



The ACTUARIAL REVIEW

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PUBLISHED BY THE CASUALTY ACTUARIAL SOCIETY

OCTOBER 1978

from the PRESIDENT

Norm Bennett, in his mutterings, has commented at various times on the closeness of our Society, the opportunity for the recruit to break bread with the veteran, the chance for the neophyte to shake a finger in the face of experience. But it's getting harder to do. Our active membership has nearly doubled in the past ten years and the interplay among our members that used to come about so easily and automatically is becoming more and more difficult to achieve.

This means that special efforts have to be made to see to it that communication is taking place among our members and that everyone in the CAS has a chance to be heard and is properly represented in the activities of the Society. A number of things have been done in recent years to respond to this need.

The Actuarial Review has grown from what started out as a newsletter from the president to a full fledged member of the CAS family of publications. This has given us a chance to exchange ideas and express opinion in a less formal way than that required by the *Proceedings*.

Our five regional affiliates have taken on a growing role of importance in our Society as a forum at the local level where views can be much more easily aired. Charlie Hewitt, during his term as president, established what has become a tradition by visiting each affiliate. These visits give the president a chance to report on the state of the Society and to listen to the grassroots comments of the membership. To further the liaison with the regional affiliates, they were invited to send someone to the September meeting of the Board. The presidents of each affiliate, or their representatives, took part in the deliberations of the Board and gave a report on their affiliates' activities.

Your Board of Directors has been very much aware of the growing and changing needs of our Society and is constantly seeking ways to be responsive. In recent action a committee on consultants' interests was formed to respond to a growing segment of our Society and another committee was formed to explore the possible need for a director of communications. But there is just so much that can be done by the officers and the

(continued on page 2)

New Jersey Tackles Problems of Actuarial Equity and Public Policy

Recommendations to the Legislature Include Changes in Class Relativities, Merit Surcharges, Residual Rate Levels, and Profitability

by Mary Lou O'Neil

Another chapter was added in September to the fast-moving history of the casualty actuary when a New Jersey Ad Hoc Committee on auto insurance reform submitted recommendations to the New Jersey legislature that, in effect, are intended to balance "actuarial equity" and "public policy."

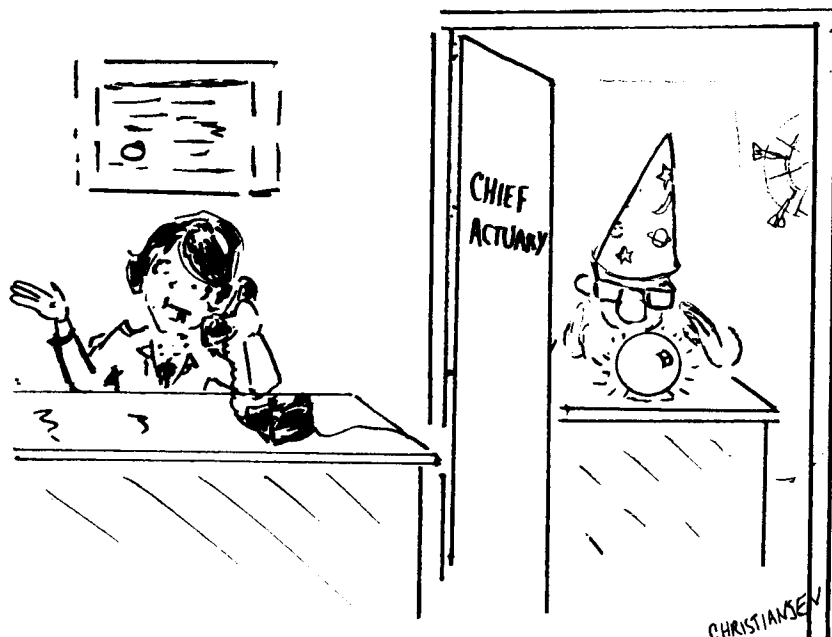
The recommendations covered territory and classification relativities, merit rating surcharges, rate levels for the residual market, and profitability.

The New Jersey story started in June, when the Insurance Department and the Governor's office proposed three bills to alter the structure of the private passenger automobile insurance market. Briefly, these three bills would: establish a reinsurance facility as the delivery mechanism for the residual market in private passenger automobile insur-

ance, establish a merit rating plan using fixed dollar amounts as surcharges based on accidents and motor vehicle violations, and provide for an increase in the Insurance Department staff at the companies' expense so that the Department could adhere to time lines established by the bill for the administration of the state's prior approval rate regulatory law.

Later in June, the Assembly Banking and Insurance Committee simultaneously voted the three bills out of committee and created the New Jersey Ad Hoc Committee on auto insurance reform. The Committee, chaired by Assemblyman Michael Adubato (D-Newark), included representatives from the New Jersey Assembly, the New Jersey Senate, private passenger automobile insurers, agents' associations, and participants from the administration and the Insurance

(continued on page 5)



"I'm sorry, sir — he's not accepting calls. He's working on his reserve review."

The Reserve Certification Proposals

Most actuaries agree that the primary qualification of a "qualified reserve specialist" authorized to sign an opinion on a property/casualty company's reserves, is that he be a member of the Casualty Actuarial Society or the American Academy of Actuaries. Most actuaries also resist the idea that a CPA can automatically be a "qualified reserve specialist," as has been proposed by the NAIC. But there are other considerations underlying the certification of property/casualty reserves that actuaries have an obligation to think about and deal with.

