



SOCIETY OF ACTUARIES

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Investment Section cont'd.

levels of the early 1980s and the recent market adjustment also impel our managements to expect our increased attention to it.

The actuarial role has continuously broadened, diversified and splintered into a number of specialties for as long as we can remember. Only the more aware of us can keep track of its many organizations, and none of us can maintain working knowledge of all its many specialties. Unfortunately, forces beyond our control have compelled us to create one more section and one more specialty. As is always the case, the cycle requires extending what we know and do by including new disciplines. In this case they are those required by the four realities listed above.

The Investment Section, as is true with all new organizations, will evolve to meet the expressed needs of its members. At present, the four realities listed previously appear to be the most logical focus for our professional development. Extending our expertise to include enhanced knowledge of investment topics will generate these initial targets:

1. Modeling

Corporate models used for model office projections and scenario testing incorporate sophisticated asset submodels in only the most highly developed examples. However, the methodologies underlying them are rapidly becoming familiar to actuaries whose roles require that familiarity. Section programs should be developed to expand these applications to include generic instrument types. For example, a typical banker's model includes submodels for bond pricing, collateralized mortgage obligations, securitized receivables and option pricing. Under the current state of the art, these four cover the universe.

2. Corporate Finance

Today's actuary must deal with diversifying and divesting product lines and subsidiaries. He already has the skills to determine value and expected return. He should add to this a working knowledge of corporate finance in order to evaluate alternative deal structures in terms of their impacts on the resultant organization. As is true with insurance schemes, the primary ingredients are cash flow, accounting treatment, and tax impact.

3. Capital Management

A number of actuarial papers have covered the approaches available

for measuring return under insurance schemes. Even more has been written on the allocation and use of company surplus. These sources, along with standard techniques used by finance professionals, should be organized and presented as a body of knowledge on capital management for insurance companies. This base should be developed further as industry focus on capital management intensifies.

4. Investment Instruments

Actuaries need basic education in the investment instruments available to their companies. They are increasingly pressured to work in partnership with their investment staff counterparts to meet their joint requirements of unified balance sheet management. To fully function each must learn the products of his partner. Fortunately the actuary has less to learn than his investment staff counterpart because investment instruments offer far fewer options and involve fewer and simpler variables than do the products developed by the actuary. Thus, a trend may develop toward more actuaries working in their companies' investment departments.

Actuaries who survive the rigorous examination ordeal emerge as super technicians and problem solvers. Although their careers frequently take them beyond actuarial responsibilities, they tend to rely on their backgrounds when becoming involved in other areas such as marketing, finance, data processing, underwriting, and so on. Many eventually move even further to management or professional technical positions in other disciplines, still relying on their actuarial knowledge throughout their careers, even though some deny it.

The creation of the Investment Section entails the creation of the "investment" actuary.

This actuary will measure the impact of alternate applications of company funds based upon his four principal perceived current requirements. His scope will cover specific products, product lines, lines of business and separate companies. To fill his role, he must have a solid working knowledge of actuarial science. Added to this will be an advanced knowledge of insurance products, corporate finance, capital management and investment instruments.

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The Job of the Papers Committee

by Kenneth A. McFarquhar

In a recent issue of *The Actuary*, Dave Jeggle, Director of Publications, encouraged members to write for some of the Society's publications, including the *Transactions*. The *Transactions* is somewhat different from other journals in that papers which are submitted must be reviewed and approved by the Papers Committee in order to be published.

The reviewing or refereeing process which has been in place for some time now is undergoing some significant changes. An Ad Hoc Committee of the Papers Committee has been studying the entire process which a paper undergoes before its publication in the *Transactions*, and some revised procedures have been proposed. In my capacity as chairperson of that Ad Hoc Committee and as former chairperson of the Papers Committee, I would like to report on these changes.

After researching reviewing processes used in other organizations and trying to combine the best procedures to meet the Society's and authors' needs, a new reviewing process was proposed. The process first begins when an author submits a paper to the Society office. Papers are sent here to preserve the author's anonymity, and so all correspondence with the author is handled through this office. Next, the submitted manuscript goes to the Papers Committee chairperson, who in turn consults with a senior reviewer. It is their responsibility to recruit four other reviewers who are experts in the paper's subject matter. To ensure that the most capable specialists review the paper, the senior reviewer may call on Section members or other sources outside the Society to assist in this process. All completed reviews are sent back to the senior reviewer.

When the paper begins the reviewing process, the author will receive a letter advising him of the likely review time. Papers are usually reviewed within 4-5 weeks, but occasionally a reviewer may need to extend that deadline. If such a delay does occur, the author will be notified to that effect. If a reviewer is unable

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to meet the review deadline, another reviewer will be found to complete the work.

