The Actuary

The Newsletter of the Society of Actuaries

VOL. 21, No. 5 May, 1987

REORGANIZATION REVISITED?

Ten individual actuaries made an important and interesting presentation before the March meeting of the Council of Presidents. Their memorandum, entitled "Greater Unification of the Profession in the United States", suggests that the unification efforts of the mid-1970's be revived. These ten propose as a vehicle for looking into this matter a 12-member Task Force, made up of two Board-level individuals appointed by each of the six North American actuarial organizations, with the COP appointing one of the 12 as Task Force Chairperson, and becoming the body to which the Task Force reports.

The ringleaders in this new effort are Allan Affleck, currently a Vice-President of the Society and a member of the Academy Board, and Harold Ingraham, the current Society President. The other eight are Bob Astley, Norm Crowder, John Fibiger, Ardian Gill, Curtis Hamilton, David Hartman, Jim MacGinnitie, and Jack Turnquist, all of whom are or have been leaders in some segment of the profession. The memorandum includes an important proviso: "While some of us occupy formal positions within the leadership of

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Special Supplement Enclosed

Enclosed with this issue of *The Actuary* is a Special Supplement. It is a report from the Committee on Planning on the highlights of results of the *Actuarial Profile Survey.* The supplement also includes commentaries by several members of the Committee on Planning and by a distinguished observer not involved with formal Society governance.

BOOK REVIEW

Dick London, *Graduation: The Revision of Estimates,* pp. 183, published by ACTEX Publications, Abington, CT, 1985.

Reviewed by Robert M. Beuerlein and William B. Frye

London's *Graduation: The Revision of Estimates,* supersedes the graduation monograph of Morton D. Miller and T.N.E. Greville's Study Note on the Society of Actuaries' syllabus. For those whose only exposure to graduation of data came from Miller and the Study Notes, there is much in Mr. London's book which is familiar. There are also several new topics and different presentations of old topics. The text covers graduation using moving-weighted-average formulas, Whittaker's method, the Bayesian process, parametric functions, and two-dimensional techniques. Additionally, statistical considerations and smooth-junction interpolation are covered.

The most significant change from prior texts is the emphasis on the Bayesian process in graduation. Bayesian graduation involves using a multivariate version of Bayes' Theorem for conditional probabilities and requires a formal expression of "prior opinion" regarding the "true values" being estimated. The prior opinion takes the form of a probability distribution for the true values. Whittaker's method is shown to be a formal application of Bayesian statistics to graduation. The Kimeldorf-Jones method is also examined in detail.

While Bayesian graduation has not yet achieved great use in practice, its inclusion in the text offers an interesting addition to the traditional graduation

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NON-FORFEITURE COMMITTEE IS FORMED

The Unruh Committee report of 1975 was a comprehensive review of the actuarial principles and practical problems associated with non-forfeiture requirements. That Committee had been formed in recognition of the fact that more than 30 years had elapsed since the last such review.

In an interesting example of the quickening pace of change, the need for another comprehensive review has arisen just 12 years later. Many of the principles underlying the current non-forfeiture legislation are difficult to adapt to the wide range of newer products. There is a need for more consistency in the application of non-forfeiture principles to newer products, and the current business and economic scene is quite different than when the Unruh Committee did its work.

The NAIC Life and Health Actuarial Task Force and its Standing Technical Advisory Committee have asked the Society to form a new committee to review the underlying principles elicited by the Unruh Committee, and to consider the appropriate concepts of equity and solvency in light of current and anticipated conditions.

Such a Committee has now been formed, with the target date (for their report) 1988. The members of the new Committee on Non-Forfeiture Principles are:

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Published monthly (except July and August) by the SOCIETY OF ACTUARIES, 500 Park Boulevard, Itasca, IL 60143. Harold G. Ingraham, Jr., President, Richard V. Minck, Secretary, Michael J. Cowell, Treasurer, Anthony T. Spano, Director of Publications. Non-member subscriptions: students, $5.50; others, $6.50.

The Society is not responsible for statements made or opinions expressed herein. All contributions are subject to editing. Submissions must be signed.

REPLACEMENT

A long-continuing problem to which life insurance actuaries have given too little attention is that of the replacement of one life insurance policy by another. A recent LIMRA release, quoting some of the remarks at a LIMRA Agency Management Conference, suggests that the industry has been rife with replacements for more than half a decade, and that new products have become vehicles for replacement rather than generators of legitimate new sales.

