

OBITUARY

HILARY L. SEAL

Last month marked the tenth anniversary of the death of Hilary Seal in Lausanne, Switzerland. The following obituary was recently published in the *Journal of the Swiss Association of Actuaries*. Since Hilary participated in the actuarial affairs in North America before many of this Conference's participants were in the actuarial field, I would like to add a few words about his support for the Actuarial Research Conferences in their early years.

Hilary attended many - but perhaps the third in 1967 was the most memorable. This was held at Yale University where he was a lecturer in Statistics. He offered classes and statistical consulting in actuarial studies (mainly risk theory) and biostatistics.

Hilary was a scholar with a keen eye on history. He could usually tell each speaker of at least one relevant reference that predated those given in the speaker's list of references. And if he really liked the paper, he would rise to discuss and to disagree publicly with it!

Hilary's participation made us all more diligent in our scholarly work and our discussion much more enlightening and entertaining!

Donald A. Jones
Corvallis

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Hilary L. Seal

January 11, 1911–July 25, 1984

It will be ten years this coming July that Hilary Seal died after having suffered a massive heart attack.

As was his costum he came on that Monday, July 23, to the Computer Center of the Federal Institute of Technology to do numerical work on his ongoing projects. In the early afternoon he complained, that he did not feel well. Within minutes he collapsed. The ambulance took him to the University Hospital at Lausanne. He seemed to make a spectacular recovery and joked, even while in intensive care, with the hospital personnel. All Tuesday, he continued to improve. In the night to Wednesday, July 25 he suffered a renewed attack which his weakened heart could not withstand.

Hilary Seal retired in 1972 from his active academic and business duties in the United States and moved with his family, his wife Myrna, and his two young children, Theodora and Gavin, to Apples (VD). He immediately contacted us at EPFL to find out about possibilities for collaboration. Since he was particularly interested to continue his research activities, he needed the infrastructure of a Computer Center to do so.

During six years he taught post-diploma courses for engineers and actuaries and he was active in the weekly statistics seminar. Through his excellent contacts we had frequent visits of illustrious statisticians and actuaries. Hilary also served on several thesis committees. He took an active role coaching the doctoral students.

While an official position at EPFL was not possible due to Hilary's age, he served us excellently during thirteen years as a permanent inofficial visiting professor. The rapport d'activité from 1973 on lists all his publications as part of the statistics unit of the Mathematics department. From [44] on they all carry the "Ecole Polytechnique Fédérale de Lausanne" label. He entertained excellent relations with the actuaries of the Institute of Actuarial Science of the University of Lausanne. He held an honorary chair at Lausanne University during the spring term 1980 and gave a course on "Mixed Poisson Processes and Risk Theory" [61]. He also took an active interest in the activities of the Swiss actuaries. In the same year, 1980, he was elected a corresponding member of their association. We also profited from the unusually complete and valuable private library of Hilary for which, unfortunately, after his death, no satisfactory solution could be found.

It was clear that retirement for Hilary never did mean to stop being active but to do precisely what interested him the most at the moment. He wrote a book [B, 3] and one third of his articles (from [44] on) while living in Apples.

Hilary was extremely well read. This together with his intellectual curiosity made him an ideal discussion partner on subjects well beyond actuarial science and statistics. But he also enjoyed good cuisine and he was knowledgeable about wine. It was a pleasure to visit the Seals. They kept an open house and were superb hosts. Hilary enjoyed very good health. He was never hospitalized and up to the day of his attack he never cancelled appointments due to ill health.

He is surely missed, and walking through the couloirs of the Department or the Computer Center, one occasionally thinks the walls will reverberate from the roaring laughter which was his trademark.

The following bibliography was compiled by Hilary's wife Myrna, who died just five years after her husband.

A. Bibliography of articles

(other than reviews and printed contributions to discussions).

