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BOOK REVIEW

by David R. Kass

G. Trier, *Technical Premium Bases in Norske Folk Livs-Og Pensjonsforsikring A/S*, pp. 39, Grondahl & Son Boktrykkeri, Oslo, 1967.

This modest pamphlet concisely details the actuarial bases used for group and ordinary insurance over the past 50 years in Norway by Norske Folk, the first company to issue group annuities in that country. While such historical information is perhaps of limited interest to many members of the Society, several aspects are worth noting.

In particular, the use of the so-called "collective" method in developing premium rates for widows' and children's pensions is of interest. This is described as follows by the author:

"In Norway we use the term 'collective' pension insurance for two reasons. One is that a plan covers a group — a collective — of an employer's employees. The other reason is that a special method, called the collective method, is applied when calculating the premiums for widows' and children's benefits. According to this collective method, premiums are paid for widows' benefits for all male insured employees regardless of marital status, and similarly, premiums are paid for children's benefits for all insured employees whether or not they have minor children.

"The premiums for these benefits depend only on the age of the employee at the time he enters the plan (or when the benefits are increased), the amounts of insurance and the retirement age. For children's benefits, however, the premiums also depend on the sex of the employee.

"The collective method has been made possible by the introduction of certain functions in the premium formulas, such as the probability of a man being married, the mean age difference between husbands and wives, the average number of children under the age of 18 (or 21) for men and women and the mean age of the employee's children. All these functions are dependent on the employee's age at any time."

While the actual technique involved is not dissimilar to that used by consulting actuaries in connection with uninsured pension funds, there is (to the best of the reviewer's knowledge) no insurance company in North America which uses a "collective" approach to group annuity premiums where widows' pensions are involved. Typically a decreasing term (or intricate contingent life annuity) approach is involved.

Even where comparable techniques *are* used, it is infrequent that reliance is placed on the probability of an employee being married; more often we request marital status as part of the census information.

In a sense, we have approached the "collective" technique both in ordinary insurance ("Family Policy" for life or medical care) and group medical care insurance by making an assumption (implicitly or explicitly) as to the number of children in a family group, give that the individual is married.

It is also interesting to note the interest bases used by Norske Folk:

1917 — 1938:	4%
1939 — 1945:	3%
1946 — 1954:	2¼%
1955 — 1962:	3%
1963 — present:	4%

□

MATRIX ALGEBRA

"Basic concepts of matrix algebra and manipulations of matrices are presented in such a way that *little competence in mathematics* is required. (Italics ours—Ed.) Examples are always included to illustrate concepts and techniques."

The quotation is from the pamphlet, *Basic Properties of Matrix Algebra*, by Katherine Harding, published by the U. S. Bureau of Mines (Information Circular 8332). The numerous actuaries who have the quoted mathematical qualifications may wish to purchase the pamphlet from U. S. Government Printing Office, Washington, D. C. 20402; price 30 cents. □

TO THE ACTUARIAL CLUBS

The Actuary is pleased to list future meetings of the Actuarial Clubs. To ensure publication, notify us at least two months prior to the meeting date. We are also anxious to consider publishing papers submitted and discussions at the meetings. □

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