

The Newsletter of the Society of Autuaries

Vol. 16, No. 10

DECEMBER, 1982

A WORTHY CAUSE

The 1982-83 appeal for Minority Recruiting Project money is in full swing, says William E. Watson of our Subcommittee. As usual, appeals are made to two groups: (i) companies that employ actuaries, and (ii) individuals such as you and me.

In group (i), 81 organizations have responded. That total at the close of last year's appeal was 95, so there are several out there who may find this reminder useful.

It has always surprised us how few individual actuaries in past years have thought it worthwhile to include Minority Recruiting in their personal contributions budgets. The total number last year was only 18, and even that was a record. Surely it wouldn't be out of order to expect at least 100 Society members to participate to the tune of, say, \$10 or \$20 cach, would it?

Those who care to do something about this, please send your check, payable to "SOA/CAS Minority Recruiting Program", to the Society office in Chicago. It's tax-deductible in the U.S.A.

Our good Subcommittee reports that it will soon publish a booklet, companion to the recently rewritten "The Actuarial Profession", expected to aid recruiting efforts among minority students.

E.J.M.

MAIL ALERT

You should have received the *Record*, Vol. 8, No. 3 covering the Colorado Springs meeting. If not, tell the Society office in Chicago.

FELLOWS' VIEWS ON ELECTION MATTERS

by Julius Vogel, Chairman, Committee On Elections

Early in 1982 our Committee sought the views of a random sample of 1,158 Fellows on the Society's election process. 776 (67%) of these questionnaires came in; thus we got answers from one-sixth of all our Fellows to a series of questions that were expressed in "agree-disagree" form.

Some things we are doing right. 69% of the respondents found our first ballot "reference list" helpful; only 8% disagreed. Similarly, 80% agreed that the candidates are well qualified (1% disagreeing). Also reassuring—82% were generally satisfied with the way the Society is run; 10% were dissatisfied.

Yet, there is room for improvement. The biggest lesson we learned is this: 81% told us they don't know enough about most of the candidates to be able to choose among them, while only 16% said they do. The Society is no longer—for most FSA's never has been—an organization whose members know each other, or at least have pretty good knowledge of those prominent enough to appear on the ballot; hence the suggestion that candidates be encouraged to come forward with platforms on current Society issues was endorsed by 58% of respondents, 31% disagreeing.

Our questionnaire also brought up some constitutional matters. 27% of respondents felt that Associates should be allowed to vote, 66%, however, disagreeing. The response to the suggestion that Associates be allowed to run for office was similar. Slightly over half the respondents agreed (and about 35% disagreed) that there ought to be a constitutional limitation on how many times an individual may serve as Vice Presi-

(Continued on page 8)

THREE STRIKES ON PERCY H. EVANS

by Mary G. Frankel

Percy H. Evans (1873-1964) entered Northwestern Mutual's Actuarial Department as a 15-year old clerk, in the same year that the Actuarial Society of America came into being, was to become our Vice-President and Actuary, was to be elected President of the American Institute of Actuaries, but despite three attempts was never to be a Fellow of the Actuarial Society. Here's the story.

Strike One (1899): The Society, which had just then introduced its examination system, refused Evans permission to take its exams on the grounds that membership was restricted to those engaged in actuarial work as a primary occupation. Evans was then an agent in San Francisco, having been sent there by Actuary Charles A. Loveland so that someone in the Actuarial Department would have an understanding of the field; this made him ineligible even though he had to his credit two years of mathematics at University of Michigan sandwiched within some five years in full-time actuarial work.

By 1916 Evans, long since back in the Home Office and Actuary of the company, was ready to take the first step. The Society had just amended its Constitution so that a practicing actuary of sufficient stature could be elected an Associate by majority vote of its Council; Percy H. Evans was so admitted.

Strike Two (1920): To become a Fellow other than by examination, one had to establish one's credentials as an actuary, which Evans did by writing ten papers for the Transactions in just four years; to get unanimous vote of the Council, which he did; and to be voted in at a Society meeting with not more than nine negative votes by the Fellows

(Continued on page 8)

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EDITORIAL

THINKING INTERNATIONALLY

The total number of actuaries-casualty, life and pension-in North America last year was 9,229 (see our June 1981 issue, page 7). By now we must have passed the 10,000 mark; about 8,500 of us are in the United States, 1,500 in Canada.

The world is shrinking in actuarial affairs these days, just as it is in all other respects. But-how lively an interest do actuaries in North America take in actuarial activities elsewhere on the globe? Do we keep ourselves informed on how others are dealing with the problems and opportunities that are common to us all?