From the individual product actuary's viewpoint, the replacement matter is indeed difficult. He or she cannot avoid the widely held (and probably valid) presumption that a life-policy replacement is *usually* against the best interests of the policyholder; but demonstration of this phenomenon is indeed difficult. That the presumption is a by-product of the long-established system by which life insurance agents are compensated makes the matter no easier. Most replacements result in another first-year commission; insurance companies pass on expenses, including commissions, to policyholders; ergo, all other things being equal, the gain to the replacing agent is at the expense of the insurance buyer.

Replacements are of at least two types, one under better control than the other. Where an agent is suggesting "within the company" replacement, conversion and commission practices to prevent policyholder harm can be devised. Most companies have developed procedures that adequately handle these not-so-very-common situations.

Much more troublesome is the replacement of an existing policy in one company by an agent or broker representing another, based on some argument that hides the commission matter. The replacing company may or may not encourage the replacement effort, but the fact remains that replacement efforts are often successful, and that raiding of business is very common. Replacement of cash value insurance by term or its equivalent has long been an approach of some segment of the industry, though replacement by universal life or its variants may account for more of what is going on today.

Much of the difficulty surrounding this problem arises from the exceptions to the general rule. Not *all* replacements are evil; there are policies that in the owner's interests *should* be replaced. A new policy may be *less* expensive, even though a new commission must be absorbed, if the old policy is otherwise high cost. The old policy may no longer fit the policyholder's circumstances, and may not be sufficiently flexible to be changed. The original company (or agent) may be providing such poor service that the policyowner may be *willing* to pay more. One of the technical problems, then, is to devise some approach to the separation of the "good" replacements from the "bad". This one will not be easy.

Actuaries are thought by many to be the problem solvers of the insurance industry. Although the replacement problem is not one to which typical actuarial techniques can be readily applied, it is an *important* problem, and certainly within the general scope of the actuary's expertise. We suggest that actuaries, and not only supervisory actuaries, take an active role. If home office product development actuaries don't apply themselves to this matter, who will? *C.L.T.*

WORKDAY PROBLEM

By Bob Likins

Your Agency Department has recently learned about a new hot selling product that the ABC Life Insurance Company has introduced to its field force. You have been asked, as product development actuary, to develop a similar, competitive product.

Later you report with a package of preliminary pricing results and product descriptive information. Your product is competitive. Your sales people want to move ahead with the product's development.

You ask how much of the new product *will* be sold. The marketing staff would like to know how much they *need* to sell in order to justify the development time and cost. They indicate that sales people are better able to respond to a sales target.

The problem: Who should answer the question first, marketing's sales estimate or your sales requirement to justify the effort?

Here's one response; what do you think?

These two efforts by actuarial and marketing should be done independently.

Implicitly or explicitly the actuary must build development costs into pricing. Therefore, given a period of time for amortizing development costs, the actuary can calculate the needed volume of sales that justifies the product's development. This assumes there aren't even more important uses for the development staff's time. Providing this information before the marketing staff has had a chance to independently review the saleability of the product could bias their sales estimate.

With a description of the product's pricing and features, the marketing staff can develop an estimate of additional sales (not cut-in sales). The estimate must be realistic, but even with the best efforts, it's a guess. □

DEATHS

John C. Archibald	FSA 1933
George V. Brady	FSA 1925
Arthur F. Parry	FSA 1947

NEW YORK'S REGULATION 126 — 13 COMMONLY ASKED QUESTIONS

Donna R. Claire

New York's Regulation 126 effectively requires all companies doing business in New York to file an actuarial opinion and memorandum on their annuity and GIC business. A number of questions have arisen in connection with this regulation. This article attempts to answer some of the most commonly asked.

1. Why was this regulation written?

For a number of years there was concern within the New York Insurance Department about interest sensitive business. Starting in 1982, New York allowed companies to use the highest rates under the dynamic valuation law for annuity and GIC business, but only if an actuarial opinion and supporting memorandum showing asset/liability management were provided. The Department wanted all companies to file these documents, and some companies did; but there was some concern about the quality.

Legislation in 1985 requires all companies doing business in New York (and all authorized reinsurers) to prove asset/liability management via actuarial documents, *or* to hold stronger reserves. I chaired an industry advisory subgroup proposing regulations on actuarial opinions and memoranda. Another industry group proposed minimum reserve standards. The Department accepted most, but not all, of the industry's recommendations.

2. I have neither the time nor the tolerance to read 92 pages plus appendices. What are the highlights?

Annuity and GIC business must be shown to have adequate reserves by testing that the assets would be sufficient under a variety of interest rate scenarios. The regulation details the items to be considered. There should be consistency among the assumptions; assumed lapse rates on the liability side and pre-payment rates on the asset side should be related to the interest rate scenario under test. Other risks, the default risk on assets and the mortality risk on annuities, are also to be considered.