The Academy's Financial Reporting Principles Committee has proposed to the NAIC A(5) Subcommittee that a qualified reserve specialist be a CAS or AAA member "or a person who has otherwise demonstrated his or her actuarial competence . . . to the satisfaction of the insurance regulatory official of the domiciliary state." It follows that, in their own best interests, the actuaries should recommend to the NAIC the means of determining the competence of reserve specialists who are not actuaries.

Moreover, if the NAIC rejects the Academy's proposed definition, and insists on recognizing CPAs as reserve specialists, the actuaries then have an even stronger reason to assist the NAIC in the means of determining which CPAs are qualified. It is generally accepted that there are technicians, other than actuaries, capable of performing a proper reserve analysis, but how are the regulatory officials to know who they are? Help from the actuarial profession in this respect is almost obligatory and would serve the industry.

There is some thought that the industry and the public would be best served and least confused if membership in the American Academy alone were taken as qualifying a reserve specialist. Pursuit of that idea would require that all members of the CAS be members of the Academy, and all other persons judged to be qualified be taken into the Academy. The advantage of this idea is that every person who ventures to sign an opinion on reserves would be subject to the professional responsibility code of one organization, the Academy. Discipline would be easier to enforce, and the public would be better protected to that extent.

Another aspect of the NAIC reserve certification proposal that deserves attention is the position of the in-house actuary. In-house actuaries are deemed to be qualified. In-house actuaries do sign life insurance reserve statements, but most life actuaries will agree that the degree of judgment required to establish life insurance reserves is considerably less than that required for property/casualty reserves. In many non-life companies the actuary submits his reserve recommendations to his executive superior and at that point the actuary's responsibility ceases. If the executive prefers to publish a reserve figure different from that recommended by his actuary, he accepts the responsibility. The situation under the new proposal would be different, and the in-house actuary, if he has to sign a reserve opinion, might face pressures other than those imposed by his professional obligations. Also, there might be a question of the public acceptance of reserve opinions signed by in-house actuaries.

Still another feature of the NAIC proposal that deserves thought is the designation of companies whose reserves will be certified — companies requiring regulatory attention on the basis of the early warning reports. The companies requiring attention are so-called priority companies — those who fail to meet the test standard in four or more tests. The trouble is that a company can achieve priority status and still pass the three reserve tests with flying colors. Such companies would have to provide opinions on their reserves, while companies that fail two or all three of the reserve tests, and pass the other eight tests, could escape the requirement. Since all companies would not be required to furnish opinions on their reserves, a more appropriate criterion is needed for the designation of companies whose reserves require analysis.

We think the foregoing considerations should be discussed publicly. The Actuarial Review would welcome comments from its readers.

M. R.

P. Adger Williams

AAA Questionnaire on Reserve Review Costs Commissioned by NAIC

The American Academy of Actuaries has developed a questionnaire, directed at consulting actuaries around the country, intended to elicit a consensus of the probable cost of an actuarial review of property/liability loss reserves if performed by an outside consultant.

The questionnaire was commissioned by a task force of the NAIC (A5) Subcommittee that in May published proposals for the actuarial certification of loss reserves. The task force, consisting of Illinois (chairman), Indiana, and Florida, was appointed to review all comments and criticisms of the (A5) Subcommittee proposals and present its recommendations at the December NAIC meeting. One of its first actions was to authorize the Academy to pursue the reserve review cost inquiry. The legality of the inquiry was affirmed by counsel for the Academy.

The questionnaire was designed by the Academy's Committee on Property and Liability Insurance Companies Financial Reporting Principles, Robert Lowe, FCAS, Chairman. Returns from the questionnaire, which went to about fifty consultants, are complete, and presumably will be presented by the three-state task force at the December NAIC meeting.

from the PRESIDENT

(continued from page 1)

Board; most of the burden must remain on the individual member.

In a 1976 report, the Ad Hoc Committee for Actuarial Communication reported that existing channels for communicating were adequate but underutilized. They recommended that the regular semi-annual meetings be supplemented by special topics seminars and that formal papers prepared for the *Proceedings* be supplemented by a call paper program. These things have been done and the response has been impressive. The mechanisms for communication are available if our members make a real effort to take advantage of them.

The ACTUARIAL REVIEW

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MAUNDERINGS

by Norman J. Bennett

This past third quarter was an interesting one. Not like the third quarters of years long past when for at least the first two months the insurance industry went to sleep. Portly executives disappeared to the Hamptons or Hyannis, meetings of any sort were unheard of, and summer actuarial students drowsed their way through busy work that didn't seem to justify any of the complicated subjects they were told they had to know. It was a tranquil season, unvarying year after year, when a great business lowered its metabolic rate and husbanded its energies.

Yet this is so much history. Perhaps it was the general introduction of air-conditioning in offices that started the change. More likely it was the emergence of a predatory species of rival carrier who ignored the old club rules and who always seemed to have energy to spare regardless of the season. Whatever the cause the third quarter is little different from the rest of the year today and is a busy and active time for most of us.

My own third quarter covered a wide variety of actuarial people and places. I visited and talked with isolated actuaries — the ones I have always suspected of having a high order of loneliness. I attended highly structured meetings of a giant rating organization, and I struggled and fumbled with a few other actuaries to get a new small rating group off the ground. I watched and tried to participate with the dozens and dozens of students and actuaries of our local club as they began to show signs of confidence and faith in their new field. I moved to the high council of our Society — changing my perspective, but still talking with actuaries about matters of interest to actuaries. From the sportiness of a Toni Regan with her new BMW to the graying J.C. Penney elegance of a Joe DeMelio, I encountered a lot of actuarial thought and heard a lot of actuarial conversation.

