



The Actuary

The Newsletter of the Society of Actuaries

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APRIL, 1980

NEW MORTALITY TABLES K(M) AND K(F)

by Michael G. Reilly

Ed. Note: This article describes the mortality tables that our Board of Governors is recommending to the NAIC as successors to the 1958 CSO Table — see 2(A) of "Summary of Non-Routine Business" in this issue. Mr. Reilly, though not a member of Charles A. Ormsby's special committee that constructed these tables, is on the staff of Committee Vice-Chairman Joseph C. Sibigtrath.

Need for a Successor to the 1958 CSO Table

Appointed in June 1976 to investigate the need for new valuation mortality tables, the Special Committee determined that mortality of insured lives has improved significantly in the more than twenty years since the exposure period of the 1958 CSO Table. Continued use of the 1958 CSO Table produces life insurance reserves and minimum cash values higher than those based on a table reflecting current mortality levels and has created serious deficiency reserve problems.

The 1958 CSO Table generally represented male mortality with a three-year age setback assumed for females to reflect their lower mortality experience. The Committee developed separate male and female tables because there are significant mortality differences by sex (intercompany experience indicates female to male mortality ratios of 60%), which could not accurately be reflected by an age setback. More female mortality experience is currently available giving greater credibility to a separate female table.

Constructing the New Basic Tables

The new tables are based on intercompany experience between 1970 and

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LINDEN N. COLE, DIRECTOR OF EDUCATION

We cordially welcome Linden Cole, F.S.A. 1963, to the key staff post of Director of Education. He tells us that until now he's been a "one employer" actuary, in New Jersey at Mutual Benefit Life. He has had 15 years experience on the Education & Examination Committee, having worked his way up, as he puts it, through the Part 7 hierarchy to Multiple Choice Editor and Part Chairman, then for several years as Education Vice-Chairman and Education Chairman.

Mr. Cole's post was established in 1977, and occupied with distinction by Warren R. Adams. Says Mr. Cole, as he considers the educational scene: "We all know there are limits to how much volunteers can find time to accomplish; with staff support though, the E & E Committee can do the intensive thinking and planning its members wanted to do all along. Witness the excellent program of seminars started during Warren Adams' term.

"With nearly 375 Fellows in the E & E and the Continuing Education Committees, it is obvious that the Society's education efforts will continue to depend on our members' volunteer efforts. Our staff must help their work in such a way that we can respond with all deliberate speed to the inevitable changing needs and new demands upon us. I am honored to be asked to work full-time with our fine volunteers." □

Actuarial Meetings

April 22, Actuaries Club of Philadelphia
May 8, Baltimore Actuaries Club
May 20, Chicago Actuarial Club
May 22, Actuarial Club of Indianapolis

NEBRASKA ROLES AND ETHICS SURVEY

Ed. Note: This, the first of two articles, is a summary of material furnished by Warren R. Luckner. The full survey is available from Prof. Luckner at his address in the Year Book.

The Actuarial Science Program at University of Nebraska includes a course on Actuarial Roles and Ethics. In 1978 the students in this class sent a questionnaire to 265 persons, mostly alumni of the Program, aimed at finding out how actuaries see themselves, and to what extent ethical questions have impinged upon them. This article gives answers by 61 Fellows — 60 F.S.A.'s and one F.C.A.S.

What 61 Fellows Said: Roles

Ques.: Do you consider yourself a professional?

Ans.: Yes, 58; No. 3. Most of the Yes responders cited the body of knowledge and skills called for, or the educational standards. Eighteen mentioned the standards of professional conduct. Of the three No's, one said, "Haven't enough responsibility"; one, "Am doing other than actuarial work"; the third regards himself as a "businessman with technical expertise."

Ques.: Which (of five given choices) best describes the current market for new actuarial students?

Ans.: No Fellow picked unreservedly the top category offered (wide open, no problem getting a job). The majority checked, in nearly equal numbers, the second choice (very good, but need an exam or two), or the third (good, but tightening up somewhat). Six supported the fourth category (fair, has tightened up considerably), and there was one

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

EDITORIAL

VIGILANCE

A BAROMETER that helps to measure our members' interest in Society affairs is the size of the response to each of the periodic requests by mail for verdicts and opinions on various matters.

