The Actuary
The Newsletter of the Society of Actuaries
VOLUME 14, NO. 1 JANUARY, 1980

INDEX-INDUCED INFLATION

by Geoffrey N. Calvert

Great damage is being done to the U.S. economy as a result of the widespread misunderstanding that the Consumer Price Index measures changes in the cost of living. It does not; but the common belief that it does tragically underlies the practice of CPI indexing (through cost-of-living adjustment clauses) of wage rates applying to tens of millions of workers; also CPI-indexing of Social Security benefits to more than thirty million recipients, and of civil service and other pensions to millions of others. The terms "CPI indexing" and "cost-of-living adjustments" are used interchangeably in many government documents, labor contracts, and reports of all kinds, as though they meant the same thing, but they do not. The fact is that the CPI *overstates* the rise in the cost of living by upwards of 2% annually, and this overadjustment is feeding right back into the inflation. By attempting to compensate for the inflation, and, in doing so, by *overcompensating*, we are accelerating the very condition we are trying to recognize.

How does this overcompensation arise? It arises through (i) measurement of the *wrong thing* by the CPI, (ii) *incomplete* measurement of the cost of the end use to the consumer, and incredibly, (iii) *inclusion of cost* but *exclusion of benefit* of many products used by the consumer. These points are clearly brought out by the following examples drawn from the work of academic economists Ruggles of Yale and Gordon of Northwestern, and of consulting economist Lee Moore of New York.

(1) Let us start with these statistics on motor tires:

	Price	*Life*	*Cost per mile*
1935 4-ply cotton	$13	7,000 miles	.186 cents
1978 steel belted radial	$68	40,000 miles	.170 cents

Ignoring the increase in miles delivered by each tire, the CPI tire price index *rose* 140%, but cost per mile *fell* by 9%.

(2) The CPI similarly ignores many other changes in quality and performance.

- Modern motor oil goes 5 or 10 times as many miles as the oil of 30 years ago;
- Today's television set lasts longer, uses less electricity, needs fewer repairs, and shows better pictures than 15 years ago;
- A jet plane flies faster, saving time which has value, and is safer;
- A modern razor blade gives more and better shaves.

(3) Similarly many kinds of taxes (other than direct income taxes) flow directly into the CPI, but *all* the government services we receive in return are incredibly omitted!

(4) The CPI movie enterainment index is *up* 330% since 1948, whereas the cost of equivalent programs on TV is *down* 80%.

(5) The gasoline excise tax went straight into the CPI, but the superhighway system that we got for it was ignored, and with it all the saving in time, gas, wear and tear, and the improvements in comfort and safety.

(*Continued on page 8*)

Editorial Support

Jonathan L. Wooley, who is now relinquishing his post as Associate Editor, has been an example to us all in his painstaking and thorough attention to the details that determine the quality of a magazine. Since January 1975 he has watched over the accuracy of words and formulas. Our warmest thanks to Jonathan.

WOMEN IN OUR PROFESSION

by Esther H. Milnes

No doubt about it—there are more women in the actuarial profession these days. That shouldn't be a surprise since more women have been entering the labor force over the last twenty years. Women now make up 41% of the work force, and 1 out of 6 of them is in a profession.

Of course, the actuarial profession has been affected by these changes. For example, at Society meetings we've all noticed increases in the number of women who are FSA's and men who are AP's (accompanying persons). Let's take a closer look at some of these changes. Have women faced the same difficulties in the actuarial profession as in medicine or law? Where do we stand now? How is our track record compared to other professions?

Women in the professional world have been examined in publications from *The Wall Street Journal* to *Redbook*. Women now established in their professions say how difficult it has been to reach these positions. There are many stories of disparate pay, lack of respect, and struggle with prejudice.

Was it any different in the actuarial profession? Probably not. Josephine Beers provided some examples. When she started her career in 1929, the start-

(*Continued on page 5*)

The Actuary

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EDITORIAL

OUR LONDON COMPANION

"FIASCO" is the catchy (rather than imposing) title of the newsletter published in London that performs somewhat the same function for members of the Institute of Actuaries as *The Actuary* undertakes for Society members. FIASCO was launched in February 1978, and has faithfully adhered to its orginally announced "approximately eight times a year" publication schedule.

That journal is, in fact, a publication, not of the Institute itself, but of the Institute of Actuaries Students Society. But when one appreciates that the Students Society is not an organization just of those who are preparing themselves to take actuarial examinations but embraces also any member of the Institute, or of the Faculty, or of any other body of actuaries who cares to pay its modest fee, and that many, many Fellows and Associates are members, and that FIASCO goes out with regular Institute mailings to all its members, a reasonable conclusion is that these English and North American newsletters enjoy comparable readerships.

