



The Actuary

The Newsletter of the Society of Actuaries

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THE ACTUARIAL PROFESSION— ITS RESPONSIBILITY TO THE PUBLIC

by William A. Halvorson

Editor's Note: We appreciate the opportunity to publish the following talk given by Mr. Halvorson to the Atlanta Actuarial Club at its meeting on Oct. 2, 1974.

Guide 1a) of the Society and Academy Guides to Professional Conduct states that: "The member will act in a manner to uphold the dignity of the actuarial profession and to fulfill its responsibility to the public."

That's easy to say, but much harder to define.

What is the "dignity" of the actuarial profession? In fact, we can ask, is there such a thing as the actuarial profession?

This requires us to define a profession. But assuming that we are a profession, the most difficult to define is the profession's responsibility to the public.

First let's note that our Guide says that the individual member will act in a manner to uphold the dignity of the profession and to fulfill *its* (meaning the profession's) responsibility to the public. Thus we should look to what the public expects of actuaries in general, if not each individual member.

In February of this year, I wrote to each Board member of the American Academy of Actuaries to ask if they believed our responsibility to the public was clear, and if not, what actions should be taken to clarify this responsibility. Let me report that very few of the replies seemed very concerned with this question, which I guess makes me a definite minority. But one very thoughtful respondent defined three class of publics, as follows:

"The most obvious public is his immediate employer or client, usually an

(Continued on page 6)

To All Our Readers,
A Happy New Year!
The Editors

BOOK-OF-THE-MONTH?

Robert B. Mitchell, *From Actuaribus to Actuary*, Society of Actuaries, 1974, pp. 71.

by Davis W. Gregg, CLU

The 25th Anniversary Committee of the Society of Actuaries acted wisely in their selection of the distinguished journalist, Robert B. Mitchell, to prepare a popular history of the actuarial profession. He perceived his job as authoring a volume for nonactuaries who may be interested in knowing what an actuary is, has been, and will be in the future. He has succeeded. No one need ever again think that an actuary is "where they bury dead actors," as did one of Mitchell's survey respondents!

This volume should be read by actuaries. They will be charmed by its style and informed by its content.

It should be read by nonactuaries. In addition to the pleasures of style and content of this short history, they will discover a vocation where the need for professionals "will continue to exceed the supply beyond the life expectancy of anyone now living." And, by George, from reading the book, I believe he is right in what otherwise might have seemed an exaggerated prediction!

But what about *Actuaribus*? Is he some character from Greek mythology who discovered numbers? Nope. An *Actuaribus* was a fellow (a "person") who recorded the public actions of Julius Caesar's Roman Senate. It seems that

(Continued on page 8)

THE CONFERENCE BOARD OF THE MATHEMATICAL SCIENCES

by Truman Botts

Since 1966 the Society of Actuaries has been an affiliate of the Conference Board of the Mathematical Sciences and has been represented on its Council by Professor Cecil J. Nesbitt of the University of Michigan. Many of the readers of *The Actuary* may, however, have only a vague idea of what the Conference Board is, what it does.

First of all, the Conference Board of the Mathematical Sciences is a society of societies; at present it has six constituent members and five affiliate members. Its constituent members are the American Mathematical Society, the Association for Symbolic Logic, the Institute of Mathematical Statistics, the Mathematical Association of America, the Society for Industrial and Applied Mathematics, and the National Council of Teachers of Mathematics. In addition to the Society of Actuaries, its affiliate members include the American Statistical Association, the Association for Computing Machinery, the Operations Research Society of America, and The Institute of Management Sciences. In general the affiliate-member societies have only partly mathematical interests or have grown up around particular areas of application.

CBMS has two major purposes, the first of which is to provide a two-way channel of communication between the professional mathematical community represented by its member societies and relevant Government and other organizations on the Washington scene. In part this communication is accomplished through direct contacts with agencies of the Federal Government and through representation of CBMS on such groups as the Scientific Manpower Commission,

(Continued on page 7)

The Actuary

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EDITORIAL

THOSE fortunate enough to attend the 25th Anniversary Annual Meeting of the Society might find it interesting to compare the expectations aroused by the Program published before the meeting with the realities of the meeting. The terrifying size, extent and detail of the meeting which the booklet suggested may well have induced a fear of being overwhelmed. Nobody could attend all the meetings and therefore the appraisal of the meeting had to be composed of varying opinions derived from various sources. There seemed to be a consensus that this was a successful meeting and this is a tribute to the Program Committee who chose topics and speakers well.

