



The Actuary

The Newsletter of the Society of Actuaries

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ACTUARIAL EDUCATION AND RESEARCH FUND (AERF)

Ed. Note: This description is taken from Morton D. Muller's report at the October 1979 Society Annual Meeting.

The Actuarial Education and Research Fund was organized in 1976 to advance knowledge of actuarial science, and to respond to public needs for education and research in our fields. It is managed by 12 directors, two from each of its six sponsoring actuarial bodies. This Board is organized into three subcommittees, to consider projects, respectively, for life and health insurance, for property and casualty insurance, and for pension plans.

A leading achievement so far has been the Fund's role as contracting party on behalf of our profession in launching a major study of public employee pension plans with relation to the issue of universal coverage under Social Security. Also under way are (1) publication of writings of the late Hugh H. Wolfenden, and (2) preparation of a text on loss distributions that will have application to rating and to reinsurance. Several other projects are near the announcement stage.*

AERF has taken over administration of the David R. Halmstad Memorial Fund, income from which is to be used to award annual prizes for estimable actuarial papers.

Obtaining money for the Fund's activities is naturally a matter of continuing concern. Those persons and organizations who desire to further the interests of our profession, and those who have special reason to expect benefits from specific projects, are counted upon to supply unrestricted and specified contributions, respectively.

*One of these is the social insurance monograph described elsewhere in this issue. □

HISTORICAL FRAGMENT

"She was the first woman . . . to be honored with membership in any American or European actuarial society." So reads the obituary of Emma Warren Cushman in Vol. XXIV of our old *Transactions*.

But what were the circumstances that led to Miss Cushman's election in October 1895—when the Actuarial Society was but six years old, and when acceptance of women into male strongholds was by no means easy? We hope that, even 85 years later, some reader will be able to throw some light on this.

The record shows that this pioneer lady had, just a month before her election, been a member of the United States delegation to the First International Congress of Actuaries in Brussels. That autumn the Actuarial Society, meeting in Montreal, elected nine actuaries to Fellowship, among whom Miss Cushman was the only North American. Seven of the eight others were officers of the Institute, the Faculty or the Congress itself. The eighth was Tsuneta Yano, a distinguished Japanese actuary. Was her election in some way a consequence of her attendance at the Congress?

It appears that in Great Britain at that time the door to Fellowship for a woman was firmly closed; we do not know what was the case on the European mainland. It was not until 1919 in London—following action to the same effect a few months earlier by the Faculty in Edinburgh—that the Institute unanimously adopted a resolution as follows:

That women be admitted to the Institute on the same conditions as men, and that the masculine shall include the feminine in all the Regulations of the Institute.

We would welcome observations from overseas readers on such questions as

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HOSPITAL AND MEDICAL CARE NEEDS —SEEN 20 YEARS LATER

by John M. Bragg

In 1959 I had the honor of moderating a Society panel on Hospital and Medical Care Needs; panelists were Morton D. Miller and W. Sheffield Owen, C.L.U. Now I am in the editor's select group of old-timers asked to say "what we worried about—and what happened". (*Ed. Note: First in this series was in the December 1979 issue.*)

That discussion majored on a resolution that had been adopted six months earlier by the Health Insurance Association of America. The statement had been described as "probably the greatest forward step in the history of insurance in our time." There was no use being modest! With 20/20 hindsight I can now divide that resolution's recommendations into two groups:

Successes:

1. Cancellations of individual policies must be minimized.
2. Guaranteed renewable policies must be developed (at a "jet-propelled" rate, said Morton Miller).
3. Group conversion privileges must become widely available.

Shortfalls:

1. Substandard A&H coverage without waivers must be developed.
2. Individual coverage over age 65 must be developed and greatly expanded.
3. Groups must cover retired people.

Coverage over age 65 was our dominant theme. This was recognized as the *crucial need*, to head off the "hundreds of bills" before Congress to provide health care for the aged. Insurance people were estimating that, although only 40% of the aged population was covered, this would rise to 90% by 1970.