In the past twelve months there have been five such official enquiries—three directed to Fellows, two to Fellows and Associates. Here are the figures:

Balloting By Fellows. (3,700 Potential Responders)

	Responses	
Granting FSA Designation to FFAA's	2,700	73%
Society Election (2nd Ballot)	2,200	59%
Constitutional Amendment on Resignations & Discipline	2,200	59%

Enquiries To All Members. (6,600 Potential Responders)

Questionnaire on Special Interests	2,300	35%
Futurism Enquiry	1,000	15%

We omit from this second table the Ninetieth Anniversary Contest of April 1979 which produced a response ratio that possibly set an enduring record—0.08%.

Reasonable inferences from the above evidence are: (1) Responses by Fellows are no better than fairly good; (2) Out there somewhere are about 500 Fellows who exert yourselves when a controversial issue comes your way; (3) Questionnaires haven't been drawing heavily.

Allowance perhaps should be made for the observed fact that the typical actuarial desk is a mess. Intentions may indeed be above reproach, but a paper that is not promptly dealt with disappears into one of the many heaps (T.B.R.L., or P.P.B., or H.I.D.). A noble experiment by the Board of Governors sometime might be to find out what, if any, resurrecting effect a follow-up postcard might have.

Two problems stem directly from the growth in our membership. In the days when the Society had 400 voting members, questions could easily be brought up at a meeting, discussed for half an hour, and immediately voted upon. Now that the number approaches 4,000, that has become impractical.

The second difficulty that comes with growth is this. As we pass successive milestones of size, we tend to regard our own single vote or opinion as of steadily decreasing significance. Logical though this attitude may be, each of us must fight against this point of view. We must make it our business to be informed on what is happening or in prospect. We must resolve to be participants, which we can be only if we steadfastly keep ballots and questionnaires from disappearing into oblivion.

Surely our actuarial clubs have a useful role in all this. They can help by sponsoring discussions of these questions between the time enquiries are received and the deadline for responses approaches. Is it too much to ask that some clubs invite members to bring their questionnaires to a club meeting, and to complete them on the spot as we used to do in junior high school? E.J.M.

Deaths

Joseph L. Moskowitz, A.S.A. 1977

Arthur Pedoe, F.S.A. 1928

Arthur Pedoe 1897-1979

Within a year after he became a Fellow in 1928, Arthur Pedoe had made the first of his major contributions to our literature through a paper with the justifiably broad title, *The Actuarial Profession in North America* (T.A.S.A. XXX, 14). To read it is to appreciate how firmly, yet courteously, he took issue with practices that he considered inferior, and how many of the reforms he urged have since taken place. In his reply to the discussion, he put forward his idea of Study Circles, a plan that he promptly pioneered in Canada several years before the Society itself adopted it.

Ten years later Mr. Pedoe produced another landmark paper, *The Education of the Actuary* (T.A.S.A. XL,50). Again the discussion produced vigorous objections to some of his proposals, but the views he expressed and those he elicited were, we suggest, not lost on subsequent Education and Examination Committees.

Throughout his career and after he retired, he wrote essays on many topics. Usually his concern was less with technical matters than with the future of our profession and maintaining high standards of conduct and performance. Always his contributions were well written and interesting, for he was blessed with an orderly and enquiring mind.

Not many years ago (1970) a Society President, conducting a poll as grist for his Presidential Address, sought nominations of actuaries whose outspokenness had most markedly influenced the rest of us. It may now be revealed that the name submitted most often was Arthur Pedoe.

In mourning our loss we cannot improve upon Joseph B. MacLean's crisp comment 41 years ago: "Anything written by Mr. Pedoe is worthy of careful attention."

A.C.W. & E.J.M.

SUMMARY OF NON-ROUTINE BUSINESS BY BOARD AND EXECUTIVE COMMITTEE, FOUR MONTHS TO FEB. 29

by Myles M. Gray, Secretary

At meetings of the Executive Committee on Dec. 13, 1979 and the Board of Governors on Jan. 24, 1980, the following non-routine business was transacted:

(1) *Finances.* In addition to changing the date when dues become payable (see our March issue) and increasing the dues, the Society, through its Administration and Finance Committee, now has the following schedule of meeting and seminar fees: Spring Meetings, \$55; Annual Meeting, \$75; 1-Day Seminars, \$110; 2-Day Seminars, \$125.

