



The Actuary

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A MESSAGE FROM OUR PRESIDENT

It is obvious that the long-term status of the actuarial profession and its significance in society, as well as the day-to-day functioning of the Society, depend crucially on the dedication of time and energy by the people who serve on Society committees.

I want to use this notice in *The Actuary* to express my appreciation and that of the Board of Governors and the members and students of the Society of Actuaries to those individuals whose volunteer work enables the Society to carry out its mission of service to the actuarial profession and the public.

I wish it were practical for me to write a letter of thanks to each individual listed in the committee roster section of the *Year Book*. However, with close to 850 people involved in committee work on behalf of the Society, this is impossible. The fact that there are so many people involved in this way is surely one of the great strengths of the Society.

PROF. POLLARD'S MORBIDITY-MORTALITY TABLE

by Louis Levinson

A "morbidity-mortality table," as conceived by Prof. A. H. Pollard, F.I.A. of Australia, is a multiple-decrement table akin to the familiar combined mortality and disability table. But, while the conventional double decrement table is the result of an investigation that takes account concurrently of the pair of decrements revealed by a single study, the decrements in the morbidity-mortality table come from independent, though doubtless properly comparable, sources.

The morbidity-mortality table has been set forth in Prof. Pollard's paper, *The Interaction Between Morbidity and Mortality*. It was submitted to the Institute of Actuaries this year, and is expected to appear in J.I.A. Vol. 107.

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THE SOCIAL SECURITY DISABILITY AMENDMENTS OF 1980

by Bruce Schobel

On June 9, 1980, President Carter signed into law the Social Security Disability Amendments of 1980. This article covers only the Disability Insurance program changes (there are many others), which fall into two major categories: (1) benefit amounts, and (2) program administration.

Benefits

Under previous law, the five years of lowest indexed earnings were excluded in calculating average indexed monthly earnings (AIME). Consequently, benefits to workers disabled at younger ages were based on a more favorable proportion of their earnings than those to older workers. The 1980 Amendments specify which years are to be excluded, starting

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"PROJECT UPDATE"

by Harvey Halpert

On March 19 the Actuaries Club of New York heard a report by Messrs. Dale R. Gustafson and James J. Murphy on the sweeping change in coverage on old policies that Northwestern Mutual Life, is offering its policyholders.

The Problem

The U.S. 1959 Income Tax Act fails to treat holders of participating policies within a single company evenhandedly in respect of the amounts that must be charged against their dividends to provide for the portion of the tax that is levied against the company's investment income. This is partly because the tax base is the excess of investment income over the policy reserve interest requirement, and partly because the "Menge formula" (10-to-1) rule used for adjusting for differing interest rates within a portfolio of policies develops serious inaccuracies when the difference between earned and reserves interest rates is as large as it has recently become. This injustice among policyholder groups has been specially troublesome in the speakers' company because more than half their policy reserves are on a 2% or a 2¼% interest rate. New policies since January 1978 are valued at 4% interest.

The Solution

It was decided to offer policyholders a choice between (i) having their policy face amount increased, reserves and cash values henceforth to be at 4% interest, or (ii) keeping their present policy just as it has been. The premium would be the same in either event. This means equating the current policy reserve (and the cash value*) for the old face amount

*To keep before-and-after cash values as well as reserves the same, requires special treatment to keep what used to be called the "surrender charge" unchanged...

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Letters*(Continued from page 2)*

It is pleasant to report that in the series between the North Stars and Montreal which went seven games, the team that scored the first goal won five of the seven (71.4%). Actuarial projections triumph again, as the Minnesota team kept actual in line with expected. Doubtless our Canadian brothers cursed the odds, but you can't beat the law of "large" numbers.

James J. Knutson

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Life Masters

Sir:

The American Contract Bridge League has announced that Life Master #30,000, Natalie Rollier of Dallas, is the wife of an actuary. Her husband, Jack A. Rollier, simultaneously qualified as LM #29,999.

Another actuary still frequently mentioned in ACBL Bulletins is Life Master #2, Oswald Jacoby. Other Society members who have been LM's for close to 25 years are William A. Poissant and Edward G. Wendt. Milton Q. Ellenby was a National and World bridge champion even before achieving his Associateship. Are there others who should be mentioned?

Among the ladies we should mention Dorothy Hayden Truscott. She never became an actuary, but after a brief career in an actuarial department became one of the world's top bridge players. Her partner frequently has been B. J. Becker, LM #6, who has some relatives who are FSA's.