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Actuarial Meetings

Feb. 14, Baltimore Actuaries Club
 Feb. 19, Chicago Actuarial Club
 Feb. 19, Actuaries Club of Philadelphia
 Mar. 13, Baltimore Actuaries Club
 Mar. 18, Chicago Actuarial Club
 Mar. 20, Actuarial Club of Indiana

Hospital, Medical Care

(Continued from page 1)

This did become a shortfall area. Medicare became law in 1966. Even now only some 60% of the aged population have any private coverage.

There was talk of paid-up individual coverage for the aged, but this seems never to have gotten off the ground. An intriguing remark, though, was made by Morton Miller: "Pre-funding of health insurance costs for retired lives is possible through a deposit fund in much the same way as the group annuity deposit administration plan." Shades of today's product phenomenon: Retired Lives Reserves!

The most significant developments in the health insurance world since those days are, in my view, the following:

1. Medicare became law in the U.S.A.; and government coverage in Canada.
2. The U.S. public appears now ready to accept national health insurance for catastrophic illnesses.
3. The health insurance business also is ready to accept national health insurance, provided a major role for the private sector is preserved.

But, does that get us out of the woods? No! Just as in 1959, there is a dominant theme—a *crucial need*; unless it is met, the insurance business can have no future. That need is cost containment. Is this not an engineering service we can render? The principal key is a compulsory limit on the amount of health care rendered; or at any rate, a compulsory limit on the amount of health care being paid for by insurance plans. In a word—"profiles".

Mr. Owen died in 1965. The best way to close this article is to quote a remark he made in that 1959 discussion: "Until we demonstrate our capacity to furnish the services that are needed and desired by the people—on an efficient and effective basis—we deserve to fail." □

ACTUARIAL PERFORMANCE APPRAISED

by Robert A. Lyle

Ed. Note: In their first joint meeting, the Chicago and Wisconsin Clubs undertook a noble experiment—inviting several qualified observers to rate actuaries' achievement. This account, by the Secretary-Treasurer of the Wisconsin Club, may be useful to Program Directors of other clubs.

The panel for what proved to be a timely and lively discussion of the topic, "How outsiders view the actuary," consisted of: a Trust Officer (Clayton A. Boggan, Winston-Salem, N.C.), a recent Insurance Commissioner (Russell E. Van Hooser, Milwaukee, Wis.), and a Home Office Official (Earl J. Borge-son, Milwaukee).

The discussion leader (E. J. Moorhead, Winston-Salem) began the discussion by posing this question: "What should I, and my corporate profession, start doing, or start doing differently, or stop doing, so that we actuaries may improve our performance?" He suggested that actuaries, beset somewhat by tunnel vision, can benefit from "seeing ourselves as others see us."

Initial presentations were on those tasks that actuaries perform well. Mr. Van Hooser said that our greatest strength is our ability to organize, to put facts into analytical sequence so conclusions can be drawn. Mr. Borge-son cited the enormous respect within the industry for our profession and the people in it, and the high public confidence in actuaries. We are often seen as "too conservative" although the necessity for that attitude is understood. Many of us, he said, have ability to listen to others, specially those in marketing, in a constructively critical way. Mr. Boggan related our contributions in the employee benefit field, influencing legislation and educating trust people.

Attention then turned to tasks that actuaries might perform better than we usually do. In the employee benefit field, we were advised not to keep such a low profile but to become more involved with individual customers so that they can

Add: First Ladies

The January issue asked for additions to the list of "first ladies" among actuaries. Here's one:

Cande J. Olsen, daughter of a Fellow, who became a Fellow in 1976.

better understand their plan. We often appear insufficiently sensitive to market needs, and reluctant to get into new, uncertain ventures.

Non-actuaries tend to accept actuaries' numbers as absolute. We must work harder to have our figures and recommendations understood. In presentations to insurance departments we should provide more thorough development and reasoning; insurance company actuaries should seek better ties with our insurance department counterparts.