Minimum reserve formulas are given. The actuary must set up statutory reserves equal to or greater than those he/she considers adequate, given the results of the testing.

3. Must I test all annuity reserves?

There is a grade-in period, but by 1988 all annuity business issued after 1982 with substantial guarantees is subject to the testing. Classes of business invested separately should be tested separately, but the results can be aggregated to determine reserve sufficiency. Future action may bring the pre-1982 business under testing.

4. Who signs the actuarial opinion? What is a "Qualified" actuary?

The concept of Valuation Actuary is still evolving, so the person to sign Opinions in New York is called by a different name — Qualified Actuary. He or she must be a MAAA, must meet the Academy definition of a Valuation Actuary, must be appointed by the insurer's Board to be the Qualified Actuary, and the New York Department must be notified as to the appointment.

5. HELP!! I don't have the capability of testing. What should I do?

There are three alternatives. One is to do no testing, but to hold the additional reserves. A second is to develop testing capability in house, or to buy an asset/liability software package. A third is to find a Qualified Actuary among the consulting firms.

6. How should asset default risk be handled?

The Qualified Actuary is to do what he/she feels appropriate. The particular concern is with junk bonds. The regulation suggests an interest rate hold-back, or substitution of the Moody rate on corporate bonds for junk bond yields, in the cash flow testing.

7. I am not investment trained. How do I project investment cash flow?

Ask your friendly investment officer, or do it yourself via actuarial literature. WARNING: even if you farm out the investment flow projections, the Qualified Actuary is still responsible.

8. The Qualified Actuary seems to have a lot of responsibility. What happens if something is wrong with the actuarial documents?

Boiling-in-oil is not indicated, but the consequences can still be severe. New York, after consultation with the Qualified Actuary, can reject the actuarial opinion and require higher reserves. If the problem is with the QA, the State may bring charges via the AAA.

9. Why the references to Macauly "duration"?

The Macauly duration concept proved to be better in theory than in practice. Problems developed in trying to define duration for most liabilities and some assets. Future legislation may well eliminate these references.

10. The regulation suggests that particular interest rate scenarios be tested. Why?

The scenarios suggested are neither required nor sufficient. If the actuary feels that scenarios other than the ones suggested make sense, he/she should test on his/her own scenarios, and explain why these were chosen.

11. What happens if we fail under one or more scenarios?

Unlike the actuarial exams, it is not required to pass all. If one or more scenarios show reserve deficiency, it is up to the QA's judgement as to whether reserves are nonetheless sufficient. As a practical matter, if the reserves are inadequate under most scenarios, or are insufficient under a level rate scenario, reserves should be strengthened.

12. The Regulation says little about my particular concern. Where do I go for help?

It is well recognized that these 92 pages do *not* answer all questions. Sources of help include (1) other actuaries, (2) the Valuation Actuary Symposium, (3) other actuarial meetings or literature, and (4) the New York Insurance Department.

13. How is this Regulation meant to help?

This Regulation, requiring asset/liability testing but little else, cannot address all of the problems to which a company may be subject. It does force companies to become aware of asset/liability characteristics, important to the understanding of risks undertaken in interest-sensitive products.

I commend the New York Insurance Department, and particularly its Chief Actuary, Robert Callahan, in their courageous step advancing the concept of valuation actuary. □

BOOK REVIEW

Checks and Balances in Social Security. Proceedings of a Symposium in honor of Robert J. Myers, edited by Yung-Ping Chen and George F. Rohrlich, pp. 357, University Press of America, 1986; $17.50 (paperback), $32.25 (hardcover).

Reviewed by John A. Beekman

This volume contains 27 papers which were presented in a Symposium held to honor Robert J. Myers. The book is organized in five parts, plus forewords by U.S. Senators John Heinz and Daniel Patrick Moynihan, two appendices, and an addendum paper.

Robert Myers began his career in Social Security in 1934 as a junior actuary for the Committee on Economic Security, and served as Chief Actuary, Social Security Administration, from 1947 to 1970; as Deputy Commissioner of Social Security from 1981 to 1982; and as Executive Director, National Commission on Social Security Reform, during 1982-83. He has gained worldwide recognition for his knowledge and wisdom regarding social insurance, and this Symposium Proceedings is a fitting tribute.