Between their journal and ours there are many similarities and a few differences. FIASCO so far has more of a social flavor than we have; for instance, it announces members' promotions and job changes. Also it accepts, for a fee, advertisements by organizations seeking actuaries.

That the volume of acceptable material has been picking up is shown by FIASCO's recent expansion from an original four 21x29½ cm. (say, 8¼"x11¾") loosely filled pages to six more tightly packed pages.

FIASCO has scooped our newsletter by introducing an Around The (Actuarial) Clubs column. As may be guessed, it gives outlet to its contributors to gratify the British penchant for humour and joy in extravagant punning. An early issue displayed a letter from our own Andrew C. Webster wishing them success and remarking thus:

> Actuaries, as you know, are not supposed to have the light touch. FIASCO goes a long way to dispel that myth.

Unlike the said ACW who still paces our newsletter's bridge as we prepare our 131st issue, FIASCO's first Editor, G. J. Lagden, bowed out after his twelfth. The incoming Editor is Peter Turvey, and the Associate Editor Miss C. A. (Tina) Bishop.

Recently the editors of FIASCO and *The Actuary* met in London to talk over what editors hope, fear, and brag about. We decided to launch a reciprocal practice of notifying our readers about items of interest in the other journal. Here is our first such announcement, which we are happy to make:

FIASCO Issue No. 8 includes at least two contributions of interest to actuaries in North America. One, by C. D. Daykin, urges widened extension of index-linked pension benefits to persons already retired. In the other, Miss Geraldine Leigh, a recent visitor to a Society of Actuaries meeting, deplores the falling status of the actuarial profession. She wonders if a decrease in the number of new Fellows should be sought, perhaps by making the examinations more difficult.

E.J.M

LETTERS

Life Insurance As Savings

Sir:

In your May editorial you sought evidence on whether most actuaries perceive whole life as an indivisible entity.

If we read the whole life contract, we find it whole. Its face amount is to be paid to the beneficiary. There is only one premium, not two parts. The policy may be surrendered for its cash value— not, "You may withdraw the deposit and do as you like with the term insurance."

What, at bottom, is all this splitting of policies and chopping of logic about? It is modeling, I submit. That modeling may be pure mathematical manipulation starting from basics of life insurance or may be built upon a lay interpretation; this usually reduces to cash flow analysis and comparisons involving interest. The thing to remember is that these are not reality, but models of reality in particular terms. As such they can be useful, but not universally or exclusively so.

In a life insurance policy, the utility of the whole is more than the sum of the utility of the parts. Contrast whole life to "term plus fund." These two simply do not work the same; this is an objective fact, not a subjective appraisal, and not a theoretical point. The asset value in whole life differs from a deposit account, and surely is not an "investment", (the investing of money or capital for income or profit). The main use of the cash values is to permit continuance of insurance through many years at a level premium. This concept leads away from presenting whole life in terms of yield on savings. The asset values (both living and survivor) are used primarily for insurance; a thing should be presented in terms of its primary use.

Having said that, certainly both the protection and savings features of whole life insurance are important in their own right. Though the whole may be more than the sum of its parts, the parts are nevertheless important.

Also, I strongly second the idea that policyowners whose needs may be changing (particularly those, say, in their 60's) should get good information on their choices: to keep the insurance going, to take paid up insurance, to settle for cash or under a payment plan. These

(Continued on page 3)

Letters

(Continued from page 2)

options add much to the utility of the product; everyone should have the chance to make the most of them.

Russell R. Jensen

* * * *

More Oldtimers' Recollections

Sir:

The age 25 rule (Actuarial Precocity, October 1979 issue) was removed in October 1937. The probable reason— three candidates were waiting for their twenty-fifth birthdays. Leslie Cannon had passed in 1936, Alan LeBourveau and I in the spring of 1937. The vote to remove is enigmatically recorded in the last sentence on p. 641 of *T.A.S.A.* XXXVIII. It seems that the rule was strictly observed up to then.

R. A. Saunders

* * * *

Sir:

In those days, the age 21 rule for Associateship was the real stumbling block. You could not begin taking your Fellowship exams until you were an Associate; you could lose a lot of your drive to study when you had to skip a year or so.

Why is this subject before us now? Are we looking ahead to celebrating the 50th anniversary of the rule's demise, considering resurrecting it, or just whipping a dead horse?

T. Arnol Crowther

* * * *

Sir:

All this exploration suggests other investigations into actuarial history, not all of them frivolous. For example:

(1) Who was the oldest (shortest, etc.) person ever to attain Associateship or Fellowship?

