The Actuary
The Newsletter of the Society of Actuaries
VOL. 16, No. 6 JUNE, 1982

THE SHRINKAGE IN PART 1 PASSERS

by Linden N. Cole,
Director of Education

Since 1976, when the number of our students passing Part 1 reached its historic peak, the numbers have steadily decreased, thus:

1976	1,654
1977	1,526
1978	1,523
1979	1,285
1980	1,249
1981	1,225

What this may mean for the future growth of Society membership can be foreseen by postulating a few rough but reasonable assumptions, viz.,

a. That 30% of those who pass Part 1 will become Associates three years later (modified for years immediately ahead for which we already know something about progress through later Parts).

b. That 80% of new Associates will become Fellows three years later.

c. That existing membership is subject to attrition, by death and withdrawal, at the rate of 1/2 of 1% annually.

This arithmetic has been done for each of five conceivable Part 1 passing levels, with the following results:

Total Society Membership, Projected To 1995

At Dec. 1	*Society Membership*	*5-Year Compound Annual Increase Rate*
1970	3,754	
1975	5,404	7.6%
1980	7,974	8.1

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AS ONE MAN SEES US

Andrew Tobias, *The Invisible Bankers—Everything The Insurance Industry Never Wanted You To Know*, 1982, pp. 336, Linden Press, Simon and Schuster, New York, $15.50.

Reviewer: Deborah Adler Poppel

Andrew Tobias does his homework. He did it on investments (*The Only Investment Guide You'll Ever Need*), on Charles Revson (*Fire and Ice*), and on get-rich-quick schemes (*The Funny Money Game*). His latest subject of study is the insurance industry.

A consistently entertaining writer, even when handling fairly dry subjects, Tobias doesn't sacrifice accuracy in his quest for entertainment. He does, though, sometimes choose entertainment over complete clarity, begetting misleading statements. For example, he says "the (insurance) industry, alone among major American industries, has managed to exempt itself from federal regulation"; the existence of state regulation isn't mentioned till a later chapter.

One problem is that these misleading passages are the ones that reviewers pick up. (Even this reviewer fell into the trap!) The layperson is much more likely to read these reviews, e.g., in *Newsweek, Savvy, People*, than to read the book. These reviews paint the book as a cruel exposé of our industry. But the book is basically fair; it's the reviewers who are damning us. (Is it possible the author knew this would happen, so deliberately studded his work with controversial statements?)

Note that I said "*basically* fair." Tobias repeatedly pursues an irksome analogy between insurance companies and banks. Viewing our payout of cash surrender benefits net of expenses, profit and death claims as akin to a bank savings account, he concludes we pay negative interest, never pointing out that if you die a day after opening a savings account you get back your initial de-

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AERF DOLLARS

by James C. Hickman, AERF Secretary

The Actuarial Education and Research Fund is charged by its parents, the five North American actuarial organizations, with promoting useful research on actuarial topics. Its assets of $73,300 at the end of 1981, nearly all in a short-term asset account managed by a Chicago bank, were allocated thus:

Wolfenden monograph	$ 1.1 (thousands)
Loss distribution textbook	3.1
Social Security monograph	35.5
Halmstad prize	10.0
Unallocated	23.6
	$ 73.3

Project Status

The Wolfenden monograph project, supported by an individual designated contribution, is to republish, with added commentary, some pioneering papers on graduation by E. L. De Forest and H. H. Wolfenden.

The loss distribution textbook, principal contributors Profs. Hogg and Klugman of University of Iowa, is well along under direction of a task force headed by Charles C. Hewitt, FCAS. Its supporting funds are coming from property-casualty and reinsurance companies.

The Social Security monograph is funded by contributions from consulting and insurance firms in the employee benefit field, and enjoys cooperation of the S.S.A.'s Office of the Actuary. Writing is to begin later this year.

Interest income from the Halmstad Fund provides the annual prize for the best contribution to actuarial research literature.

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The Actuary

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

EDITORIAL

RETIREMENT AGE ARITHMETIC

A Guest Editorial by Robert J. Myers

It is convenient and useful to examine the implications of whatever retirement age is chosen for a national pension plan in terms of a "retirement expectancy" index, viz.:

(probability of survival through the working life span)
× (life expectancy at retirement)

Let us do this first for Germany, the country with the oldest social security system of modern type.

Germany

Almost a century ago, when Chancellor Otto von Bismarck chose age 70—not age 65 as some have believed (see *The Actuary*, April 1978)—for the German plan, that was a relatively advanced age. The official German population life tables for 1871-80 showed that only 29.9% of males (the vast majority of the work force then) survived from age 20 to age 70, and then had an expectation of life of only 7.34 years. Thus, their retirement expectancy index was 2.19 years (.299 x 7.34).