The size of our membership in the International Actuarial Association (IAA), the body that arranges a Congress in every calendar year exactly divisible by four, qualifies as one measure of the interest that we take in international affairs within our profession. The figures look like this:

•	Total Number of Actuaries	IAA Members	IAA Members per 100
Canada	1,500	314	21
U.S.A.	8,500	606	7

Since the total IAA membership from all countries at the latest published count was 3,851, it may be observed that of each 100 members in all countries, 8 are in Canada, 16 in the United States.

For some reason on which we can only speculate, support of the International Actuarial Association is proportionately three times as great in Canada as it is in the United States. It seems fair to suppose that there are some actuaries in the southern half of the North American continent who might be persuaded to take the modest leap into international actuarialdom by joining the Association; there may be more in the northern half also.

Enquiries would, we are sure, be welcomed by the two actuaries who take care of enrolling Association members-John C. Angle in New York, Michael Rosenfelder in Toronto. Their addresses are in the Society Yearbook.

THE PREYING MANTIS

by Bertie Ramsbottom

Of all the businesses, by far, Consultancy's the most bizarre. For, to the penetrating eye, There's no apparent reason why, With no more assets than a pen, This group of personable men Can sell to clients more than twice The same ridiculous advice, Or find, in such a rich profusion, Problems to fit their own solution.

The strategy that they pursue— To give advice instead of do-Keeps their fingers on the pulses Without recourse to stomach ulcers, And brings them monetary gain, Without a modicum of pain. The wretched object of their quest, Reduced to cardiac arrest, Is left alone to implement The asinine report they've sent. Meanwhile the analysts have gone Back to client number one, Who desperately needs their aid To tidy up the mess they made. And on and on-ad infinitum The masochistic clients invite 'em. Until the merciful reliever Invokes the company receiver.

No one really seems to know The rate at which consultants grow, By some amocha-like division? Or chemo-biologic fission? They clone themselves without an end Along their exponential trend.

The paradox is each adviser, If he makes his client wiser, Inadvertently destroys The basis of his future joys. So does anybody know Where latter-day consultants go?

Ed. Note: This first appeared in the Financial Times (U.K.), April 11, 1981: on this continent, in Harvard Business Review, September/October 1982. We reprint by kind permission of the author, Ralph Windle, and the Financial Times, Credit for bringing it to our attenti goes to David S. Williams, F.S.A.

Bertie Ramsbottom's collected "Boardroom Ballads" are being published in Britain now, and soon on this continent, we hope.

E.J.M.

ON-ROUTINE BUSINESS OF BOARD OF GOVERNORS AND EXECUTIVE COMMITTEE

July to October 1982

by Kenneth T. Clark, Secretary

- 1. The Board adopted the Report of the Task Force to Develop Guidelines for the Operation of the Committee on Complaints and Discipline. These guidelines specify procedures to be followed when a complaint is made, for disclosure of the outcome to the parties, and for reporting to the Board.
- 2. The Board considered a report (elsewhere in this issue) from the Committee on Elections on a questionnaire put to a 25% sample of Fellows about our election process, and asked that Committee: (i) to propose ways to have candidates for election better known to the Fellows; (ii) to recommend ways of ensuring year-to-year consistency in the action process; (iii) to examine other anges suggested by responders.
- 3. The Board authorized an antitrust review and audit of Society activities, aimed at giving reasonable assurance that our services to members and our incidental services to the insurance industry comply with antitrust law in the U.S.A. The review will be made by outside counsel.
- 4. The Board adopted recommendations of the Committee on Planning which include a context for strategic planning, and an annual planning cycle—also a Statement of Purpose (digested elsewhere on this page) to be printed in the 1983 Yearbook. The Board transferred responsibility for the Society's planning of its relationship to other actuarial bodies to the Committee on Planning from the Committee on Cooperation and Coordination which it discharged with thanks.
- 5. After discussing the implications of a proposed request to the NAIC that the FSA designation be recognized as the NAA designation now is, i.e., as qualification to perform actuarial duties in certifying life company annual statements, the Board referred this complex question, and the broader issue of protecting and enhancing the FSA designation, to the Committee On Planning.