Many Society officers are, or were, excellent players and would have become Life Masters had they seen fit to devote to bridge the time and expense required. Two who did so achieve were the late William M. Anderson, President 1955-56, and Fredrick E. Rathgeber, Vice-President 1968-70.

Students of actuarial science who may read this are advised that LM #29,999 achieved FSA first, then took up serious tournament bridge.

J. Eugene Taylor

Sir:

There has been controversy in ACBL's *The Contract Bridge Bulletin* on who developed the point-count method. William M. Anderson's name wasn't mentioned until Oswald Jacoby described Ander-

son's role as well as Jacoby's own, in the letter excerpted below.

Richard M. Sellers

Mr. Jacoby's letter contained the following:

"In 1932 I married a tennis player who wanted to learn bridge. In teaching her I found quick trick valuation hopeless and started a count of 3, 2, 1, ½ to teach her. After a while it became apparent that I was bidding better with the Boss (she still is), so I started using point count with my regular partners.

....

"(Charles) Goren's first real use of point count came in 1937 . . . Some time later Bill Anderson, a distinguished actuary, suggested the short-suit distributional addition to Goren.

". . . When I got back (from World War II) I found that lots of players were using 4-3-2-1. While I can show conclusively that 3-2-1-½ is a smidgeon better, I saw no reason not to follow the majority. Everyone has followed suit by now except some die-hard idiots who say points aren't worth a damn."

* * * *

Formula For Desperation

Sir:

Roland Dieter (February issue) urges that one of the criteria for exam success be the amount of effort the candidate has expended in preparation. Aside from the, to my mind, insurmountable problems of measurement and verification, such a plan is a formula for desperation: the harder one studies, the harder one has to study in order to pass. Movement by the Society to dilute standards based on performance with those based on effort would open a Pandora's box of subjectivity.

Paul E. Buell

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MEA Virtute

Sir:

My defense to C. F. B. Richardson's criticism (April issue) that I didn't list his and other past lapse studies is that those studies didn't touch on what I was writing about, i.e., the need for lapse tables representative of the industry as a whole. The papers he mentioned are indeed excellent studies of lapse characteristics, but they deal in the experiences of individual companies.

Frank Zaret

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Boot Camp

Sir:

Your readers have in recent issues been treated to gripping statistical tales of actuaries who have had actuarial siblings, passed exams the fastest, died the oldest, been born the youngest, etc. Allow me, in that hallowed tradition, to stake my claim to fame as the actuary who learned to tie his shoes the youngest, viz., at 3 months, 8 days. While I didn't learn to untie them until taught how in the Society's study note on variable annuities, I claim my place among those great actuaries whose achievements are continually recognized in your pages.

Claude Y. Paquin

* * * *

Faces Are Red

Sir:

To quote Mark Twain, "The reports of my death have been greatly exaggerated." Reading my obituary in the April issue was an experience few encounter. However, for my next obituary, please note that I am an F.S.A. (1979) and not an A.S.A. Although attaining that designation has been described as "almost killing me," I made it there alive!

Joseph L. Moskowitz

Ed. Note: Confusion between two members of the same surname in our 1978 Year Book resulted in our listing Mr. Joseph L., instead of Joseph, in the April Deaths. We are relieved to receive Mr. Moskowitz's good humored letter, and tender him our humble apologies.

* * * *

Self-Appointment Par Excellence

Sir:

In response to George Ryrie's story of his two Fellowship scrolls (February issue), may I file my claim as the only actuary who has signed two of his own diplomas. In 1949 I signed my own Society certificate as Secretary-Treasurer. Sixteen years later I signed my Academy certificate as President.

Henry F. Rood

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(Continued on page 7)

Morbidity-Mortality Table

(Continued from page 1)

Origin of the Idea

The seed of this analytical system had been in the author's mind for more than thirty years. The current stimulus for the paper was the formation of a committee on factors affecting mortality and length of life by the International Union for the Scientific Study of Population, which committee was ushered in with a comment that

"the traditional demographic and actuarial approach to mortality produces diminishing returns . . . (and) closer links with other biomedical disciplines, with genetics or biology, are essential if we wish as demographers to improve our contribution to the study of mortality."