But there was more to the meeting than a series of concurrent sessions, workshops, teaching sessions, etc. For this was the 25th Anniversary of the Society and this imparted an air to the proceedings that is not found in the regular annual meetings. This nebulous aura is not something that can be recorded in the pages of *Transactions* but it existed nevertheless and contributed to the success of the meeting. A record attendance and the presence of guests from far and near and from within and without the profession undoubtedly enhanced the occasion. There were so many memorable events that even the most capricious memory might be overtaxed to recall more than a few of them. Elsewhere there will be a record of this meeting — the business sessions and the social events and perhaps the historian will record that for the first time a Dixieland band (and a good one) enlivened the reception and that a replay of part of the New Orleans Mardi Gras delighted the banquet audience. All of this and more derived from the excellent arrangements made by the 25th Anniversary Committee under the Chairmanship of Mort Miller.

According to the Program Foreword the unifying theme of the meeting was "Professions and Professionalism." In the last issue we reported on the Exhibit showing Highlights of Actuarial History on the North American continent. This Exhibit, it seemed to us, bridged the past and the present and illumined the theme. At the meeting the profession was quite properly looking to the future but there is some comfort and even inspiration at looking at where we have been and in recognizing the achievements of the early practitioners in the actuarial profession.

We hope that the actuarial clubs and other interested organizations throughout North America will take advantage of the offer to arrange for the Exhibit being displayed at their meetings. It might even be possible to display the Exhibit at the Society meetings over the next few years. The members of the Society, unavoidably absent from New Orleans can capture some of the flavor of the meeting from the published reports and we hope from seeing the Exhibit with its excellent Catalog.

The Exhibit should remind us that actuarial history is still being made and along with those others who were in New Orleans we salute Mort Miller and his Committee for a memorable job well done — for the creation of another Highlight of Actuarial History!

A.C.W.

LETTERS

Question and Answer

Sir:

A number of guide lines, ambiguous and other, are available to John A. Stedman in answer to his request in the October issue for interpretation of the Standard Valuation and Nonforfeiture Laws.

Assuming the schedule of premiums and benefits is known and the plan determined, then the Standard Nonforfeiture Law is relatively clear. For valuation a 1948 NAIC "Proceedings" committee report states that the methods set forth by Menge in the *Record* Volume XXV are acceptable although not unique. Menge's procedures can be used with confidence.

The problem is then of plan definition rather than procedures. Concerning Mr. Stedman's example of a juvenile term changing to a whole life plan, this was covered in the 1946 meeting of the Hooker Committee which provided that if the change to the whole life plan is at the company's published rate at the attained age of conversion, then the policy may be valued as two separate plans, a term and a whole life, otherwise it should be valued as one continuous plan, that is a life plan from issue with changing premiums.

Other situations seem to have been left undecided deliberately. This leaves today's actuary at the mercy of any Department which has its own valuation definition of plan. An adverse decision can be a source of embarrassment to the actuary, if not discredit as to his competence, potential embarrassment to shareholders, and even possible capital impairment of the company. A wide range of reserve amounts can be developed by varying plan assumptions.

A formal interpretation would seem to be a most urgent need in the profession. It is a most disturbing thought when signing an annual statement, to know that one is certifying to reserves computed in accordance with the Standard Valuation Law when there is no authority other than popular custom to justify the procedures used. The situation indeed dangerous to all members of the Society who make such certifications, and deserves consideration each time a certification is affixed.

(Continued on page 3)

Letters

(Continued from page 2)

Could the Society assist its members in laying down a foundation of actuarial principles, or the NAIC standardize state valuation procedures?

John T. Gilchrist

* * * *

Sir:

The letter by Mr. Stedman in *The Actuary* for October, 1974 touches on a question to which I can get no valid answer.

The Standard Valuation Law states that where a policy is other than a level premium level benefit life plan, the net premium shall also be a "fixed percentage" of the respective gross premium. What is the justification for this provision?

Let us start with an actual case of a double protection level premium policy for an initial amount of \$1,000 decreasing to \$500 at age 60. If the company later adds an extra loading to the first premium only, the reserve required under the Standard Valuation Law increases by about half the extra loading the first year. The increase runs off with duration. If, however, the extra loading is added to *all* the premiums, the required reserve under the standard valuation law would not change. Therefore, it cannot be said that the presence of the extra loading creates the additional reserve, because extra loadings all the way down the line create no additional reserve over the basic double protection level premium plan's reserve.

Consider for example a garden variety \$1,000 Whole Life policy. If a company uses different non-level patterns of gross premiums for the same \$1,000 level death benefit, the required reserves will all be different, yet the death benefit is the same in all cases. Basically, the purpose of the policy reserve is to support the death benefit; if there is no variation in the death benefit, why should there be a variation in the reserve just because loading patterns, and the resulting gross premiums, have different patterns from level?