- [1] Illustrative example. In: Tables of $\tan^{-1}x$ and $\log(1+x^2)$, by L.J. Comrie, Cambridge, 1938, 7-9.
- [2] Tests of a mortality table graduation (with discussion). *J. Inst. Actu.*, 71, 1943, 5-67.
- [3] The mathematics of a population composed of k stationary strata each recruited from the stratum below and supported at the lowest level by a uniform annual number of entrants. *Biometrika*, 33, 1945, 226-230.
- [4] A probability distribution of deaths at age x when policies are counted instead of lives. *Skand. Aktu. Tidskr.*, 30, 1947, 18-43.
- [5] Gambler's ruin. *J. Inst. Actu. Stud. Soc.*, 6, 1947, 35-37.
- [6] A historical note on the use of χ^2 to test the adequacy of a mortality table graduation. *J. Inst. Actu. Stud. Soc.*, 6, 1947, 185-187.
- [7] Multiple decrement tables and the force of mortality - a historical note. *J. Inst. Actu. Stud. Soc.*, 6, 1947, 197-199.
- [8] A note on the χ^2 smooth test. *Biometrika*, 35, 1948, 202.
- [9] The probability of decrements from a population. A study in discrete random processes. *Skand. Aktu. Tidskr.*, 31, 1948, 14-46.
- [10] Translation of a passage from Ugo Broggi's "Matematica attuariale" (Milan 1906). *J. Inst. Actu. Stud. Soc.*, 7, 1948, 178-179.
- [11] Reply to correspondence on the review of Bailey & Haycock's booklet on multiple decrement tables. *J. Inst. Actu. Stud. Soc.*, 7, 1948, 187-188.
- [12] The historical development of the use of generating functions in probability theory. *Mitt. Verein. Schweiz. Versich. Math.*, 49, 1949, 209-228.

-
- [13] Mortality data and the binomial probability law. *Skand. Aktu. Tidskr.*, 32, 1949, 188–216.
- [14] Karup's theorem of multiple decrement. *J. Inst. Actu. Stud. Soc.*, 8, 1949, 104–110.
- [15] Discrete random processes. *J. Inst. Actu. Stud. Soc.*, 8, 1949, 204–209.
- [16] The columnar method – a historical note. *Proc. Centenary Assembly Inst. Actu.*, 3, 1950, 387–394.
- [17] Letter to the Editor on the distribution of deaths when policies are counted instead of lives. *J. Inst. Actu.*, 77, 1951, 490–492.
- [18] Spot the prior reference. *J. Inst. Actu. Stud. Soc.*, 10, 1951, 255–258.
- [19] The maximum likelihood fitting of the discrete Pareto law. *J. Inst. Actu.*, 78, 1952, 115–121.
- [20] "Acceptable" funding methods for self-insured pension funds. *Proc. Conf. Actu. Pub. Prac.*, 2, 1952, 17–44.
- [21] The mathematical risk of lump-sum death benefits in a trustee pension plan. *Trans. Soc. Actu.*, 5, 1953, 135–142.
- [22] The estimation of mortality and other decremental probabilities. *Skand. Aktu. Tidskr.*, 37, 1954, 137–162.
- [23] Letters to the Editor on "A Budget of paradoxes". *J. Inst. Actu. Stud. Soc.*, 12, 1954, 55 and 13, 1955, 60–65.
- [24] A statistical review of the evidence for the existence of temporary selection. *J. Inst. Actu.*, 85, 1959, 165–210.
- [25] The logic behind the self-insurance of a welfare plan. *Proc. 7th Ann. Workshop, Nat. Conf. Health, Welfare, Pens. Plans*, 1961, 229–237.
- [26] Deaths among prospective existings. *Proc. Conf. Actu. Pub. Pract.*, 11, 1962, 308–310.
- [27] The calculation of isolated (Makeham) joint annuity values: Actuarial note. *Trans. Fac. Actu.*, 28, 1964, 91–98.
- [28] Regular monthly feature: "Pension and Profit-Sharing Digest", in *Trusts & Estates Magazine* from April 1956 through Oct. 1965.
- [29] The random walk of a simple risk business. *Astin Bull.*, 4, 1966, 19–28.
- [30] The hypothesis of parallelism of two first principal axes. *Biométrie-Praximétrie*, 7, 1966, 173–176.
- [31] Testing for contagion in animal populations. *Trans. Amer. Fisheries Soc.*, 95, 436–437.
- [32] The historical development of the Gauss linear model. *Biometrika*, 54, 1–24.
- [33] The use of multiple regression in risk classification based on proportionate losses. *Ber. XVIII Internat. Kong. Versich. Math.*, 2, 1968, 659–663.
- [34] Bayes, Thomas. *Internat. Encycl. Stat. Vol. I*, Macmillan & Free Press, 1968, 7–9.
- [35] Moivre, Abraham De. *Internat. Encycl. Stat. Vol. I*, Macmillan & Free Press, 1968, 601–603.
- [36] Widow's pension and other death benefits. *Proc. 13th Ann. Conf. Nat. Foundn Health, Welfare, Pens. Plans*, 1968, 241–243.
- [37] Trends in social security: An actuary's view. *Retirement Plan Prospectives*, Manufacturers Hanover Bank, New York, 1968.
- [38] "Addendum" to: An upper bound on the stop-loss net premium by N. L. Bowers, Jr. *Trans. Soc. Actu.*, 21, 1969, 216–217.