Advantages Cited

Prof. Pollard sees his system as productive of numerous useful measures, notably: the chance at birth of incurring a specified disease during any subsequent period; the chance of dying from the disease; the relative survival rate; the percentage of the population afflicted by the disorder; the incidence of the disease per 100,000 of total population; the death rates from the disease; the median age of incurring the ailment and the average subsequent survival; the expectation of life free of the disease, etc., etc.

In justifying the unconventional approaches employed, the author points out that demographers have used various mixes of data for estimating longevity in countries handicapped by inadequate statistics. By applying to diverse material the ratios and empirical formulae found to apply universally, demographers, it is asserted, have been able to obtain satisfactory results.

Table Format

The author's tables, displayed for illustration in his paper, require eleven columns to exhibit numbers living, numbers incurring the disease being studied, and deaths from the disease and from other causes. Of major interest is the combining, as already mentioned, of material from different sources. In the examples presented, experience of the total 1976 Australian population is fitted with experience of cancer incidence and mor-

ELIZUR WRIGHT'S DAUGHTER LUCY

Lucy Jane Wright (1842-67), rather than Emma Warren Cushman (February issue), might have become the actuarial world's first Lady Fellow. Eduard H. Minor, who remembered reading about her in T. O'Donnell's book of the 1930's, *History of Life Insurance in Its Formative Years*, and Stephen L. Smith, who had his company's records perused for details of her life in Maine, combined to supply the story for this sketch.

As Mr. O'Donnell recounted, Elizur Wright put his daughter Lucy, and his other children, to work on his actuarial calculations. Thus Lucy, in 1858-66, learned the rudiments and more of actuarial science.

On May 2, 1866, Miss Wright was appointed actuary of Union Mutual Life Insurance Company of Portland, ME. From the pages of that company's history (*A Maine Heritage*, George Stuyvesant Jackson, 1964), we learn that she had an impressive background: "By the time she was 15, she had not only mastered college mathematics (without ever going to college) but was well versed in civil and mechanical engineering." And yet "she was no solemn young mathematical prodigy . . . but . . . a born mimic and master of impersonations, a talented artist and amateur playwright . . ."

Sad to report, onslaught of tuberculosis forced Miss Wright to resign after seven strenuous months as an actuary. She died on May 26, 1867—22 years before the Actuarial Society of America was founded. To her goes the honor of having been the first North American woman actuary. □

tality compiled by the New South Wales Cancer Registry for 1972. Morbidity embracing other diseases came from the Intercontinental Medical Statistics International, formed in U.S.A. 1954 and since extended to other countries.

Comment

The author's analytical procedure strikes this observer as being thoroughly worthy of study by actuaries on this continent. □

BOOK REVIEW

The Journal of Irreproducible Results. Published quarterly by the Society for Irreproducible Research, Box 234, Chicago Heights, IL 60411. 32 pp. Annual subscription, \$3.70 within USA, \$4.45 elsewhere.

For our readers who relish satire and hilarity at the expense of people like ourselves, it seems safe to recommend that you risk a year's subscription to this *Journal* so you can find out whether its contents tickle your funny-bone as they do this reviewer's.

The *Journal's* editorial staff is impressive, consisting of people in 38 disciplines. To draw a sample, #1 is Astronomy, #11 Genetics, #21 Neonatology, and #31 Psychology. The actuarial profession is not represented on the current list of Associate Editors. Assuming that the numbering is to be taken seriously—it is hard to know when one's leg is being pulled—the magazine is in its 26th year, and has been a quarterly for seven of these years.

Its major content is of three kinds. There are derisive descriptions, some of them ribald, of pseudo-research, bearing titles such as:

A Refutation of the "Proof" That Heaven is Hotter Than Hell
The Rational Number Shortage
A Model of Secrecy
Predictive Documentation by Computer

Then there are quotations from serious articles and speeches that, at least when quoted out of context, range from whimsical to uproarious. And there are tongue-in-cheek Letters to the Editor.

Each issue's cover, of the three we have seen, displays a caricature of some scientific object.

The moving spirit, who is said to publish it at a negative profit out of his laboratory, is George H. Scherr, Ph.D. To describe the product, as one reviewer has, as a ray of sunshine to lighten one's despair, seems fitting.

E.J.M.

Myers' Social Security Summaries—For the Asking

The latest in Robert J. Myers' famous series of Summaries of the provisions of the OASDI and Medicare system may now be had free by writing to Mr. Myers at his *Year Book* address. It even includes the just enacted disability amendments.