- 6. The Board voted to expose to the members a proposed concise version of our present Guides and Opinions.
- 7. The Board authorized forming a Committee on Relations with Statistical Organizations, to maintain liaison with such bodies in the U.S.A. and Canada whose interests overlap ours.
- 8. The Board made provision for future membership discussion of proposed amendments to our Constitution before votes on them are taken.
- 9. The Board considered a recommendation from the Committee on Discipline for a public reprimand of a member pursuant to Article VII of the Society's Constitution. Acting in accordance with the Committee's recommendation the Board voted to reprimand Mr. C. David Williams, A.S.A. of Cincinnati for having represented himself as an Enrolled Actuary, when, in fact, he was not an Enrolled Actuary, and for having signed, on more than one occasion, as an enrolled actuary, certain Schedules B of Form 5500, a government form, and for having used an enrolled actuary number which he was not entitled to use.

INSTITUTE OF ACTUARIES AFFILIATE STATUS

Affiliate Memberships aren't new to the Institute of Actuaries, but they are rare. Only 16 such members are listed in its current Year Book; of these, however, 6 are in the United States. These actuaries have had "the same rights and privileges as Honorary Members".

Now, the Council of the Institute has introduced what some might call an alternate route to Affiliate Membership, one which may be of direct interest to some of our readers, Fellows of the Society of Actuaries—as well as of other named actuarial bodies elsewhere—may now become Affiliate Members either (i) by transferring, without entrance fee, from another class of Institute membership, or (ii) in reinstatement of a lapsed Institute membership, subject to entrance fee but free of assessment for subscription arrears.

This newsletter's Editor can answer some of the simpler questions about all this, but those wishing authoritative particulars should write to Staple Inn Hall, London.

STATEMENT OF PURPOSE

Ed. Note: See Non-Routine Business report on this page. This is slightly abridged; full text will be in 1983 Yearbook.

The Society is an educational, research and professional organization primarily for actuaries in Canada and the United States. Membership is conditioned on successful completion of rigorous education requirements, thereby providing assurance to the public that members are trained to perform at a high level of knowledge and competency. The Society encourages theoretical and practical research and supports the continuing professional development of its members.

Actuarial science is built on evaluation of financial, economic and other implications of future contingent events. The actuary is trained to analyze uncertainty, risk and probabilities. The actuary's domain includes financial security and other programs involving such contingencies as life, health, property and casualty, retirement, and other demographic as well as economic and investment contingencies.

The Society of Actuaries, oriented to contingencies other than property and casualty, has the following responsibilities:

- 1. To identify, educate and qualify persons with the interest and potential to become members.
- 2. To provide programs and facilities for continuing education and professional development of its members and for others interested in actuarial science.
- 3. To promote research in actuarial science and to publish the results.
- 4. To maintain and enforce a code of professional conduct for members.

TURVEY'S NOTATION (ENGLAND)

by Frank G. Reynolds

(This is Article No. 5 in a series.)

In March 1972, Peter J. Turvey, F.I.A. proposed to the Institute of Actuaries Students' Society a notation that dealt only with the present range of symbols and was limited to the standard computer print characters.

The function name consisted of two parts. The first corresponded to the current central symbol and consisted of the traditional letter with a modifier to distinguish between the current upper and lower case letters; the rest was a series of indicators specifying the parameters. These indicators identified:

- "— the number of lives, and whether joint or last survivor
 - the 'selectness' of these lives
 - how a 'term', if any, is involved
 - the interest rate
 - the mortality basis
 - frequency of payment
 - conditions regarding premium payments."

The parameters, except for the interest rate, were always to be integers. Arithmetical expressions, such as x+n or x+10, were considered desirable though difficult for computers of those days to handle.

Proposed

Examples: Current

 A_x 3% 58CSO
 AQI(X,6, .03)

 (six being the code number for the 1958

 CSO table).

 A_{xy:n|} at i%
 A2NIC(X,Y,N,I)

 A[x]+t
 AD(X,T)

 n|^ax:m|
 APNAN(X,N,M)

This proposal, similar to the Australian one in Article No. 4, had the advantage that the first one or two letters identified the basic function and the rest defined the parameters. Number codes were limited, logical and understandable. Drawbacks were its unfamiliarity and narrow scope.

FOR YOUR READING

Disability Newsletter No. 34, Evolution of Noncancellable — The Third Generation of Disability Policies. August 1982. John Haynes Miller, F.S.A., Editor.

A review of the 67-year history of noncan disability struggles in North America that actuaries concerned with product design ought not to miss.

Actuarial Study No. 87, Life Tables for the United States: 1900-2050, pp. 86.

Says SSA Deputy Chief Actuary, Francisco Bayo, A.S.A., in the Foreword: . . . "Actuaries want to stay abreast of changes in mortality to be sure that insurance premiums are properly set and that pension plans are properly funded." This splendid compilation of comparative data should help do that and much more.