In noting a few of my random impressions, I don't presume to any statement of the actuarial zeitgeist. The Society's long-range planning folks can safely ignore me. These are simply some personal notes of one individual on things he has seen and heard of late.

These seem to be trying times for the young actuaries and trainees. Many of us from not too far back in history would visualize our examination system as a mesa, with gently sloping sides to discourage the halfhearted and lazy, but with a roomy flat top to accommodate all those who really want to climb there. Today it appears to those making the examination ascent that the slope of whatever it is they are climbing (they can't see the top) is constantly steepening and narrowing. Whether this is so or not, the enormous base of candidates jostling and crowding its way up the slopes creates such an impression by its very numbers and competitiveness.

Today's students say they have no real problem understanding this condition. Like it or not, competition has been their way of life from the days of seeking admission to their first-choice college. But they are anxious that this continuing struggle to become an actuary — an academic contest prolonged far beyond college — be rewarded with profitable and expanding careers.

They wonder and worry about fundamentals. Can personal lines be kept in the hands of private carriers? How many actuaries would an industry without personal lines need? These are not baseless worries to the young. Assuming the unfortunate — but plausible — answer to the first question, the answer to the second might be, "Not very many, probably."

Consequently, it didn't seem peculiar to me to find that one student was puzzled over the Society's current emphasis on reorganization and loss reserve certification. He thought it a too narrow preoccu-

The Quarterly Review

by Robert A. Bailey

CLAIM RESERVES IN GENERAL INSURANCE, D. H. Reid, F.I.A., submitted to the Institute of Actuaries, March 1978

(Mr. Reid's paper was sent to the Actuarial Review and to Mr. Bailey after Mr. Reid read Mr. Bailey's article, "The Actuarial Dilemma," in the January 1978 AR.)

The author fits a mathematical function to claim reserves. The function incorporates the number of claims outstanding, the amount at which they will be settled, and the length of time to settlement. The function provides for an interest discount to present value, monetary inflation, social inflation, and randomness.

Once a function has been fitted to a set of claims that have been settled, it is used to estimate future settlements on claims currently outstanding. The function provides a mean expected reserve (a 50% probability of being adequate) and various measures of the anticipated estimation error, such as a 90% reserve (a 90% probability of being adequate).

The author fits a different function to each body of data — for example, private passenger auto comprehensive claims outstanding in 1970. The functions the author uses are complex with potentially an infinite number of terms. The functions use exponentials, log transformations, Gamma functions, and "finesse." For example, the author uses a 19-term function to fit a log transformation of both claim size (x) and time (t) for non-zero employers' liability claims settled within three years of the reserve date. One such term was $.86735 10^{15} x^{12} t^{18} e^{-30x} e^{-15t}$. A different function was used to fit zero claims. And a third function was used to fit non-zero claims settled more than three years after the reserve date. These different functions were "blended" together using an arc tan function. The selection of functions and terms within each function was done by a trial and error process until a fit was achieved that was satisfactory to the author. The possibilities are infinite. The only limits are the practitioner's time, imagination, and computer resources. Whether the results mean anything after the use of so much imagination is another question.

Mr. Reid is to be commended for a major effort in trying to develop a system of establishing reserves for non-life insurance coverages; but the system is hardly practical for use by most companies, at least in the United States.

pation with the special interests of consultants. No one has told him why these subjects should be of vital concern to him as a company actuary. He has only a token interest in reorganization and he has had limited practical experience with loss reserves, much less certifying them. He suspects that this is an important task, but he is more concerned with his company's continued need for a competitive and open market. Only if he himself has a job doing what he is doing, he claims, will there be a need for more than a few other actuaries as loss reserve specialists. Wouldn't it be more relevant to the majority's interests, one of his companions speculated, if we were to devote at least as much of our energies to the classification problem as some regulators and consumer advocates are doing?

Not too surprisingly I also spotted a glimmer of concern for image. The fear is that of becoming so overly technical as a result of an increasingly complex examination process as to become culturally isolated in one's company, particularly from the management. Stan Khury's comment that the first thing new Fellows should do is get their teeth capped and go to Dale Carnegie may exaggerate the situation, but there is evidence that bright students quickly realize that they should not be primarily mathematicians or technicians but business people just as the recruiting brochures indicated. Speaking and writ-

(continued on page 6)

from the READERS

The Actuarial Review goes out of its way to thank Richard Woll for the following letter. AR hopes the letter will elicit the dialogue Mr. Woll calls for.

where are the actuaries?

To the Actuarial Review:

In recent years, as the pressures for changing the automobile classification system have mounted, I have been wondering what the role of actuaries and the CAS should be in this area. It is true that much of this pressure arises from political and social causes and is a demand for change which exists apart from conclusions drawn as the result of a reasoning process; but any attempt to change a system should involve an understanding of what is being changed, why it came about in the first place, what the system is intended to accomplish, and what will be the consequences of change. It should also be noted that even changes arising from non-reasoning sources have to be cloaked by reason, and this change is no exception.