The argument that the Standard Valuation Law is established to limit the amount of expense that can be "borrowed" from the first net level premium does not apply here, because these expense loadings are not borrowed from the net level premium; they are direct extra charges to the insured added to the net premium.

What I seek is some discussion of why the "fixed percentage" of the respective gross premiums is necessary or justified as a logical requirement, or a financial requirement, or an economic requirement, or a mathematical requirement in the Standard Valuation Law, for non-level premium policies.

John S. Ripandelli

* * * *

Sir:

Mr. Stedman has raised a question concerning the valuation and nonforfeiture laws. They require that the modified and adjusted premiums shall be a fixed percentage of the respective gross premiums. Mr. Stedman asks when this principle applies and when it does not? As an example of a "clear cut" case, he mentions a YRT policy to which the rule does not (apparently) apply.

Unfortunately, I don't believe that the situation is as "clear cut" as might be desired, especially when consideration of the nature and purpose of deficiency reserves is added to the picture. One possible attitude could result from viewing the purpose of the "percentage of gross premium" rule as a recognition of acquisition expense not considered in the calculation of full net level premium reserves. Hence, these last, (assuming they are clearly defined for YRT!) may always be considered as meeting minimum reserve standards. If reserves less than full net level are held, they must be at least equal to the minimum reserves computed as described in the valuation law. Similar reasoning would apply to cash values less than full net level and hence the percentage of gross premium requirement does not come into play.

For the specific example of a low (term to 25) premium to 25 and an attained age whole life premium thereafter, I can only offer the same logic suggesting either full net level reserves or application of the percentage to gross requirement.

I shall be interested to see what other comments are generated by Mr. Stedman's letter.

T. C. Sutton

* * * *

Sir:

The question asked by Mr. John A. Stedman in the October, 1974 issue is one for which I evolved certain criteria.

There is no certainty that my approach is correct.

Both the form of the policy contract and the premium rates must support the position that the contract is severable, otherwise it is all one contract.

A contract written as One Year Term, renewable at the end of each year, at the gross premium rates then in effect for new contracts at the attained age, is obviously a succession of one-year contracts. I do not think that this position is spoiled if the gross premium rates are guaranteed in the contract, provided that they are applicable to One Year Term policies at the attained age. However, a contract written as Term to 65 with increasing premiums, even although those premiums are exactly the same as in the preceding sentence, is all one contract and it has to be tested under the valuation and non-forfeiture laws.

It would be an obvious subterfuge to write a contract as a succession of Term policies, at premium rates which remain level throughout, and happen to be equal to the Ordinary Life premium at the original age. It would be equally a subterfuge if the premiums increase with age, but are not in line with a policy issued at the attained age.

Coming then to Mr. Stedman's example, I would ask whether he would write the policy as one contract, or as a Term policy to age 25 converting to Ordinary Life. I see that the Ordinary Life portion is to have a proper premium for age 25.

J. Ross Gray

* * * *

From Actuarius to Actuary

Sir:

Young persons who might think it could be great

To help an actuary actuate,
And might just do that if they only knew
Precisely what the fellows really do—
No longer need they falter to begin:
Their doubts, at last, can vanish, for
within

The silver book, by Mitchell, all is told:
It would have been more fitly bound in
gold!

R. Graham Deas

(Continued on page 4)

Letters

(Continued from page 3)

Actuarial Advisory Committee

Sir:

Section 15 of the Railroad Retirement Act provides for the appointment of an Actuarial Advisory Committee to review the actuarial work of the Railroad Retirement Board. One of these actuaries is appointed from recommendations of railroad labor, one from recommendations of railroad management, and one, appointed by the Secretary of Treasury, represents the public.

For your information, the following members of the Society of Actuaries have been recently appointed to these positions: (1) Robert J. Myers, represents railroad labor, (2) Thomas H. Jolls, Jr., represents railroad management, and (3) Cedric W. Kroll, represents the public. These individuals are all Members of the American Academy of Actuaries.

You might also be interested in the following which is contained in Section 15 (f) of the Railroad Retirement Act of 1974, Public Law 93-445:

"The actuaries so selected shall hold membership in the American Academy of Actuaries and shall be qualified in the evaluation of pension plans: *Provided, however*, that these requirements shall not apply to any actuary who served as a member of the Committee prior to Jan. 1, 1975."