By the early 1930's these figures had increased so that the corresponding index for retirement at age 70 was 4.88 years (.539 x 9.05). For the Federal Republic of Germany in 1977-79, this index had risen further to 6.05 years (.612 x 9.88). Meanwhile though, the retirement age in Germany had been lowered to age 65, in 1916.

United States

In contrast, for the current "normal" retirement age of 65 for the United States, using the U.S. 1978 male population mortality, the index measured from age 20 is 10.0 years (.714 x 14.0). When our program was being developed in the mid-1930s, if the "normal" retirement age selected had been the equivalent at that time of what age 70 had been in Germany fifty years earlier, it would have been 75. This is in vivid contrast to the age 65 actually adopted, and still in effect.

The Office of the Actuary, Social Security Administration has made an analysis along these lines of what the retirement age should be now (and also in future years) if age 65 were treated as "correct" for the 1940—see Francisco R. Bayo and Joseph F. Faber, *Actuarial Note No.* 105, June 1981. Based on combined female-male mortality, the equivalent retirement age would be about 71. Interestingly, if that equivalent retirement age is measured in terms of only the life expectancy at time of retirement, the same age, 71, emerges.

ACTUARIES AT WORK IN OTHER LANDS: IRELAND

by R. Peter Delany

Ed. Note: This is the third article in a series.

At a meeting in the Russell Hotel, Dublin, in May 1972 at which all sixteen actuaries then employed and resident in Ireland were present, the Society of Actuaries in Ireland was established with the following objectives:

(1) To further the general interest of the actuarial profession in Ireland, and to present it as may be required.

(2) To encourage communication between members and with other societies both in Ireland and abroad.

(3) To hold meetings from time to time to discuss papers or matters of interest to the profession.

Membership is open automatically to F.I.A.'s and F.F.A.'s resident in Ireland, and by invitation to others deemed suitable for membership by virtue of their experience or qualifications.

Often before 1972 the founding of such a body had been discussed informally, but the numbers were too small (only 10 in 1966), and until the seventies most, being employed in one location, met each other frequently.

Current membership is 45 — 38 F.I.A.'s and 7 F.F.A.'s; 25 are in insurance companies, 6 in consulting practice, 7 are insurance brokers or pension consultants, 3 are in banks, 2 in miscellaneous occupations, and 2 retired.

In recent years the Society has been involved in discussions with, and submissions to, Government Departments about public pensions, i.e., a National Income-Related Pension Scheme, an activity that is soon to be resumed if further developments occur as anticipated. Otherwise, work of actuaries here is broadly similar to that of actuaries in Britain, but with one noticeable exception. Where damages or compensation are awarded for personal or fatal injury, an actuary's assistance in capitalizing future loss, requiring evidence in court by the actuary, is invariably needed here.

Although the small number of actuaries precludes our becoming an examining body in the foreseeable future, our Society's existence is desirable if not a necessity so that the profession can speak as one voice on legislative and other matters affecting it and the country. □

THE 1983 TABLE *a*

by Robert J. Johansen

Ed. Note: This is the last of three articles. The first two described steps in constructing the 1973 *Experience Table, and from it the* 1983 Table *a.*

How Reserves Compare

At 5% interest, immediate annuity values for men at ages 60-75 on the 1983 Table *a* are 5-7% higher than on the 1971 IAM Table; for women at these ages they are 5-10% higher. At ages above 75, these percentage increases are greater, reaching excesses beyond 20%. Percentage increases at 7% or 9% interest, and for life annuities with 10 years or 20 years certain periods are smaller.

A model office was constructed from exposures by amounts in the first five contract years in the *TSA* 1979 Reports Number (1971-76 Annuity Study). This showed the following percentage excesses of 1983 Table *a* aggregate reserves over those on the 1971 IAM Table:

5% interest, 11 years, about 8% excess

7% interest, 11 years, about 7% excess

5% interest, 21 years about 10% excess

7% interest, 21 years, about 9½% excess

At 9% interest, the ratios were about 1% lower than at 7% interest.

Projection Beyond 1983

The charge to the Committee included derivation of new projection factors. The Committee's finding was that Projection B (*TSA I*, 417) and its derivatives would be inadequate at high ages where they provided for hardly any annual improvement.

Review of expert opinion revealed wide disagreement as to the reasons for the mortality decline at high ages, although all seemed to accept the decline since the late 1960's as not just an artifact. Explanations ranged from recognition and better treatment of hypertension to improved emergency care to less smoking. Barring setbacks from influenza epidemics, declines are expected to continue, even if at a lower rate, much of this in deaths from heart and related causes.