It seems to me that actuaries should be very much involved in the analytical parts of this process and the dialogue accompanying it. When I look around, however, I see that the major contributors to the analysis of class systems have been:

- (1) The SRI Report on Risk Classification.
- (2) A series of papers prepared by the State Rating Bureau of Massachusetts in connection with 1978 auto rates.

Both of these sources are cited in the report of the Rates and Rating Procedures Task Force to the (D3) Subcommittee of the NAIC which states that:

"Given the growing evidence against the use of these factors (age, sex, and marital status), the NAIC should act to eliminate these rating criteria over time.

When we search this report for such evidence, we learn that:

"The Stanford and Massachusetts studies have suggested a primary reason to

examine the creation and approval of classification plans—low predictive accuracy. The Stanford Report, for example, found that existing rating practices serve to technically explain only about 22 percent of the variance in loss between groups. The report further concluded that because of interdependencies among factors, marginal rating factors may be eliminated or substituted without seriously reducing the predictive accuracy of the rating model. These results have been verified by the Massachusetts Department, which determined that use of merit and inexperience rating performed nearly as well as traditional age, sex, and marital status classifications in reducing residual variance of loss."

One would think that such conclusions would have come about as a result of careful actuarial work, but when one examines the sources cited one finds that actuaries had very little to do with them. Both, in fact, display a certain lack of understanding of actuarial principles in their comments on credibility.

The SRI Report, for example, informs us that:

"... its logic (credibility theory) lacks clarity and hides assumptions." (Page 71.)

"When the accuracy of an estimate is in doubt, the estimate is biased" (because of the use of credibility theory). (Page 72.)

"The application of credibility theory should be reexamined." (Page 107.)

The Massachusetts State Rating Bureau tells us:

"Credibility theory... is not always in accordance with solid statistical theory." (Page 8, "An estimation model for multivariate insurance rate classification")

The basis of the SRI conclusions can be found in an actuarial paper which is included as Part IV of the Supplement to its Report. This Supplement examines risk assessment from a mathematical and statistical perspective, a model is developed to determine the efficiency of the risk assessment process in automobile insurance, and the use of subjective (utility) functions is suggested as a way to alleviate the injustices of overpricing.

The State Rating Bureau picks up where the SRI Report leaves off, and claims that:

- (1) The risk assessment system is hopelessly inefficient.

- (2) This inefficiency causes many people to be severely overcharged.
- (3) Utility functions must be used to adjust what is condescendingly called the "actuarial" rate to a "preferred" rate. If one realizes that such a "preferred" rate is determined by the preference of the one applying the utility function, the aptness of the term is readily recognized.
- (4) The more logical answer to pricing inequities — to adjust the pricing mechanism — is not possible because it is impossible to improve the risk assessment system.

I assert that these are very important arguments which are of vital concern to all actuaries, but they have come into being without being subject to actuarial review and input. If, for example, these papers had been submitted for our *Proceedings*, I am sure that a spirited and enlightening debate would have taken place. If, after that, the conclusions of these papers were confirmed, we would at least know that actuaries had played an appropriate part in the process.

My fear, at this time, is that we will find that major changes in the insurance system have taken place and that actuaries had nothing to do with the process.

I suggest that the CAS should respond as if these papers had been presented for our approval and should conduct an intensive and rigorous appraisal of them. We should call for reviews and make them available to all members of the CAS. I think that this effort could take place through the Actuarial Review since there is no time to spare if we wish to play any part in the changes that are now enveloping us.

If we lose the right to perform the best job of risk assessment possible, given economic and legal restraints, the consequences will probably be a rigidly regulated insurance business functioning as a tax collector rather than as a bulwark against uncertainty. Remember that the attack on risk assessment in automobile insurance is not making points that are confined to that line alone.

We cannot afford to remain bystanders in such circumstances.

Richard G. Woll

for the under-achievers

To the Actuarial Review:

We have a formidable little puzzle corner in each issue of the Actuarial Review that attracts the numerous mathematical types in the Society. I've noticed from time to time, however, that some of you members are quietly embarrassed at not being able to participate in this recreation and have your names listed as successful puzzle solvers. Whatever

(continued next page)

New Jersey Studies Actuarial Equity

(continued from page 1)

Department. The committee's charge was to recommend a viable alternative to a reinsurance facility that would solve some of New Jersey's automobile insurance problems . . . not least of which is a population of one million drivers in the assigned risk plan.

Simplifying this charge, the committee sought a response to the problems of availability, affordability, and profitability as each affects the various parties to the auto insurance transaction.

The first task was to determine what kind of delivery mechanism could most efficiently service hard-to-place drivers and at the same time provide for needed depopulation incentives and be flexible enough to allow attack on the affordability problem. The committee agreed that this mechanism should be a New Jersey Full Insurance Underwriting Association, which is in principle a modified JUA approach.

The association would provide coverage through a limited number of servicing carriers to all licensed drivers who are not acceptable for voluntary market coverage. All

insurers licensed to transact auto insurance business in the state would be members of the association and share in its premiums and losses. The association would provide the consumer with a full selection of coverages as well as efficient service as monitored by strict standards for servicing carriers.

Affordability quickly became the focal point of discussion, pitting "actuarial equity" against "public policy." Traditional rating methods were challenged. In particular, territory and classification differentials were examined. The committee also explored the potential effects of eliminating age, sex, and marital status as rating criteria, the adoption of uniform merit rating surcharges by territory, and the use of voluntary market rates for all drivers. The committee endeavored to achieve a balance between the goals of actuarial equity and public policy so that gross market dislocations may be avoided. Members of the committee recalled the remark of one industry spokesman at recent Pennsylvania hearings: insurer knowledge of differences in driver loss potential cannot be removed through legislation. The existing system cannot be displaced without a proper alternative.

