

Contents

1. Historical Introduction	1
The random variables Y and T	1
Barrois and Dormoy	2
Filip Lundberg	3
The Poisson process	4
Lundberg's formula for $F(x, t)$, the df of aggregate claims	5
The Spielfonds and ruin of the company	6
2. The Choices for $p_n(t)$ and $B(\cdot)$; the Simplest Model of a Nonlife Company; and the Use of Queueing Techniques	9
The Poisson, negative binomial and generalized Waring distributions	9
Distributions used for $B(\cdot)$	14
Queueing models	16
$U(w, t)$ for the $M/M/1$ case	17
Arfwedson's formula for $U(w, t)$	19
Survival through the n th claim	22
Vale to queueing techniques	25
3. A Computational Accessory – The Laplace Transform	26
De Moivre's Lemma	26
Numerical illustration	27
Inverting a generating function	29
Fourier reciprocal relations and the Laplace transform	31
Inversion formulas	33
Numerical illustration	35
Real and imaginary forms of $\beta(s)$	40
4. The Probability of t -year Survival	43
An operational formula for $U(w, t)$	43
Arfwedson and Thyrión: an imaginary collaboration	48

Numerical evaluation of relation (1)	49
Beard's formula for $W_n(w)$	52
5. Approximations and Controls	54
Approximations to $F(x, t)$	54
Approximate calculation of $U(w, t)$	56
Calculation of $U(w)$	59
Appendix: Computer Programs	64
BESSEL	64
DEMOIV	67
TRIALS	70
GETUWT	78
GETBRM	83
POLLAK	88
DEMUWT	90
UINTEG	94
Bibliography	97
Index	101