From its own study of mortality decline over various periods to 1980 and opinions of experts, the Committee derived Projection G, a set of improvement rates somewhat lower than those it used to derive the 1983 Basic Table, and with lower rates for men than for women. The table below compares several of these factors.

ANNUAL MORTALITY IMPROVEMENT RATES

Men	*Proj. B*	*Proj. G*	*Comm. 1973-83*	*SSA**
67	1.04%	1.50	2.25	1.56
72	.87	1.25	2.25	1.27
77	.65	1.25	2.00	1.02
82	.40	1.25	1.75	.83
87	.15	1.25	1.50	
92	0	1.00	1.50	
Women				
62	1.16	1.75	2.25	1.62
67	1.04	1.75	2.25	1.64
72	.87	1.75	2.25	1.77
77	.65	1.50	2.00	1.93
82	.40	1.50	1.75	2.11
87	.15	1.50	1.50	
92	0	1.25	1.50	

*Implied in Actuarial Study No. 82, Social Security Administration

□

FASB DATABANK

The Financial Accounting Standards Board tells us they have developed a data bank containing information about pensions and changing prices, extracted from 1,100 companies' annual reports. It's available to researchers and others interested; indeed, its purpose is to encourage research about pensions and effects of changing prices on business enterprises.

It gives numerical data about pension costs, vested and non-vested benefits, plan assets and interest rates; also references to multi-employer plans and changes in actuarial assumptions. The data bank supplements Compustat and Value Line data banks and may be merged with them.

For information and a descriptive manual, write to: DATABANK, Financial Accounting Standards Board, High Ridge Park, Stamford, CT 06905.

E.J.M.

NON-ROUTINE BUSINESS OF BOARD OF GOVERNORS AND EXECUTIVE COMMITTEE

December 1981 to March 1982

by Kenneth T. Clark, Secretary

1. At its two-day meeting in February, the Executive Committee, as is customary, concentrated on a few topics, which this year were: Sections, Education Policy, Planning, and Public Relations.

2. The Board decided that two changes in our Constitution, both concerning admission to Associateship, should be submitted to the Fellows for approval.

3. The Board approved a new prize to be granted annually for the paper judged the best published in the *Transactions* that year.

4. The Board approved an E. & E. Committee proposal entitled "A Strategic Premise For Actuarial Education," whose essence was stated as:

> "To provide an understanding of fundamental mathematical concepts and their application — To give a picture of the environments in which financial arrangements operate—To expose techniques that the actuary can identify, apply, and recognize as to their limitations—To expose a range of actuarial practice, including application of concepts and techniques—To develop a sense of inquisitiveness to explore non-traditional methods and practices."

5. The Board approved model by-laws for and guidelines for forming new Sections.

6. The Board approved a new procedure for recognizing authors of papers.

7. The Board undertook to study a proposal that Fellows be accredited, as Academy members now are, to sign opinions for life company financial statements.

Ed. Note re Item 7: *The task force that is to report to the Board in October* 1982 *cordially invites Society members to send your views on this proposal to the task force chairman, Julius Vogel, at his Yearbook address. Since all pros and cons may not be immediately evident, interested actuaries are welcome to request a file of relevant letters from Executive Director John E. O'Connor at Chicago headquarters.* □

LETTERS

Actuaries Do Want Books

Sir:

The notice ("Books Offered", April issue) that you printed about availability of actuarial volumes I no longer need in retirement, yielded 29 enquiries. These calls were mainly from recent Fellows. In due course one came to my house and took the lot.

I am happy that my old books will thus continue to be put to good use.

Frank F. Dodge

Ed. Note: This newsletter will be glad to print other such offers of actuarial books available gratis or for cost of shipping.

* * * *

In Other Lands

Sir:

The excellent article by Alfonso P. Garcia, Jr. and Steve S. V. Wong (March and April issues) bring back pleasant memories of both the Philippines and Malaysia. At the Baguio City meeting at which the idea of an Asian Society was first discussed, I had the distinction of being the only Welsh F.I.A. attending as a delegate from Malaysia (if that doesn't sound too Irish for Americans to follow!).

My stay in Malaysia for a UK consulting firm lasted for four very enjoyable years during which I was a member of the Malaysian Actuarial Society. The student actuaries in that relatively small country who have overcome the difficulties of progressing through the examinations of the British and American professional bodies are to be congratulated upon having attained Associateship status or beyond.

Visiting actuaries were "shanghaied" at the airport to ensure that they promised to address the Society. A warm reception was always given them—as well as a sumptuous n-course Chinese meal afterwards; I always lost count of "n" after six! I am sure that hospitality is no less now than it was when I left, so if any reader is planning a visit to Malaysia (and it's well worth visiting) I strongly urge letting the Society know.