(2) Who was the first actuary who had to pass a non-trivial number of exams?

(3) Who was the first female actuary? (See box in this issue—Ed.)

(4) What was the longest travel time from ASA to FSA? (The shortest, presumably is zero).

(5) What has been the historical correlation between the number of new Fellows and some population index? (See F. W. Kilbourne, *Record,* Vol. 4, No. 1, 13—Ed.) Are the reasons for fluctuations documented?

Gerald A. Fryer

* * * *

Peering Ahead

Sir:

The Transactions, The Record, The Actuary—the first of these is the medium for scholarly papers, the second for current events and outlook, the third, apparently, for anything relevant, irrevelant or even irreverent. Our Committee on Futurism encourages actuaries to contribute materials about the future to all three of these.

By no means do we claim that the future is more important than the present or the past; but in actuarics' writings the past and the present do tend to be favored, and the future to be neglected. Can a better balance be reached?

Anyone with ideas or suggestions on future topics who would like to discuss them with somebody before submitting them for publication is welcome to seek help from our Committee. Areas of interest include better understanding of today's reality, alternative futures, and techniques.

If your item is for *The Transactions* or *Record,* please write or phone me, but if for *The Actuary,* Anthony Autin is your man. We will try to serve. not as a bottleneck but as a conduit.

Systematic study of the actuarial future, barely started, holds great promise for us provided we can adequately pool our thoughts, largely through greater use of these three excellent Society publications. Our Committee would like the privilege of helping to increase the flow of useful ideas.

Wilfred A. Kraegel
Chairman, Society Committee on Futurism

* * * *

From An Author In Belgium

Sir:

I was very pleased at Mr. McKee's excellent review of my paper (Sept. issue), and thank him for discovering the mistake on p. 3. His review prompts these comments:

(1) I considered my paper just a mathematical exercise for theoreticians, and therefore have been surprised by the number of interesting reactions to it. I consider section 3, The Bayes Criterion, the most interesting for practitioners; it is far more realistic to postulate that a certain proportion of applicants is unhealthy than to suppose that applicants' sole objective is to poison the company. Curiously, this section was not commented upon in the review.

(2) The reviewer mentions four major obstacles to practical implementation of game theory. My opinion is that the biggest is the second one: assessment of payoffs to the different outcomes. I do not consider the third and fourth obstacles as really serious; there exist classical methods of regression and discriminant-analysis that select the relevant items of medical information, combine them into a single discriminating variable and derive its observed distribution. Those methods may be found today, ready to use, in most computer libraries, e.g., in the United States, in the well known "SPSS" package of Northwestern University.

(3) Mathematicians familiar with Operations Research techniques will not agree with the reviewer's opinion that linear programming is "tremendously laborious."

(4) This paper has been submitted for publication in the ASTIN Bulletin. If accepted, it will contain an appendix describing more completely the determination of the critical value(s) and the conditions for its uniqueness.

Jean Lemaire

Mr. McKee replies: My thanks to M. Lemaire for responding so thoughtfully to my review. About his comment (3) *there seems to be a misunderstanding. My point was that without linear programming, evaluation of the game would be tremendously laborious. It was only lack of space that kept me from commenting on the Bayes Criterion section.*

* * * *

In Defence of Flesch

Sir:

In his attempt to amuse, David H. Raymond (October issue) loses sight of the purpose of the Flesch score.

Flesch's is an empirically determined formula found to correlate reasonably with readability. But readability is subjective; hence perfect correlation is impossible. Readability depends on more than sentence and word size—notably, on content and the reader's prior knowledge. For this reason, the Flesch score shouldn't be construed as an absolute measure; but it can be useful to compare two *otherwise similar* documents, e.g., policy forms.

Comparing a calculus theorem with a pulp novel is mixing the proverbial apples and oranges. (Can you say

(Continued on page 7)

GOLDEN ANNIVERSARIES 1980

Eleven Fellows and four Associates are celebrating their 50th anniversaries as such this year. We heartily congratulate the following:

Fellows

Harry M. Atrubin	Benjamin T. Holmes
Henry E. Blagden	Daniel J. Lyons
William H. Burling	Morris Monsky
Frederick J. Cunningham	John Y. Ruddock
Alton O. Groth	William L. Wadleigh
Milton J. Wood	

Associates

Leonard Roy Baker	G. Emerson Reilly
Charles H. Jones	Emeterio Roa, Sr.