The final topic was important matters that actuaries tend to neglect. Mr. Borge-son talked about successes and failures in communications between the actuary and the field force; if we communicate well, field reaction is usually positive, but many field people find actuarial communication unsatisfactory. They see us as good at supporting conclusions with facts, but with excessive use of technical mumbo-jumbo. Sometimes we use apparently precise formulas to produce uncompetitive premiums. In short, actuaries must see to it that actuarial science yields results that are usable. Mr. Van Hooser on the same theme pointed to our frequent failure to take a forceful role, as in disputes between the "right rates" and "rates that will sell."

The moderator closed the presentation phase with a reminder of Ray Brady's admonitions of last spring, printed in *The Actuary*, April 1979. Small discussion groups then addressed the questions that the panelists had raised. Then the meeting reconvened for a report session conducted by the Society's Communications Manager, Mrs. Linda Delgado.

The organizers regard this whole experiment as a success, and believe that actuaries present will take to heart the advice given by our guests. □

COMMITTEE CHAIRMEN

Here is a list of Chairmen of Committees in advance of publication of the 1980 *Year Book*.

Standing Committees

Administration and Finance Committee	Ardian C. Gill
Admissions	L. Blake Fewster
Board of Publications	Robert E. Hunstad
Editorial Board <i>The Actuary</i>	Ernest J. Moorhead
Editorial Board <i>Record</i>	Francis P. Lemery, Jr.
Editorial Board <i>Transactions</i>	John T. Dillon
Career Encouragement	Eugene M. Woodard
Subcommittee on Actuarial Opportunities	James F. Vonesh
Subcommittee on Minority Recruiting	Fazli M. Dato
Subcommittee on Publications	Myron H. Margolin
Subcommittee on Relations with Colleges, Universities, High Schools and Related Matters	Robert N. Powell
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Continuing Education	Charles E. Rohm*
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Economics and Finance	Ronald A. Karp
Health and Group Insurance	Cynthia M. Clancy
Life and Health Corporate Affairs	Nathan H. Epstein
Life Insurance and Annuities Research	James L. Lewis, Jr.
Editorial Board of <i>Arch</i>	Courtland C. Smith
	Arnold F. Shapiro**
	Courtland C. Smith**
Retirement Plans	Carl R. Ohman
Social Insurance	Howard J. Bolnick
Education and Examination	John W. Paddon*
Education	James J. Murphy
Education Policy	Barbara J. Lautzenheiser
Examinations	Neil A. Parmenter
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Parts 1 and 2	John L. Engelhardt
Part 3	Walter B. Lowrie
Part 4	Marshall H. Lykins
Part 5A	R. Stephen Radcliffe
Part 5B	Judy A. Faucett
Part 6	Peter Hepokoski
Part 7	Thaddeus W. Trenton
Part 8	Cecil D. Bykerk
Part 9	Frank G. Reynolds

Jointly Administered Pension Examination For Enrollment of Actuaries (new Part 7-E, U.S., Section A)	Henry J. Garretson***
Elections	William A. Halvorson
Executive	Julius Vogel
Futurism	Wilfred A. Kraegel
Mortality and Morbidity Experience Studies	
Aviation and Hazardous Sports	Frederic Seltzer
Individual Health Insurance	Francis T. O'Grady
Individual Ordinary Insurance and Annuities	John H. Cook
Group Annuities	Robert M. Chmely
Group Life and Health Insurance	Simone Matteodo, Jr.
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Theory of Risk	Frank G. Reynolds
	John C. Woody

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Credit Insurance	Harvey S. Calloway
Dividend Philosophy	Edwin B. Lancaster
Recommend New Disability Tables for Valuation	William J. Taylor
Recommend New Mortality Tables for Valuation	Charles A. Ormsby
Reorganization	Walter N. Miller
Valuation and Related Problems	Charles L. Trowbridge

Joint Committees

Pension Terminology	Michael J. Tierney
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*General Chairman

**Joint Editors

***Representative of American Society of Pension Actuaries

Actuarial Courses—Addendum

University of North Carolina, Chapel Hill, (27514) qualifies for inclusion in our LIST OF SCHOOLS OFFERING ACTUARIAL SCIENCE COURSES. They offer courses for examinations 1-4 in an undergraduate program resulting in a B.S. in Mathematical Sciences, Actuarial Option. Information can be had from W. Robert Mann, Professor of Mathematics, or Norman Johnson, Professor of Statistics.