Social Security Disability

(Continued from page 1)

with zero years for claimants under age 27, increasing by 1 year for each 5 years of age, reaching the maximum of 5 years at age 47.

A new feature allows workers below age 37 to exclude additional years* in which they were unemployed and there was a child under age 3 living in the same household.

Under previous law, the maximum benefit payable to a disabled worker and his family varied from 150% to 188% of the worker's benefit. The new law lowers this maximum to 85% of the worker's AIME, or 150% of his benefit if less, but never below the worker's benefit.

Administration

One major administrative change is designed to improve the quality of disability determinations made by state agencies. Commencing in 1983, the Social Security Administration must review at least 65% of all state agency allowances. In addition, the Secretary of Health and Human Services is required to specify administrative procedures and set performance standards for state agencies.

Disabled beneficiaries have been required to re-establish periodically their entitlement to benefits if their primary diagnosis is any of thirteen specified impairments from which recovery is considered likely. The 1980 Amendments require that from 1982 all beneficiaries with impairments rated as non-permanent be re-examined at least once every three years.

The 1980 Amendments provide incentives (or remove disincentives) for disabled beneficiaries to return to work, in several ways: (1) a former beneficiary need not wait the usual 24 months for Medicare eligibility, (2) Medicare eligibility is extended for 36 months after a beneficiary returns to work, provided the beneficiary has not medically recovered, and (3) benefits may be continued after medical recovery if a beneficiary is enrolled in an approved vocational rehabilitation program.

*Total exclusion, regular and additional, is limited to 3 years.

Federal Statistics

Financing America's Unemployment Compensation Program

Reviews the financing problem, identifies major taxation issues, lists policy options and offers recommendations. Available from Lillian Howard UI Service, Employment & Training Admin., 601 D Street, N.W., Room 7000, Washington, DC 20213.

Income of U.S. Population 55 and Over, 1976

Begins a biennial series on incomes of older people. Tabulates major income sources, amounts, and proportions by age, marital status, sex and race. Staff Paper No. 35, SSA Publication 13-11865, single copy free from Publications Staff, Office of Research & Statistics, Social Security Administration, Rm. 1120, Universal North Bldg., 1875 Connecticut Ave., N.W., Washington, DC 20009.

Major Changes in U.S. Age Structure

The age structure in the U.S.A. has been changing significantly. The Census Bureau's latest estimates by age, race and sex show major shifts, specially among young adults and the elderly. A copy of Estimates of the Population of the United States, by Age, Race, and Sex: 1976 to 1979, Series P-25, No. 870, is available for \$1.75 from Government Printing Office, Washington, D.C. 20502.

State Population Estimates by Age, 1971-79

Every state saw considerable growth in its young adult and elderly populations in the 1970's. Changes in age distributions were most apparent in regions and states heavily affected by migration. A copy of Estimates of the Population of States, by Age, July 1, 1971 to July 1, 1979, Series P-25, No. 875, is available for \$1.00 from G.P.O. at the address above.

U.S. Population Gain Since 1970 Concentrated in California, Texas and Florida

The Bureau of the Census reports that population growth between 1970 and 1979 was concentrated in three states—California, Texas and Florida. Those three accounted for almost 7 million of the country's 16.8 million growth in the decade. A copy of Annual Estimates of the Population of States: July 1, 1970 to 1979 with Components of Change, Series P-25, No. 876, can be had for \$1.25 from G.P.O., same address.

It is estimated that these Amendments will reduce DI program costs by about 10% relatively, although the full effect will not be felt for several years. Most of the provisions affecting benefit calculations apply only to workers who become entitled to benefits for the first time after June 1980. For a fuller explanation of the effects of the new law, please write the Office of the Actuary, Social Security Administration, Suite 700, Altmeyer Building, Baltimore, MD 21235. □

MISTREATMENT OF ACTUARIAL COST ESTIMATES FOR MEDICARE

Memo by Robert J. Myers

Ed. Note: Mr. Myers has given a more detailed version of this memorandum to the Commissioner of Social Security and other government officials. A copy of the text is available from him, on request to his Year Book address.

For 45 years the Executive Branch and the Congress have based their planning of the OASDI and Medicare programs on actuarial cost estimates made by qualified actuaries in the Social Security Administration. Those actuaries have always made their estimates in a professional manner, not letting their own views on the desirability of the proposals, or the possible wishes of the policy-planners to have low estimates for changes they favor (or high ones for changes not favored) affect their results. All parties, regardless of their political views, have come to take for granted the integrity of the actuarial cost estimates as bases for legislative decisions.

