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The Actuary

CRISIS IN THE WORLD FINANCIAL SYSTEM

Ed. Note: This is an abstract by James W. Snell of an April address by University of Manitoba Professor John McCallum to the Winnipeg Actuaries Club.

The world financial system is an institutional arrangement among corporate banks, national banks, the International Monetary Fund, and others, set up at Bretton Woods, New Hampshire in 1944 to improve post-war international trade by fostering efficient flow of money and credit to facilitate transfers of goods and services, capitalizing on each country's relative strengths.

But this arrangement began to break down in the late 50's and early 60's when the U.S., partly from financing the Vietnam War, rang up huge trade deficits. Then came the oil price increase of the early 70's. No more than an inconvenience to the developed nations, it faced the lesser developed with a decision: cut back their development, or borrow. Meanwhile, the OPEC nations became rich beyond description; they deposited their excess funds in western banks at relatively low short-term rates.

These banks, assuming that a country couldn't fail, started a vicious circle by lending these deposits at supposedly profitable rates to the lesser developed countries for oil purchases and other consumption items. Next, the Reagan administration stepped in and decided to get inflation in the U.S. under control, a factor in plunging the U.S. and the world into recession. World trade broke down, bartering came to the fore, and the lesser developed countries found their own commodity prices down and their export revenues no longer meeting growth in their interest charges.

Suddenly, financial institutions found that multiples of their total equity were at risk to countries that couldn't even pay the interest on their obligations. Simultaneously, OPEC's oil revenues were down and they drew on their deposits to pay current bills.

Weekly, the crisis is held at bay as there is yet another delayed failure—a country is saved by having its loan repayments delayed, and further loans made to help pay the interest on the existing loans. We can't afford to let one bank go because the ripple effect would cause the whole house of cards to tumble.

THE 1978 INSTITUTE AND FACULTY PROPOSAL ON NOTATION

by Frank G. Reynolds

(This is Article No. 10 in a series.)

A proposal presented in June 1978 by a study group of the Institute and Faculty Joint Working Party on Computers and Actuarial Notation provides an excellent summary of the problems faced by innovators in this field, as well as the consequences of clinging to the present notation. By developing a systematic translation from the present symbols to those proposed, headway is made toward achieving a computer-compatible language while avoiding a complete break with tradition.

The authors begin by noting that within every actuarial function exists a natural linear sequence, viz.,

Lower Left Prefix / Main Function Letter / Lower Right Suffix.

In the proposal, all symbols are on one line; accents follow the symbol they modify; the upper right superfix is placed between the main function letter and the lower right suffix. The upper left superfix, optional in present notation, is dropped. At this stage of the translation, the point reached can be illustrated thus:

Present	Becomes
$a_{x:y:\overline{n}|}$	ax:y:n⌉
$_t|\bar{A}_x$	t|A⁻x
$A_{x:\overline{n}|}^{\frac{1}{}}$	Ax:n⌉1

Here the authors pause to note that since certain of our present 30 symbols and 15 accents are rarely used and some can be adequately represented by a combination of symbols, their number can be cut to 26 and 10. The proposed notation emerges by associating a number with each accent and special character; for example, a bar becomes 3, and the customary angle, ⌐, becomes the 7 it already resembles. The outcome then is:

Present	Fully Translated
A_x	AX
$\bar{a}_{xy}$	B3XY
$A_{xy:\overline{n}|}^{\frac{1}{}}$	AXY8R71
$_t|^a x:\overline{n}|$	T6BX8R7
$a_{55:70}^{(4)}$	BK9XY(4,55,70)
$_{10}|^{\ddot{a}} x:y:\overline{15}|$	T6B2K9X8Y8R7(10,4,X,Y,15)

The authors proceed to tidy the mechanical translation with logical simplications, even managing to reduce T6B2K9X8Y8R7 (10, 4, X, Y, 15) to T6B2KXYR (10, 4, X, Y, 15) by noting that colons needn't be translated and that R can represent the angle bracket.

