

In the process of evolution, accuracy may have been sacrificed in some areas and complexity created in the rating treatments, particularly in those risks where our expanding economy sparked by advances in science and technology have caused re-evaluation of previous hazards and the fire safety measures related thereto.

The actuary and this Society can be of real help by continuing the studies of the several facets of the problem on a specific basis, selecting possibly one or more of the areas treated so ably by Mr. Longley-Cook in the paper under review.

## OCEAN MARINE RATE MAKING

D. DOUGLAS ROBERTSON

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DISCUSSION BY F. J. HUNT, JR.

Ocean Marine Insurance has been included in our reading list and examinations for a number of years now. However, a check of the *Proceedings* indicates that we have never before had a paper on the subject. Mr. Robertson's paper, therefore, fills a long-standing gap and should be most helpful in rounding out our coverage of the property insurance field.

Ocean Marine Insurance has not been completely ignored by the actuarial profession. Early volumes of the *Journal of the Institute of Actuaries* contain varied articles and reports on the subject. In Volume I of the *Assurance Magazine* (which later became the *Journal of the Institute of Actuaries*) there are an even dozen marine articles including such actuarial subjects as a study of collision statistics developing the relative probabilities of collision resulting in total loss for sailing vessels and steamers. By 1900 such articles had virtually disappeared from the *Journal* and an index to previous volumes published about that time notes that entries under the heading "Marine Insurance" had been omitted. This was probably partly due to an increasing preoccupation of the Institute with the life field; however, we may well conjecture that a contributing factor was a certain lack of enthusiasm on the part of the marine underwriters. With a history dating back to ancient times and policies comparable to the modern form having been written prior to 1400 A.D., the marine business had well established policy forms, underwriting procedures and rating methods. The underwriters could hardly have been expected to pay much heed to the proposals and opinions of the comparatively recent upstarts from the newer fields of insurance.

Mr. Robertson's paper is quite general in nature—a natural result of covering such a large field in a few pages. Also, rating procedures in ocean marine are fairly indefinite and rather difficult to pinpoint.

Probably in no other field does the underwriter's judgment weigh so heavily; as a matter of fact, in most instances the underwriter is the rate maker. William D. Winter in his "Marine Insurance" mentions some of the reasons for this situation:

"Marine underwriting is not scientific in the sense that life underwriting is.

"The marine underwriter is dealing with risks that are affected not only by the ordinary stable situations encountered every day but also by the rapidly changing conditions encountered on the seas. No chart or table can be devised that will show to a nicety how many days will be clear and how many stormy or that will measure the severity and direction of storms. He is dealing with problems over which the veil of the future is drawn, but he must rely on past experience and his judgment of changing conditions in order to arrive at conclusions of what will probably happen in the future. Furthermore, owing to the unusual physical hazards to which marine risks are subjected, the experience upon which the underwriter depends must extend over a considerable period of time, 10 years perhaps being the shortest period from which to draw conclusions."

A further complicating factor in ocean marine is that its worldwide nature in a very practical way precludes the use of exact formulas or procedures. This has been publicized most recently in the hearings before the United States Senate Antitrust and Monopoly Subcommittee by the testimony of Mr. Miles F. York on behalf of the American Institute of Marine Underwriters:

"World competition and the unique characteristics of marine insurance require flexibility in individually considered premium rates. The American market could not compete in the world market if regulation robbed it of the necessary flexibility."

Even though there are no actuarial formulas in the computation or derivation of ocean marine rates, a more careful reading of Mr. Robertson's paper does reveal several areas where there are procedures or problems similar to those which we encounter in other fields. While there are no industrywide ocean marine classified experience figures, each company does keep its own figures and the success of that company may well hinge on the detail available in its statistics. "Biography of a Business", a history of the Insurance Company of North America, contains a chapter describing how the unprofitable result of their ocean marine account in the 1890's was eventually corrected on the basis of information made available through the introduction of a more complete and meaningful statistical plan.

The open cargo account can be readily compared to experience rating in the casualty field and the hull account to automobile fleet rating. While the ocean marine underwriter is more subject to the pressures of competition in arriving at the account or fleet rates, he

still must consider such factors as allowance for catastrophe losses and credibility in determining how far experience should be reflected in revised rates.

The estimating of increasing costs on deferred hull repairs indicates that loss reserving can occupy a position comparable to the rest of the industry. Improvements in communication and transportation have greatly reduced the traditional delays in reporting losses, but there is still a sufficient lag, particularly on export cargo, to make important the accurate estimating of the incurred but not reported reserves.

The quotation from Winter mentioned before should have a familiar ring to the fire side of the business. The extreme difficulty of forecasting weather patterns and the need for a prolonged period of experience parallel very closely the problem in developing adequate extended coverage rates—particularly in those states subject to devastating hurricanes at irregular intervals.

With Mr. Robertson's paper finally getting ocean marine insurance into our *Proceedings* and serving as a reminder that our Society is interested in all fields of property insurance, we can hope that there will be forthcoming more detailed studies in those areas of ocean marine where actuarial techniques and experience can be of assistance.

## A REVIEW OF THE EXPERIENCE OF MASSACHUSETTS WORKMEN'S COMPENSATION EXPERIENCE RATED RISKS

WALDO A. STEVENS

VOLUME XLVI, PAGE 87

DISCUSSION BY M. G. McDONALD

Mr. Stevens has followed the suggestion contained in a recent address of President Pruitt wherein it was implied that the actuary should get out of the "niche" and assist the underwriter. This paper presents comprehensive data which should provide a better market for debit rated risks in general. Of course, there are other considerations employed by the underwriter in viewing applications from debit rated risks besides loss ratio and modification. Many times an underwriter with a solid safety engineering unit behind him can convert the risk from the debit to the credit side of the ledger. In other instances competent field forces find misclassification which when brought to the attention of the supervising bureau results in a shift. In addition, the experience of other lines is viewed as possible support.

Mr. Stevens makes several comments on the Massachusetts exception in the application of the off-balance factor to experience rated risks exclusively and further suggests that the exception be eliminated. However, he offers no better solution than exists outside of Massachusetts. Approximately ninety percent of premium developed