(2) *Mortality Tables for Valuation.* (A) The Board recommended, on behalf of the Society, certain mortality tables (described elsewhere in this issue) for consideration by the National Association of Insurance Commissioners. (B) In response to a request for the Society's assistance from the Chairman of the NAIC Committee Technical Task Force on Valuation and Nonforfeiture Value Regulation, the Board authorized forming two special committees to study the possible needs for new mortality bases or tables for Individual Annuities and Group Annuities, and referred the following requests to the Research Policy Committee for recommendations:

(i) on whether the duties of our permanent committee on mortality should be expanded to include developing new mortality bases or tables for statutory valuation and nonforfeiture value purposes when that committee perceives such needs;

(ii) on whether new mortality bases or tables may be needed for (a) guaranteed-issue life insurance, (b) renewable term insurance, (c) substandard life insurance, and (d) industrial life insurance.

(3) *Dividend Philosophy.* The Board requested the Committee on Dividend Philosophy to transmit to the corresponding Academy and Canadian Institute committees its latest report (i.e., the amended version after the exposure to members of its September 1979 report), and to continue its work on recommendations for dividends on individual annuities and dividends on participating business of stock life companies.

(4) *Build and Blood Pressure Study.* The Board approved the cost of publishing the new Build and Blood Pressure Study in 1980.

(5) *Discontinuing Annual Banquet.* The Executive Committee agreed to discontinue the Annual Meeting Banquet.

TRANSACTIONS OF 21st INTERNATIONAL CONGRESS

The papers prepared for presentation at the International Congress in Switzerland next June, in six volumes, have been distributed to registrants. Though it is unlikely, if indeed it is possible, that other actuaries will subscribe for a set, surely some registrants can spare copies on request, particularly as they will by next autumn possess two sets. Also, authors have supplies of their own papers.

Here are the titles of the six volumes. The meaning of the figures in parentheses is this: the first denotes the total number of papers from all countries; the second, the number by Canadian and U.S. authors.

1. Generalized models of the insurance business. (41—6)

2. Testing hypotheses by statistical investigations. (23—2)

3. Statistical bases and experience in disability, sickness and accident insurance. (27—4)

4. Estimating the value of insurance companies and portfolios. (31—5)

5. Inter-relations between demographic and economic development and Social Security. (27—5)

6. National Reports: The training of the actuary (28—2). The National Report for Canada was written by Nicholas Bauer, and that for U.S.A. by Geoffrey Crofts.

Preliminary information about the next meeting of the ASTIN (Actuarial Studies in Non-Life Insurance) Section, to convene in Loen, Norway on May 31, 1981, is obtainable from Laurence E. Coward in Toronto, or John C. Woody in New York.

Roles and Ethics Survey

(Continued from page 1)

outright pessimist (very limited opportunities).

What 61 Fellows Said: Ethics

Ques.: Have you read the Society Guides and Opinions as to Professional Conduct?

Ans.:

	Guides	Opinions
Completely	34	25
In Part	27	27
Not At All		8
No Response		1

Ques.: What is your opinion of the Guides and Opinions?

Ans.: Favorable/Needed, 45; Unfavorable/No Need, 6; No Response, 10. Those expressing the unfavorable view were either critical of the content (weak, wordy, too general, divorced from real world, incomplete, overbearing), or said that if all this is necessary we really aren't very professional. Many of the favorable verdicts did criticize some elements of the Guides and Opinions.

Ques.: Have you ever encountered a situation in your actuarial career which seemed to raise the possibility of doing something contrary to (i) your personal ethics, (ii) the Guides to Professional Conduct? If so, please describe the situation and what you did about it.

Ans.:

	Personal Ethics	Guides
Specific	15	8
General	7	5

The lower numbers who identified situations involving the Guides, rather than those involving personal ethics, may indicate that the Guides are more liberal than an actuary's personal ethics—which may be all right if the intent is that the Guides express minimum standards. Types of situations ranged widely: manipulation of data and assumptions, approving cost estimates without review, conflict about equity in rates and dividends, underwriting problems, approving deficient reserves, doing things not really qualified to do.

1980 Canadian Requirements— Fellowship Exam.

by M. W. Chambers

To obtain examination credit toward Fellowship in the Canadian Institute of Actuaries, candidates must meet the following requirements set by the Council of the Canadian Institute:

- (a) Candidates completing Part 9 at the Spring 1980 session must pass the Canadian version of Part 9.
- (b) Candidates completing Part 7 at the Fall 1980 session must pass the Canadian version of either Part 7 Insurance or Part 7 Employee benefits.

Solutions to March Actucrostics

by The Competition Editor

#3. *Author:* D. Gustafson. *Works:* On Being President (*Academy Newsletter*, March 1979). "It may be something of an oversimplification, but I think good friends are one of the most valuable attributes of life. On that scale, I am wealthy indeed. I won't be wealthy any other way. I spend money and cherish friends. I don't think I've got that backwards."