Part One is entitled, "Perspectives on the Origin and on the Legislative and Administrative Evolution of Social Security in the United States." The opening paper by George Rohrlich, a co-editor of the volume, is concerned with historical perspectives on Social Security. The second paper, "Social Security as a Floor of Protection", was written by Yung-Ping Chen. Dr. Chen convened and directed the Symposium, and served as co-editor. The third and fourth papers, by James W. Kelley and Jack S. Futterman, discuss significant differences that have occurred in recent years in the way Social Security legislation is enacted, and the need for continuity and expertise of top management in the person of the Commissioner of Social Security.

Part Two consists of five papers about "Financing, Budgetary, Taxation, and Actuarial Aspects." The first paper, by Joseph Humphreys (staff member of Committee on Finance, U.S. Senate), discusses the many consequences of separating the general budget of the Federal Government from the Social Security budget. In the second paper, C.L. Trowbridge, a former Social Security Chief Actuary, offers a mathematical formulation for determining the actuarial balance and the financial impact of the various economic and demographic factors. The third paper, presented by Richard S. Foster, Acting Deputy Chief Actuary for Social Security, describes the short-range financial status of Social Security as seen in October 1982, the time of the conference. Alicia Munnell, Vice-President and Economist, Federal Reserve Bank of Boston, discusses taxation of Social Security benefits in the fourth paper. The last paper of Part Two proposes a joint public and private review committee composed of actuaries to examine the financial viability of the system. It was written by Barnet Berin, managing director and chief actuary at William Mercer, Inc.

Part Three is entitled, "The Future Role of Social Security as Seen by the Insurance Industry, Pension Planners, Organized Labor, and the General Public." The first three papers set forth positions taken by the insurance industry. Robert Beck, Chairman and Chief Executive Officer, Prudential Insurance Company, and a member of the National Commission on Social Security Reform, describes five aspects of the problems as of October 1982, and offers short- and long-run solutions. James Swenson, Vice-President and Associate Actuary of Prudential Insurance Company, emphasizes the need for legislation to create a safe base for Social Security's future. James Douds and Michael Kerley, both of the National Association of Life Underwriters, describe the affirmative position toward Social Security taken by their organization and insurance sales force over the years. L. Edwin Wang uses a questionnaire to obtain and present the views of the Social Security program expressed by a group of pension planners representing 80% of the large church employees' benefits plans in the U.S. One of the former Chief Actuaries, Dwight K. Bartlett, III, explores the proposition that the job of Social Security would be made easier if a private pension scheme would take over part of its task. Burt Seidman, Director of Social Security of the AFL-CIO, discusses some principles which he feels should guide Social Security. The final paper of Part Four is by Milton Gwirtzman who discusses the highlights from some two dozen public polls concerned with public confidence in Social Security, and related matters.

Part Four consists of eight papers devoted to the theme, "The Quest for a Steady Future Despite Continuing Sources of Uncertainty." In the first paper, James Dillman discusses the findings and recommendations of the National Commission on Social Security (1979-81). David Koitz looks at Social Security's financial problems as a specialist in social legislation, and also as a citizen-taxpayer. The third paper, by Carolyn Weaver (staff member of the Senate Finance Committee), analyzes features of the Social Security program as it has evolved over 50 years. She discusses inequities which she foresees Congress will grapple with for decades to come. Elizabeth Duskin, Vice-Chairman of the National Commission on Social Security, uses that experience in discussing the role of advisory committees or commissions, and the successful process of compromise pursued by the National Commission on Social Security Reform. In the fifth paper, Lawrence Atkins points out the various escape routes from Social Security coverage, and the ensuing erosion of the Social Security tax base. Janice Gregory, staff member of the Social Security Subcommittee of the House Ways and Means Committee, examines the interplay between demographic and political factors that impact on Social Security. The next paper, "A Bond Plan to Restore Public Confidence in Social Security," by Yung-Ping Chen, proposes that when Social Security trust funds are low, beneficiaries will receive, except for low-income persons, their benefits in cash and deferred benefits (bonds) to be payable when the trust funds rise above a pre-determined level. The last paper of Part Four is by Robert J. Myers. It details changes in Social Security following the 1983 Amendments. Myers points out where Congress followed the recommendations of the Commission on Social Security Reform and where it went beyond or departed from the Commission's recommendations.

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Book Review: Social Security

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Part Five's three papers are concerned with Social Security programs in other countries. In the first paper, William Yoffee shows the impact of Social Security standards as set forth in International Labor Conventions on developed and developing nations. Vladimir Rys reflects on past, present, and future developments in Social Security as seen by a sociologist. Giovanni Tamburi writes about future cost patterns as viewed by an actuary.