James L. Cowen, Chairman
Railroad Retirement Board

* * * *

On Being An Actuarial Function

Sir:

In his article, in the October issue Ray Peterson says, ". . . when one gets a contract to receive a stipulated periodical sum so long as one shall live after retirement, the actuarial function *a^x* comes alive — a very personal and living thing — *you become the actuarial function!*"

It should be of particular interest to his many friends and former colleagues to learn not that he has become an "actuarial function," but that he has *come alive* — after retirement, prompting the logical question as to why it took him so long! Perhaps even he, during his working years, experienced difficulty in determining whether a particular actuary was alive or not.

He goes on to say, ". . . you are paid for merely existing . . ." It's not clear at this point if his reference is to actuaries *before* retirement, or *after* retirement; a strong case can be made in either event.

Over the years it has been my privilege, as toastmaster, to preside over numerous actuarial functions but, while Mr. Peterson was usually in attendance, I cannot regard myself as ever having "presided" over that particular "actuarial function." In fact, having worked for him in a certain well known insurance institution from 1930 through 1935, it would be more appropriate to say that *he presided over me* for five years. Accordingly, I'd say I deserve even more credit than he for just surviving, or existing, to date!

Mr. Peterson is so correct in acknowledging that, following retirement ". . . your *mere existence* is a financial asset that you possess." However, he fails to balance the books by explaining that what may be an *asset to him*, is a *liability* to his former employer; so what's new about that?

I trust that the "function" will continue "enjoying a deep breath of fresh morning air" for many, many years to come.

Milton J. Goldberg

* * * *

Elections

Sir:

Many of us are becoming concerned that the election process of the Society is more democratic in form than in substance and ought to be looked into again. What concerns us is that our elections have no issues, and the candidates' views on the problems of the profession are totally unknown to most of us. The presentation of papers and membership on Society committees are not, in my view at least, sufficient indicators of whether the candidate for an office in the Society would adequately represent the views of those who would vote for him.

The committee in charge of conducting elections is rather close-mouthed about the number of people who bother to vote or to suggest candidates. It would be interesting to have the committee open up and reveal publicly the full results of our elections (e. g., number of votes for each candidate). I fear fewer and fewer members now bother to vote because they figure "what's the use?"

It seems to be a function of the electoral process, and a most proper one too, to cause issues to be identified and solutions or courses of action proposed and debated before the electorate. Practically all nominated actuaries are "nice" and could be elected as "Mr. Nice." But when elections turn into mere popularity or name-recognition contests, it is time to take another look. Along with some colleagues with whom I have discussed this subject, I think it is time for another look at our electoral process.

Claude Y. Paquin

* * * *

Pension Index

Sir:

Another survey purporting to compare the actuarial assumptions used in valuing different pension plans has been published, this time by Institutional Investor Magazine in their continuing feature called "Pensionforum." Once again, the survey concentrated on investment return assumptions, but did also record salary projections although no correlation between the two was attempted. I recognize that the only real comparison between different sets of assumptions is to compare the results of complete valuations using the same data base. However, the profession must come up with some generally accepted simplified measuring device or continue to be plagued by comparisons focusing on the actuarial interest assumptions and expected investment return.

I would like to suggest that this subject be given consideration by the appropriate committee of the Society, and I would also like to outline a basis which would serve as a useful starting point.

First of all, it seems clear that the wide variety of actuarial methods in existence cannot be fitted into any simple index. My 'Entry Age Level' may be individually calculated, with pre-retirement Death and Disability benefits funded by term cost. Your 'Entry Age Level' may include all benefits and be determined in aggregate with the Normal Cost percentage developed from a calculation for hypothetical new entrants. But, this aspect does not seem too important to me since the different methods are only devices to determine the incidence of funding, and should not have too much bearing on the actuarial assumptions.

(Continued on page 5)

Letters

(Continued from page 4)

The next problem area is the non-economic assumptions such as mortality, disability, turnover, dependency status, remarriage, retirement age, and expense loadings, to mention the more common ones. My solution to differences in this area is somewhat cavalier. I think they should be ignored since presumably each actuary is using assumptions which reflect the expected experience of the participants in the plan. Now I will be the first to admit that you sometimes have to wonder whether the actuary has ever looked at actual experience. Do the Railroad Retirement statistics really have such wide general application? However, ERISA charges those of us who enroll with the responsibility of using assumptions expected to reflect experience so that some of the artificiality in this area will tend to vanish.

