DISCUSSIONS OF PAPERS PUBLISHED IN VOLUME LIII

CURRENT RATEMAKING PROCEDURES IN BOILER AND MACHINERY INSURANCE

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DISCUSSION BY ERNEST T. BERKELEY

Papers on ratemaking are read by students probably more than papers on other subjects since they serve as a very convenient and authoritative reference in preparing for the examinations of the Casualty Actuarial Society, but they are also certainly useful to many others, both members and nonmembers of the Society, as a means of keeping informed concerning the contemporary methods of developing rates, which are a vital determinant in the fortunes of our business.

I am reviewing the paper from the viewpoint of an old student who studied for the Society examinations some thirty-five years ago. My reaction to the paper may vary somewhat from that of a present-day student, and yet I am sure there is a common feeling that papers on ratemaking in the Proceedings are most welcome and satisfy a long standing need.

As I read the paper I tried to look at it through the eyes of a young student but I really couldn't do it. Too many years have gone by. I suppose the student looks for a certain kind of format, perhaps, explanations of things I take for granted and illustrations and examples of procedures I would consider to be unnecessary. Another important consideration from anybody's point of view is the fact that due to the size and nature of the boiler and machinery line, one should not expect the degree of refinement found in workmen's compensation ratemaking procedures, for example.

My own feeling is that Mr. Brannigan has made an excellent presentation of the ratemaking procedures currently in use for boiler and machinery insurance. His approach is orderly, logical, and thorough, thus fulfilling in a very satisfactory way the educational intent of the paper. I think Mr. Brannigan is to be complimented on the fine job he has done and the contribution he has made to the growing ratemaking literature of the Society, which already includes similar papers covering some of the better known lines of business such as workmen's compensation, automobile, liability, and fire.

The paper begins with a description of the coverage and the determination of the manual premium, which provides the necessary background for the subsequent description of the ratemaking statistics and finally the details of the rate making procedure itself, by using the actual rate revision of 1961.

As the author indicates, his paper is intended to be wholly descriptive and he makes no attempt to evaluate the procedures described. I am not in a position to make an evaluation either, but I should like to comment briefly on two points that seem to me to have special significance.

The first has to do with credibility, the basis of which the author describes as follows: "The requirement of $7,000,000 of five calendar years of earned premium at present rate level for full credibility was established much the same as the $5,000,000 was for Fire, on a judgment basis. The premium requirements for less than full credibility are calculated using the common partial credibility formula $Z^2 = \frac{P}{N}$ where P is the premium for the object type and N is $7,000,000, or the premium required for 100% credibility." While the word "judgment" may have a number of meanings, I believe it is used here to indicate a basis which is largely nonscientific or non-actuarial in nature. Despite the fact that boiler and machinery differs from most other lines of insurance in that countrywide data are used in ratemaking with no territorial breakdown, thus keeping premium volume at relatively high levels, I believe that a partial credibility factor must come into play very frequently in the determination of the rate level change by object, thus making it important that the full credibility standard be determined as accurately as possible. Credibility problems of various kinds are found in other lines as well, but this does not mean that the credibility procedures generally in use are of questionable value. Rather it is a situation where further research would result in refinements leading to answers of somewhat greater accuracy.

The second point is that I did not notice any reference in the paper to loss development factors, having in mind that losses are on an accident year, calendar year basis. While these factors are probably less important than in some other lines because of the quicker settlement of property claims, I became curious about them and learned on inquiry that another review of rates is currently in progress. A loss development factor is being introduced and probably reflects incurred but not reported losses more than the development of outstanding cases.

On page 261 of the 1966 *Proceedings* a small correction should be noted. In the explanation of the various columns of Exhibit VI the statement is made that: "Column (12) shows the relationship of each of the object formula loss and inspection ratios to that for all objects combined (.593) for this body of experience." The figure (.593) should be (.601).