But, in recent months, actuarial cost estimates for the Medicare program appear to have been misused. Two such instances are summarized here in the hope that publicizing them will decrease the likelihood of future such occurrences.

Case No. 1

The actuarial estimates of the effect of the End-Stage Renal Disease provisions that were aimed at encouraging home dialysis in Public Law 95-292 showed a cost increase of \$31 million for fiscal year 1979, followed by appreciable savings later. But in a so-called Fraud, Abuse, and Waste Initiative Package prepared by the Executive Branch in December 1978, Initiative #8 (dealing with this matter) showed a saving of \$10 million. This misuse of the estimates was, I understand, rectified and not passed on to Congress; nonetheless, it is an example of undesirable tendencies.

Case No. 2

On Oct. 25, 1979, the Congressional Budget Office submitted to the Senate Committee on Finance cost estimates for H.R. 934, the Medicare-Medicaid Administrative and Reimbursement Reform Act of 1979. The acknowledged basis was a set of figures furnished by the ac-

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FROM OUR COMPETITION EDITOR

Puzzling actuaries will welcome a new series of supplements, Cryptic Crosswords, which we plan to alternate with our popular Actucrostics. The one accompanying this issue came from the shore of the English Channel, out of the fertile brain of a welcome guest composer, R. Graham Deas, A.S.A. Mr. Deas, father of one of our own Vice-Presidents (D.D.B.), has done his bit to preserve this newsletter's reputation for sanity by providing some tips on where to seek solutions to clues in this peculiarly British cousin of the familiar crossword. Says he:

The clues, deliberately and artfully confusing, usually consist of two or more relevant parts. When the right answer is found, a kind of oblique logic in the clue becomes evident. The task is rather like finding a position on a map from cross bearings.

The component parts of these clues take several forms. Most common is an anagram hidden in the clue's words; a word such as "mixed" or "sort" suggests this form. Or, the answer may be concealed in a sequence of letters bridging successive words of the clue. Sometimes all or part of such a letter sequence may be reversed—if so, some word that obtrudes will give a hint where to look.

As far as the compiler can manage, there is not a single unnecessary word in a clue, even though it looks long by the standards of regular crosswords. So, if a word looks out of place, pause and ask yourself why it has been put there.

Some clues are extracts from well-known quotations, and frequent use is made of puns and double meanings.

One cheering point—answers usually are common words. The object is to test the solver's imagination rather than his or her dictionary knowledge.

* * * *

Here are the solutions to the Actucrostics that came with the May issue:

Actucrostic 5. *Author:* (Donald R.) Schuette. *Work:* (A Linear Programming) Approach to Graduation. (*Transactions*, Vol. XXX). "The Whittaker-Henderson Type B method of graduation, in which the weighted sum of the squares of the deviations of graduated values from observed values plus a parameter times the sum of the squares of the z th differences of the graduated values is minimized, is modified by using absolute values instead of squares."

Non-actucrostic 1. *Author:* (Sir Fred) Hoyle. *Work:* "Astronomy and Cosmology." ". . . the power received from a cosmic source is very small indeed, . . . It has been estimated that all

the radio power received by all the world's radiotelescopes operating for a decade would not raise the temperature of a spoonful of water by as much as a millionth of a degree."

C.G.C.

POLICY DIVIDEND QUESTIONNAIRE TO STOCK COMPANY ACTUARIES

The Society's Committee on Dividend Philosophy has sent a questionnaire to the chief actuary of every U.S. and Canadian stock life company that employs one or more Society members.

The objective is to assemble information about those companies' practices and philosophy in the determination and illustration of non-guaranteed benefits. The Committee has already published an exposure draft of opinion and recommendations for participating individual life insurance of mutual companies (Opinion S-7).

Replies are to be confidential, even from the committee members themselves, by the same technique used to preserve secrecy in Society elections.

Individual Views Invited

The Committee would like to have the benefit of the views of individual actuaries on the ideals of practice and philosophy in this important subject of stock company non-guaranteed benefits to policyholders. Actuaries who might want to express their views, or who just want to see the questionnaire, may obtain a copy from Richard S. Miller at his *Year Book* address.

The Committee plans to report its findings to the Board of Governors early in the fall.

Exam Seminars

Georgia State University will offer seminars for these Fall 1980 exams:

Society, Parts 2, 3, 4, 5, & 6
Enrolled Actuary, EA-2
Casualty Society, Parts 5 & 9,
if sufficient interest.