This year's list includes one overseas member and several who have been exceptionally prominent in their influence on actuarial matters through the years. We hope several of them will contribute to these columns during 1980, and will make the effort to attend Society meetings, to be greeted and to keep associations fresh. Also, actuarial clubs should not overlook the opportunity to extend them special invitations to club meetings so as to enjoy and benefit from their views and recollections. □

APPEAL FOR MONEY BROUGHT 355 REPLIES

The mail solicitation last April for contributions to the Actuarial Education & Research Fund garnered 355 responses from actuaries. This information was given at our Annual Meeting by Morton D. Miller, one of the two Society representatives on the Fund's Committee. The amount raised was $8,000.

Our other representative is Cecil J. Nesbitt.

The Fund qualified as a 501(C)(3) organization, thus making contributions in the United States deductible. Consideration is being given, said Mr. Miller, to achieving similar status from the Department of National Revenue in Canada.

Another solicitation of actuaries is planned. Our readers will notice also the new wording in this newsletter's November Death Notices saying that those who wish to make memorial donations to the Fund are assured that these will be acknowledged to the donor and to the deceased member's family. □

DUKE OF EDINBURGH ADDRESSES ACTUARIES

by E. J. Moorhead

Several American actuaries, including our own Julius Vogel in possibly his first presidential appearance, were among 1,500 actuaries and guests at Grosvenor House, London, to witness and enjoy another famous victory by the Institute of Actuaries—its Twenty-Fourth Biennial Dinner.

This traditional event, entirely social in character, gives British actuaries and their spouses unparalleled opportunity to mingle with visitors from other professions and countries. The after-dinner speeches were wisely limited to three, all brief and pleasantly varied.

The toast to The Institute of Actuaries was proposed by the Guest of Honour, His Royal Highness, The Duke of Edinburgh, in highly polished and entertaining words. Prince Philip avowed that he hadn't the faintest idea what actuaries do. All he was sure of, and this on the authority of his hosts, was that if actuaries were to stop work for a week the fabric of industry and commerce would collapse.

Mr. Peter E. Moody, President of the Institute, performed his duties gracefully as proposer of the toasts to The Queen and, later, The Guests, as well as in replying to the Duke's remarks.

A clerical guest, The Rev. Richard Tydeman, found an ingenious and altogether acceptable way to bring variety into his response to the toast to The Guests; speakers faced with the problem of making bricks with little straw might use his idea as their model. First he allowed us to believe that he had become confused about what group he was

(Continued on page 7)

SOCIETY FINANCES

Our Treasurer, Mr. L. Blake Fewster, reported at Bal Harbour (see Item 3 of "Summary of Non-Routine Business" in our December issue) that the Society incurred a substantial deficit in our fiscal year that ended July 31, 1979. Remedial measures are, we understand, likely to be announced in these columns after the Board of Governors meeting on January 24, 1980. Meanwhile, here for our members' information is a comparative summary of accounts for the past three years.

Income and Expenses
(rounded to thousands of dollars)

	Year ending July 31		
Income	1977	1978	1979
Membership dues	$ 435M	471**	515
Meeting registration fees	102	111	116
Examination fees & material	454	521	569
Sale of publications	127	98	82
Income from Amer. Academy	43	54	58
Investment income	32	35	42
Other income	46	106	94
	1,239	1,396	1,476
Expenses			
Membership activities	150	140	141
Meeting expenses	79	140	174
Examinations & materials	271	273	387
Cost of publications	44	29	30
Salaries	220	296	331
Other general & administrative	410	495	575
	1,174	1,373	1,638
Excess Income over Expenses	65M	23M	– 162M

** Omits effect of accountng adjustment, for which see *TSA* XXX, 492, Note G.

Welcome

We welcome now the assistance of Geoffrey L. Kischuk, whose eagle eye helps to eradicate errors in copy and in printing.

Women

(*Continued from page 1*)

ing salaries for college graduates were $1,300 per year for women and $1,500 for men. And that difference widened with service and exams passed. Why? Women weren't worth as much to the company since most would leave to marry.

Later in Miss Beers' career a man was hired as her assistant. His salary was 50% greater than hers. Why? He had four mouths to feed when she had only one.

What about responsibility and opportunity? Miss Beers says she was given her fair share—and that she enjoyed her work. She admits though that having a brother in the profession didn't hurt her in that regard.

What's it like for women becoming actuaries today? The blatant salary differentials are gone, but attitudes change more slowly. This assessment in the legal profession sums up the situation for actuaries as well.

> "In the larger law firms," says Ann G. Miller, a partner in the San Francisco firm of Lillick, McHose & Charles, "I think the blatant discrimination of 10 years ago has disappeared. What you (a female lawyer) may find is a subtle attitude you're uncomfortable with—a subconscious resistance you can't put your finger on because men aren't yet used to women in business situations. It's their social upbringing. All their lives, they've dealt with women as wives, girl friends and the like: Suddenly they have to face a woman as a hardnosed adversary."(1)

Women actuaries have their share of other problems, too. Being mistaken for a secretary is common. And how often have you seen a woman sitting in a session at a Society meeting circled by a protective barrier of chairs which the men have tactfully avoided taking?