Huw R. Wynne-Griffith, F.I.A.

Ed. Note: Among the reasons why this letter delights us is that the writer describes himself as "A.S.A. and proud of it!".

* * * *

What Does Benefit Indexing Cost?

Sir:

A common practice by our profession of suggesting that automatic pension benefit increases don't increase pension costs because of the compensating effect of higher interest assumptions troubles me. Little wonder that actuaries have gained the reputation of submitting mysterious and confusing reports. That benefit increases involve higher costs cannot be denied; indeed there's a spiralling effect because the higher benefits and costs contribute to further inflation.

Costs attributable to automatic increases may be offset by higher investment earnings which are themselves traceable to the same inflation. Some of the perceived correlation between inflation and interest rates may be caused by extraneous factors (e.g. the Federal Reserve System); besides, there are periods of little or no harmony between inflation and common stock performance. At least one actuarial author says that the additional cost of indexing is greater if there's an existing asset fund; we can appreciate the mathematics leading to this statement, but isn't its logic terribly confusing to the non-actuary?

We actuaries have an obligation to evaluate benefit costs properly, and also to communicate them properly—above all, to avoid mathematical manipulation. It seems to me that if the statement I'm questioning here is true, some of our insurance-financial organizations ought to be willing to underwrite such contracts. Are there any takers?

Harry D. Morgan

* * * *

Immunization Fallacy

Sir:

Frank M. Redington's article (Jan. issue) was a refreshing admission by a most eminent actuary that "our so-called valuations can be no more than transient statements of value in the particular conditions of the moment." So true.

To my mind, immunization theory is a snare and a delusion. Our so-called valuations in this day and age cannot rely upon it because we cannot possibly estimate emergence of income, disbursements and capital outgo — guaranteed cash values, policy loans and other withdrawable items such as premium deposit funds and transferable group annuity funds. In many ways the older, mature life companies are in a dangerous position rather like the savings and loan industry, with demand liabilities and long-term assets based on interest rates far removed from current conditions.

The only prudent course in the present economic environment is to invest most of the assets in securities maturing in 5 or 10 years at most, until we find out whether the economy settles down in an environment more like what we were used to 20 or 30 years ago. It seems very doubtful that those happy days will return.

Charles F. B. Richardson

* * * *

Inferior Exam Questions

Sir:

Part 9P, for which I sat last November (and, happily, passed) had the lowest quality of any exam in my six student years.

Important topics were overlooked in the questioning; questions were asked on less important and extraneous topics. For example, there was a 4-point question on ESOP's, a topic not in the course of reading, and though the syllabus is clearly focused on plan design (the Requirements even saying that certain material should be read "from the standpoint of plan design as opposed to funding"), there were 7 points on funding.

I realize that putting together an exam is a difficult task, performed by volunteers with major responsibilities elsewhere. But this by no means justifies that exam. A student who has prepared digilently for several months deserves a fair, carefully thought-out exam with questions focusing on the topics students were told to study.

Michael T. Merlob

* * * *

We'd Better Do Our Job

Sir:

It's discouraging to read Stuart J. Kingston's call (April issue) for more regulation to offset actuaries being "outwitted by agency officers" or because of "top management's short range attitude." But I agree with the Editor's caption to that letter, "We Aren't Doing Our Job."

Our profession needs urgently to upgrade, through performance, our reputation with regulators so they will accept

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Letters

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our certifications that reserves are adequate and that the company is solvent. And accomplishing that should lead to less regulation.

But we have a long way to go to establish that credibility. Said a high official of the New York Department in response to my suggestion that he place more reliance on actuaries, "Your profession has only drummed two people out of the corps in its entire history, and you didn't do that until they were in jail."

It is doubtful that dismissing members is evidence of anything, nor do I share Mr. Kingston's lament that "Too few actuaries have resigned in public protest against top management's short range attitude." Top management isn't the culprit any more than Hitler was the sole Nazi abomination. We actuaries must take our responsibilities seriously and personally.

Several years ago in *The Actuary* (Oct. 1976—Ed.) I called for an Actuarial Standards Board. Since then there has been much development of Guides to Professional Conduct; perhaps we don't need any more than those or any better discipline procedures, but I doubt it. What we do need is perfect adherence to the requirements we already have.

Ardian C. Gill

* * * *

Taxation Ethics

Sir:

Charles M. Larson's objection (April issue) to Stuart J. Kingston's assertion that high taxes are unethical should be framed by defense lawyers for use when they represent clients accused of diverting funds.