Having solved the really difficult problems by the process of ignoring them, I would now like to propose a Conservatism of Actuarial Packages Index (CAPI). This Index would be a function of three items, the interest rate used as a discount for future investment return, and the salary scale used to project benefits, and a comparison of annuity factors at retirement age. The base factor for a set of assumptions would be determined by the following formula, where y is the Normal Retirement Age:

$$100 \times \frac{S_y}{S_{y-20}} \times \sqrt{20} \times \frac{a_{\overline{20}|i}^{(12)*}}{a_{\overline{20}|j}^{(12)**}}$$

*Post-retirement interest assumption
**6%

This calculation would use "male" assumptions if sex differentiated tables are used since I know of nobody using realistic assumptions of future salary progressions for females, and males still dominate the employment statistics after age 35.

An index of 100 would result for an assumption package using a 6% salary scale and a 6% investment return expectation. An old friend of simpler days long past, Unit Credit at 3½% with no salary projection, would develop an Index value of 60. A typical insurance company Deposit Administration assumption package of 5% interest with a 3% salary projection would develop an Index value of 73. Finally, the type of

realistic assumption package we will probably all move toward, say 7% interest with a 6% salary projection, will generate an Index value of 78. All these values are for a Normal Retirement Age of 65.

This Index does not purport to measure the relative cost of a plan using different assumptions, and does need relatively careful analysis, especially if an automatic increment applies after retirement. For instance, if a 2% per year benefit increase after retirement is taken into account by reducing the interest assumption by 2% after retirement, then the correct denominator would be an annuity function at 4%. Using a 20 year discount period prior to retirement can also be challenged, but the liability for accrued benefits does tend to be concentrated in the later years.

The Index is also probably most useful for plans with a benefit formula which is a function of salary, and probably most valid for a Final Pay type formula. Dollar per month plans do get updated periodically, but it is virtually impossible to incorporate anticipation of these increases into a valuation.

I would again like to urge the Society to sponsor such an Index, and to sponsor a meaningful survey of private pension plan assumptions and methods, so that the over-simplified and much publicized surveys put out by the investment industry can be effectively countered. And, yes, I am a little tired of being viewed as a wild man when using 8% interest with a 6.5% salary scale, especially when criticism comes from a smugly "conservative" 6%/3% package!

Alexander Grieve

* * * *

Closing the GAAP's?

Sir:

As investment analysts, we found the review of LOMA's "Procedures for Adjusting Life Insurance Company Statutory Financial Statements to GAAP Basis" of particular interest. As most actuaries should be aware by now, GAAP has created a great deal of uncertainty among investors, contrary to its stated intent.

One of the critical problems, as LOMA's study documents, is the enormous latitude the actuary and accountant have in formulating GAAP assumptions with only a minimal amount of disclosure to investors required as to

what those assumptions are. It is virtually an impossible task for the analyst to make sound qualitative comparisons of GAAP adjustments when he is generally confronted with such footnotes as "Withdrawal assumptions are based on company experience for the appropriate type of policy." The absurdity of such a statement being permitted to pass for disclosure is obvious.

Consider the problem of the analyst who knows a company's lapse rates are increasing — as many now are — and understands that GAAP earnings are much more sensitive to such lapse experience than are the earnings derived by the methods of the Association of Insurance and Financial Analysts. The analyst has no data with which to attempt a quantification of the possible effect on GAAP earnings of this lapse experience.

GAAP was adopted to an important degree in response to pressure from security analysts. We were lax, however, in attempting to obtain sufficient disclosure of assumptions to enable us to make meaningful analysis of the figures. The actuarial profession appears to be taking optimal advantage of our laxity by making minimal disclosure.

Companies that publish detailed statistical supplements which are useful to analysts in interpreting their GAAP figures and which are meaningful in projecting earnings are likely to evoke a warm response on Wall Street. But, the supplements we have seen thus far are not adequate for these purposes. How can we calculate earnings due to mortality profits, to investments, or loading with the data now made available?

GAAP is a step in the right direction but until the industry decides to make it possible for analysts to use the figures intelligently, life stocks are likely to continue to be widely regarded as an esoteric group best left to esoteric people.

Carl Wright*
Jeff Liebmann

*Mr. Wright is an insurance stock analyst with a New York Stock Exchange firm.

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The Soul of Wit

Sir:

I have looked up the reference D133 TSA XXV — what a pity the speaker wasn't Ed Lew!

William A. White

Actuarial Responsibility

(Continued from page 1)

insurance company or a pension plan, and in some cases a regulatory body. Various regulatory agencies constitute indirect clients—state insurance departments, the SEC, and the various agencies concerned with regulation or supervision of pension plans. A third class of public might be called remote clients—participants in pension plans; policy owners, shareholders and agents of insurance companies; the investment community generally; and, even more remotely, the broad public generally.