Actuarial Note No. 112, Average Wages for 1980 for Indexing Under The Social Security Act & Automatic Determinations for 1982. Eli N. Donkar, A.S.A.

Sequel to Actuarial Note No. 103 on this subject.

Actuarial Note No. 113, Growth in Fringe Benefits. John C. Wilkin, F.S.A., Ronald V. Greasch, A.S.A., Milton P. Glanz, A.S.A.

An analysis of the effects that such growth may have on the long-range OASDI cost estimates.

The above three items are available from Office of The Actuary, Social

Security Administration, Altmeyer Bldg., Ste. 700, Baltimore, MD 21235.

Carlton Harker, F.S.A., Cost Containment of Health Care Benefits, 1982, pp. 192. Paperback, \$30. Order from American Institute of Management Services, Box 11107, Winston-Salem, NC 27116.

A desk manual of cost containment programs. Viewpoints are mentioned, "but only in a nonjudgmental way".

Robert J. Myers, F.S.A., Why Do People Retire Early? An article in Social Security Bulletin, September 1982. Single copy, \$3.50 U.S.A., \$4.40 elsewhere. Order from Supt. of Documents, U.S. Govt. Printing Office, Washington, DC 20402.

Expresses contrary viewpoint to analytical method and conclusions, printed in same issue, of Eric R. Kingson, Ph.D., "The Health of Very Early Retirees".

Journal of Western Gerontological Society, Summer 1982 issue, The Older Worker: Employment and Retirement, pp. 80. Single copy, \$6.00. Order from that Society, 833 Market St., Dept. M, Room 516, San Francisco, CA 94103.

28 articles, one by Morrison H. Beach, F.S.A., aimed at giving authoritative information on many aspects of its subject, including growth of the aging workforce pre-retirement design and planning, age-flexible pension benefits.

The Association of Swiss Actuaries, wishing to maintain the scientific exchange established during the 21st International Congress (1980) is organizing an

INTERNATIONAL SUMMER SCHOOL

at Leysin, Switzerland, September 12-16, 1983.

The topic: Methods and Techniques of Estimating Claims Reserves.

This is for any actuaries having basic knowledge of risk theory and mathematical statistics, especially those confronted with claims reserve problems. Inclusive price for accommodation, meals and seminar fees is Sw. Fcs. 350.

Application form is available from Harry H. Panjer at his Yearbook address.

E. & E. COMMITTEE ANNOUNCES PART 5B SEMINARS

Several 2-day seminars are planned for March 1983 on the new Part 5B textbook, Survival Models and Data Analysis, by R. Elandt-Johnson and N. J. Johnson. We hope to use insurance company conference space in cities where enough students support a seminar. If feasible, days will be Friday and Saturday. Fee: \$100 per person (not covering meals and hotel charges).

Cities chosen will be announced to potential Part 5B candidates in early January. But even if your city isn't on that list, a seminar may be arranged if at least 10 attendees can be promised. Write or phone Linden N. Cole, Director of Education, at Society office.

BOOK ON BABBAGE

Ed. Note: We are indebted to Patricia L. Shapiro, F.S.A. for lending us her copy of a biography of Charles Babbage (1791-1871), much of whose life was devoted to inventing and constructing machines to free actuaries and other sufferers from the drudgery of repetitive arithmetic. Maboth Moscley's Irascible Genius: The Life of Charles Babbage (1964) was published in the U.S.A. in 1970 by Henry Regnery, Chicago.

It is written that, while a Cambridge undergraduate, Babbage, with a book of logarithms open before him, said to a friend, "I am thinking that all these tables might be calculated by machinery". He set this idea aside for many years, during which time he was asked to organize and manage a life insurance company, and did get as far as to construct a mortality table and to compose a small treatise on the nature of life insurance.

At about age 30 he visualized a machine that would "compute tables by differences", and shortly afterwards suched in building one that would produce any tables whose second differences were constant; it first exercise was calculating values of $(x^2 + x + 41)$ too rapidly for its results to be copied down.

It being evident that a general-purpose "difference engine" would be a formidable undertaking, Babbage turned to the British Government for financing. Arousing the personal enthusiasm of even the hero of Waterloo, the Duke of Wellington, Babbage got the backing he sought, which turned out to be the beginning of his troubles because the practical engineering difficulties of producing the instrument proved immensely greater than he or anybody else had foreseen.

Babbage was eventually to gain recognition and a measure of material benefit during his lifetime devoted, to the point of destroying his health, to the difference engine and other more advanced calculating monsters.