Biographic and professional data, as well as selected publications of Robert J. Myers, are contained in an appendix. It is a real service to scholars and friends for this to appear.

An addendum paper, "Components of Trends in Social Security Costs," by Francisco R. Bayo, Milton P. Glanz, and C.L. Trowbridge, expands and complements the sixth paper with empirical work. This paper also appears in *The Transactions of the Society of Actuaries,* Vol. 38, 1986.

The co-editors, Yung-Ping Chen and George Rohrlich, prepared a lengthy Introduction to the Proceedings, and their "guide through the 27 chapters" was very helpful in the preparation of this review.

This has turned out to be a long review. However, I found the book to be fascinating reading and feel that it should be beneficial to all actuaries. It contains an absorbing description of the genesis of the Social Security program, insiders' thoughts on the administration of the program in recent years, and a description of how Presidential commissions on Social Security are appointed, their tasks, their accomplishments, and their concerns for the future. The book captures the intense public debate about the long-term role of Social Security at a point in time when public confidence in its future was at its lowest point. The restoration of that confidence is occurring, partially because of the 1983 Amendments which were helped greatly by the long experience, expertise, and service of Bob Myers as Executive Director, National Commission on Social Security Reform.

As the Introduction says (p. xii), these proceedings "express our and all the conference participants' love, respect and admiration for Bob and for what he has wrought in this half century of zealous and sustained effort on behalf of Social Security in this country and abroad." This reviewer would agree completely in that expression, and is thankful that these proceedings are available. ☐

Book Review: Graduation

(Continued from page 1)

techniques, and brings to mind the fact that graduation of data is not a static field.

From an educational viewpoint, the text admirably presents material and reinforces it in the exercises at the end of each chapter. Many of the exercises are derivations of the theory presented in the text and are important to the understanding of the material. At times the text becomes a bit "chatty" and the consistency of notation fails. Overall, the text covers an amount of material appropriate for a one semester course and the student should be able to follow the material as long as he/she takes the time to work through the exercises. Though the text does not provide an exhaustive discussion of the subject, an extensive bibliography is provided to assist in an in-depth study of a particular topic.

From a practical viewpoint, some of the graduation methods are highly computer oriented and lend themselves well to actual situations encountered by a practicing actuary. For example, while the calculations involved in a two-dimensional graduation or a regression method are extremely onerous when done manually, the computer greatly simplifies the calculations and allows the theory to be applied. In the final chapter of the text, each method of graduation is analyzed and critiqued. This chapter is very important for the practitioner.

Overall, the text is needed because of the computer revolution and the extensive amount of research that has taken place in this field since the publication of prior texts. The text presents a modernized view of the subject of graduation over that contained in prior texts. ☐

UNIVERSITY OF TEXAS ACTUARIAL STUDENT REUNION

Over the last 30 years some 30 students have passed through the ac tuarial science program at the Universi ty of Texas. The first-ever reunion o UT Actuarial Science students will b held in Austin on the weekend of Jun 5-6, immediately following the sprin meeting of the Actuaries' Club of th Southwest.

After World War II, Dr. Ralph Lan of the UT Math Department began th teaching of actuarial science courses but it was not until 1958 that a forma degree program in Actuarial Scienc was established. Byron Cosby was it first professor.

Since 1958 the Texas Life Convention and its successor, the Texas Life Insurance Association, have supported the program financially. The actuarial consulting firms of Texas have also provided financial support, while the Actuaries' Club of the Southwest has supported students through a scholarship program.

The UT Actuarial Science Class of 1977 is organizing this "weight-average" ten-year reunion, but all past UT actuarial students and their families and friends are invited. Based upon an earlier survey-of-interest, the expected attendance is more than 100. ☐

ACTEX COMPETITION RESULT

The results of the grant competition sponsored by ACTEX Publications (November), to encourage the writing of a comprehensive textbook on the theory and practice of determining the financial values associated with individual life insurance and annuity products, are these:

The winning proposal was that of Professor R. Neil Vance, University of Pennsylvania. The first runner-up was Professor Frank G. Reynolds, University of Waterloo.

The Board of Editors of ACTEX Publications was assisted in the judging process by a panel of five distinguished actuaries: Derek Eckersley, James C. Hickman, Robert H. Hoskins, Barbara J. Lautzenheiser, and E.J. Moorhead. ☐

Reorganization Revisited?

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the profession currently, this note represents our own personal thinking, and is not intended to convey the position of any of the organizations of which we are members."