Mr. Larson considers arbitrary redistribution ethical provided the income it transfers comes from taxpayers making, say, $20,000 per year to those making $15,000. This is just a microcosm of our present tax structure; our government restricts incentives by transferring from those who produce to those who consume.

One must concur with Mr. Kingston's view unless one supports transferring income, from each according to his ability to pay, to each according to his needs.

Richard H. Solomon

* * * *

Society Finances

Sir:

As an F.I.A. who is an A.S.A. by virtue thereof, I found most interesting (in your April issue) the summary of W. W. Truckle's paper on actuarial education and Leslie J. Lohmann's letter on subsidizing examination costs out of membership dues.

The Institute of Actuaries requires everyone who takes its exams to be a member—it has a student level of membership—and thus to pay dues. The Society might consider a similar provision, thus offsetting the subsidy.

A side issue is the extent of tax-deductibility. For example, although Society accounts show meetings and seminars costing just about what those who attend them pay, there is a subsidy of a different sort to those attenders who can take a tax deduction.

On Mr. Lohmann's other point, it seems to me that we owe our committee members decent accommodations when they travel on our behalf; surely the extra cost of this in the Society's budget would be relatively trivial.

Jan R. Harrington

MERGERS AND ACQUISITIONS ON HARTFORD PROGRAM

by David M. Lipkin

A recent Hartford Actuaries Club workshop examined Life Company Mergers and Acquisitions. The audience was addressed by two Fellows: Howard L. Rosen (acquisitions) and Charles C. DeWeese (mergers).

Mr. Rosen explained that many concerns, including non-insurance and foreign companies, are making life companies their takeover targets. Typical prices have been rising to two-to-three times GAAP book value. Three reasons for this popularity are (1) their stable earnings, (2) tax advantages, especially upon liquidation, and (3) favorable cash flow. The actuary's role is to set a value on the acquired company's present value of future profits so that a fair purchase price can be set.

If the company doesn't know that it is, or doesn't want to be, the subject of such study, the actuary must rely solely upon published data, hence is forced to make many educated guesses.

The most important assumption the actuary must make is the rate at which future projected profits are to be discounted. This rate is supposed to reflect the underlying risks; typical rates that Rosen has seen are 12-18%. The discount rate is usually increased in valuing profits from health business (riskier than life), or business not yet written (obviously risky).

The actuary is often called upon to justify a purchase price that has already been set. (There are probably analogies here to other actuarial functions.) To ensure that his assumptions are unbiassed, Rosen prefers not to know the target value.

Mr. DeWeese then gave some background on the merger between Connecticut General and INA Corporation.

Connecticut General is a multi-line insurance company, the bulk of whose business is life and health insurance with emphasis on employee benefits. Its relatively small property and casualty business is written through a subsidiary. INA's business complements Connecticut General's, as INA specializes in property and casualty insurance, with smaller life and health operations.

Connecticut General began looking to acquire a property/casualty company in 1979, for several reasons, including (1) favorable prospects for long-term profitability and growth in that industry, (2) opportunity to diversify in business risk, and (3) desire to be as large a factor in property and casualty as it is in its other lines.

As Connecticut General narrowed its list of candidates, INA emerged as an attractive company, but too large for CG to buy. At the same time, INA was going through a similar exercise, with an interest in increasing its employee benefits business. CG emerged as their most attractive candidate, but too large for them to purchase.

Goldman Sachs & Co., acting as investment banker to both companies and aware of these interests, first suggested merger and brought the companies together to discuss that possibility. Describing the result as "a merger of equals", DeWeese noted that one major advantage of this merger over an acquisition was that neither company paid a premium to acquire the other. The two units will continue to operate under their own names. □

PROPOSALS FOR REFORM OF ACTUARIAL NOTATION

by Frank C. Reynolds, Chairman, Committee on Standard Notation & Nomenclature

Ed. Note: This is the first article in a series.

Little noticed by most North American actuaries, our colleagues elsewhere have worked hard in the last 15 years trying to revise our traditional system of notation. While the initial efforts came from a group of German-speaking actuaries, notable work has been done by the British, Australians, and New Zealanders.

Why Change?

Present notation poses three basic problems, two of which are:

(a) It doesn't serve the needs of pensions and health insurance.

(b) Minor inconsistencies and difficulties have arisen in practical use, e.g., the Mereu Ambiguity (*The Actuary*, April 1973).

Although there is widespread agreement on the need to replace our notation, and even some consensus on how to do it, the obstacle to progress has been in the third basic problem now to be discussed.

Strengths and Weaknesses Of Our Present System

Reluctance to abandon present notation, a central symbol surrounded by a "halo" of parameters that define it further, comes from its major strengths, which are these:

(1) A symbol is quickly comprehensible to those familiar with the principles.