This is a fascinating book, encouraging to actuaries who themselves experience frustration in bringing exciting his to fruition. Though why the word trascible" is in the title escapes this reader; the inventor surely displayed astonishing patience and consideration for others throughout his years of trial. Photographs of Babbage's machines are displayed—there is also a memorable re-

mark by his mother when her son was in understandable depths of despair:

"My dear son, you have advanced far in the accomplishment of a great object, which is worthy of your ambition. You are capable of completing it. My advice is, pursue it, even if it should oblige you to live on bread and cheese."

Babbage might have been, perhaps indeed can be claimed to have been, an actuary. And so might Augusta Ada, Countess of Lovelace, who thoroughly understood what he was doing, even down to the details, and rendered essential support and inspiration.

E.J.M.

THE E. & E. CORNER

Ques.: Examination results for the November 1981 Parts 7 and 9 arrived early in January, 1982. Can we expect them to arrive about the same time in 1983?

Ans.: The 1981 Fellowship exam results arrived early because Part 7 (EA-2) was an all multiple-choice exam, and Part 9 had only 62 candidates. In 1982, essays were added to Part 7, and the number of candidates sitting for Part 9 increased greatly. It is therefore likely that Fellowship exam results will be received a little later in 1983 than they were in 1982.

Quest: How does the Society handle questions that were not printed correctly or are otherwise unsatisfactory?

Ans.: If there is more than one correct answer, credit is given for any correct response. If a question has no correct answer, the question is eliminated from grading.

In one recent Part 7 exam, the order of two questions was switched—candidates near the pass mark had their question books reviewed, and were graded on the work that was shown. In a recent essay exam, an annuity value needed to answer the question was left off—candidates who recognized the problem were given full credit, as were those who completed the question in terms of commutation functions.

We give as much credit as possible, particularly for candidates close to the pass mark. If a problem is significant enough to change a failing to a passing grade, the candidate is given the benefit of the doubt.

HOW THE COMMITTEE ON DISCIPLINE DOES ITS WORK

by John M. Bragg

Since the Committee On Discipline was formed in 1976, eleven disciplinary actions have been taken by the Society. These arose out of 28 complaint cases logged by the Committee, three of which are still outstanding. This article's purpose is to throw light on these facts, and to clear up some of the mystery that surrounds the Committee's work.

An essential characteristic of any true profession is possession of a code of ethics, and of the means for enforcing it. The Society does possess such a code, i.e., the Guides to Professional Conduct and the Opinions as to Professional Conduct. It also possesses the means of enforcing its code of ethics; enforcement is the work of this Committee. Such instruments are essential for any profession; furthermore, its members and the public at large need to be aware that a code of ethics exists and is enforced.

The Committee on Discipline consists of a chairman (who must be a Society past-president) and at least 1.4 other members—at present there are 20—distributed by geography and specialty. Its past chairmen have been Edwin B. Lancaster, Charles L. Trowbridge, and John M. Bragg; E. Paul Barnhart has become chairman in the fall of 1982. The Committee operates under the detailed provisions to be found in Article VII of the Society's Constitution, supplemented by its own written guidelines.

The Committee considers complaint cases which are submitted in writing, but it may also generate cases on its own initiative; both forms of initiation have occurred. A two-thirds vote by the entire Committee is needed to impose any of the six constitutional sanctions: warning, admonishment, private reprimand, public reprimand, suspension, and expulsion. In the case of any of the last three of these, the Committee's action must be ratified by the Board of Governors which has power to downgrade a recommended sanction, but not to upgrade it. A member against whom a charge which might result in reprimand, suspension, or expulsion has been made, has the right to appear before the Committee and the Board-in person or by counsel. The Committee works closely

(Continued on page 8)

LETTERS

The Society's Syllabus

I recently came across a letter that had been lost for 17 years. Unfortunately, the writer's signature has become illegible, though the letter was otherwise intact. It may have a message for actuaries who would like to see computer science on our course of study. The text, dated June 3, 1965, follows:

- " I write to express my conviction that Computational Methods ought to become a part of the Society's syllabus. Since proper use of multicolumnar paper in performing computations is critical to an actuary's performance, our profession must see to it that new F.S.A.s are proficient in all the following:
- Selecting the correct paper. Paper with too many columns is wasteful; paper with too few has to be widened with the aid of scotch tape.
- Choosing the best writing instrument. Ball point pens are superior to fountain pens which tend to be messy.
- Selecting the proper coloured pencil to be used by the checker.
- Following sound practices in signing and dating one's work.
- Heading columns clearly, and using abbreviations and symbols consistently. Perhaps standard actuarial notation for column headings needs to be developed.
- Performing the calculations. Students should be required to demonstrate mastery of the Friden desk calculator. Possibly the new concept of electronic calculators should be taught even though it's obvious that wide-spread use of these expensive machines lies many years in the future.