Keeping these facts in the forefront, the committee took several giant steps toward greater social equity along the continuum

from actuarial equity. These steps were the adoption of general market reforms: limitation of the size of maximum territory and classification relativities to the statewide average, uniform merit rating surcharges by territory, and a single rate level (ISO) for all residual market drivers. Although the present rating structure was preserved, the committee recognized the need for further assessment of the structure. Therefore, a Territory and Classification Study Commission was created which will perform a detailed analysis of the present territory and classification definitions and differentials and implement any necessary changes by January, 1980.

Profitability was addressed through the recommendation of specific time lines for Insurance Department actions on rate filings, establishment of an indexing procedure for automatic adjustment of rates, and provision for automatic recoupment of any association losses through the voluntary market rates.

The Ad Hoc Committee recommendations now before the New Jersey legislature point to the changing environment, in which adherence to actuarial equity is no longer the sole basis for the pricing of insurance. It is difficult to say where this chapter will end. However, actuaries are becoming aware of the new role required by ever-increasing social demands.

from the READERS

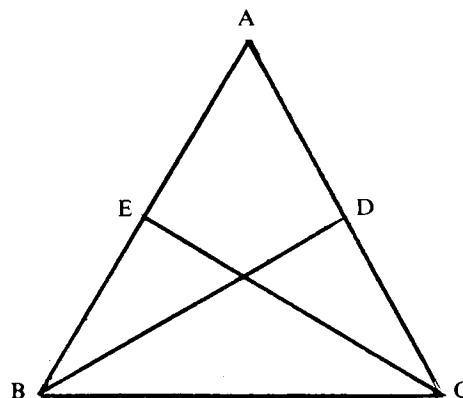
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the reason for this embarrassment — advancing age, outmoded training, or too hard puzzles — I'd like to offer you a chance to gain some small sense of achievement and success of your own.

Anticipating, but braving the scorn of such pros as Al Skelding, Don Behan, Joe Kidd, and Jim Bernoulli, I offer to you under-achieving colleagues a simply stated little problem that may be your first step toward gaining confidence to take on the real puzzles actuaries do. We may even be able to persuade the Editor as a charity to publish your names for sending in solutions. Of course if the major league solvers want to waste their time by contributing answers, they'll have to be listed too. But then you'll be in excellent company and in a few months no one will remember how you got there.

Note the triangle ABC below. I drew the lines BD and CE by bisecting the angles B and C. I then noted that these lines BD and CE were equal. You simply have to jot down a

proof that I started with an isosceles triangle ($AB = AC$). Do it now — on the back of an envelope, or in the margin of this page — and gain back a little of the youthful confidence you thought was gone forever.



Norman J. Bennett

loss reserve principles

To the Actuarial Review:

I recently received the "Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Liabilities," May, 1978. The Committee on Loss Reserves is to be commended for their fine work.

One purpose for the statement might be to demonstrate that actuaries have expertise in the field of loss reserving that members of other professions do not. If so, perhaps the statement should be expanded to include a greater body of actuarial expertise. I hope that actuaries will see the importance of such work and be willing to contribute their efforts.

Oakley E. Van Slyke

Lemuel H. Devers, president of the Massachusetts Auto Racing and Accident Prevention Bureau, possesses his own statistics, and he acknowledges that Massachusetts drivers bump into each other about 10 percent more frequently than drivers anywhere else in the United States. — *Caskie Stinnett, "Heels on Wheels," in the Atlantic Monthly.*

Commissioner Stone turns his back for five minutes, and right away Boston Common is transformed into Watkins Glen.

CANY Members Favor Merger of CAS with Other Actuarial Societies

But CAS Fellows and Associates in Poll Vote Against; Relaxation of AAA Membership Requirements Approved by All CANY Segments

by Philip D. Miller

A merger of the Casualty Actuarial Society into an overall actuarial organization as part of a reorganization of the profession, if adequate safeguards are provided to protect the interests of casualty actuaries, is favored by respondents to a questionnaire distributed by the Casualty Actuaries of New York to its membership. The vote was 41-31.

Analysis of the results reveals a disparity of opinion by category of membership. CAS Fellows narrowly disapproved the suggested merger by a 9-10 vote. Also, CAS Associates disapproved by a 13-18 vote. On the other hand, CAS Students overwhelmingly favored a merger, 17-3.

Set forth below is a list of reasons given for the two positions:

Reasons for Voting Yes

1. Greater voice, recognition, and political power
2. Increased education and ability in more areas arising from interaction with others.
3. To increase the likelihood that only actuaries would certify loss reserves
4. Less public confusion
5. Fewer overhead expenses

Reasons for Voting No

1. Adequate safeguards are impossible
2. The American Academy of Actuaries should be expanded to serve that purpose
3. Loss of identity in too large a group
4. Loss of personal contact
5. Diverse interests of life and casualty actuaries

Suggestions for adequate safeguards are as follows:

1. Subgroups with separate examinations and meetings
2. Strong conduct codes that would prevent life actuaries from practicing casualty work

3. Sole control and veto power by casualty actuaries over casualty issues
4. Meetings on special topics

AAA Membership

The questionnaire also polled the CANY membership on American Academy of Actuaries membership requirements. Relaxation of membership requirements is favored by a vote of 43-19. The breakdown by category is as follows: Fellows, 10-7; Associates, 23-6; Students, 10-5.