For details, ask: Prof. Robert W. Batten, Dept. of Insurance, GSU, Atlanta, GA 30303.

PLACES AVAILABLE ON ADVISORY COMMITTEE TO JOINT BOARD FOR ENROLLMENT OF ACTUARIES

Next fall, the 2-year term of the Joint Board's present Advisory Committee on Examinations for the EA designation will expire, and a new Advisory Committee will set about preparing the November 1981 basic and pension exams and then the May 1982 basic exam. Anyone possibly interested in becoming a member of the new Advisory Committee is cordially invited to talk with members of the present Advisory Committee, or with the Joint Board's Chairman, or its Executive Director, names, addresses and phone numbers of whom are obtainable from the Society office.

The qualifications are that the actuary be enrolled and have a keen interest in exam preparation work. Each year's activities involve 100-150 hours of review and editing of examination questions, including about six meetings. See also the article on these exams by Rowland E. Cross in *The Actuary*, September 1979.

An official invitation and description is in an early summer issue of the *Federal Register*. Application deadline is one month after that formal notice appears.

NEW PROGRAM ANNOUNCEMENT PROCEDURE CUTS COSTS

The cost-conscious Program Committee approved a staff recommendation that preliminary program announcements for the Spring and Annual Meetings be condensed to eliminate irrelevant items not directly connected with topics of the meetings.

The effect on printing and mailing costs was dramatic. They averaged \$7,137 for the 1979 Spring Meetings; for Hartford 1980 they fell to \$3,951. Executive Director John O'Connor welcomes comments on this new procedure.

Medicare

(Continued from page 5)

tuaries, but the CBO changed them. Certainly, the CBO can make its own estimates if it wishes, but it should then state clearly that its estimates have modified the ones furnished to them by the actuaries, and differ therefrom.

JUSTING OASDI BENEFITS IN UNUSUAL ECONOMIC TIMES

by Robert J. Myers

The existing provision for automatic increases in Social Security benefits proportional to the rise in the Consumer Price Index is sound, I believe, provided the CPI itself is a reasonable and proper index.

But if, over any extended period, prices rise more rapidly than wages, it is unfair for active workers to be burdened by a lowered standard of living, while beneficiaries get the benefit of a full CPI increase at the expense of those workers. Hence, under such circumstances the adjustment should somehow be modified.

Simply basing the benefit increase on the lower of the wage and price changes does not solve the problem satisfactorily, because it gives beneficiaries the worst of both worlds under conditions that are mere fluctuations. For example, if wages increase more than prices by 1% in one year, but the reverse occurs in the next year, it seems just and proper to use the price index for both years.

I have developed a modification of the automatic-adjustment provision that I believe works equitably in unusual economic times when wages rise less rapidly than prices for several successive years. I propose that the percentage increase derived by the present method be reduced by the average percent that the wage increase was lower than the CPI increase in the second and third preceding years. This plan takes into account the necessary lag in obtaining indexing factors for wage changes as compared with factors for price changes under the present definitions of those factors.

One possible version of this proposal would be to provide that such reductions be offset by later adjustments upward when wage increases again become larger than price increases.

An illustration of both parts of this plan is presented in the table below. As an example, the 1981 CPI increase as derived under present law would be reduced by 0.1 percentage points so as to reflect the average 0.1% excess of the CPI over wage increases that occurred in 1978 and 1979. Beginning in 1985

in this example, CPI adjustments would be increased until the illustrated reduction of 7.4 percentage points for 1981-84 had been restored.

Objection might be raised to the logic of imposing reductions in years, such as 1982 in the illustration, when wages

are increasing more rapidly than prices. The answer to this criticism is that, because of the lag, beneficiaries will have had larger benefits than if the adjustment data had been available currently, so really they are somewhat ahead, rather than behind.

Illustration of Proposed Automatic-Adjustment Plan For 1980-86

Year	Increase under Present Law	Wage Increase from Prior Yr.	(2) (minus) (1)	Avg. of col. (3) for 2nd & 3rd prior yrs.	Adjusted Increase (1) + (4)
	(1)	(2)	(3)	(4)	(5)
1978	6.5%	7.9%	+1.4%		
1979	9.9	8.3	-1.6		
1980	14.3				
		8.5	-5.8		
1981	10.0	9.0	-1.0	-.1%	9.9%
1982	9.0	9.6	+.6	-3.7	5.3
1983	7.0	8.0	+1.0	-3.4	3.6
1984	6.0	7.6	+1.6	-.2	5.8
1985	5.0	n.a.	n.a.	+.8	5.8
1986	5.0	n.a.	n.a.	+1.3	6.3

The figures above the line are actual (or reasonably close thereto). Those below the line are only for purposes of illustration.