Addition of this subject matter to the course of study will ensure that our new Fellows can multiply and divide with efficiency and confidence."

(Signature obliterated)

This unknown writer's logical argument for including "Computational Methods" on the 1965 course of study almost convinces me that computer science belongs in the 1982 curriculum.

Randall J. Dutka

Improving This Newsletter

Sir:

Frank Di Paolo's request (May issue) for fiction and poetry supplements to The Actuary goes to prove that there are actuaries whose interests go beyond studying for exams (before attaining Fellowship), and delivering nerve-deadening cliches about studying for exams (after they have achieved Fellowship). But it will be expensive if more and more of us demand special supplements pertaining to our own pet interests. May I recommend that the editor choose between the following:

- (1) Print no supplements.
- (2) Print only supplements on topics demonstrably of interest to everybody.

The first example of a topic of universal interest that comes to mind is a set of coupons granting discounts at food or department stores-naturally only for items that can be obtained everywhere that The Actuary circulates. I hope that other readers will come up with equally helpful suggestions.

Michael O. Khalil

Probable-Cause

Sir:

Readers of Alistair Longley-Cook's reference to Sir Winston Churchill's aversion to hyphens (March issue) may appreciate knowing that Sir Winston's own family name was Spencer-Churchill.

By ditching that double-barrelled name he was able to draw attention to his descent from the first Duke of Marlborough (John Churchill); but having decided to drop his own hyphen, he enjoved inveighing against hyphens for all purposes.

Another point: Mr. Longley-Cook suggests that hyphenated names are created to memorialize family names on the distaff side that would otherwise disappear. This is true at the outset, but I believe that the system's attractiveness to subsequent generations comes from its turning a common name (e.g. Jones) into an uncommon one (e.g. Armstrong-Jones).

Allan Singleton-Green

Passing Ratio

Sir:

I was at first shocked to read—E. & E. Quiz, October issue—that only 33%

(392 of 1,185) of those receiving Par credit in 1970 were Society members by Spring 1981. But, reflecting on my own recommendation to math undergrads that they write Part 1 even if their professional interest is minimal, I recognize that many go no further. A study of Part 2, or even Part 3, passers might be more useful.

Stephen C. Frechtling

Math Of Universal Life

Sir:

Actuaries involved with the Universal Life plan may be interested in a compilation of some formulae used in various form filings in California. The basic concept of Universal Life is that policy values will be derived by using a Fackler accumulation process. In its simplest form:

$$T_1 = [T_0 (1+i) - RS] / (1-R)$$

where T₁ is the terminal value, T₀ is the initial value, i is the rate of intered R is the rate of mortality and S is t... sum insured.

Very often there seem to be three formulae used: one in the policy, another in the actuarial worksheets and a third in the computer process. Policies are most difficult to decipher; the policy value defined may be an initial value, an initial value before receipt of the due premium, or the terminal value. The definition of the monthly deduction depends on the interpretation of the type of value, so the distinction is not trivial. Doing the best with what can be interpreted, and ignoring premiums, some six formulae have been distinguished. These are the following where To represents the prior terminal value and the other symbols have the meaning above.

1.
$$T_1 = T_0 (1+i) - RST/(1-R)$$

2.
$$T_1 = T_0 (1+i) (1+R) - RS$$

3.
$$T_1 = [T_0 (1+R (1+i)) - RS]$$

(1+i)

4.
$$T_1 = [T_0 (1+i) - RS/(1+i)]$$

5.
$$T_1 = T_0 (1+i) (1+R) - RS$$

/(1+i)

6.
$$T_i = T_0 (1+i) (1-R) - RS$$

(1+i)

(Continued on page 7)

ters

(Continued from page 6)

It seems that #2 is derived from #1 by the transformation R/(1-R); likewise #5 from #4. #3 is #2 with the rate R of #2 divided by (1+i).

Also it can be demonstrated that #5 rate R is approximately #2 rate R times (1+i). #6 seems an orphan.