#4. *Author:* Halvorson. *Work:* Address Of The President (*T.S.A.*XXX, 7). "I have found the following words from Abraham Lincoln to be of help. Let me share them with you:

"The dogmas of the quiet past are inadequate for the stormy present.

"The occasion is piled high with difficulty, and we must rise with the occasion.

"As our case is new, so we must think anew, and act anew."

Actuarial Lingo?

From a *New York Times Magazine* article on John Connally:

When asked . . . about three people who might work in his White House, Connally responded like an actuary. "Yes, Richard Keeton, a top Texas litigator, might come to the White House staff. He's made enough money to go into government." . . .

WILL THERE BE ENOUGH ACTUARIES?

by John C. Maynard

Ed. Note: This is the third, and last, of the series of reflections by actuaries who were asked to take a fresh look today at problems that worried them 20 years ago. Mr. Maynard enlisted help from 32 eminent actuaries whom he describes here as "correspondents."

The future supply of actuaries was giving concern in 1959. A survey had shown that the immediate need for actuaries (Fellows and Associates) exceeded the then membership by 454; furthermore, to meet the estimated need in 1968, membership would have to grow at 10.6% p.a., whereas it had been growing at only 5%. It was feared that the numbers of college courses and teachers would be inadequate for such a task. Actuaries were wondering whether more joint activities between actuarial clubs and colleges had better be undertaken.

In fact, as the following figures show, membership growth was destined to accelerate during the two decades ahead.

		<u>Fellows</u>	<u>Associates</u>	<u>Total</u>
1958	Actual Numbers	978	765	1,743
	Shortage*	206	248	454
1968	Actual Numbers	1,763	1,512	3,275
	Shortage*	529	991	1,520
	Ann. Growth Rate Achieved from 1958	6.1%	7.1%	6.5%
1979	Actual Numbers	3,955	3,042	6,997
	Ann. Growth Rate Achieved from 1958	6.9%	6.8%	6.8%
	from 1968	7.6%	6.6%	7.1%

*These shortages were those that emerged from a 1958 survey—see *TSA* XI, 146.

Several factors not clearly foreseen in 1959 have favoured our profession. The supply of actuarial students has been augmented by the high birth rates of the late 1940's, and by a decline in employment opportunities for mathematicians in competing fields of science, engineering, and industry. We have enjoyed years of prosperity and have seen growing technical capacity amid social and economic change. In its search for financial security, the public has underwritten growth in actuarial employment at attractive compensation levels. Attracting potential actuaries has been easier as our profession and its opportunities have become better known.

Growth has been shared among all the major categories of actuarial employment, as the following figures show.

	<u>Insurance</u>	<u>Consulting</u>	<u>Government</u>	<u>Academic</u>	<u>Other</u>	<u>Retired or Unknown</u>
1964	1,712	352	53	23	62	196
1979	3,894	2,192	183	83	88	557
Ann. Growth	5.6%	13.0%	8.6%	8.9%	2.4%	7.2%

Most of the contrasting causes of these disparate growth rates are too well known to require cataloguing, but worthy of special mention are such influences as the birth of GAAP (in a foiled attempt to reveal the mysteries of life company statements), new forms of coverage, increasingly complex analyses made possible by computers, extensions of government regulations such as ERISA in the United States, and the entry of more colleges into actuarial science programmes.

Now (1980) What Needs Are Foreseen?

My helpful and well informed correspondents believe that the North American public will continue to seek financial security through government and private plans. These plans will grow ever more complex, requiring new designs and new controls that actuaries will develop. Actuarial training is expected to be increasingly useful also in non-traditional fields such as investments and new forms of financial consulting.

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Will There Be Enough Actuaries?

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Some of these observers, though, regard major thrusts such as ERISA as unlikely to be duplicated, resulting in a workload that can largely be taken care of by our new members of the past decade—hence a slower needed growth in numbers.