Letters

(Continued from page 3)

An Author Replies

Sir:

The figures in my article (Feb. issue), on which Messrs. Kovacs and Myers have kindly commented, were designed for use with 1979 monthly earnings. When E represents 1980 earnings, the relationships are:

1980 Monthly Earnings (E)	Approximate AIME
Up to \$1,125	.942 E
\$1,126 - 2,313	- (.0023E) ³ - (.0145E) ² + 1.153E
Over \$2,313	\$1,382

The method was intended, as Mr. Myers said, to produce values at the beginning of the calendar year of attaining age 65. The formula for retirements occurring uniformly through the calendar year, would be:

$$PIA (CYB + 65) = PIA (1979) \times 1.07^{CYB-1914} \times (1 + [.07 \times 7/12])$$

Mr. Myers also is correct in saying that the birth-year must be 1917 or later, i.e., within the period to which the AIME method applies.

My assumption wasn't that the rates of CPI and average wage increases would be the same, but that replacement ratios for workers with the same present earnings but different years of birth would be the same percentage of their final earnings. This was the intent of those who legislated the 1977 amendments, and it appears they were successful.

As Mr. Myers observed, the greatest divergence between exact values and my approximation is at the highest earnings levels. As time goes on, my method should become more accurate in that range; meanwhile, the distortion is not excessive for the age and salary distributions of most plans.

Richard Carson

"Project Update"*(Continued from page 1)*

on the old reserve basis with that for the new face amount and the 4% reserve. A natural consequence of this is that dividends in future years will increase less rapidly than they would have increased had the policy not been changed. Policy provisions, specially the policy loan interest rate, were to remain unchanged.

Since the increases in face amount that emerged from the arithmetic were sometimes large, even exceeding 20%, it was felt necessary to place limits thereon to protect against possible severe adverse selection in the event that the proportion of such policyholders accepting the offer proved disappointingly low. Policies subjected to these limits were granted dividend additions offsetting their decreases in basic reserves.

So that all tax savings resulting from the program would be passed along to the policyholders who accept the offer, implementation costs for developing, publicizing and administering the program are being paid out of general surplus. The plan has been approved by all 50 states and the District of Columbia, and the company expects about a two-thirds acceptance rate.

Field Force Considerations

The change being a policy change, not in any sense a replacement, and there being no premium increase, no agent's commission accrues. Yet it was necessary to secure thorough and widespread agent cooperation if policyholders' questions were to be adequately answered and the considerations involved in making the choice sufficiently understood. Agents were given complete details of the program, and were placed in a position to explain the computer-prepared comparisons that were, over a period of a year, being mailed to eligible policyholders.

The company believes that the pains it has taken to acquaint its agents with the purpose and merits of the offer will minimize instances of replacement of policies within the company, and that the favorable terms of the program make any attempts by agents of other companies to raid the business unlikely to succeed.

A SALUTE TO OUR 25 OLD-TIMERS WHO ATTAINED THEIR PRESENT MEMBERSHIP STATUS BEFORE 1925

1913	Paul V. Montgomery, FSA	Dallas, Texas
1917	Charles W. Gamerdinger, FSA Henry G. Sellman, ASA	West Hartford, Conn. Monmouth, Ill.
1919	Erston Marshall, FSA W. Rulon Williamson, FSA John V. Hanna, ASA	Atlanta, Ga. Windsor, Conn. Concord, N. H.
1920	William P. Barber, Jr., FSA F. Bruce Gerhard, FSA Marcus Gunn, FSA James E. Hoskins, FSA	Redington Beach, Fla. Summit, N. J. Sacramento, Calif. West Hartford, Conn.
1921	Horace Holmes, FSA Francis McAdam Smith, FSA	Kitchener, Ont. Long Bell Island, N. J.
1922	Alden T. Bunyan, FSA Elder A. Porter, FSA	West Hartford, Conn. Athens, Ohio
1923	J. Gordon Beatty, FSA Henry S. Beers, FSA Arthur W. Larsen, FSA Morris Pike, ASA Norris E. Sheppard, ASA	Toronto, Ont. Tucson, Ariz. Omaha, Neb. White Plains, N. Y. Toronto, Ont.
1924	Albert E. Babbitt, FSA Reinhard A. Hohaus, FSA George L. Holmes, FSA James T. Phillips, FSA John D. Williamson, FSA Elizabeth W. Wilson, ASA	New York, N. Y. Greens Farms, Conn. Willowdale, Ont. Toronto, Ont. Toronto, Ont. Lexington, Mass.