Of those answering affirmatively, 39 call for extension of membership to Associates of both the Casualty and Life Societies, and 18 favor membership for those passing U.S. government exams. Three believe that others could be members, subject either to an experience requirement, a vote by the Board of Directors, or special individual contribution to the industry.

Here is a list of reasons given for the two positions.

Reasons for Voting Yes

1. Associates are well qualified, often more so than Fellows. Experience, not just exams, is an important factor.
2. To increase the ability and number of actuaries for certifying reserves in Annual Statements.
3. To provide meaningful representation by broadening membership in the AAA. The AAA could fill a need for a comprehensive framework for the profession by encompassing all actuarial disciplines.

Reasons for Voting No

1. Relaxation of requirements would mean lower standards and reduced stature for the AAA.
2. If standards are relaxed, the new AAA member might not be sufficiently qualified.

BOARD OF DIRECTORS

The major actions of the Board of Directors at its meeting September 11 and 12 were as follows:

1. Approved the budget for the next fiscal year. The budget is slightly lower than last year's because of the transfer of exam administration for Parts 1, 2, and 3 to the Society of Actuaries in Chicago. There will be no change of dues.

2. Approved the continuing efforts of the chairman of the Finance Committee to get the CAS library established as a trust under IRS Code 501c.(3).

3. Approved the following meeting sites: November 1981, New Orleans Hilton; May 1982, The Breakers, Palm Beach, Florida; November 1982 or November 1983, San Francisco (alternate of Boston).

4. Noted that the latest reorganization plan suggested by the Steering Committees of the six actuarial bodies has been vetoed by the Board of the Society of Actuaries.

5. Directed the Committee on Career Enhancement to study alternatives for dispensing funds raised by letters to casualty insurance companies (\$6,900 raised to date) — taking cognizance of the results of other organizations involved in minority recruiting and scholarship programs.

6. Noted that the Call for Papers for the May 1979 meeting has elicited 16 proposals, five from non-members.

7. Acknowledged the presence at a Board meeting for the first time of presidents (or their representatives) of the five CAS affiliates, to contribute to the Board discussions and to report on local activities.

3. If requirements are relaxed, the AAA would have the same members as the CAS and Society of Actuaries, counter to the intended purpose of the AAA.

An experience requirement is strongly favored for AAA membership. Slightly more than 75% of the responses indicated a preference for an experience requirement, and more than half of the 75% specified five years as the requirement.

Regarding classes of membership in the Academy, more than one class of membership is opposed, 20-38. Of those favoring more than one class, half favor a relaxation of AAA membership requirements.

MAUNDERINGS

(continued from page 3)

ing clearly and convincingly are important skills for the actuary determined to be heard, quite as much as for those trained for the law and senior business management.

Knowing this to be true, I was momentarily nonplussed at a Board meeting in reading the biographical sketch prepared for the So-

ciety by a recent Associate. In response to the question as to whether he had received any honors, he had proudly written "Phi Beta Kappa." I rather half-heartedly muttered to my fellow Board members my disappointment that today the ability to spell seems only incidental to the attainment of high scholastic distinction. Fred Kilbourne quickly brought me safely back to reality: "Don't judge so harshly," he advised. "He undoubtedly spells very well in English. He's only weak in Greek."

CAS FELLOWS FIFTY YEARS

The Actuarial Review here continues its annual salute to Fellows of the Casualty Actuarial Society who received their designations fifty years ago. Information for this series is taken almost exclusively from old copies of the Proceedings and the Year Book.

WILLIAM H. BURLING. Like so many of the previous generation of actuaries, Mr. Burling spent his entire actuarial life in one company — in his case, The Travelers. Mr. Burling's career differed, however, from that of most of his CAS colleagues, in that he was not active in the property or casualty insurance lines, but rather in the group accident and health and pension fields. He became an Associate of the CAS in 1927, and a Fellow in 1928. As might be expected, he is also a Fellow of the Society of Actuaries, 1930.

Mr. Burling has not attended many CAS meetings in the last twenty years. But in the early 1950s, when the New York Disability Benefits law was in the works, and after it was passed, he attended many CAS meetings in which DBL was on the program, took part in the discussions of the new legislation, and assisted his less knowledgeable colleagues with suggestions on how to make rates for that kind of insurance.

Bill Burling was named Assistant Actuary of The Travelers in 1937, Assistant Secretary in the Group Department in 1949, and Secretary in 1955. He moved to Toronto in 1963 to become Manager and Actuary of the Travelers of Canada Group Department, and in 1968 went back to Hartford to become Second Vice President and Actuary. He retired in 1970 and now lives in Walnut Creek, California.

From 1934 to 1939 Mr. Burling served on the Education Committee of the CAS. In the 1930, 1932, and 1933 issues of the *Proceedings* he authored reviews of a number of articles on public and private retirement systems and on proposals for a Social Security system.

RALPH M. MARSHALL. All three of the fifty-year Fellows in 1978 spent their entire actuarial careers in one organization — Mr. Marshall's in the National Council on Compensation Insurance. Mr. Marshall is remembered by most CAS members, and his name is known to all CAS students, as the author of the basic text on workmen's compensation ratemaking (it was still *workmen's* compensation in 1954 when Mr. Marshall made his presentation). Although some of the ratemaking procedures have since been revised, Mr. Marshall's paper is still a fundamental reference work on WC ratemaking in the CAS Syllabus.