But all foresee that Society membership growth, whether fast or moderate, will happen, and there will be demands upon our profession in the decade of the 1980's. The demand essentially will be to engender wise practices in insurance and pensions in an era of unprecedented financial change likely to make some present practices and contracts ineffective. My correspondents laid stress on the following expected events:

- greater professional specialization seems to be coming;
- publications and communications must be maintained amid increasing difficulties in doing so;
- continuing education of actuaries will be prominent;
- our education and examination system will be hard pressed to deal with changes in actuarial practice and volume while maintaining adequate standards;
- basic research on valuation principles will require attention;
- one consequence of all this will be a need for more permanent staffs in our actuarial bodies. □

LOOKING AHEAD AT SOCIETY'S OPERATING MARGINS

by L. B. Fewster, Treasurer

The Society, like other organizations these days, is challenged to control our expenses. As a non-profit body, we aim to have some years of operating gain, and some of loss. Our steadily broadening activities, especially in education and research, are important to the future of the Society and of our members individually. Direct costs of each activity should be met by those who benefit from it.

Our Administration & Finance Committee, aided by our staff, has done the budgetary analysis needed to chart services that will be furnished economically and will be adequately supported by the members who use them. Schedules of dues and fees have been reviewed for consistency with resulting benefits.

Members have received President Vogel's announcement of increased dues. There will be increases also in fees for meetings and seminars. Even at these higher rates, our members will, we believe, be getting excellent value for the dollar; one reason is that we all reap the benefit of much volunteer work.

The following figures, expressed in thousands of dollars, illustrate the expected effect of the changes being made. They assume inflation factors of 8% in 1980-81, 9% in 1981-82.

OPERATING MARGINS (INCOME LESS EXPENSES)

	<i>Fiscal Year (August to July)</i>		
	1979-80	1980-81	1981-82
If dues and Fees Weren't Changed	Loss \$142M	Loss \$256M	Loss \$395M
Added Revenue From Changes	167	292	303
Expected Operating Margin	Gain 25M	Gain 36M	Loss 92M

NEWS FROM LONDON

by E. J. Moorhead

The February FIASCO announces that the winning entry in their contest to complete the sentence, Old Actuaries Never Die, They Just . . . Get Broken Down By Age And Sex.

An article, Political Actuaries, speaks first of our own members of that breed,

Thomas P. Bowles and W. Paul McCrossan, reports four instances in the U.K., and asks how many other actuaries have taken their political responsibilities so seriously as to run for public office?

The advocacy by Geraldine Leigh for making actuarial examinations more difficult (reported in our January issue) yielded three responses, none of them neutral. □

"INSURANCE LOAN: PROS AND CONS"

On Feb. 23 *The New York Times* printed an article with the above title. Its subject matter was limited to the arbitrating of policy loan proceeds by investing them in money market instruments whose yields are perhaps 8 percentage points above the policy loan interest rate.

Some of our readers may like to imagine themselves being asked for their views on this, as were three company people who are well known among us.

Miss Jeanne R. Corbett is quoted as saying, "If you don't look at the tax situation, you may find that, on the average, you have not gained a great deal." A similar warning evidently was voiced by two F.S.A.'s, Messrs. Walter N. Miller and Julius Vogel, but all these three readily conceded that in some cases worthwhile gains would be realized.

Mr. Miller was prompted to give an example "of how things might work out in the case of a \$20,000 policy written 10 years ago and now having a loan value of \$3,000." He was unhappy when the article quoted him as saying, "Most people with \$20,000 policies are probably in the 50% tax bracket so, after taxes, you might not net much more than \$120, or \$10 a month." His message was that most people who would pay particular attention to the article would probably be in a combined (federal plus state plus, in many cases, city) tax bracket of at least 50%.

Regrettably, the article endorses the notion that you're borrowing your own money when taking a policy loan. Also, some statistics on the increased lapse rates of policies subject to loan are given; it appears unsupportable that these apply to this type of transaction.

E.J.M.

Federal Statistics

Directory of Data Files

A compilation of descriptive and ordering information on Census Bureau statistical programs and related data, including over 300 machine-readable files. Contains extensive explanations. Order it from: Subscribers Services Section, Census Bureau, Washington, DC 20023. Price \$11.00 includes quarterly updates for 3 years.

MORE ACTUARIES IN PRINT

Paul H. Gilman sent us a review, in the *San Francisco Examiner & Chronicle*, of a thriller by Geoffrey Watson, *The Nooriabad File*. Its hero is a youngish actuarial consultant who, says reviewer Lenore Glen Offord, is kidnapped by an unexpectedly polite group of terrorists. The review closes thus: "I couldn't really grasp the idea of the yarn, or all about what happened. Other readers may be brighter."