(2) The notation is precise, and forces its users to be specific.

(3) The system's clarity has led to helpful developments by people pondering the true meaning of certain combinations.

(4) The system is used worldwide, and has been carried over into related fields.

Yet, proponents of change have two basic arguments and several subsidiary ones. Academics trained in other fields find our notation difficult to accept; first, it's not in the functional form $f(x,y,z,u,v,w)$ to which they are used, and seemingly small changes may result in vastly different meanings; second, the

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Deaths

Allan F. Lebourveau, F.S.A. 1937

Sir George Henry Maddex, F.S.A. 1950*

*Sir George Maddex, K.B.E. was President of the Institute of Actuaries in 1948-50, a period that included the 100th anniversary of the Institute. At our March 1950 meeting the Society unanimously voted to enroll him as a Fellow without examination (*TSA II*, 166). In recent years Sir George has been our only member holding that distinction.

MARCUS GUNN, 1892-1982

Ed. Note: This appreciation has been compiled from recollections by several who knew Mr. Gunn well.

As a very young boy in Oregon, Marcus Gunn was orphaned by the deaths of his parents in a flash flood from which the Gunn children barely escaped. Brought up by an aunt in Detroit, Marcus became a 1914 graduate of the University of Michigan Actuarial Program; in 1920, after his studies had been interrupted by service in World War I, he earned his Fellowship in the American Institute of Actuaries.

Until 1962 when he retired as Vice President and Chief Actuary of California—Western States Life Insurance Company, he established and held his reputation as an actuary who was courageous, innovative and flexible. With other actuaries he pioneered in mass selling, first of life insurance in the 1930's, then of hospital and medical coverage after World War II. Two large life insurance plans, still in existence nearly half-a century later, stand as evidence of his imaginative combining of group and individual policy concepts in a way not previously undertaken. The health insurance coverage for the California Farm Bureau, in days when such coverage was new to most rural people, was a case of joint underwriting by three companies of a plan that no single company was prepared to undertake.

"Mark," said an eminent actuary 30 years ago, "was the moving spirit in getting the (Pacific States Actuarial Club) started." His friends remember the twinkle in his eye, his enjoyment of physical vigor which prompted him to challenge younger associates to foot or bicycle races, but mostly the aid and encouragement he gave so freely. He generously shared his store of knowledge and experience with those whom it would help. □

HESTER PLAN FOR INVESTING DURING INFLATION

by Robert J. Johansen

At our Houston meeting (PD 1), Donald D. Hester, Professor of Economics at University of Wisconsin, outlined a novel investment system aimed at protecting purchasing power of the lender's funds from inflation's ravages.

Noting that over the next few years corporations will need to borrow large amounts, Prof. Hester suggested that to fill their long-term needs two varieties of paper be created: (1) a series of futures contracts on the Consumer Price Index in the same amount as the repayment due in a year, and (2) a series of conventional coupon bonds which pay, say, 2% per annum. The former would require the borrower to pay at maturity the product of the contract's face value and the percentage change in the CPI since the security was issued. The lender would receive both the conventional bond and the long side of the series of futures contracts. Either party could trade these futures contracts in the usual way in a secondary market such as the Chicago Board of Trade.

This device seems preferable to constant purchasing power bonds because of the secondary market feature, and yet seems capable of fully protecting the interests of beneficiaries. No reinvestment to preserve the inflation premium is involved. With an assured volume of contracts and with settlement allowed in current dollars, this market might well become the dominant futures market in the U.S.A.

The presentations by Prof. Hester and his panel colleague Prof. Victor Zarnowitz, and the ensuing discussion, will appear in the *Record*, Vol. 8, No. 1. □

Message To Part 7 Students

For the 1982 exam, the following have been removed from Required Reading: *From Part 7E*, the Winklevoss text and the Street paper; *From Part 7I (Can.)*, study notes 705, 706 and 711. Other minor changes are being made, and a modest amount of material added. Be sure to read the Introductory Study Note carefully for particulars.

L.N.C.

As One Man Sees Us

(Continued from page 1)

posit but if you die a day after buying a life insurance policy someone gets a windfall. This was sloppy reporting in an otherwise well researched book.

What does the author say about actuaries?

> "Actuaries forecast claims, crank in assumptions about interest rates and, thus armed, set insurance rates. They excel at statistics, probability theory, compound-interest calculations and the extrapolation of trends. They say things like (and I quote) 'The adjusted rates were graduated by a Jenkins fifth difference modified osculatory interpolation formula with fourth differences at the end points set equal to zero.' They tend to be conservative."

