to determine the price of insurance. In the case of individual risk experience rating, a body of past experience, usually three years, is used to determine the relationship of the individual risk experience to the experience of all risks classified in a similar manner. For the most part, if a risk has better than average experience, a credit modification will result, and conversely if the risk has worse than average experience, a debit modification will result. That such is not always the case is due more to a definition of what constitutes better or worse experience.

To some, the loss ratio is the determining factor. This relationship of losses incurred to premiums is naturally of considerable importance in the insurance business on an overall basis; however, on an individual risk basis, the losses must be considered with respect to the elements of frequency and severity. A risk with a high frequency of small losses and with a low loss ratio can be considered much less desirable than a risk with low frequency of large losses with a high loss ratio unless, of course, consistency of one or the other is such to establish credible evidence that the risk does not fall within the normal pattern.

Under the Experience Rating Plan, the degree to which a risk is considered better or worse than average is measured more by the frequency of losses than by the severity of the losses. It does not always follow that a risk with a high loss ratio is a debit risk or that a risk with a low loss ratio is a credit risk under the Experience Rating Plan. And so, depending upon who is making the decision, the desirability of writing a risk is not always judged by the same criteria.

Theoretically, the Experience Rating Plan is designed to bring the loss ratios of all eligible risks more closely to the average all risk loss ratio. Assuming that the manual rates are correct, that is, that they will reproduce the permissible loss ratio, then all of the credit debit risks should reproduce the permissible loss ratio, and equally all of the debit risks should reproduce the permissible loss ratio. If the Plan is meeting this objective, then the concept that it is less desirable to write debit risks is clearly wrong.

The author proceeds to develop the necessary data to investigate this problem and shows the plan is not now in correct balance. He discusses the off-balance and concludes that whatever its cause, the experience of the debit risks is not sufficiently worse to cause a blanket rejection of all debit risks. It might better be said that the experience of credit risks is somewhat better than that of the debit risks inasmuch as the experience of the debit risks for this policy year is certainly favorable and, that as a whole, such experience would make a nice underwriting portfolio. Furthermore, the experience modification is only a guide as to whether or not a risk is desirable or merely acceptable. By no means can a modification derived under the Experience Rating Plan be the only criterion of whether or not a risk is desirable. Many other factors—physical, moral and psychological—have as important or more important a role to play as the experience rating modification. The experience rating modification is merely another guide, one designed to bring a risk's loss ratio more closely to the average loss ratio. It is not infallible. With proper underwriting and engineering, it can continue to be a profitable guide.