A test that is being used by California is to apply the formula used by the Company to a single premium of \$112.03910 for the 1958 CSO ALB 4% basis at age 80. The result at the end of a year should be zero as this is the single premium for an assurance of \$1000 over twelve months with monthly survival rate one twelfth the power of the annual survival rate px. An even distribution of deaths gives a very similar number. At 41/2% the number is 111.75565. For age nearest birthday at 4% the number is 107.71559 and at 41/2% 107.44286. Rates per thousand to satisfy this test are 10.0724, 10.1749, 10.1417, 10.1072, 10.2104 and 10.1394 for each of the above six methods respectively for the B table and 4% interest. An actuary wishing to test his formulae may like to try this test out. Maybe it could be expanded to include premium payments, since it seems that interest may not always be credited for the entire month when payments are received on the due

The algebra is interesting; the handling of model premiums and calculations on other than a monthly basis would seem to have a wide range of approaches. The use of the monthly death payments assumption in the test described above may be too liberal and not in conformity with the Standard Laws. Much may be of interest only to the purist, and it is interesting to see how such a simple theory can have such a variety of rate charges. Any comments and discussions will be very welcome.

John T. Gilchrist

ATTENTION ACTUARIAL TRAINING DIRECTORS

there are significant changes in the rt 3 Course of Reading. Please remind all who intend to study for Part 3 to examine carefully the Course of Reading in the 1983 Examinations booklet.

Bernard A. Bartels

HOW MYERS SERVES SOCIAL SECURITY COMMISSION

by David M. Lipkin

(Ed. Note: This is the second of two articles. The first was in our September issue.)

This reporter spoke with Robert J. Myers about his role as Executive Director of the National Commission on Social Security Reform.

Myers described two Commission goals: First, to investigate both short and long term financing alternatives for the OASDI system; second, to arrive at consensus recommendations on how to solve its financing problems. He views consensus as essential because possible solutions, which fall into the general categories of raising taxes and reducing future growth of benefits, are likely to be politically distasteful. Remedial legislation can be expected only if bipartisan Congressional agreement, based on bipartisan Commission recommendations, develops.

The Commission's plan of attack has been to explore potential long-term solutions first, on the grounds that anything done to solve them may also help to solve the short-term problems.

Why can this Commission expect to achieve greater success than the various commissions and panels that preceded it? Myers believes that this Commission enjoys two advantages: (1) the financial problems have become urgent, and (2) seven members of Congress who play key roles in enacting legislation are on the Commission. Current laws that allow inter-fund borrowing are purposely temporary, thus tending to force a lasting solution. Anyway, this temporary borrowing would provide adequate financing only till the middle of 1984, when all trust funds (OASI, DI and HI) are projected to be exhausted.

Myers, as Executive Director of the 15-member Commission, does not vote. He and his staff however, provide its members with a steady flow of memoranda giving background on possible solutions in language helpful to the members. Myers, then, is the Commission's actuarial consultant. To function effectively as such, he cannot publicly take sides on the issues under discussion, but he does discuss his private views with Alan Greenspan, the Commission Chairman.

The rest of this article will offer a glimpse of just three topics discussed in Myers' memoranda.

Alternative Method Of Benefit Indexina

One of the main causes of the funds' depletion is recent inflation, as price levels (related to the funds' outgo) rose faster than wage levels (related to their income). One of Myers' first memoranda dealt with the "wage-price differential", which he called "by far the most important economic element in connection with the long-range financing of the OASDI program."

"At times, it has been suggested that it would be highly desirable for the OASDI system to be on a basis such that it is automatically self-adjusted so as to be stable over the years, regardless of changes in economic conditions. In turn such a basis would eliminate the present dependence of the program, as to its financial stability, on the economic assumptions chosen for the actuarial cost estimates and on the resulting experience.

"Such a result was achieved in part in the 1977 Amendments, insofar as the computation of initial benefits is concerned—namely, by the procedure of wage-indexing the earnings record and, at the same time, adjusting the benefit formula according to changes in the general wage level . . .

"A change in the program can be made such that, if it is on a self-adjusting basis, the benefit structure could become completely self-stabilizing. Specifically, what should be done is to provide that the automatic benefit increases no longer be based on the percentage increase in the CPI, but rather on the increase in nationwide wage rates minus 1½%, or some other fixed percentage..."

Increase In Normal Retirement Age

In contrast to the 'ad hoc' proposals that would gradually raise the normal retirement age (NRA) to 68, Myers provided background on how the NRA might be indexed.

"The proposed methods would increase the NRA only if longevity actually increases. This procedure

(Continued on page 8)

Committee on Discipline

(Continued from page 5)

with the Society's General Counsel, Alan E. Lazarescu, on all disciplinary cases.

Our Committee operates under a rule of confidentiality which is required by our Constitution in all cases except those resulting in public reprimand, suspension, or expulsion. One purpose is to prevent harm to an innocent person's career through innuendo. Another is to prevent permanent harm to a career from a minor infraction. The Committee has been well impressed by the wisdom of this rule of confidentiality, though the opposite side to that coin is that the Committee's work becomes cloaked in mystery.