Ralph Marshall became an Associate of the CAS in 1926 and a Fellow in 1928. He was at the National Council at that time and became Assistant Actuary in 1935. In 1961 he retired, and now resides in Catts Corner, Worton, Maryland.

Latest Activities on the *Proceedings* Mart

The wheeling and dealing in the market for old issues of the *CAS Proceedings* will probably be accelerated by the following offers and seekings.

Everett G. Bishop reports that the American Mutual Insurance Companies would like to trade extra copies of the *Proceedings*, from 1922 to 1945, for the following:

PCAS Volumes XLII (1955) and XLIV (1957)
TSA Volumes III, V, VII, IX, X, XII, XIII, XV, XVI
TASA Volume XXX

Edward Weissner writes that the Prudential Reinsurance Company would like to complete its library, and needs Volumes XLII (1955), XLIII (1956), and XLV (1958) through LI (1964). But he says the company has duplicate copies of "several" volumes dated prior to 1940, and would like to trade them.

Robert A. Bailey informs AR that the NAIC Central Office library has duplicate paper-bound copies of Volumes XIV (1927), XV (1928), XVIII (1931), and XXIII (1936); and duplicate hard cover copies of Volumes LII (1965) through LX-III (1976), and an Index for the years 1965 through 1974. These are for sale. However, the NAIC needs (paper or hard cover) Volumes I (1914), III (1916) through XII (1925), XVI (1929), XVIII (1931), XIX (1932), and XXV (1938).

Something ought to be accomplished out of all this!

In 1929 Mr. Marshall became a member of the Education Committee, and from 1932 to 1936 served on the Examination Committee, becoming chairman of the Fellowship Part in 1935, and General Chairman in 1936. He was a member of the Council (now called the Board) from 1936 to 1939. He served on the Special Committee on Reserves for Fidelity and Surety lines in 1937 and 1938, and was a member of the Special Committee on Mortality for Disabled Lives in both of its assignments, from 1937 to 1945, and from 1955 to 1957.

In addition to his monumental paper on workmen's compensation ratemaking, Mr. Marshall presented a paper in 1933, in collaboration with William F. Roeber, on "An American Remarriage Table." And he presented discussions of papers in 1932 on the Unit Statistical Plan written by Mark Kormes, in 1934 on Indeterminate Claim Reserve Tables by Nels Valerius, in 1939 on Tables Adapted for Machine Computation by Francis Perryman, and in 1941 on a paper prior to his own on workmen's compensation ratemaking by Stefan Peters.

NELS M. VALERIUS. The big Aetna was the scene of Mr. Valerius's actuarial life. In 1928, when he became a Fellow (having achieved his Associateship in 1927), he was in the Accident and Liability Department of the Aetna Life Insurance Company. The Aetna Casualty and Surety Company was formed, and he became Assistant Actuary in 1947 and Associate Actuary in 1959. By the time he retired in 1970, the company was known as the Aetna Life & Casualty. He now lives in Newington, Connecticut.

Nels Valerius's contributions to the CAS were notable, both in service and in actuarial publications. He was elected three times to the Council (now the Board) — from 1939 to 1942, from 1945 to 1947 to fill a vacancy, and again from 1953 to 1956. He was Chairman of the Associateship Part of the Examination Committee from 1934 to 1937, Chairman of the Fellowship Part in 1937, and General Chairman in 1938. From 1939 to 1948 he served on the Education Committee, and from 1947 to 1952 on the Committee on Review of Papers, becoming chairman in 1949. And he accepted assignment to the Committee on Mortality for Disabled Lives from 1955 to 1957.

Mr. Valerius's papers were outstanding. In 1933 "On Indeterminate Claim Reserve Tables for Compensation"; in 1934 "Index Numbers of Compensation Insurance Rate Levels" (in collaboration with Paul Dorweiler); in 1939 "Additional Index Numbers of Compensation Insurance Rate Levels"; in 1942 "Risk Distributions Underlying Insurance Charges in the Retrospective Rating Plan"; and in 1967 "Notes on Whittaker-Henderson Formula A."

In addition to the foregoing, Mr. Valerius produced discussions of Thomas O. Carlson's paper on a Standard System of Notation in 1934; Mark Kormes's paper on the WC Experience Rating Plan in 1935; J. J. Smick's paper on WC Benefits also in 1935; Roger Johnson's paper on New York WC Ratemaking in 1941; and Harmon T. Barber's paper on Mechanized Unit Reporting in 1947.

YEAR BOOK REVISIONS

GREENE, THOMAS A. (Associate) — Vice President, Ryan Insurance Group, Inc., 523 East Putnam Avenue, Greenwich, Connecticut 06830

INDERBITZIN, PAUL H. (Associate) — Secretary, Reliance Insurance Company, 4 Penn Center Plaza, Philadelphia, Pennsylvania 19103

MUETTERTIES, JOHN H. (Fellow) — President, Independent Actuarial Services of New Jersey, Inc., P. O. Box 193, Mountain Lakes, New Jersey 07046

Albert B. Lewis to be Featured Speaker at CAS Annual Meeting

Albert B. Lewis, Superintendent of Insurance of New York, will be the principal speaker at the Thursday, November 16, luncheon session of the CAS annual meeting at the Waldorf Astoria hotel in New York City, November 15 to 17. This meeting will be the first in New York since 1964.