“The responsibilities of the actuary depend to some degree on the sophistication of the client, and the question is made more complicated because in general the more remote publics are the least sophisticated and the definition and discharge of responsibilities to those publics is correspondingly more difficult. The actuary’s professional responsibilities to his immediate employer or client are fairly clear and are well defined by present guidelines. The responsibilities to indirect clients are less clear, and the responsibilities to remote clients are positively hazy.”

Thus the problem does exist, of forming some common understanding of our responsibility to the second and third classes of our public if we are to deserve to be considered a profession by the public. As one of my colleagues has asked, “I wonder if it isn’t more important what the public thinks we are than what we really are.”

What does the public think we are? Incidentally, the Society’s Public Relations Committee, under Walt Rugland’s chairmanship, has a subcommittee working hard to promote understanding of the work of the actuary, and I think we can expect some real results from their efforts.

Later, I will want to discuss the second and third classes of the public. But first, I’ll comment briefly on what our employers and clients expect of us. To various degrees, our insurance company client or employer expects the following from us:

(1) To keep him informed on “where we are (as a company) and where we are going.”

(2) To assist him in setting prices on the security program he sells that will be competitive, yet adequate to permit

the company to pay off on all of its benefit promises while meeting defined profit objectives.

(3) To advise him on his surplus requirements and other risk management reserves and techniques.

(4) To provide him with the technical support needed to meet all State, SEC and IRS reserve and financial reporting requirements.

To the extent that all of our insurance company clients are successful, the actuary deserves, but probably doesn’t get, a good deal of the credit for that success, in that he has properly predicted future requirements in his pricing and reserving.

To the extent that the company is unsuccessful, however, the actuary again deserves, but probably doesn’t always get, part of the blame. But company management does rely on the actuary to keep them fully informed on the status of the company, and the validity of the assumptions used in pricing and reserving. If you’ve heard it once, you’ve heard it a thousand times—management doesn’t want any big surprises, especially at year-end when public disclosure of the company’s financial progress is required. That’s when some of the actuary’s responsibilities to the public come into play, and we should look at that now.

What does the State Insurance Commissioner’s office expect of the company’s actuary?

In over-simplified terms, the minimum valuation laws, identified as the Guertin Legislation, were intended to assure that life companies would set enough aside out of current premiums into required reserves to be sure that the company could meet its long range promises. Guaranteed renewable and non-cancellable health policies require similar reserves. Actuaries support these laws, and insurance commissioners rely on the honest actuarial appraisal of these reserve requirements, so that reserves equal to at least these minimums will be established.

For the profession to try to avoid these minimum requirements for any specific company is simply unthinkable. Perhaps we need to go further in our responsibility as a profession to supplement the current minimum reserve requirements with a gross premium valuation. The Society of Actuaries has a committee working on this problem, and the NAIC seems interested in a full

exploration of the valuation and solvency problem. Something could come of this.

In view of the Commissioners’ desire to know whether the company meets current solvency tests and whether it will be able to meet its future obligations, the actuarial profession can be helpful, is uniquely so qualified, and probably should be looking for additional legitimate ways of protecting present and future policyholders in fulfilling its responsibility to the public.

Similarly, we have been assisting the accountants in fulfilling their interpretation of their legal requirements to the SEC that earnings of stock life insurance companies should be adjusted according to generally accepted accounting principles. The “public” being protected is the investor in life insurance stocks. Actuaries have not resisted this development, but instead our profession has responded positively, even aggressively, to make this need for public disclosure meaningful. It couldn’t be done competently without us. The Academy’s Financial Reporting Principles Committee has done an outstanding job in defining the specialized requirements for all actuaries in connection with GAAP. Perhaps our only failure has been our inability to identify the name of the professional actuary who did the work on GAAP reserves and prepaid expenses to either the SEC or to the investing public, as would seem to be required by our present *Guides*.

And, the now one-month-old law, Employees Retirement Income Security Act of 1974 has thrust the actuary fully into a position responsible to the participants for an actuarial statement and opinion on the plan’s liabilities for nonforfeitable benefits, based on his “best estimate of anticipated experience under the plan.” The law seems to go further in causing the actuary to be a “fiduciary,” and responsible for the acts of all the other fiduciaries. The Academy is working diligently to assist the Labor and Treasury Departments in drafting the regulations necessary to carry out these newly imposed actuarial responsibilities.

The Academy’s Committee on Principles and Practices in connection with Pension Plans is making progress on defining what is considered to be the role of the actuary and minimum actuarial requirements. This step is monumental, as far as I am concerned, and none too soon.

(Continued on page 7)

Actuarial Responsibility

(Continued from page 6)

Finally, I read with interest that Congress has appointed a Committee of Actuaries and Economists to review the status of our Social Security plan.