But let's move away from the subjective and take a look at some of the statistics about changes that have already occurred in our profession. Below are some membership figures of the Society of Actuaries. After a long fairly stable period, the percentage of women began to increase. In the 1970's women members quadrupled, while male membership increased only 68 percent. The number of women now taking exams points to further gains ahead.

Membership — Society of Actuaries

Year	*Women*	*Men*	*Total*
1950	33 (3.1%)	1,041	1,074
1960	42 (2.2%)	1,868	1,910
1970	91 (2.6%)	3,453	3.544
1978	357 (5.8%)	5,808	6,165

Source: Society of Actuaries Year Books

How do these changes in the actuarial profession compare with changes in other professions where women have been making gains? Below are some numbers to consider.

The increase in the number of women in the actuarial profession has been dramatic. Of course, there was plenty of room for this. And there is still room for further increase.

What of the future? We'll probably see continuing increases in the women's share of our profession. But these changes won't occur painlessly. Perhaps the greatest conflict facing women actuaries, as in other professions, is between family and career. As societal attitudes change we will see more innovative approaches to this problem. What happens will have a significant impact on our profession and women's role in it. □

(1)Drinkhall, Jim, "Ladies of the Bar," *The Wall Street Journal*, May 31, 1978, p. 40, col. 2.

Gaining In the Professions—Share of Women Among All Workers

	1960	1977	*Increase in Share*
Engineers	0.8%	2.7%	238%
Lawyers and Judges	3.5%	9.5%	171%
ACTUARIES	2.2%	5.8%	164%
Life and Physical Scientists	9.2%	15.6%	70%
Accountants	16.5%	27.5%	67%
Architects	2.1%	3.4%	62%
Physicians	6.9%	11.2%	62%
Clerics	2.3%	3.5%	52%
College and University Teachers	23.9%	31.7%	33%
Editors and Reporters	36.6%	44.9%	23%
Social Scientists	25.4%	28.6%	13%
All Vocations	32.8%	40.5%	23%

Sources: Actuarial statistics from Society of Actuaries Year Books. Other professions from U.S. Depts. of Labor & Commerce reported in *U.S. News and World Report*, Sept. 4, 1978.

FIRST LADIES

First Woman Fellow who was:	*When*	*Name*
Elected to membership	1895	Emma Warren Cushman*
Admitted by examination	1921	Estella King
Elected to Board of Governors	1950	Helen L. Clark
Sister of a Fellow	1951	Josephine W. Beers
Daughter of a Member	1969	Daphne (Deas) Bartlett
Elected Treasurer	1974	Anna M. Rappaport
Daughter of a Fellow	1976	Esther (Hook) Milnes & Sheila (Moorhead) Kelley
Elected Vice-President	1978	Barbara J. Lautzenheiser

All of which is subject to corrections and additions, which will be welcomed.

* A biographical note on this pioneer will grace our next issue.

IDOLS FALL

by Frank Zaret

It came as a shock. Time has a way of causing idols to fall, and the broken pieces of a great one lie strewn at my feet. Perhaps one gets accustomed to traumatic experiences—a speeding ticket, an IRS audit, middle-age mumps. But there it was. The work of a giant, a titan of the profession, reduced, in my mind, to the ordinary. Sad! Sad!

Many, no doubt, have believed in the inviolability of the Linton lapse tables —"facts" that have withstood the ravages of time, still widely used today, accepted by insurance departments, supposedly typifying industry experience. But, alas, they are not what they seem.

We on the NAIC Advisory Committee on Policy Lapsation had occasion to look at what industry lapse rates had been developed in the past. First on my list to review were Linton's tables. I was curious to know how one develops a pillar of the industry.

In his paper (*RAIA* XIII, 1924), Linton discusses general agency profits. A main factor is policy persistency. Because of the stature and acceptance accorded Linton's lapse tables, I had thought there would at least be a representative number of companies in his study. To my chagrin, this was not so.

Linton used the lapse experience of one—repeat, one—company for his "A" tables. The data were adjusted from a paper by Maclean (*TASA* XXI, 1920) that traced policies issued from 1903 to 1917 through their 1918 anniversaries. For his "B" tables, Linton simply doubled the "A" rates—which suited the particular purposes he had in mind, but added nothing to our general body of knowledge. Later there appeared some "C" rates, prescribed by the New York Insurance Department for use with term insurance. "C" rates are triple the "A" rates. More science!