The program for the meeting will concentrate on issues now in the forefront of property/casualty actuarial attention. The future of the industry, as well as the future of the CAS, will be discussed in separate panels.

Workshop sessions involve presentations on risk classifications, expense loadings, workers' compensation issues, insolvency problems, and NAIC financial items. Risk management and consumerism are the subjects of other panel presentations.

The program will feature, among other distinguished speakers, such notable actuaries as Tom Murrin, Dick Johe, George Morison, and Jack Moseley.

IT'S A PUZZLEMENT

By Wayne H. Fisher

the rhombicosidodecahedron

Fourteen solutions were received that correctly described the rhombicosidodecahedron as having 60 vertices and 62 faces. Most solutions involved Leonhard Euler's well-known relationship for solid polyhedrons of vertices (V) plus faces (F) minus edges (E) equals 2. Donald Behan's solution was typical and is as follows:

Let the number of triangles be (T), squares (S), and pentagons (P). Since each edge is an edge of exactly one square, $E = 4S$. Then $T = \frac{2}{3}S$ and $P = \frac{2}{5}S$. Each vertex is counted four times, so $V = \frac{1}{4}(3T + 4S + 5P) = \frac{1}{4}(2S + 4S + 2S) = 2S$. Also $F = T + S + P = \frac{31}{15}S$, so, using Euler's relationship $2S + \frac{31}{15}S - 2 = 4S$, $\frac{1}{15}S = 2$, leaving $S = 30$, $T = 20$, and $P = 12$.

Also solving the puzzle were: Mike Convey, Ralph Edwards, John Herder, Doug Hoylman, Joel Kleinman, Peter Licht, Chuck McClenahan, John McGowan, Jerry Miccolis, Sandy Squires, Jack Swisher, Joth Tupper, David Wong.

circle the mountain

A few years ago the familiar puzzle of the truck crossing the desert appeared in this column. This time our truck must circle a large mountain.

Our truck has a fuel tank that holds enough fuel to go one fifth of the way around the mountain. It can also carry one extra container that holds the same amount of fuel as the tank. The containers may be used to fill the truck's fuel tank or can be stored for later use, but only full containers can be stored.

The object is to find a way to make a round trip, in one direction, with an overall minimum consumption of fuel. Preliminary trips can be made in either direction to leave containers at strategic spots. At the starting point assume there is an unlimited supply of fuel and containers.

CAS AFFILIATES

CASUALTY ACTUARIES OF NEW ENGLAND

The eighth meeting of CANE was held on September 13 at the Sheraton-Sturbridge Inn, Massachusetts. The first speaker was George Morison, who discussed changes in the membership requirements of the American Academy of Actuaries. He was followed by Donald Trudeau with a talk on revisions in the 1978 Annual Statement blank. The closing presentation was a repeat performance of the CAS spring meeting scenarios on professional conduct, with performers Paul Lis-cord, Irene Bass, and Robert Foster.

CASUALTY ACTUARIES OF NEW YORK

CANY held its fall meeting in the World Trade Center on September 6. The program opened with a panel discussion on consumerism and the future of personal lines. Linda Lamel of the New York Insurance Department presented the consumer's point of view, and called on the actuaries to take the lead in meeting the growing social challenges facing the insurance industry. According to Ms. Lamel, the challenges involve reexamination and revision of current rating methods, as well as a campaign to explain the rating system to the public. She warned that if the actuaries (who are best qualified to lead the

way) do not assume the responsibility, the legislators will assume it for them. George Mulligan of the AIA pointed out that many of today's availability and affordability problems stem from existing insurance regulations. He called for the removal of prior approval laws. Norman Bennett moderated the discussion.

A second panel, moderated by Gerald Hartman, presented an insight into the means employed by two companies to meet some of the challenges brought out in the first panel's remarks. Michael Miller discussed new data collection techniques and expense allocation methods used at State Farm. Sanford Squires discussed Commercial Union's new automobile class plan.

The next speaker was John Ryan, who discussed the actuarial profession in the United Kingdom.

Finally, CANY was privileged to hear Adger Williams, CAS president, speak briefly on the need for better communication within the society through vehicles such as the local affiliates, the Actuarial Review, and general polls. Adger also stressed the need for actuaries to communicate more effectively with the outside world — the regulators, the legislators, and the consumers.

CASUALTY ACTUARIES OF THE MID-ATLANTIC REGION

CAMAR had its first joint meeting with the Philadelphia Actuarial Club on September 26 at Stouffer's Restaurant in Penn Center. Gerald Hartman, president of CAMAR, chaired the non-life portion of the program; and Donald Fleischer, secretary-treasurer of the life actuarial group, presided over the business meeting for his members.

In the first portion of the program Warren Cooper reviewed briefly the NAIC's eleven early warning tests, and Walter Fitzgibbon described a new set of early warning tests offered to the NAIC by the American Insurance Association. The AIA tests were developed by Aetna Life & Casualty, and involve a multivariate discrimination system.

The second part of the program had as its theme "The Actuary as a Professional in the Public's Eye," and was chaired by Stanley Tulin of the Philadelphia club. He introduced Kevin Ryan, FCAS, who discussed current proposals for having reserves of fire and casualty companies certified by a qualified reserve specialist; and John Herman, an enrolled actuary, who presented problems of the actuarial appraisal of companies for purchase, and problems of compliance with reporting requirements of ERISA.