



SOCIETY OF ACTUARIES

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**PROGRESS REPORT:
PRE-1889 ACTUARIES**

An exciting array of reader responses has more than quadrupled our list of actuaries who practiced in North America too early in the nineteenth century to have become members of the Actuarial Society (see May issue, page 6). Though still incomplete, the roster now contains 59 names:

Francis B. Bacon	W. E. Harvey
Hugh C. Baker	John W. Hornor
Benjamin G. Balch	C. M. Hibbard
Stephen Ball	Edward Hsley
W. H. Beers	Benjamin Kendall
John Blackbridge	Benjamin D. Kennedy
Nathaniel I. Bowditch	George B. Lester
W. N. Bowers	Preston S. Lincoln
Joseph P. Bradley	James Weir Mason
W. A. Brewer, Jr.	Levi W. Meech
E. W. Bryant	Lewis Merrill
David Burke	I. J. Merritt
Charles Carpmael	Albert G. Milton
R. L. Case, Jr.	George L. Montague
Seth C. Chandler, Jr.	H. R. Morley
J. B. Cherriman	Carey Murdock
John E. Clark	Robert R. Pease
Osman D. Clark	Benjamin Peirce
W. J. Coffin	George W. Reed
N. G. De Groot	E. H. Sewell
Edward Dewey	Jacob Shoemaker
Amzi Dodd	Frederick Stancliffe
Ezekiel B. Elliott	Charles H. Stewart
John F. Entz	William P. Stewart
Pliny Freeman	John B. Thurston
David L. Gallup	A. M. Ward
Charles Gill	P. D. Whitmore
Leopold Goldman	Elizur Wright
Norman W. Harris	Lucy Jane Wright
Charles J. Harvey	

In some cases we lack enough particulars to be sure that the person's responsibilities warrant describing him as an actuary; in a number of others we have been given anecdotes easily worthy of inclusion in the historical essay that is in the works.

Please — those who have historical data but have not got around to writing — let us hear from you.

E.J.M.

THE OPENING PROPOSAL FOR ACTUARIAL NOTATION REFORM

by Frank G. Reynolds

(This is Article No. 2 in a series.)

Current reform negotiations have their origins in a paper presented to the 1968 International Congress of Actuaries by Boehm and Reichel in collaboration with nine other German-speaking actuaries. Its scope was vast as it undertook to give the rationale for a new system of notation, to develop a new International Actuarial Publication Language, to extend the notation to pensions and health insurance, and to provide a second computer-compatible language.

Paramount considerations were printability and compatibility with other mathematical fields. Accordingly, a linear, functional notation was offered. For symbols, it was proposed to use the 52 Latin letters, the lower case Greek letters, the ten Arabic numerals, and the fourteen common special characters.

The central letter of the present notation was to be retained. Modifying letters, such as "c" for continuous functions and "m" for insurances payable immediately on death (the "middle" of the policy year), could be appended.

Following the symbol were five blocks to be contained in brackets and separated by semi-colons;

- Block (i): Age(s) of the person(s) on whose survival payment depends.
- Block (ii): Information on
 - time of maturity
 - period of deferment
 - commencement ages
 - maximum duration
- Block (iii): Payment frequency, where appropriate.
- Block (iv): Interest rate.
- Block (v): Mortality table.

Thus, omitting the interest and mortality terms,

<i>Current</i>	<i>Proposed</i>
$\ddot{a}_{x:n}^{(4)}$	$\ddot{a}(x; x:n; 4)$
\ddot{a}_{xy}	$\ddot{a}(x; x:\omega) + \ddot{a}(y; y:\omega) - \ddot{a}(x,y; x:\omega, y:\omega)$
\bar{A}_x	$A_m(x; 0:\omega)$
${}_tV_x$	$V(A(x; 0:\omega), P(A(x; 0:\omega); \ddot{a}(x; x:\omega; t)))$

As can be seen, there was a considerable increase in volume, with, though, some increase in clarity for the beginner. A few shorthand rules were suggested for common cases.

For pension funds, the notation was to retain the same basic forms as for individual life functions but to use identifying letters for the six states—active, invalid, pensioner, widow, orphan, and full orphan. A sequence of these letters could be used when an individual goes through a series of states, e.g., the present value of a widow's pension for a person currently a pensioner would be $\ddot{a}rw(\)$. For sickness insurance, the notation called for identifying the claim frequency and cost by a basic symbol modified to identify the sources of claims.

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