Accordingly, what we have is a long revered industry standard which, in fact, covers a single company's experience, based on data now more than 60 years old that were subjectively modified by its developer. One of the discussers of Linton's paper noted that the Linton "A" tables have "unusually favorable" termination rates. That seems to be the case even today.

Well, if Linton didn't make a true industry lapse study, who has? Exploration unearths a 1925 study of policies issued 1909-1923, sponsored by the American Life Convention (*ALC Proceedings*, 1925) covering 77 companies. This had the makings of a useful industry study, but appears to have fallen quickly into obscurity.

While various individual company lapse studies have been published over the years, no studies of the industry as as a whole were made from the mid-twenties until 1960. At that time, Moorhead (*TSA* XII, 1960) constructed his "R," "S," and "T" tables, using two sources for his data, namely, a LIMRA study of 54 companies tracing policies issued in 1949 for nine years, and additional discrete data for longer durations secured separately from 40-plus companies.

At last, this could be a live one. But again, no. The "R," "S," and "T" tables were constructed to offer several lapse patterns from which to choose. As Moorhead admits, "No pretense whatever is made that these are standard tables that fit any single known experience, and certainly no inference that they represent industry averages or yardsticks of any kind is justified." Back to ground zero.

So, we have the Linton "A" and "B" (and "C") tables published in 1924 predicated on a single company's experience. And, we have the Moorhead "R," "S," and "T" tables published 36 years later in 1960 ". . . to provide a spectrum of choices." Who used the letters in between?* Any professional hunger for industry lapse rate studies comparable to industry mortality studies is not readily apparent.

The only intercompany lapse studies with a degree of authenticity have come recently from LIMRA. In 1974 LIMRA published its first long-term lapse study, covering the experience of nine companies, tracing from policy anniversaries in 1971 to 1972. LIMRA has continued these studies, and the number of contributing companies has increased to approximately two dozen—more are expected.

Actual-to-expected ratios of the LIMRA lapse rates to those of Linton and Moorhead show substantial differences. This implies that the older studies are obsolete and newer ones sorely needed. If the NAIC moves ahead with its proposal on lapse disclosure in its present direction, we may have industry norms thrust upon us rather than developing them ourselves.

* * * * *

There! You have the reason for my distress. The discovery that I've been laboring under false impressions about our esteemed lapse studies has shaken me. Oh well, even if an idol or two have toppled from their pedestals, there are others to revere. My faith now is in McConney-Guest and their agents' termination table. When was it presented? Oh yes, 1942. There doesn't seem to have been another industry study of agent's terminations made since.** No need to, I suppose. Solid as a rock. For kicks, let me see what *TASA* XLIII says. McC-G's agents' survival rates are based on LIMRA's 1938-41 study of 12 companies' data—only about 40 years old. Hmm, tempus really fugits. Termination rates beyond the first five contract years cut arbitrarily by McC-G—graded into the American Men mortality table. What's this? All sorts of adjustments made to actual experience. Not really a reflection of industry results. Et tu, McC-G. □

Ed Note: "R," "S" and "T" were not to be read as letters of the alphabet They stood for Rather-good, So-so, and Terrible.

***Ed. Note: What about TSA* XV 430?

ARCH

Issue 1979.1

Life Table Techniques Applied to Experiments in Carcinogenesis, etc., John A. Beekman

Comment on Scheel's Proposal for Splitting Life Insurance to Achieve Variance Reduction, Donald R. Schuette

Individual Health Insurance and Compliance with Price Controls, Clayton A. Cardinal

Using Cash Flows to Allocate Investment Income, Charles E. Johnson

Departments: Problems and Solutions; Teacher's Corner; Comments

Address inquiries to ARCH (Actuarial Research Clearing House), Society of Actuaries, 208 South LaSalle St., Chicago, IL 60604. □

Solutions to November Actucrostics

by The Competition Editor

1. *Author*: Andy Webster. Work: "Last Editorial" (Dec. '78). "I consider myself fortunate and privileged to have acted as Editor of *The Actuary*. For me this has been an enjoyable way of recognizing and at least partly repaying my debt to the Society and to the profession. So I take my leave as Editor. . ."
2. *Author*: (Jack) Moorhead. Work: "Man From Aberdeen" (Jan. '79). "Finally let's remember that occasionally he had to accept brickbats, a specially trying necessity for one whose labors through the burden and heat of those many days were solely* for love. . . . But the messages . . . he is now receiving from around the actuarial world are All Homage."