Acknowledgements to the Institute of Actuaries, which shows this information annually in its *Year Book*, and to Messrs. Oates and von Schilling who suggested (May issue) that we start doing likewise.

What Will Other Companies Do?

This program naturally has created widespread interest, making it likely that this lead will in due course be extensively followed. Similar offers, however, are expected to make their appearance slowly because the systems required to accomplish the task are complicated, specially so in companies whose patterns of policy editions are less adaptable to making straightforward conversions than in this company.

Ed. Note: We learn of one other company, Pan-American Life, that is making a similar benefit increase on its old policies effective June 30, 1980. One difference is that no formal policyholder acceptance is being solicited, because in their version future cash values will always be at least as large as if the increases in death benefits had not been granted, and the current dividend scale is being continued.

Deaths

Frederic P. Chapman, F.S.A. 1933
Juris Lielais, A.S.A. 1979
James S. Elston, F.S.A. 1918

Jim Elston was particularly active in the American Institute of Actuaries. He was Editor of *The Record* from 1929 to 1946 and was one of the Vice Presidents at the time of the merger with the Society.

He also edited the second edition of the Society's Actuarial Study No. 1, *Sources and Characteristics of the Principal Mortality Tables*.

Contributions to the Actuarial Education & Research Fund, 208 S. LaSalle St., Chicago, 60604, in memory of any deceased Society member are acknowledged to the donor and to the member's family.

NON-ACTUCROSTIC 1

DEFINITIONS

WORDS

A. Apathetic; ambivalent.
(hyph. wd.)

197 80 75 211 159 104 186 89 76

M. Scientific demonstration
of accuracy. (2 wds.)

194 99 168 2 119 201 174 72 63

128 50

11 154 43 84 18 126 210 184

B. Indebted.

122 6 144 55

N. To long for.

39 67 112 88 207

C. Triangular traffic sign.

191 51 117 148 68

O. Obnoxious.

142 86 17 169 74

D. Exact, faultless.
(hyph. wd.)

203 160 131 1 157 79 176 218

P. Plummet.

179 19 40 57 47 82 94 10

9 135 165 32 187

Q. Wreckage.

143 92 56 31 205 120

E. Chosen.

37 44 171 91 116 217 109

R. _____ girl.
(related to scouting)

121 192 25 4 180 132 137 33

F. Fragrant.

42 8 115 64 73 102 13 196

S. Atrocious.

29 195 161 38 139 134 140 106 181 61

G. Ding-a-ling.

110 22 212 69 154 37 111 190

T. Front edge of the tibia.

156 70 26 133

166 65 202 150

U. Reduced to a pulpy state.

41 200 28 53 49 139

H. Compress.

62 7 204 184 24 141 45 164 15

V. Blacklisting.

146 175 208 170 130 27 155 35 163

I. Redundant.

189 12 127 162 52 45 152 91 81

W. Workshop.

182 198 97

147 125

X. Outshine.

177 14 48 133 193 77 71 149 172 145

J. Out-of-date.
(hyph. wd.)

23 100 16 173 21 199 209 114

Y. Pleasant.
(hyph. wd.)

215 151 206 96 103 30 20 173 107

183 46 58 213

60 113

K. An FDR cabinet member.
(2 wds.)

59 78 105 81 124 54 101 214 129

Z. Cowardly.

98 90 108 118 136 185

L. Effective.

5 123 95 216 167 66 34 36 3

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300
12	I	13	F	14	X	15	H	16	J	17	O	18	M	19	P	20	Y	21	J	22	G	23	J	24	H	25	R	26	T	27	V	28	U	29	S	30	Y																																																																																																																																																																																																																																																																								
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164	H	165	D	166	G	167	I	168	M	169	O	170	V	171	E	172	X	173	J	174	M	175	V	176	D	177	X	178	Y	179	P	180	R	181	S	182	W																																																																																																																																																																																																																																																																								
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