Once the reviews have been returned to the senior reviewer, he will complete a comprehensive report of the paper. Both the senior reviewer and the Papers Committee chairperson will make certain that this final review is complete and consistent. Accomplishing this may sometimes require discussion among the reviewers, particularly if there is some disagreement between reviewers. In addition, the Papers Committee may sometimes request supplemental material on aspects of the paper which have been inadequately covered. In either case, when this has been done, the review process is complete. The next step is to communicate the decision to the author. This is done through the Society office.

Approval of the paper sets the publishing process in motion. If a paper has been refused, however, the reviewers may encourage the author to make some changes and resubmit the paper. If an author disagrees with the Papers Committee's decision, he/she may:

- 1) discuss it with the chairperson and ultimately ask for a reversal of the decision;
- 2) write a letter to the chairperson expressing the same sentiments; or
- 3) appeal to the President of the Society.

In summary, what are the primary changes from the past? First, in the previous structure, we did not have senior reviewers, and so the chairperson was responsible for coordinating all reviews. This meant that in most cases the chairperson was not an expert in the subject matter of papers, and so there was a greater chance of inadequate reviews. In fact, some criticism of the system also suggested that "leading edge" papers were sometimes not recognized because of a lack of subject expertise on the Papers Committee. This situation should be improved with the recruitment of experts as senior reviewers for each speciality.

Second, in the past, it was usual for the reviewers to communicate with each other. In the new structure this will be encouraged, particularly when trying to resolve differences in reviews. Third, when an author disagreed with the decision

rendered by the Papers Committee, the only recourse available was an appeal to the President. Now an author can appeal to the Papers Committee Chairperson and the senior reviewer. The latter will be knowledgeable on the subject and thus able to discuss the paper thoroughly.

We believe that the proposed system just described incorporates procedures which will assure both expert review and constructive communication with the author. I hope our members will have a much better idea of the review process we are striving to implement for the TSA, and that it will encourage them to put pen to paper and submit something in the near future.

Kenneth A. McFarquhar is an Actuary at Manufacturers Life Ins. Co. He is past chairperson of the Papers Committee, and current chairperson of the Ad Hoc Committee to restructure the Papers Committee.

Conference Announcement and Call for Papers

The 23rd Actuarial Research Conference to be held August 25-27, 1988, at the University of Connecticut is intended to bring together practicing actuaries and academics to discuss the latest developments in the theory of insurance catastrophes. A particular emphasis of this conference is on the AIDS epidemic. A number of actuaries who have been active in this area will join statisticians and medical researchers to explore the current state of knowledge. There also will be sessions for contributed papers on other topics of interest in insurance catastrophes and various actuarial research work underway.

Individuals interested in presenting papers are invited to submit abstracts by July 1, 1988. Contributed talks will be 30 minutes each. The registration fee is \$75. The Conference is sponsored by the Casualty Actuarial Society, Society of Actuaries, Hartford Actuaries Club and the University of Connecticut's Department of Mathematics and Actuarial Science Program.

For more information and registration forms contact the Conference Coordinator, Dr. Charles Vinsonhaler, at the University of Connecticut in Storrs, Connecticut, phone (203) 486-3944 or 3923, or Mark G. Doherty, Director of Research for the Society of Actuaries, phone (312) 773-3010.

Actuarial Sciences and Uncertainties

by Francisco R. Bayo

In many scientific disciplines, the processes of experimental observation and logical deduction have been applied successfully to reduce the realm of the unknown and the uncertain. Many diverse physical phenomena have been condensed into a few mathematical formulations, some deterministic and others stochastic. It is natural then for actuaries to seek to apply similar formulations more broadly in their discipline, hoping to reduce some of the uncertainties with which they must contend.

Many actuaries feel that merely to adopt a reasonable assumption in the midst of uncertainty is not sufficient. They must arrive at it in a rigorous way by creating a mathematical model — one that they feel brings us closer to certainty or at least helps us understand more fully the nature of the uncertainties. We must understand and accept, however, that true certainty will always elude us.

In recent years actuaries have applied stochastic models to mortality and other processes in order to get a measure of the inherent uncertainty. This is useful when we have a reasonable knowledge of the underlying parameters and their probabilities. But the temptation is to extend stochastic modeling into areas of unpredictable parameters and probabilities. What do some actuaries mean by stochastic projections of financial operations? Do they truly believe that the demographic and economic behavior of the population involved will proceed stochastically according to predetermined parameters and probabilities? Don't they realize that they are not referring to physical processes nor to animals in a carefully controlled laboratory? Their models refer to people with freedom to act under largely uncontrolled conditions.

Science is an ever-improving field. Today's discovery makes yesterday's "knowledge" imperfect. I am concerned that, in our zealous rush toward more rigorous modeling, we will bargain away our professional actuarial judgment in exchange for a false sense of security. Why don't we just openly proclaim with a sense of

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