A bright spot is that although he complains of an excess of lawyers, underwriters, agents, and insurance in general, he never says there are too many actuaries.

I needn't expound on Tobias' book; Valerie Sands did this capably in the *National Underwriter* (April 3, 1982). It is important that actuaries not dismiss this book with, "Who does this guy think he is to tell us how to run the industry?". This guy is basically an educated consumer; his misconceptions and gripes are those of the consumer, albeit expressed with sophistication; his solutions, the ill-advised as well as the feasible, will appeal to consumers. We should prepare ourselves with rebuttals to his misconceptions, and with our solutions to his gripes.

At least buy the book, it's deductible. □

Actuarial Software Catalog Available

The first Actuarial Software Catalog, a project of our Committee on Computer Science described in our Sept. 1981 issue, has been published. To obtain a copy, send $3.00 to Society of Actuaries, Box 98474, Chicago, IL 60693.

Systems for employee benefits are listed separately from those for life and health actuarial operations.

Shrinkage

(Continued from page 1)

Assumption A: Level 1,200 Part 1 Passers		
1985	9,678	3.9
1990	11,221	3.0
1995	12,725	2.5
Assumption B: Level 1,600 Part 1 Passers		
1985	9,798	4.2
1990	11,932	4.0
1995	14,013	3.3
Assumption C: Level 2,000 Part 1 Passers		
1985	9,918	4.5
1990	12,643	5.0
1995	15,300	3.9
Assumption D: 10% Annual Increase (from '81)		
1985	9,722	4.0
1990	12,172	4.6
1995	16,203	5.9
Assumption E: 2% Annual Decrease (from '81)		
1985	9,678	3.9
1990	11,117	2.8
1995	12,359	2.1

None of these five possibilities will achieve membership growth even approaching in percentage what we have experienced during the 1970's. Even to accomplish growth rates in the 3%-5% range—the second and third projections—would require a recruiting and publicity effort beyond the scope of anything presently contemplated. □

Actuarial Notation

(Continued from page 6)

difficulties that printers and even typists have with the notation are barriers to getting books and papers published.

The subsidiary arguments for change get into the practicing actuary's world. The present notation is difficult to convey by the spoken word—a problem in everyday work and even more so for the student attempting to comprehend a professor in the classroom. Computer incompatibility too has been identified as a practical problem, though less and less so as computer flexibility grows.

Our next article will begin to examine various proposals for change that have been offered. □

AERF Dollars

(Continued from page 1)

Unallocated funds, largely contributions by individual actuaries, support AERF's administrative activities and new projects still ahead.

Income and Expenditures

Income	
Contributions	$ 14.0 (thousands)
Interest	6.4
	20.4
Expenditures	
Halmstad prize	1.2 (thousands)
Administration	2.9
Fund solicitation	3.3
Research Director	7.1
Project development	1.3
	$ 15.8

AERF's Research Director is Cecil J. Nesbitt, University of Michigan. Its Directors are in our 1982 Yearbook, p.19. □

SOCIAL SECURITY REPORTS

It is specially important this year that actuaries familarize ourselves with at least the official summaries of the Social Security Trustees Reports. These help us to evaluate the funding and benefit proposals being made and criticized as the system's decision-making time approaches. There is also supplementary material useful to many of us. The following have been issued recently:

I. *Trustees Reports*

Single copies of two summaries are yours for the asking, viz.,

Summary of the 1982 *Annual Reports of the Social Security Boards of Trustees.* 23 pp. Request this from Office of the Actuary, Social Security Administration, Baltimore, MD 21235.

Summary of the 1982 *Annual Reports of the Medicare Board of Trustees.* 20 pp. This is a new summary that has been prepared, says Roland E. King, F.S.A. "because of public misconceptions regarding the nature of the trust funds and their financial problems." Request this from Bureau of Data Management and Strategy, HCFA, Office of Financial and Actuarial Analysis, Room 1-C-11 Oak Meadows Bldg., 6325 Security Blvd., Baltimore, MD 21207.

And of course actuaries who will read them should include in their letters requests for the full texts of the customary three Trustees Reports.

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SIGHTINGS

Louis Garfin sent along an open letter to Uncle Sam that appeared in the Orange Coast Daily Pilot, January 17, 1982. The writer "Cuzin Marmaduke, A Baffled Taxpayer," complaining that the federal income tax rates went up instead of down in 1981, closed with:

> "What makes matters worse is those actuarial folks who keep right on raisin' life expectancy."

Donald J. Martineau brought us from Johannesburg an article in that city's Sunday Express criticizing South Africa's low civil service pay, but citing, seemingly as an exception, the Actuaries' Office. Its starting pay was given as R 4,900 p.a., which we calculate as equivalent to $US 4,600.