* * * *

Paul Thomson found a handsome tribute to an unidentified member of our profession in an article, "Putting Life into the Computer," in *The Christian Century*, March 5, 1980:

"From time to time we deal with the actuary who annually figures how much money the Christian Century Foundation must pay out each month to properly fund our retirement investment program. It is a complicated procedure, based on the number of employees, their ages, their life expectancy, and the sum they are to receive. . . . This man probably uses a computer. . . . but when he writes to tell us what we will owe, it is a personal letter indicating that he knows our people and is concerned that we keep our retirement fund at a level sufficient to cover future spending. I get the feeling that he looks upon our active and retired staff members as individuals of worth. . . . Our auditors tell us that

he is a conservative man, insisting that we put aside a bit more money than is actually necessary, but we do it anyway because we figure that it's a good idea to be conservative where pensions are concerned. A computer wouldn't add that personal touch. Our actuarial expert does."

* * * *

James B. Germain writes: "I have long supported the proposition that, for an actuary, verbal skills are more important than mathematical. Accordingly, I was delighted to find that my daughter's high school guidance chart cross-matches Math and English and comes up with "Actuarial"! □

New Mortality Tables

(Continued from page 1)

1975 policy anniversaries. A five-year period, one year longer than that of the 1958 CSO Table, was used to provide more data, especially for the female table. The first five policy years were, as in the 1958 CSO Table, excluded from the data (except for the young ages). This introduces an element of conservatism by eliminating favorable select experience and avoids the wide variation in intercompany experience in these years due to differences in underwriting rules, etc. Both non-medical and medical experience were included throughout, even though the 1958 CSO Table excluded non-medical experience in years 6-15, because the percentage of non-medical business has grown substantially.

The experience rates were graduated using the same Jenkins' formula used for the 1958 CSO Table. Minor adjustments in experience rates were made so that (1) at the very young ages they

would be more consistent with other mortality tables; (2) they would grade smoothly into unity at age 100 for the Basic Tables and age 99 for K(M) and K(F); and (3) the overall ratio of actual to expected claims based on the Basic Tables would be 1.000.

There is a significant dip in mortality rates in the 20's in the Male Basic Table and Table K(M). Even though the Committee considered removing this dip as was done in the 1958 CSO Table, it was retained because it is now so much more pronounced and to remove it would disregard the experience at important insuring ages. Although there was a very slight dip in the female experience, it was removed by the graduation process.

Developing the Margin Formula

The margin formula used to load the Basic Tables consists of a quadratic function of age divided by the curtate expectation of life calculated from the Basic Tables. The prime constraint was that reserves in the aggregate (for a

model office) be close to those developed using the underlying 1970-75 fifteen year select and ultimate mortality experience. Tables K(M) and K(F) produced model office reserves that are about 7% lower than those based on the 1958 CSO Table.

Comparison with 1958 CSO Table

As the table below shows, Table K(M) rates are generally 10-20% lower than those of the 1958 CSO Table; the reductions are greater for Table K(F) over the 1958 CSO rates setback three years.

Future Action

After the report was presented to the Board of Governors early in 1979, it requested that copies be distributed to the entire membership for discussion at the Society's meeting in Bal Harbour in October 1979. The general reaction to the report has been very favorable. It is now anticipated that the NAIC will this December vote on the adoption of the tables as the new minimum valuation standard.

Tables K(M) and K(F) vs. 1958 CSO Tables

(1000 q_x)

Age x	Male			Female		
	Table K(M) (1)	1958 CSO (2)	(1)/(2) x 100% (3)	Table K(F) (4)	1958 CSO (3-year setback) (5)	(4)/(5) x 100% (6)
15	1.33	1.46	91.1%	.85	1.26	67.5%
25	1.77	1.93	91.7	1.16	1.86	62.4
35	2.11	2.51	84.1	1.65	2.25	73.3
45	4.55	5.35	85.0	3.56	4.17	85.4
55	10.47	13.00	80.5	7.09	9.96	71.2
65	25.42	31.75	80.1	14.59	24.31	60.0
75	64.19	73.37	87.5	38.24	58.65	65.2

BIRTH OF A YEAR BOOK

We warmly welcome arrival of the newly designed *Year Book*—22 ounces of useful material about Society and members' affairs. Among features deserving commendation are the phone numbers, inclusion of the formerly separate listings by business connections, photos of officers and staff, the rewritten Historical Background, and the detailed list in the Table of Contents showing the Services Available from the Society to members.