This proposal, admittedly not the end of the author's trail, seems to present three main difficulties:

1. The main or central symbol doesn't always come first, and often must be searched for.

2. Replacing the special characters by numbers creates sequencing problems and detracts from readability.

3. The total expression quickly becomes unwieldy.

Yet, this plan represents progress on several fronts. It directly and systematically addresses the problem of computer-compatibility; it reduces the needed letters to the 26 of the English alphabet; it demonstrates that some of our present symbols aren't needed.

Ed. Note: This brings to its end Mr. Reynold's informative series. We look forward to his reports of future notation developments. ☐

THIS MONTH'S QUERY FOR ACTUARIES

Never before has a newspaper's remark about actuaries stirred up so much mail to us. A record, that may stand for a while, was set by a piece in the March 21st *Wall Street Journal* describing a planned TV game show in which unemployed contestants are to display their qualifications "for a genuine job with a genuine employer".

After citing some unusual careers that may be featured, the article closed thus:

"Mr. Vane (the directing executive) concedes that the demonstration part of 'Help Wanted!' may cut down on its ability to offer white-collar jobs. The show's producers haven't yet thought of an exciting way for, say, an actuarial statistician to show his stuff on the air."

We are most grateful to the readers who have drawn this to our attention. This month's query is:

What is an exciting way for an actuarial statistician to portray on the air just what the work entails, and also to demonstrate his or her own job skills, as the show will require?

Please send answers to the Editor at his masthead address, for summarization with attribution.

E.J.M.

TWO-TIMERS

There was a time when our students had the opportunity to display their fortitude, and perhaps to increase their chances of achieving a passing grade, by sitting for both of the separate sets of examinations administered by the then independent actuarial bodies, the Actuarial Society of America and the American Institute of Actuaries. Long before these two merged to form our present Society, joint examinations came into effect in three stages, viz.,

1929	Associateship, Parts 1-4
1932	All Associateship, Parts 1-8
1938	All Associateship and Fellowship Parts

In *T.A.S.A.* 50 (1949), 212, Reinhard A. Hohaus recorded the names of 35 members, dubbed "two-timers", who had earned Fellowship in both bodies "by passing separate and distinct examinations in each body from the first Associateship part to the last Fellowship part". Mr. Hohaus went on to comment thus:

"While this group, being closed to new entrants, can claim to be exclusive, they certainly will not be envied by the others who had the good sense or good fortune to have one or more examinations of either body waived. Incidentally, one of these others is the man who wrote all the Fellowship examinations in both bodies one year, and passed the first half and failed the second half in one body, and failed the first half and passed the second half of the other. That was a striking illustration of the need for joint examinations, because recurrence of such cases would certainly not reflect favorably on the prestige of the examination standards, etc., of the two bodies.

"A movement is under way to have the two-timers form an informal organization with purely social objec-

tives. I hope it materializes because it would be a unique experience to belong to an actuarial organization in which there will never be a debate as to the requirements for admission to membership."

If such a club materialized and still exists, its complement now is 16, five of them Canadian. Arrayed in order of Fellowship (in whichever body each got there the earlier), these two-timers are:

1924
Reinhard A. Hohaus
1925
William F. Poorman
1926
Joseph A. Budinger
1927-28
(None)
1929
Elgin R. Batho
Walter O. Menge
Carroll E. Nelson
1930
Harry M. Atrubin
Alton O. Groth
Benjamin T. Holmes
Daniel J. Lyons
1931
Joseph B. Glenn
John H. Miller
1932
George Kenigson
Thomas B. Morrison
1933
Harold R. Lawson
1934
(None)
1935
Edgar M. Jackson

We hope that some of these oldtimers seeing this may be moved to comment upon their motivations as they now recall them, and their reflections in retrospect upon the wisdom of having voluntarily endured those extra hours in purgatory.

E.J.M.

COMMUNIQUÉ

We warmly welcome, as a sister actuarial publication, this monthly newssheet being sent to its member-subscribers from the headquarters of the Canadian Institute of Actuaries.