Isn't it obvious that our unique abilities are needed now, and we are being forced to recognize our responsibility to the people who are counting on the future benefits promised by our clients and employers? I say forced, meaning that outside forces are calling on us to disclose our findings to those whose future will be affected by the ability of our plans and companies to perform.

Perhaps it is time for our profession to become a leader in initiating these disclosure requirements, instead of being merely a willing participant. I'm proud of what our profession has done, and is doing, to protect plan participants and company policyholders. But can we, and should we be doing more?

Now, to get political, I have recommended to the Academy Board that The Joint Committee on Professional Conduct—which carries the responsibility to coordinate, or initiate consideration of Guides, Opinions and other matters relating to professional conduct, (and does not handle disciplinary problems)—more clearly define our profession's collective responsibility to the public, so that we will follow the direction set by our first President, Henry Rood, when he stated that the profession must "revise its posture from that of a private, inward-looking, narrowly focused group of experts to that of a profession, recognized by and accountable to the public."

We have made big strides, but perhaps it's now time to start running. Perhaps we are, if the activity and momentum of our officers, committee chairmen and committee members are an indication. □

Conference Board

(Continued from page 1)

the Committee of Scientific Society Presidents, the American Association for the Advancement of Science, the American Council on Education and the Division of Mathematical Sciences of the National Research Council.

A principal vehicle for communication with its professional constituency is the Conference Board's *Newsletter*, publish-

ed in four sixteen-page issues per year. The *Newsletter* features Washington news of interest to the broad mathematical community, notices and reports regarding national and international mathematical events, information and data on fellowships and other opportunities in mathematical research and education, and editorials and position papers on issues of concern to professionals in the mathematical sciences.

The other major purpose of CBMS is to serve as a forum and focus for issues and projects of concern to any or all of its member societies.

This role is implemented through the semi-annual council meetings and through a public panel discussion on some Conference sponsored subject at the joint winter mathematics meeting of A.M.S., M.A.A. and other member societies. For example, at the January 1975 Joint Meeting in Washington, D.C. the public panel discussion will be *Wide Ranging Applications of Statistics*. This is being arranged and moderated by Dr. Joan R. Rosenblatt, Chief of the Statistical Engineering Laboratory at the National Bureau of Standards.

Editorials and position papers and reports that appear from time to time in the *CBMS Newsletter* also contribute to the forum role. CBMS projects of broad interest have included, among others, the eleven or twelve NSF-CBMS Regional Conferences that are held each year together with the monographs published by AMS and by SIAM that result from these Conferences; a major study of information-service needs of the mathematical sciences; a series of surveys of undergraduate and graduate mathematical education and a survey in progress of school-level mathematical education; an earlier study of buildings and facilities for the mathematical sciences; and a project (just getting under way) on public understanding of mathematics and its applications.

The cost of the *Newsletter* is just \$4.00 per year for individuals belonging to one or more member societies of the CBMS and \$8.00 per year for institutions and other individuals. Subscriptions should be sent to CBMS, 2100 Pennsylvania Ave. N.W., #834, Washington, D.C. 20037.

Editor's Note: Dr. Botts is the Executive Director of The Conference Board of the Mathematical Sciences. □

Death

Louis Robert

Social Security Notes

Railroad Employees with Less Than 10 years of Service and Their Chances of Receiving Railroad Retirement Benefits, Actuarial Note No. 3-74, October 1974, U.S. Railroad Retirement Board, Chicago, Illinois, pp. 6.

This note presents probabilities that railroad employees with less than 10 years of railroad service will remain in railroad service until various future points in time. Railroad employees have a 10-years of service requirement for receipt of any retirement or survivor benefit. Data for this note were obtained from separation rates for calendar years 1968-71, which were used in the Twelfth Valuation of the Railroad Retirement Account.

For free copies write to the U.S. Railroad Retirement Board, 844 Rush Street, Chicago, Illinois 60611.

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Francisco Bayo and Steven F. McKay, U.S. Population Projections for OASDI Cost Estimates, Actuarial Study No. 72, Social Security Administration, Baltimore, Maryland 21235, July 1974, pp. 33.

This study presents the population projections for the United States which are being used by the Social Security Administration in estimating the cost of the social security program. Detailed discussions are given of the mortality, fertility and migration assumptions.