The format, we learn, was the brainchild of Peter W. Plumley when he was Executive Director. Mr. Plumley did much of the layout, his work then being completed by two successive Presidents, Paul Barnhart and Julius Vogel. Gary See and Anna Rappaport contributed valuable help. Naturally, a heavy burden fell on our staff, notably John O'Connor and Linda Delgadillo.

The number of errors—happily confined largely to the List of Members by Business Connections—is typical of what turns up in a shake-down cruise. A list of these provided by Robert J. Myers will be helpful for next year. We enquired about the cause of the mistake on p. 253 that was pointed out by Mr. Longo, whose letter is in this issue. The names of that trio are on the mailing list to receive copies of everything that goes out, and deletion therefrom was simply overlooked when the List by Business Connections was sent to the printer.

E.J.M.

Year Book

Please add the following Committee to the Committees on Research and Development under the Supervision of Daphne D. Bartlett, Vice-President.

Committee on Government Statistics

The Committee serves as a liaison between members of the Society and the Committee of Professional Associations on Federal statistics (COPAFS) in matters relating to the quality and usefulness of statistical data produced by and for the U.S. federal government and its agencies. The Committee will evaluate questions and proposals and make recommendations to COPAFS.

The Chairman and Vice-Chairman are ex-officio the Society's representatives to COPAFS.

Actuarial Error

Sir:

Congratulations to Mr. Bartels, Ms. Delgadillo and Mr. O'Connor on their attainment of Society Fellowship, as shown on p. 253 of our new (and genuinely improved) *Year Book*.

Here I am informing actuarial students of the need to pass their remaining exams, when I should be recommending that they seek positions on the Society's administrative staff.

Eureka! The alternate route has been found.

Frank J. Longo

Ed. Note: See "Birth of a Year Book," elsewhere in this issue.

* * * *

The Little Computer that Could

Sir:

In response to James Harlin (February issue), our computer counts syllables according to the rules in the applicable Massachusetts House Bill. Since that Bill gives no rule for distinguishing period and decimal, our syllable count of Mr. Harlin's letter — 191 syllables in 122 words in 8 sentences, producing a Flesch score of 59 — may not be acceptable, but James should remember that computers are only human.

If alterations to the Flesch test are to be examined, I, for one, support consideration of the Fog Index recommended by Laurence Coward (December 1979 issue).

F. Stuart Trask

Ed. Note: Mr. Trask sent us a handsome sample of how his computer tested the readability of Mr. Harlin's letter. Messrs. George Y. Cherlin, Rea B. Hayes, and Dinkar B. Koppikar also wrote to tell us of the syllable-counting skills of computers.

The members are: Robert J. Johansen, Chairman; Philip F. Finnegan, Vice Chairman; Paul Barnhart, Edward A. Lew, Robert J. Myers, David S. Reed, Allan B. Roby, Jr. □

LETTERS

Flesch Debate Finale

Sir:

The Flesch test misses its mark because it over-emphasizes sentence length and ignores the most important determinant of readability—use of common words in their common meanings.

The sentence "The carpus is in the manus" gets a good score of 88, while the sentence "Familiarity breeds contempt" gets a score of minus 50. Yet the former is gibberish to most readers, while the latter is perfectly clear.

Mr. Flesch uses word length to measure word familiarity; such correlation exists, no doubt, but is poor. And it hasn't been tested at all in insurance policies. This is necessary because "insurance policy" is itself a common expression that wreaks havoc on a Flesch score. Laws about contract wording should employ a soundly constructed readability measure.

Oakley E. Van Slyke

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Views On "Index-Induced" Inflation

Sir:

Geoffrey Calvert's article (January issue) closes with a challenge. I believe that it is possible, in the following manner, to develop more reliable indexes:

(1) Select appropriate samples of the working population, weighted to depict major groupings.

(2) Construct an index from specified categories of the expenditures of these samples, after having obtained the members' cooperation in paying all but their minor expenses by check or credit card so as to produce reasonably accurate records for analysis.

Barnet N. Berin

* * * *

Sir:

Does cost of living mean no improvement in quality of living? Or should it recognize such improvement to the extent enjoyed by the average American? Mr. Calvert takes the conservative position, partly with the objective of reducing Social Security benefits.

It depends on whose ox is being gored.

(Continued on page 8)

Letters

(Continued from page 7)

I would have more sympathy with the author's position if he would provide evidence that his living standards are "withering" in comparison with those of people on Social Security.

Charles M. Larson

* * * *

Sir:

Mr. Calvert's views I found most thought-provoking. May I draw your readers' attention to a New York Times article (January 27, 1980) by Ugo Sacchetti that comes out on the other side of this important question.