Reports of 1979 Advisory Council on Social Security

In this year of decision for benefits and financing of OASDHI, actuaries are urged to become familiar with the recently released Advisory Council Reports. For a free copy, write to:

Office of Public Inquiries,
Social Security Administration
6401 Security Blvd., Room 4100 Annex
Baltimore, MD 21235

Exam Seminars Georgia State

Part 2, April 21-May 2; Part 3, April 7-18; Part 4, April 14-25; Part 5, March 31-April 12; Part 7, April 14-18; Part 9, April 21-26.

There will also be a Part 6 CAS Seminar for the Casualty Actuarial Society's exam.

For details, ask: Prof. Robert W. Batten, Department of Insurance, Georgia State University, Atlanta, GA, 30303.

MORTALITY BY CAUSE OF DEATH

We commend a sister publication for making age-adjusted death rates by cause in the United States population conveniently available. These figures, compiled by H.E.W.'s National Center for Health Statistics, appear on pages 77-84 of the *T.S.A.* 1978 Reports Number distributed last November, and are there primarily through the efforts of John W. Tomlinson.

Our enthusiasm comes partly from remembering that this valuable time-series was originally presented to actuaries by the first Associate Editor of *The Actuary*, Mortimer Spiegelman (*T.S.A.* XIX, D 449).

As the Report makes clear, the purity of this series over the past 28 years is unavoidably somewhat marred by changes in official classifications, especially between 1967 and 1968.

To whet our readers' appetites we show below a few death rates for the years 1950, 1967, 1968 and 1977. Strict comparability exists only between the first pair and the last pair for each cause of death.

Age-Adjusted Death Rates Per 100,000, United States White Males

<u>Cause of Death</u>	<u>1950</u>	<u>1967</u>	<u>1968</u>	<u>1977</u>
Major Cardiovascular Diseases*	499.9	465.7	465.4	365.0
Malignant Neoplasms	130.9	150.3	152.5	160.0
Accidents	81.0	77.8	77.9	63.2
Pneumonia & Influenza	27.1	24.2	30.9	18.1
Diabetes Mellitus	11.3	12.4	13.3	9.8
Cirrhosis of Liver	11.6	17.2	17.7	16.7
Tuberculosis	23.3	3.6	3.1	1.2

E.J.M.

* 1968 definition

AERF TO SPONSOR SOCIAL SECURITY MONOGRAPH

The Actuarial Education and Research Fund is sponsoring preparation of a monograph, *Actuarial Guide to Social Security in the United States*, under specifications developed by the Committees on Social Insurance of the Academy and Society.

These purposes are (1) to provide a source through which actuaries, accountants, economists and others may become acquainted with the actuarial aspects and issues of Social Security, and (2) to be an authoritative introduction to actuarial principles and processes used to guide Social Security.

This project offers some actuary (or actuaries) an opportunity to make a contribution of professional and national significance. If you are interested in undertaking it, watch for announcements, to be published soon, of the request for proposals. You might also reveal your interest to any member of the AERF Pension Subcommittee. Its members are James C. Hickman, Fenton R. Isaacson and Cecil J. Nesbitt (Chairman).

Boleslaw Monic Foundation Award

Papers on "Net Retentions"

1st prize — 8,000 Dutch florins
(approximately \$4,500.)

2nd prize — 5,000 florins

3rd prize — 1,000 florins

Competitors are invited to submit papers setting out and justifying methods which will assist offices in determining optimal retention limits. Theoretical analysis of the problem will be welcome but such a treatment, possibly based on a general strategy, should produce methods or algorithms which can be understood and applied by practitioners.

An example of the application of the favoured method to a hypothetical or existing portfolio will be welcome.