Notes arrived (in the same mail) from *Paul G. Schott* (a) and *Edward Scher* (b) telling us that in George Bernard Shaw's "Mrs. Warren's Profession" (1893) Mrs. Warren's daughter, Vivie, (a) in Act I has a job "working away at actuarial calculations," and (b) ultimately decides to become a consulting actuary rather than to follow in her mother's older profession.

Paul Schott also spotted two other references to our craft. (1) In a story about one Peter Gould of Santa Fe, N.M. in the March 1982 National Geographic, Mr. Gould is said to have remarked that he introduced John Ehrlichman to Allen Ginsberg, which wouldn't have happened "had he remained in Athens (Texas) with his actuarial tables." (He apparently was an agent, not an actuary). (2) Carl Sagan in his "Cosmos", in the course of exposing astrology's quackery, refers, with an illustration therefrom (p. 51), to John Graunt's "1632 book on actuarial statistics."

From *Louis M. Cornelis* we have an article in the Globe and Mail, Feb. 23, 1982, quoting Joe Thauberger, president of a branch of Canada's Social Credit Party:

> "The devil himself invented the compound interest rate—because compound interest will destroy Christianity better than any evolutionist or non-believer you ever saw. It's going to destroy everything."

E.J.M.

AGES OF OUR NEW FELLOWS

Headquarters having kindly sent the data, we are able to display the spread of new Fellows' ages, and to compare them with figures for Fellows by examination given by the late John R. Larus in *T.A.S.A. XXXIX*, 29. It appears that the more the median age changes the more it is the same.

AGES WHEN ADMITTED TO FELLOWSHIP

Year Admitted	*Number*	*Average Age*	*Median*	*Highest*	*Lowest*
1900-04	20	33	33	46	25
1905-14	45	30	29	48	23
1915-24	90	30	29	40	24
1925-36	205	29	28	50	23
1981	265	30	29	54	22

About his column of lowest ages, Mr. Larus commented:

> "It may seem surprising to see Fellows by examination listed as entering at age 23, for since the spring of 1896 our constitution, until amended last fall (1937), has stipulated age 25 as the minimum. Facts, however, stare us in the face. . . ."

As to highest ages in 1981, we find one new Fellow at age 54, one at age 44, two at age 43, one at age 41, and one at age 40. At the low end, there was one at age 22, none at age 23, and there were twelve at age 24. Ages in this study are reckoned at (1981 minus year of birth).

E.J.M.

THEY LIKED THOSE RISK THEORY SEMINARS

by Linden N. Cole, Director of Education

Our 13 risk theory seminars, to introduce Part 5A candidates to the new material were strongly supported, and, according to 109 questionnaires since received, were popular. Prevailing opinions were that these sessions boosted attendees' confidence in their ability to continue studying on their own, and their chances of passing the exam. □

BIGGEST BRIDGE HAND IN 53 YEARS OF COMPETITION

Our distinguished colleague Oswald Jacoby had never (reported Alan Truscott in *The New York Times*) held a hand in tournament play as potent as this one he picked up on March 22nd:

S.: AKQ7
H.: AKQ8764
D.: AK
C.: —

Mr. Jacoby (South) opened with an artificial two clubs and eventually bid seven hearts after North had supported that suit. East doubled to encourage West to lead clubs. "Jacoby promptly redoubled", said Mr. Truscott, "wrapped up 13 tricks briskly, and wrote down the unusual (and rewarding) score of 2,890."

E.J.M.

Social Security

(*Continued from page 7*)

II. *Actuarial Notes*

Actuarial Notes Nos. 111 and 112 are now available from Office of the Actuary:

No. 111. Computing A Social Security Benefit After the 1980 and 1981 Amendments, by Steven F. McKay, F.S.A.

No. 112. Average Wages For 1980 For Indexing . . . And Automatic Determinations for 1982, by Eli N. Donkar, Ph.D., A.S.A.

III. *"What If Price Indexing . . . ?"*

Robert J. Myers has written a 2-page article examining what the result so far would have been if price (instead of wage) indexing had been adopted in the 1977 Amendments. Request a copy from him at National Commission on Social Security Reform, 736 Jackson Place N.W., Washington, DC 20503.

IV. *"Social Security—The Only Way It Can Be Made To Work"*

This is the title of a 2½-page essay by our editorial board colleague, Charles G. Groeschell, which he sent to President Reagan and to the above-named National Commission. He doesn't claim to present a definitive solution but explores possibilities for easing Social Security's financial problems by helping and encouraging its recipients to be productive during their retirement years. Request a copy from him at his Yearbook address.

E.J.M.