Ronald E. Ferguson, F.C.A.S.

Ed. Note: The part of the Sacchetti article specifically in opposition to the purported failure of CPI to take quality improvements adequately into account, contends: "(a) That the index does not take adequately into account quality deterioration; (b) that the definition of quality improvement is often questionable, and at any rate non-symmetrical; and (c) that even when an improvement is real, the CPI correction may be made, in terms of fairness, only under specific conditions that frequently do not exist."

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Sir:

Geoffrey Calvert ignores decreases in durability, workmanship and quality in many goods and services. He cites examples of quality improvements, but neglects to mention many instances of quality deterioration.

Such examples are legion. Go into any restaurant. A waitress used to serve you; today you perform many of the services yourself. And is the food as wholesome and nutritious as 20 years ago?

Office visits to a doctor have declined to perhaps 5 minutes these days.

Recently, I compared the floors in a 48-year-old and a two-year-old house; they creaked in the new, but not in the old one.

It's hard to find a product that is not flimsier, thinner, less durable than its counterpart years ago.

This is not to say that the quality of everything has decreased. There have in-

deed been many quality improvements. Where the balance is, I doubt if anybody knows.

Mr. Calvert may be right in asserting that indexing incomes and benefits for some people increases their economic status and speeds inflation. But reducing CPI for the alleged quality difference, e.g. 2%, won't change that. Parties take the structure of the CPI into account in their negotiating. Would the author be happier if a wage settlement were 7% plus his reduced CPI, instead of 5% plus the present CPI? His argument is more persuasive in the case of Social Security indexing, but even here one wonders if the voting power of those millions wouldn't result in the same benefits even with a downgraded CPI.

Richard W. Ziock

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Sir:

Geoffrey Calvert's article is a prime example of how more actuaries should be applying their special talents. His work commands respect, even though no doubt there is something to be said on the other side.

Should not his tire price index increase be 423% instead of 140%?

Carroll E. Nelson

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Emphasizing Income, Not Lump-Sum Benefit

Sir:

Life insurance ought to be marketed in terms of how much *life income* it will provide to the beneficiary—not in terms of the conventional lump-sum face amount. Until an Income Policy is put on the market, insurance will continue to be sold in woefully inadequate amounts.

Today's typical prospect and beneficiary overestimate vastly the sufficiency of even, say, a \$100,000 policy, failing to appreciate that it will furnish only \$400 of monthly income if the insured dies when the beneficiary is in her middle 50's. But a wife with two children is capable of picturing and expressing her need in dollars per month for the rest of her life.

The vehicle for an Income Policy need not be anything new to actuaries; it can be just the familiar Ordinary Life supplemented by Decreasing Term, so that these in combination will promise the monthly income that the beneficiary

knows she will need. The policy would not be the old survivorship or reversionary annuity, which has been proven to lack appeal, partly because it provides no surrender values.

The combination of whole life and term coverages would pay adequate agent's commission, would be self-supporting from the company standpoint, would be easy to understand and simple to administer. I prefer to leave the details of its rate structure to the ingenuity of the practicing actuary.

Milton J. Goldberg

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Persistency Research

Sir:

Frank Zaret (January issue) wants actuaries to promote up-to-date persistency tables.

It is surprising that Mr. Zaret makes no reference to the vast amount of research on lapse rates performed by LISRB-LIAMA-LIMRA over more than 50 years. Nor does he mention Norman Buck's paper, *TSA XII*, 258, nor the paper by Hartwell and me, *TSA III*, 338.

C.F.B. Richardson

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AN EVENT OF 1760

by E. J. Moorhead

History buffs and teachers will be fascinated by a short paper by R. H. Daw, F.I.A. entitled "Smallpox and the Double Decrement Table: a piece of actuarial prehistory." This appears in the latest segment (Part III) of the *Journal of the Institute of Actuaries*, Vol. 106.

Mr. Daw reports that Daniel Bernoulli, the Swiss actuarial pioneer, produced in a 1760 memoir the first double decrement life table. Starting from Edmund Halley's Breslau life table, Bernoulli derived a table excluding smallpox deaths. He assumed that no person could have smallpox more than once and that those saved (through inoculation) from smallpox would subsequently experience the same mortality rates as other persons of the same age.

Bernoulli had clearly in his mind the day, two centuries ahead, when smallpox mortality would be a scourge of the past. □