* *Ed. Note*: Our C. E. testifies that when he finished Actucrostic 2 he had one "l" left over, no place to put it. His solution was to create a new word "soley". Messages from solvers who thought this odd have rolled in—for which C. E. thanks you. The ingenious James H. Hunt thought C. E. might have altered Definition I to "*Dubious* honor for famous actuaries" whence the solution emerges "Math Hall of Flame". Our inclination is to define that as "Actuary's Valhalla". □

Duke of Edinburgh

(*Continued from page 4*)

addressing, as he gave a pseudo-lecture on The Motor Car. Then, after regretting that his wife could not be there because she had other things to do, he brought down the house by voicing the opinion that the Guest of Honour might perhaps be in the same situation.

Clearly we in Canada and the U.S.A. would benefit if, somehow overcoming our difficulties of geography, we could find a similar way to bring our profession to the attention of those on this side of the Atlantic who are but vaguely familiar with our credentials. □

APOLOGY

Ed. Note: *We learn that we erred in failing to list Reginald C. Barnsley in our roster* (*October* 1979) *of those who completed Associateship examinations before age* 21.

Deaths

Serge A. Laplante, F.S.A. 1969
Frank G. Whitbread, F.S.A. 1931

Letters

(*Continued from page 3*)

whether your dog is fatter than your brother?) The two passages differ in content and, I suspect, in readership.

Also, each example has its problems. Had the novel been about John Jones and Sue Smith at Joe's Truck Stop in Maine, the Flesch score would have been roughly 20 points higher. This illustrates the arbitrary nature of these examples. One could write a passage entirely of nouns, or one in French, with marvelous Flesch scores. Would Mr. Raymond assert that a legislature would deem such passages easy reading?

I'm sure the author didn't intend to represent his rendition of the B.W. theorem as the work of Angus Taylor. Investigation of the source reveals that Mr. Raymond manipulated the proof to produce as high a Flesch score as possible. All formulas were removed; sentences and words were shortened. Although he destroyed the work's style, (evidently his apologies to Taylor go without saying), he did indeed render it more readable. Thus does he illustrate perhaps the best use of the Flesch test —to encourage improving readability by seeking to improve a text's score. This, I believe, is the usage intended by the Massachusetts legislature.

Mr. Raymond doesn't argue with the basic issue — that insurance policies should be more readable. The Flesch score, albeit not perfect, is a good, workable index. I'm sure that actuaries welcome constructive alternatives.

Deborah L. Adler

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Society-Decision-Making

Sir:

Barnet N. Berin (October issue) objects to the methods by which rules of conduct are adopted in our profession. Some of his criticisms may be justified for past rules, but not for present ones. Since 1977, any change in rules has required exposure to the entire membership, sufficient time for comments, committee analysis of those comments, a report of that analysis to the Board, and then a Board vote before that rule is adopted and printed.

Most rules have been prepared and adopted with little controversy or complaint. An important exception has been the set of Pension Plan Recommendations and Interpretations displayed in the 1979 Academy Year Book, pp. 350-379. One problem with them is that the two Interpretations beginning on p. 369 appear to have been adopted without the exposure they should have been given to all members of the Academy, the Society and the Conference.

There have been vigorous complaints, few but from active and influential members, about the content of those recommendations. One of Mr. Berin's objectives was lack of a public forum for discussion. In this case, public discussion seems an excellent idea, and I hope the actuarial bodies will provide opportunities for it.

William David Smith

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SOCIETY SEMINARS

Second half 1980

Listing for first half 1980 is on page 6 of December 1979 issue

When	*What*	*Where*	*Length*
July	Materials of Forecasting	New England & Midwest	2 days
August	Immunization	New York, Chicago, Denver	1 day
September	Valuation of Life Companies	New York, Chicago	1 day
November	Federal Income Tax Planning for Insurance Companies	New York, Chicago, Atlanta, Los Angeles	1 day

Index-Induced Inflation

(Continued from page 1)

(6) A set of calculations that cost $1.26 to do by IBM computer in 1952 now costs 0.7 of a cent—but this startling reduction is nowhere reflected in the CPI.

(7) Economies of scale are similarly omitted. The CPI electricity index is *up* 46% per KWh since 1917, but by using more, the average consumer actually pays 51% *less* per KWh. (The average American worker earned one KWh in 902 seconds in 1917, in 98 seconds in 1947, in 29 seconds in 1967, and in 26 seconds in 1978).

(8) A $200 microcomputer has as much computing capacity as a $1 million room-size computer in 1954; but it is not in the CPI. Pocket calculators were excluded until *after* their price had fallen 90%, or 98% from comparable desk calculators.