Accompanying the presentation was a review of the earlier unsuccessful efforts toward reorganization of the actuarial profession, and a discussion of why greater success might be achieved now, a decade later. It is quite clear that the ten are *not* making any specific proposal; but their belief in greater unification is clearly stated, as is their recommendation for the reopening of this controversial matter.

The Council of Presidents accepted *in principle* the concept of this new Task Force, subject to positive action by each of its constituent bodies. The COP, an informal but long-established body made up of the Presidents and Presidents-Elect of the Academy, the Canadian Institute, the CAS, the Conference, and the Society, has only advisory powers. The sixth actuarial organization contemplated for Task Force representation is The American Society of Pension Actuaries.

Five of the six organizations can act no sooner than their next Board meetings, scheduled for the months of May and June. The AAA Board, however, met in late March, only two weeks after the Council of Presidents' meeting, and approved the participation of the Academy in the proposed Task Force. Other Boards will find this matter on their agendas for May or June. If all approve, the study will move ahead.

The time frame proposed is essentially (1) Task Force members would be identified by early June, and would meet monthly from June 1987 through February 1988, and (2) the Task Force would be committed to presenting a report by the end of February 1988, for presentation to the Boards of the six actuarial organizations in the March/April 1988 time frame. Discussion can be expected to be extensive, continuing through the fall of 1988, with any action decided upon taken in early 1989. The June 1989 Centennial Meeting of the entire profession in Washington, DC, is an important symbolic reason, according to the memorandum, for targeting action by then.

As it did when reoganization was a hot subject in the mid-1970's, *The Actuary* will keep readers informed. Those interested in the details of earlier unification efforts, and who have access to back copies of *The Actuary*, will find the proposals summarized in Supplements to the May 1976 and September 1976 issues. □

LETTERS

Unification

Sir:

The supplement to this issue of *The Actuary* describes a strategic plan for the Society of Actuaries, presented by Jim Anderson. It includes an analysis of our current state of affairs, along with several recommendations for the future. I agree with the general direction of most of Mr. Anderson's comments and would like to focus on one of his recommendations.

Mr. Anderson suggests that the Society of Actuaries should

> seek an amalgamation with the Casualty Actuarial Society, the Conference of Actuaries in Public Practice, and the American Society of Pension Actuaries to expedite its move to widen its existing focus into growing areas of practice.

The last several issues of *The Actuary* have contained articles and letters, including one of my own, discussing the possibility of achieving greater unification within the actuarial profession. There are many of us who believe the time has come to study this question.

As reported elsewhere in this issue, at the Council of Presidents meeting on March 12, a group of individual actuaries presented a recommendation that the COP establish a Task Force to consider how the role of the actuarial profession could be strengthened and whether greater unification of the profession could contribute to this objective. The Boards of six actuarial organizations will be meeting between now and June, and I hope each will approve the concept and agree to appoint two members to the Task Force.

Many leaders in the actuarial profession share the general concerns identified by Mr. Anderson, although there is undoubtedly disagreement with some of his specific suggestions. I think we must consider how to achieve greater unification of the actuarial profession in order to ensure a viable future for ourselves and future generations of actuaries.

In order to make progress on greater unification within the profession, we will need the support and encouragement of our members, and I hope many will take the opportunity to send their comments about the idea of the Task Force to *The Actuary*. As a Vice President of the Society with responsibility for providing direction and leadership for our activities, it would be helpful for me to know that my sense of the importance of this issue is shared by others. I welcome hearing from your readers, either through letters to the editor or directly at my *Yearbook* address.

Allan D. Affleck

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Two Professions

Sir:

Unifying the profession seems to be coming up for discussion again, but everyone still has his own grand design. Rather than arguing grand designs, couldn't we just take some more steps in the right direction? A few suggestions:

- A single newsletter including life, casualty, pension, Canadian, U.S., etc. developments so that we all get a little more information on other specialties.
- A single detailed directory of North American actuaries with just a listing of members' names, if that, in the various yearbooks.
- Admission of any actuary to any actuarial organization's meetings at the "insider" price.
- One joint meeting per year of all the organizations.
- A jointly sponsored finance and investment exam, essentially the present Part 8, leading, together with the compound interest exam, to a certificate similar to the Institute's and open to non-actuaries.
- A jointly sponsored diploma in actuarial mathematics, maybe with life and casualty specialization, at

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Letters

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about the present ASA level with the ASA awarded a couple of exams later as in the CAS; since the basics of our profession are universal we might even get the Institute and Faculty interested in this.