Papers must be received in The Netherlands by April 30, 1980.

For full details, please write to the Executive Director in the Chicago office.

Note: In 1976 John Haynes Miller was one of the award winners. Maybe he'll try again.

Railroad Retirement Act Valuation Report

The December 1977 valuation of the railroad retirement system has been published. It includes a statement by the Board's Actuarial Advisory Committee whose members were Cedric W. Kroll (chairman), Thomas H. Jolls, Jr., and Robert J. Myers. You may obtain a copy gratis from Robert E. Larson, Chief Actuary, Railroad Retirement Board, 844 Rush St., Chicago, IL 60611.

A THOUSAND REPLIED TO FUTURISM ENQUIRY

by David N. Ball

The Committee on Futurism is grateful to the Fellows and Associates who answered our questionnaire last summer. The 1,011 responses came from a representative cross-section of older and younger members, but with rather more than a proportionate number from those who attained membership since 1970. The degree of your interest in futurism was expressed thus:

Strong Interest	98
Substantial Interest	316
Casual Interest	572
No Interest	25

On futurism's relevance to the actuary's professional life, 476 thought it "very much relevant," 492 "moderately," 29 "not relevant."

Repliers' Activities

Eighty-seven of you are members of futurism-oriented bodies such as the World Future Society. Forty-seven have given talks or written papers or books in this field. Sixty-two others reported a variety of activities, including work in ACLI's Trend Analysis Program. Ninety-six are willing to serve on our Committee—some conditionally. (One said, "if a local committee were formed in Johannesburg!") We were pleased to hear from several overseas members.

About one-quarter of you gave us your views on what you'd like to see being done. In general, our Committee activities—sessions at Society meetings, offering speakers to actuarial clubs, giving ideas to examination and other committees, compilation of bibliographies, and encouragement of papers for the *Transactions*—appear to fill the expressed needs. We have ample encouragement to proceed!

LETTERS

Impressions From South Africa

Ed. Note: We welcome this view of the American actuarial organizational scene. The writer is F.J.A. 1971, A.S.A. 1977.

Sir:

I followed with interest and incomprehension the debate on actuarial qualifications in North America. Distance lends perspective, but also masks details—so please pardon any howlers!

Actuaries outside the U.S.A. are accustomed to each nation having but one society to represent the profession. (England and Scotland are, of course, separate nations!). Other sodalities deal with special interests, e.g., consulting actuaries—but these are always subordinate to the parent society. Any other organizational schema merely produces public confusion and governmental interference.

I feel sure I speak for most actuaries outside North America in saying that the Society of Actuaries is held your national organization—by virtue of antiquity and achievement. For evidence I point to the Institute of Actuaries' Yearbook which lists the Society in pride of place under the head "Overseas Actuarial Societies."

How your actuarial life should be ordered is not for a foreigner to say. Perhaps, though, a couple of friendly comments may be acceptable:

(1) Professional bodies exist primarily to protect the public (from charlatans and quackery) by setting a proper standard for practice. Such a measure exists independent of governments and legislators; no law nor public official can convert ignorance into knowledge or rework folly as wisdom. Those experienced in a profession are best equipped to gauge competence; to be thought an actuary by politicians is no endorsement; to be held an actuary among actuaries is!

(2) No nation is an island—each national actuarial body must esteem the good opinion of actuarial brethren abroad. This requires a yardstick for awarding the accolade of "actuary" comparable with those prevailing in other lands. I have the impression that on the European mainland a greater mastery of our peculiar art (or science) is called

If You Want Board Minutes, Just Ask For Them

Minutes of Board of Governors meetings (except "executive sessions") have long been available to our members, though we believe that the only members who knew this for sure were ones that requested them. Anyway, we now have from Ardian Gill authoritative word on how one goes about seeing or getting them.

If you just want to inspect them, make an appointment with our Executive Director to do so at our Chicago office. If you want a copy of the minutes of a meeting you specify, write to the Executive Director. John O'Connor won't charge you for them unless requests become so numerous as to become costly or burdensome.