-
- [39] Simulation of the ruin potential of non-life insurance companies. *Trans. Soc. Actu.*, 21, 1969, 563–590.
- [40] Probability distributions of aggregate sickness durations. *Skand. Aktu. Tidskr.*, 53, 1970, 193–204.
- [41] Numerical calculation of the Bohman-Esscher family of convolution-mixed negative binomial distribution functions. *Mitt. Verein. Schweiz. Versich. Math.*, 71, 1971, 71–94.
- [42] Numerical calculation of the probability of ruin in the Poisson/exponential case. *Mitt. Verein. Schweiz. Versich. Math.*, 72, 1972, 77–100.
- [43] Risk theory and the single-server queue. *Mitt. Verein. Schweiz. Versich. Math.*, 72, 1972, 171–178.
- [44] The theory of risk. *Nordisk Försäkrings Tidskr.*, 54, 1974, 150–156.
- [45] The numerical calculation of $U(w, t)$, the probability of non-ruin in an interval $(0, t)$. *Scand. Actu. J.*, 1974, 121–139.
- [46] The story of 100 actuarially guaranteed no-ruin casualty insurance companies. *Astin Bull.*, 8, 1975, 364–377.
- [47] A note on the use of Laguerre polynomials in the inversion of Laplace transforms. *Bl. Deutsch. Ges. Versich. Math.*, 12, 1975, 131–134.
- [48] When does a renewal, or other stationary point process, start? *Scand. Actu. J.*, 1976, 114–117.
- [49] Approximations to risk theory's $F(x, t)$ by means of the gamma distribution. *Astin Bull.*, 9, 1976, 213–218.
- [50] Numerical inversion of characteristic functions. *Scand. Actu. J.*, 1977, 48–53.
- [51] Multiple decrements or competing risks. *Biometrika*, 64, 1977, 429–439.
- [52] Letter to the Editor. *Astin Bull.*, 9, 1977, 267–268.
- [53] From aggregate claims distribution to probability of ruin. *Astin Bull.*, 10, 1978, 47–53.
- [54] Letter to the Editor. *Astin Bull.*, 10, 1979, 130.
- [55] The fitting of a mathematical graduation formula: A historical review with illustrations. *Bl. Deutsch. Ges. Versich. Math.*, 14, 1979, 237–253.
- [56] Survival probabilities based on Pareto claim distributions. *Astin Bull.*, 11, 1980, 61–71.
- [57] Ruin probabilities for mixed Poisson claim numbers without Laplace transforms. *Mitt. Verein. Schweiz. Versich. Math.*, 80, 1980, 297–306.
- [58] Early uses of Graunt's life table. *J. Inst. Actu.*, 107, 1980, 507–511.
- [59] Graduation by piecewise cubic polynomials: A historical review. *Bl. Deutsch. Ges. Versich. Math.*, 15, 1981, 89–114.
- [60] Actuarial estimation of decremental probabilities. *Mitt. Verein. Schweiz. Versich. Math.*, 81, 1981, 167–175.
- [61] Mixed Poisson Processes and Risk Theory. (mimeo). *Inst. Sci. Actu., Univ. Lausanne*, 1981, 74 + xii.
- [62] Mixed Poisson – an ideal distribution of claim numbers? *Mitt. Verein. Schweiz. Versich. Math.*, 82, 1982, 293–295.
- [63] Numerical probabilities of ruin when expected claim numbers are large. *Mitt. Verein. Schweiz. Versich. Math.*, 83, 1983, 89–104.

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- [64] Distributions of claim amounts – continuous or discrete? Mitt. Verein. Schweiz. Versich. Math., 83, 1983, 128–129.
- [65] The Poisson process: Its failure in risk theory. Insurance: Math. and Econ., 2, 287–288.
- [66] The German and Italian contributions to exposed to risk: A historical review. Bl. Deutsch. Ges. Versich. Math., 16, 1984, 285–292.

B. Bibliography of books

- [1] *Multivariate Statistical Analysis for Biologists*. John Wiley, New York, 1964, pp. xii + 207 (Japanese trans. 1970).
- [2] *Stochastic Theory of a Risk Business*. John Wiley, New York, 1969, pp. xiii + 210.
- [3] *Survival Probabilities: The Goal of Risk Theory*. John Wiley, Chichester, 1978, pp. x + 103.

P. E. Nüesch, Lausanne