The first three of these, at least, do not seem very controversial. Would anyone like to add to, or subtract from, my wish list?

Brian A. Jones

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Sir:

Ardian Gill's suggestion (February) that the educational roles of the various actuarial organizations be subsumed into a new Actuarial University deserves extensive consideration.

From my perspective, the greatest benefit would be to raise the level of the examination process for casualty actuaries to that of life and benefit actuaries. In spite of the hard work of the members of the CAS Syllabus Committee over many years, casualty actuarial students must read a great deal of material about ad hoc procedures for estimating loss costs, with almost no material about scientific measures of loss and their biases. The reason is simple: little is written for the syllabus because the research function is disjoint from the accreditation function.

Mr. Gill's Actuarial University would address this problem head-on by involving each volunteer "faculty member" in the creation of new research by students as well as in the accreditation of those students.

Oakley E. Van Slyke

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Wherein Are We Unique?

Sir:

I know of no other profession quite so concerned with the articulation of its "unique" characteristics and function. Your February 1987 editorial, "Wherein Are We Unique?", is but the latest of many such attempts at discriminating our profession from other related fields.

In that piece you accurately summarized Marshall Field's assertion that the emphasis on "financial risk, the projection of the past into the future, and particularly the dynamics of a business situation" uniquely distinguishes the actuary from other professionals, in particular the accountant and the statistician. I will let the statisticians fend for themselves. However, as a proud member of both the actuarial and the accounting professions, I most assuredly disagree with Mr. Field's claim that any of these three characteristics distinguishes between the actuary and the accountant.

First, regarding the actuary's "unique" interest in risk, I refer the interested reader to a February 1984 article in the *Journal of Accountancy,* "A Special Area of Service: Risk Management", discussing the CPA's role in managing various potential sources of business risk. The independent auditor is mandated by his authoritative professional standards to evaluate environmental and company specific risks in planning and conducting his audit. Finally, in the modern era of financial transactions involving transfers of receivables with and without recourse, in-substance debt defeasance, interest rate swaps, asset sale and leasebacks, collateralized mortgage obligations and a myriad of other innovative financial risk-sharing devices, it is ludicrous to envision the accountant as an archaic 19th century bean counter incapable of consulting with his clients about "financial risk."

Secondly, the notion of accountants simply "accounting" for historical events without an interest in the future is just as antiquated. The AICPA Auditing Standards Board issued in October 1985 the first in a series of authoritative pronouncements on prospective financial information, "Financial Forecasts and Projections." The Financial Accounting Standards Board in its Conceptual Framework Project defines the objective of financial reporting as the dissemination of information useful "in assessing the amounts, timing, and uncertainty of prospective cash receipts" and maintains that "without an interest in the future, knowledge of the past is sterile." The emerging contemporary role of financial accounting is not one of accounting for past transactions but one of providing information with predictive value. The actuary is not alone in his interest in the future.

Finally, the accountant as a consultant, auditor or decision-maker is, of course, concerned with "the dynamics of a business situation." The art of accounting lies not in the application of a predesigned set of technical standards to various well-defined static transactions, but rather in the analysis and interpretation of various economic events as to their underlying economic substance and their impact on the various users of financial information.

I submit that the quest for a description of "wherein we are unique" is ill-founded. The value of the actuary does not rest in any skills or duties which are uniquely his. The value of the actuary lies in the integration of his well-refined skills and perspective with those of other professionals on common problems which transcend our overlapping functional areas. The actuarial profession is so highly respected not because of the voodoo which *only* we can do, but simply because we do the voodoo so *well.*

David W. Wright

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Social Security Trust Funds

Sir:

In the February issue, Dwight Bartlett states that "one should not be misled by the fact that there is interest being credited to the Trust Funds. The real burden on the economy is the benefits being paid, plus the expenses of administering the program." Although I am opposed to building up huge trust-fund balances, it is not correct that their interest earnings have no effect on the total burden on the governmental sector of the economy.

Based on the reasonable assumptions that the National Debt is larger than the balances of these and other trust funds (i.e., that some public debt is held by private individuals and organizations), and that Congress is not moved to extravagance by the accumulation of trust-fund balances, the interest earnings of the trust funds represent that much less financing from payroll taxes. In the absence of the trust-fund balances and the government securities held therefor, the payroll taxes would necessarily be higher, and at the same time the interest on the total governmental debt would be the same (but would go entirely to the private sector instead of part going to the trust funds).