(9) From 1918 to 1940 the CPI represented the cost of shaving by barbers, whose fees accounted for 0.4% of the 1918 CPI and stayed in the index until 1940, even though the safety razor (which cost much less) became the dominant shaving method in the 1920's—a good illustration of obsolescence in the face of continuing technical substitution.

(10) When 100% cotton sheets were displaced by polyester blends needing less care and giving longer life, this value improvement was ignored by the CPI.

(11) Penicillin was excluded from the CPI until *after* its price had fallen by 99%.

(12) Today's radical increase in miles per gallon delivered by the average automobile is being ignored, but the increase in the cost of each gallon is counted in the CPI—a blatant distortion of the cost of personal transportation.

(13) The fuel efficiency of a wide range of products is being rapidly improved as a step toward meeting the energy squeeze. The CPI ignores this, but it counts the rise in energy cost per unit.

(14) Substitutions of low-priced for high-priced items are going on all the time, as relative prices change; and substitutions of better-value or better-quality items or materials for poorer ones. The CPI assumes that none of this is happening.

(15) Convenience foods save time and waste, but these very real values are ignored by the CPI.

One could easily exend this list, but the above items suffice to show that the CPI, with all its fateful impact on the economy, is *not* a measure of the actual cost of living at all, but is instead a highly incomplete, inaccurate, and misleading gauge which is based on the prices of a stated, rigid, outdated set of items that are connected with the actual cost of living only in a rude and even indirect way. Not only is it inaccurate as a measure of living costs; it is consistently biased upwards, making it a prime cause of inflation.

As the price of energy rises, but conservation measures shrink our need to use it, does it make sense to increase the incomes of one section of the population so as to adjust fully for the rise in its price, thus placing them in a position to use fully as much as before, while everyone else must cut back twice? When taxes are increased to pay for a new government service, must those with indexed incomes have these taxes refunded (through CPI adjustments in their incomes) so that these government services are provided to them at no cost, while those with non-indexed incomes must carry twice the load?

In indexing incomes and benefits for one section of the population by the crude application of this rough tool, we are (i)constantly *elevating* the economic status of this section at the expense of the remainder, and (ii) speeding up the inflation so that the non-indexed population has to withstand a double impact, as living standards, savings, pensions and insurance values wither. In a period dominated by an energy crunch, faltering productivity, and a need for belt-tightening, this procedure is indeed inequitable and anomalous.

Is it not time for us to take this whole matter in hand? □

FEDERAL STATISTICS

DHEW Annual Report on Health, United States, 1978.

Single copies of the report, *Health, United States,* 1978 [DHEW Publication Number (PHS) 78-1232] may be obtained from the National Center for Health Statistics, Room 1-57, Center Building, 3700 East-West Highway, Hyattsville, Md. 20782. It is a compendium of health statistics, data on health providers, expenditures, usage — 1976 and 1977 data and projections.

Proposed Federal Budget for Fiscal Year 1980—Unified Budget and an Alternative Concept.

Single copy available from the Tax Foundation, 1975 Connecticut Avenue, N.W., Washington, D. C. 20009.

Demographic, Social, and Economic Profile of States: Spring, 1976.

P-20, No. 334, may be obtained for $3.00 from GPO*.

Estimates of the Population of States, by Age: July 1, 1977 and 1978.

Series P-25, No. 794, may be obtained for 70 cents from GPO*.

Perspectives on American Husbands and Wives, Special Studies.

Series P-23, No. 77 is available from GPO*, $2.30 per copy. First study of joint characteristics (demographic and economic) of married couples.

The Future of the American Family and Prospective Trends in the Size and Structure of the Elderly Population, Impact of Mortality Trends and Some Implications.

These are in one Report, Series P-23, No. 78, $1.30 per copy, from GPO*.

Reasons for Interstate Migration: Jobs, Retirement, Climate, and Other Influences.

Covers moves from August 1973 to December 1976. Census Bureau publication, Series P 23, No. 81, available from Government Printing Office for $1.50 per copy.

Utilization of Short-Stay Hospitals: Annual Summary of the United States, 1977.

Gives estimates by age, sex, and color of patients and by geographic region, size, and ownership of hospital. Also, statistics on diagnoses and operations performed. Utilization is in terms of frequencies, days of care, and average lengths of stay. Single copies are available free of charge from NCHS, Room I-57, Center Building, 3700 East-West Highways, Hyattsville, Maryland 20782, Attn: M. Murray.

Population Profile of the United States: 1978.

1978 statistics on population growth, social characteristics, employment and income, etc. Series P-20, No. 336, available for $2.40 from GPO.

*Superintendent of Documents, Government Printing Office, Washington, D. C. 20402.