For free copies write to the Office of the Actuary, Social Security Administration, 6401 Security Boulevard, Baltimore, Maryland 21235. □

COMPETITION EDITOR

UNDERWRITING UP-TO-DATE

The following letter appeared in a recent issue of the *Journal of the American Medical Association* and we bring it to the attention of the E & E Committee to see whether they would like to further restructure the Fellowship examinations in Selection of Risks. Dr. Wilson cheerfully gave us permission to publish the letter and carefully explained that F.F.A. in his case did not denote an actuarial fellowship in a (*distinguished-Ed.*) actuarial body but a Fellowship in the Faculty of Anesthetists, Royal College of Surgeons. This Faculty has a great deal in common with actuaries. They both put people to sleep, but the actuaries do not need to use any anesthetics.

* * * *

To the Editor: Life assurance companies need a reliable yet simple way to estimate life expectancy. Many palmists believe that the length of the life line can be used to predict life expectancy.¹

We tested this idea in 51 cadavers of known age at death, using a map measure to determine the length of the life line in each hand. The heelcrown length measurement enabled correction for differences in body size. Correlations between age and other variables (Table) were obtained through a matrix program (BMD 02D) using a CDC 6400 digital computer.

The critical value of correlation coefficient for significance ($P = .05$) is .27 ($N = 51$). Within the Table, no value exceeded the critical value, and therefore no correlation was significant.

The life line was interrupted in one hand in six subjects; in these, the total length of that line was used in the calculations. Fortunately, the level of significance of the correlations was so low that it would have made no difference whether the six broken lines were included or not. These subjects died at the ages of 19, 40, 50, 75 and 82 years. Thus, a broken life line is not related to age at death, and it is our personal expectation that it correlates with nothing whatsoever.

This study is of the greatest importance because it is one of the few instances in which soothsaying has been, in sooth, objectively tested. We happily conclude that palmistry may be used to predict life expectancy but, when it is so used, it is blessedly free of scientific worthiness or usefulness to life insurers.

M. E. Wilson, MB ChB, PhD FFA, RCS
L. E. Mather, PhD

1. Jones FW: *The Principles of Anatomy as Seen in the Hand*,
ed 2. Baltimore, Williams & Wilkins, Co. 1942.

Lack of Correlation Between Length of Life Line and Age at Death*							
	Age, yr	Length of Life Line, cm					Mean Height
		Left	Left Height	Right	Right Height	Right and Left	
Mean	65.2	9.2	0.056	9.4	0.058	9.3	0.057
SD	±16.7	±1.3	±0.004	±1.9	±0.012	±1.4	±0.009
Correlation coefficient with age	1.000	.056	.018	.021	.010	.040	.015

*This Table can be safely ignored by palmists.

new company. So, the first "actuary" with a life insurance company started at the top. This seems appropriate enough in view of distinguished actuaries who have served as company presidents down through history. (Or, would this be better put "actuaries who have served as distinguished company presidents"?) At any rate, just to confuse the matter, none of the Equitable's first four actuaries (presidents) could do actuarial work; they hired outside mathematicians!

The development of actuarial science as we know it today is traced through brief descriptions of the pioneering contributions of strong and meaningful personalities of England, Canada, and the United States who placed the foundation stones of the profession. From Dodson, to Mores, to Price, to Morgan, to Shoemaker, to Baker, to Gill, to Fackler, to Homans, to Wright, tells the story of the first century.

The century that has followed is less the story of individuals and more that of men joining together in organizations to build their profession. The societies are established, the educational programs are set, the research work is begun, the literature is published, and the ethical standards are formed. Here is a clear case study of how a "profession" is built; not by self-serving declaration by men that they are "professionals" but by the slow and sometimes tortuous process of practitioners qualifying themselves to serve distinctive public needs.

Yes, the actuarial profession is coming of age. Public recognition grows. Government recognition is coming with a rush. An actuary is quoted as describing the U.S. 1974 pension reform legislation as "The Actuaries' Full Employment Act of 1974." This light-hearted humor, found often in Mitchell's short history, leads me to my only real concern about his book. He has not repeated a single "actuary joke" in the entire volume! Is it possible that this objective journalist accepted a commission with a clause that forbade him to repeat any of these hoary stories that are told to actuaries on themselves more than by others? I'll always wonder.

Dr. Gregg is President of the American College of Life Underwriters. □

Actuarial Meetings

- Jan. 9, Baltimore Actuaries Club
Jan. 20, Chicago Actuarial Club
Feb. 13, Baltimore Actuaries Club

PLEASE get the schedules for your 1975 meeting dates to us as soon as possible. We would appreciate having them at least 2 months prior to meeting dates. □

Book-of-the-Month?

(Continued from page 1)

an eccentric Latin scholar who was the principal promoter of the Equitable Life Assurance Society in England 200 years ago decided to use the Anglicized version of *Actuarius* as a distinctive title of the chief administrative officer of his