Robert J. Myers

(Continued on page 8)

Letters

(Continued from page 7)

Social Security Trust Funds

Sir:

Kenneth A. Steiner objects (*The Actuary,* February) to my statement that the Committee on Social Insurance of the AAA has endorsed the concept of current cost funding for Social Security.

My dictionary — "Endorse: To give one's name or support to."

Please note that the Committee does not have to use the word "endorse" to endorse current cost funding. If the Committee refuses to take a succinct verbal stand for or against current cost funding, I am entitled to judge their position on the basis of what they do. I am not constrained to a belief based upon what they say or do not say.

When the Committee offered its 75%-125% measure of "actuarial balance", that recommendation was for a very tight current cost funding for Social Security that left nothing that could rationally be called advance funding. So it gave the Committee's name to a clearly current cost method of funding Social Security. By my dictionary it endorsed it.

Charles M. Larson

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New Valuation Law

Sir:

Walt Rugland's article, *Development of New Valuation Law for Life Insurers,* in the March issue states:

> "It is the belief of STAC that the industry needs to be able to better utilize its capital, and that those companies which wish to structure their business in such a manner to reduce risk should have the opportunity to reduce reserves and make capital available. Likewise, those that wish to take risk should carry reserves which reflect it."

I am a member of STAC and must say that my position is quite the contrary of that stated by Walt.

As to permitting reductions in reserves, I should observe that a considerable amount of investigation and research led to the reserve standards adopted in the 1970's and 1980's. I feel that a proposal to weaken existing reserve standards should receive comparable professional attention and deliberation. As to the 1980 amendments to the standard valuation law, they were intended to give greatly reduced or virtually non-existent aggregate safety margins over time, so it seems to me the proposal to weaken standards below that level is questionable. As professionals we should be concerned not only over what fosters freedom for the practicing actuary, but also minimum overall standards of valuation that are sufficient to assure the ability of insurers to meet their obligations to the insureds and annuitants, their widows and orphans.

As to the notion that those insurers who wish to take risk should (voluntarily) carry reserves which reflect it, my opinion is that that is an idealistic notion. It is unlikely to result in the real world without action by the states whose responsibility, after all, continues to be the protection of the public from the hazard of a particular company adopting an inadequate reserving level.

Paul E. Sarnoff

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The Three A's

Sir:

Here is a *Sightings* item which shows that actuarial science does not have to be associated with dull pursuits. In the March issue of *USA Today,* in an article about Hollywood divorces (Joan Collins, Johnny Carson, and Sylvester Stallone, among others), an attorney is quoted as saying: "Now people hire the three A's: actuaries, accountants, and appraisers" to make their case in divorce settlements. We even got top billing!

Dennie W. Pritchard

MATH ODDITIES: MORE ABOUT π

The February Math Oddities column shows that the ancient Hindus had a very good idea of the numerical value of π; and that they had developed a visual proof of the formula for the area of a circle. Responses from two readers indicate that the ancient Hebrews, too, were knowledgeable as to these matters.

Mark Abraham and Solomon Goldfinger, independently, tell us of a Biblical passage that some Jewish scholars interpret as providing a very close approximation to the true value of π. The verse is Kings I 7:23, describing the construction of Solomon's temple. The text tells of a circular object of diameter 10 and circumference 30, implying (for the uninitiated) that π is 3.

In the original Hebrew text, however, the word kav (for circumference) is peculiarly spelled, adding an unneeded letter. Each letter in the Hebrew alphabet had a numerical interpretation, the usual spelling of kav is numerically interpreted as 106, and the extra letter adds 5. The ratio 111/106, when applied to the first approximation $\pi = 3$, results in the "hidden" value $\pi = 333/106 = 3.14151$, less than .003% below the true value, 3.14159.

Mr. Goldfinger goes on to raise these questions: Who knew the value of π to this level of accuracy at the time this portion of the Bible was written? Who devised the technique for concealing this value in the text? How did he arrange for it to appear in the exact verse describing the dimensions of a circular object, indeed within the word for circumference? What are the chances that all of this is coincidence? He leaves these questions to the reader.

Mr. Abraham adds that the Talmud, the oral tradition dating back to the time of Moses, provides the following proof as to the area of a circle:

1. Visualize a circle as made up of an infinite number of smaller concentric circles, all with a common center.
2. Make a straight scissor cut from a point on the outside circle through to the center.
3. Unfold all cut circles into a series of straight lines, with the outside circle at the base, the next centered on top of the first, etc.
4. The result is an isoseles triangle with base equal to the circumference C and height equal to the radius r. The area is then 1/2 $C \times r = \pi$ times r squared. □