E.J.M.

for than in the English-speaking world. Conversely, having set a proper standard, a national actuarial society enjoys the approbation of its accolade—and its alone—by other actuarial groups around the world.

Quasi-"actuarial" "qualifications" given by other bodies—public or private—are recognized elsewhere only in the degree that the national actuarial society honours them. (I myself can practice in South Africa only because the Actuarial Society of South Africa deems it proper to recognize my English qualifications).

Finally let me, with fraternal regards, wish the Society of Actuaries well. You come like Hercules to the cleansing of the Augean Stables!

P. G. A. Cammidge

* * * *

Board of Governors

Sir:

News Item: Dateline, Canada, December 1979. The Canadian parliament votes by a narrow margin to reject a major administration proposal. This is considered a vote of no confidence. *Result:* New elections are held so that the leadership will again reflect the will of the people.

News Item: Dateline, Society of Actuaries, September 1979. A majority of the voting Fellows rejects a proposed

constitutional amendment which had been recommended by the leadership, and which reaches to the heart of the purpose of the Society. Yet no one resigns, and the President who takes over the next month is one who has taken a public position in favor of the rejected proposal!

The Society does not have the luxury of the Canadian system. The only way the majority is to have its way is to elect persons to the Board who agree with the majority viewpoint. But how can we do this when we don't know the position of the candidates on key issues?

There is a way! Here's what to do:

(1) Write to the President urging that more information be given in election mailings about the position of candidates on key issues affecting the Society. Details will have to be worked out, so *do it now*, and don't expect the other guy or gal to do it for you.

(2) When the next voting takes place for the Board in mid-1980, find out how candidates stand on these issues. If you have doubts, telephone them. Most importantly, on the first ballot, take the time to recommend for elected Board positions those whose viewpoints agree with yours—otherwise, you will never get the chance to vote for them on the second ballot.

We can elect a Board which will properly represent the views of the Fellows. But it will take effort by all of those interested in the value of the FSA designation. Don't let the bad news be that the Fellows weren't interested after all.

Peter W. Plumley

* * * *

Reserves For Deposit Term

Sir:

A question about deposit term, additional to the ones cited by Messrs. Margolin and Mason (October 1979, Supplement), is whether annual statement reserves by the commonly used full preliminary term method comply with the legal requirements of the Commissioners Reserve Valuation Method.

The customary justification for using full preliminary term—that deposit term is a lower premium plan than 20-payment life—can in my opinion be shown to be invalid. It is true that a paragraph in Jordan's *Life Contingencies* (2nd ed.

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Letters

(Continued from page 6)

1975, p. 137) says that if the renewal net premium is less than the 19-payment life net premium at (issue age+1), CRVM produces full preliminary term reserves, but careful reading of the entire chapter reveals that this statement is true only for a *level-premium policy*, which deposit term isn't.

CRVM, of course, is defined not by a textbook but by statutory language. The law contains no statement linking the policy's renewal net premium to 19-payment life; it happens that such a test applies when premiums are level.

When the algebra called for by the law is worked out for a policy with varying premiums, the result is not a full preliminary term reserve but, in fact, a reserve substantially greater. I will be happy to send a mathematical demonstration of this to any reader who will write to me at my address in the Society Year Book.

Paul E. Sarnoff

* * * *

Is Ne Passeront Pas

Sir:

While the effort to obtain two 5's on the same exam one year apart (Richard L. Marker's letter, November 1979) is no doubt greater than obtaining a pass score the first time around, I believe our employers generally would be wiser to retain one who has demonstrated the better memory in carrying out an actuarial mission, other things being equal. Further, I suggest that the passing criteria be higher for the same exam retaken within one year, to recognize that more effort was expended.

Roland A. Dieter

* * * *

Sir:

A line has already been drawn—at one 6.

T. Allen Park

* * * *

Harmonic Progression

Sir:

A review in an English magazine of some recently reissued recordings (to mark the centenary of Sir Thomas Beecham's birth) contained this comment:

"Despite Sir Thomas' farseeing actuarial mind, immediate sponsorship and payment of his orchestra concerned him more, perhaps, in those years than royalties in the future."