What kinds of case come before the Committee? They may be arbitrarily classified as "Business Ethics" or "Alleged Cheating on Exams by Associates". (Cheating by examinees below the Associate level is the E. & E. Committee's province.)

The business ethics cases cover a wide variety of situations, ranging from frivolous to serious. Many are dropped because the matter is not within the Committee's purview, or is withdrawn by the complainant. Comparatively few, but some, cases involve alleged malpractice of actuarial science; these are the ones on which the Committeee can render an especially useful service to the profession.

A final word about the other actuarial bodies on this continent. They all have disciplinary procedures similar to our own. Is there any kind of jointly conceived disciplinary action on a particular case? No! Each body must take, and does take, its own independent action.

Fellows Views

(Continued from page 1)

dent or as a member of the Board of Governors. (There is already a ban against repeating as President).

Our Committee has been given three jobs to do, for which see the Report of Non-Routine Business in this issue.

A complete compilation and analysis of the results of this questionnaire, consisting of about 130 pages, is available from the Society office in Chicago for \$10 a copy.

Three Strikes

(Continued from page 1)

present, the hurdle he didn't surmount. The opposition came from a group of younger men who had just passed their examinations and were resolutely against anyone bypassing the rigors they had endured.

Evans remained active in the Society, and also in the American Institute in which he'd become a Fellow other than by examination in 1919, a member of the Board of Governors in 1921, and President in 1924.

Strike Three (1928): In the light of Percy Evans' service to the profession, Society President Edward E. Rhodes sent a letter to all Fellows asking whether or not he should be made a Fellow. That informal survey turned up 16 negative votes, more than enough to veto nomination. News of this made Evans decide to get along without Fellowship in the Actuarial Society of America.

Last Laugh (1949): In June 1949 all Fellows of either the Actuarial Society or the American Institute became of equal status as Fellows of the Society of Actuaries. Percy Evans, by then four years into his retirement, must have chuckled about that.

MYERS HONORED AT OCTOBER ASSEMBLY

A symposium on the theme, "Checks and Balances on Social Security" drew nearly 50 authorities for a day's animated discussion on the campus of the American College in Bryn Mawr, Pa. on October 29th. The event's organizer, Yung-Ping Chen, Ph.D., Research Director of the McCahan Foundation, presided.

The occasion, marking Robert J. Myers' distinguished career dating from U.S. Social Security's early days, opened with a dinner the previous evening, at which many personal anecdotes were told and warm tributes paid. Three generations of the Myers' were present.

Formal papers were discussed and informal presentations made on seven session topics ranging from historical to forecasting. Ten F.S.A.'s participated.

Dr. Chen announced that the papers and discussions will be printed in due course. When they are, this newsletter will tell our readers of their availability and cost.

E.J.M.

Myers Serves

(Continued from page 7)

tends to serve as a stabilizing device insofar as the future costs of the OASDI program are concerned . . .

"The specific procedure . . . can be illustrated by considering what would be done in the initial adjustment. In 1985, when the 1979-81 Life Table will be available, the age would be determined in such table at which there is the same expectation of life as at age 65 in the 1969-71 Life Table (15.0 years). Although the 1979-81 Table is not yet available, a preliminary table for 1980 indicates that the equivalent age is 67.0. Thus, life expectancy at the current NRA increased by 2.0 years. The new normal retirement age would then be the current age (65) plus 50% of the 2.0 years increase in life expectancy, yielding a new normal retirement age of 66."

Automatic Changes In OASDI Tax Rates

"...(T)he OASDI tax rate for 199and after, as prescribed under present law would be left unchanged (at 12.4% for the employer and employee combined) until the defined 'adequate fund ratio' (of fund balance to one year's benefit payments) has been built up. This ratio is defined for purposes of illustration as being between 50% and 55%.

"When the fund ratio first equals or exceeds 60.0%, the combined employer-employee tax rate for the next calendar year would be reduced by .4%." (Thereafter, the action as to the tax rate for a particular year would be determined by a procedure that Myers described, depending on the direction in which the fund ratio moves.)

These excerpts have but scratched the surface of Myers' memoranda to the Commission. Apparent advice in them reflects not necessarily his personal beliefs, but rather hypotheses on how stabilization might be accomplished. There ample evidence of the respect accordance his actuarial knowledge and judgment, and the solid trust that this Executive Director and actuarial consultant has earned in the eyes of the Commission members.