ABSTRACTS

AN EXPOSURE FORMULA CONTROVERSY

The letter "An attempt to convert American Actuaries," by Hilary Seal, is reprinted from The Actuary. This is followed by five letters responding to the original article. The derivation of exposure formulas is discussed. Two of the letters discuss others literature on the subject.

DIVIDED DIFFERENCES BY CONTOUR INTEGRATION

Elias S.W. Shiu

Properties of divided differences are derived using the Cauchy integral formula.

ALLOCATING ACTUARIAL RESOURCES AMONG BRANCH OFFICES

Arnold F. Shapiro and John M. McAdon

This article shows how one could determine how the workload should be divided between the branch offices of a consulting firm in such a way as to minimize costs.

SOME NOTES ON PENSION FUNDING

Ralph Garfield

The first section of this article demonstrates that in a defined benefit plan, valued on the Aggregate method, with a pre-retirement death benefit equal to the present value of the accrued pension based on plan participation, the choice of the mortality basis in the pre-retirement period is largely immaterial. A second section compares the aggregate and the unit credit funding methods.

ANNUITY CERTAIN SYMBOLS FOR FRACTIONAL PAYMENT PERIODS

Warren R. Luckner

The use of annuity certain symbols provides a convenient short hand for
the value, accounting for interest, of a variety of types of sequences of
payments at a variety of different points in time. One must, however, be
careful with the use of such symbols for fractional payment periods, ie. for
$\overline{j}|i$ where j, measured in interest conversion periods, represents a fractional
number of payment periods. What one might want it to represent and what it
does represent, according to standard textbook definitions of the symbol, may
be different. This paper discusses the problem, how it develops and some
important practical implications.

ADJUSTING LIFE TABLES TO INCORPORATE PERTINENT PERSONAL PROFILE INFORMATION

Patrick L. Brockett and Samuel Cox

The purpose of this paper is to show how to use personal information such
as medical history, family characteristics, insurance characteristics, etc. in
a logical statistical fashion for the purpose of modifying an existing mortality
table to reflect the collected underwriting information. The technique
presented is applicable even when the relevant information has only been
gathered on a relatively small group of individuals, as well as cases in which
more extensive experience has been gathered. Consequently, some smaller scale
medical studies can be made useful for actuarial calculations.

BALDUCCI AND THE 'UNIFORM DISTRIBUTION OF DEATHS' HYPOTHESES

Hung-ping Tsao

This paper shows that Balducci hypothesis imposed on a survivorship
function l_x over a closed interval $[o, w]$ is dual to the 'Uniform distribution
of deaths' hypothesis imposed on the survivorship function l_{w-x}^{-1} over the same
interval, where w is such that $l_{w+1} = 0$. This fact enables us to give a
simple visualization of interpolation relations concerning $_tq_x$ and $_hq_{x+t}$.

A MORE GENERAL PRESENTATION OF PENSION FUNDING

Hung-ping Tsao

This paper improves Chapter 2 of "Mathematics of Pension Funding" (Part 7 Study Notes). Key formulas are derived in more general fashions than in Study Notes. For three individual cost methods, concise formulations and auxiliary diagrams of normal costs and accrued liabilities are also presented.

SIMPLIFIED CREDIBILITY MATHEMATICS

Joseph L. Tupper, III

The conventional formulas for estimating risk means and variances are derived using techniques no more advanced than in Part 2 of the Society of Actuaries syllabus. The main tool is linear regression and a slightly simpler formula for variance credibility is given.

IMMUNIZATION THEORY: A SIMPLIFIED EXAMPLE

David C. Wu, Laura L. Schumacher, and James C. Hickman

This article expounds on Redington's immunization model and provides examples based on cash flow rates which are gamma functions.