I for one never associated that famous musician with actuarial science. Have other readers come across similar usage (or misuse!) of our profession's adjective?

Brian L. Burnell

* * * *

A Workable Work-Saver?

Sir:

The Flesch test cannot be given to a computer to perform because a computer cannot count syllables. But I believe an equally suitable reading-ease test that can be applied by computer and thus can eliminate expensive manual counting, is obtainable by substituting letters-per-word (L) for syllables-per-word (S).

If it were desired that this new test conform to the characteristics of the present Flesch test, the formula might reasonably be

$$W + 25.25L < 164.369$$

instead of Norman Buck's simplified $W + 83.350S < 164.369$ (September issue).

On the other hand, if a change is to be made at all, new modern values of the Flesch constants might well be sought. The problem is: Could state acceptance of a new formula be obtained?

James L. Harlin

* * * *

Abundant Pulcibus Vitiis

Sir:

Yes, there is *joie de vivre* in insurance regulation; at least there is a sense of humor. Witness the following response received by a life insurer from one of the more impish regulators:

In the ten-day free look provision you use the Latin phrase *ab initio*. It has been the general policy of this department to disapprove forms which contain foreign language phrases unfamiliar to the general public. *A fortiori* it is contrary to the purpose of our readability law.

Joseph R. Lawrence

COMPETITION II

Earl Hoffman made the following fine suggestion (and one closely related to that made by Pete Plumley) for this month's Competition:

Give the titles for two papers to be presented at the Society of Actuaries' Annual Meeting in the fall of 2179 (to be held, of course, at the Sheraton Great Spot on Jupiter).

Here are Earl's suggested entries:

Mortality Tables for Travelers At or Near the Speed of Light.

Impact on Pension Plans of Deferred Retirement Beyond Age 265.

or, that old standby,

Reorganization of the Actuarial Profession.

There will be three excellent prizes to the three entries that come closest to being true.

Please send contributions to the Competition Editor at the masthead address of *The Actuary*.

C.C.G.

NEWS FROM LONDON

In the January issue of FIASCO is a suggestion from M. A. Pomery:

"... we are muddling along, inflation-proofing some financial transactions but not others . . . we have a civil service every member of which is protected to the grave from the effects of inflation. Is there not a strong case, if we really want to reduce inflation in this country, for passing a law forbidding any financial transaction or arrangement to carry any form of automatic inflation-proofing or index-linking? If not, the only logical alternative is to index-link every transaction and what incentive is then left for anyone to try to reduce the rate of inflation?"

There is also a vigorous exchange of views on whether the general insurance business that, to quote one writer, "for nearly 250 years has been conducted with a remarkable record of success by non-actuaries", is in vast need of actuarial expertise.

FIASCO is seeking local volunteers to increase its reporting of actuarial items from outside the U.K., "especially American journals." If we learn of anybody taking this on, we'll start air-mailing *The Actuary* to that reporter. □

E.J.M.

Historical Fragment

(Continued from page 1)

what efforts, if any, had preceded this resolution, and when the first lady Fellows were admitted to actuarial bodies outside North America.

Just the smallest of enquiries among today's Society members have shown that few have been able to come even fairly close to identifying 1895 as the admission date of our first lady Fellow. The commonest estimate we heard was the decade of the 1920's, which, as shown in the table on page 5 of the January issue, was correct for the first lady who qualified by examination. (One estimate given us was as late as 1940). Here then is a biographical capsule on Miss Cushman.

In September 1875 at age 28, after having taught school for a time, she was appointed to a clerkship in the Massachusetts Insurance Department. Twenty years later (1895, the same year as the two events described above) she was given entire charge of the actuarial work of that Department, with the title of Actuary. This was shortly after William S. Smith, the previous holder of the post and the man credited with having taught Miss Cushman actuarial science, had left to become actuary of the John Hancock Mutual Life Insurance Company. By 1907 her salary had reached \$2,000 per year, perhaps the equivalent of \$30,000 today.

Miss Cushman stayed in that Insurance Department for a total of 42 years. Attainment of age 70, in 1917, dictated her retirement, but not the close of her actuarial career. In 1918—conceivably to fill a gap caused by absences for war service—she entered the actuarial department of John Hancock. Certainly this was not a favor conferred on her by her original mentor; Mr. Smith had died in 1909. Miss Cushman stayed with John Hancock until a few days before she died in February 1923, at the age of 76.

E.J.M.

GEORGE RYRIE, F.S.A., F.S.A.

The discussion of unhallowed Fellowships (October 1979) has evoked the following revelation from Mr. Ryrie:

"I passed my Fellowship Part Two with the examinations of April 22, 1931, being then aged 23 years, 11 months,

ESTIMATING SOCIAL SECURITY BENEFITS FROM PRESENT EARNINGS

by Richard Carson

The 1977 introduction of Average Indexed Monthly Earnings (AIME) into the U.S. Social Security benefit formula makes it necessary to seek new ways to estimate the Primary Insurance Amount (PIA). I have found the following relationships useful and sufficiently accurate.

<u>1979 Monthly Earnings (E)</u>	<u>Approximate AIME</u>
Up to \$1,025	0.955 E
\$1,026 — 2,200	(.0035E) ^a — (.0209E) ^a + 1.317E
Over \$2,200	\$1,258

after which PIA comes directly from these formulas:

PIA (1979) = 90% of first \$180 of AIME + 32% of next \$905 + 15% of excess.

PIA (CYB + 65) = PIA (1979) × 1.07^{CYB-1914}, where CYB is calendar year of birth.

The relationships hold if the progression of past earnings has matched the indices that were promulgated to calculate AIME's, and future earnings and average total earnings will increase at a constant 7% annually. The approximation was made by fitting a curve to the mean and the two extremes of calculated AIME's.

My approximation produces PIA's that are very close to those that an exact calculation (using the prescribed assumptions) would give, except when the period to retirement age is long. I would be interested to know what methods of estimation other actuaries are using. □

19 days. In due course I received a Fellowship scroll signed by then President Wendell M. Strong showing that I had been admitted as Fellow on April 22, 1931. It was accompanied by a bill for the Fellowship fee of \$25.

"I had been paying the Associateship fee of \$15 and my Edinburgh blood rebelled at paying for a status that would be denied me till I had reached the magic age of 25. My protest was accepted.

"On June 1, 1932 I paid the regular Fellowship fee and was rewarded by another Fellowship scroll, signed by John S. Thompson, indicating that I had been admitted Fellow on May 3, 1932, my 25th birthday. This seems to place me in another category—a double Fellow.

"I am rather proud of the two Fellowship scrolls, suitably framed and hanging on my office wall.

"Another name for your list of those who completed Fellowship exams before age 25 is that of William M. Anderson; Bill was not quite 23 years old when he passed his final exam in 1928. A point of interest about him is that although he became President of the Society and was awarded an Honorary Fellowship by the Faculty of Actuaries, at no time in his career with his company did he

ever hold an official position with the word 'actuary' in the title."

The extraordinary number of Canadians who now report having qualified when little more than children suggests a positive relationship between frostbite and actuarial concentration. □

CHINESE DELICACY

Thank you to John Angle for sending us a translation into English of a rejection letter to would-be contributors used, it is said, many years ago by a Mandarin Chinese Journal of Economics:

We have read your manuscript with boundless delight. If we were to publish your paper it would be impossible for us to publish any work of lower standard. And as it is unthinkable that, within the next thousand years, we shall see its equal—we are, to our regret, compelled to return your divine composition, and to beg you a thousand times to overlook our short sight and timidity.

The erudite Mr. Angle picked this up from the October 1979 *Journal of Political Economy*, which credited it to N.R. Barrett, "Publish or Perish," in the August 1962 *Journal of Thoracic and Cardiovascular Surgery*. □