

## **TRANSACTIONS OF SOCIETY OF ACTUARIES 1981 REPORTS**

### **II. MORTALITY ON POLICIES FOR LARGE AMOUNTS BETWEEN 1973 AND 1978 ANNIVERSARIES**

#### **ABSTRACT**

This is the latest in a series of quinquennial reports on intercompany mortality experience under Standard Ordinary life insurance policies for large amounts. The study covers the experience between policy anniversaries in 1973 and 1978 in the first twenty-five policy years after issue (i.e., issues of 1949 through 1977). For issues of 1974 and later the classification "large amount" refers to policies of \$100,000 or more; prior to 1974 the classification includes policies of \$50,000 or more.

Expected deaths in the study are based on a special table constructed from the 1973-78 Standard Ordinary intercompany experience on policies for all amounts. The study also includes analyses of mortality ratios based on the 1965-70 Basic Tables and on the experience table used for the 1958-63 large-amount study.

Analyses of the experience are shown by issue age, policy year, permanent plans (including plans with a term element), term plans, sex, classification amount (defined as the total amount of insurance in force on the insured in all companies, including the current application), purpose of the insurance, and insured's annual income. An analysis by cause of death is also included.

Based on the 1973-78 table, the mortality experience for large-amount policies was 92 percent of the corresponding mortality for policies of all sizes combined. Term plan mortality was 98 percent and permanent plan mortality was 91 percent. The mortality ratios declined with increasing issue age. There was little pattern by policy year. Female mortality was 68 percent of male mortality. Male mortality on permanent plans having a supplemental term element was lower than on permanent plans without a supplemental term element.

Issues of 1959 and later were classified by purpose of insurance and annual income of the insured. The mortality for business, keyman, and creditor insurance was very favorable, while personal insurance experienced mortality above the study average. By annual income, the mortality ratios were highest for incomes of \$100,000 and over.

Compared with previous large-amount studies, there has been a significant decrease in mortality. Based on the 1958-63 Experience Table, mortality ratios for the last three five-year periods have been 88, 80, and 69 percent, respectively. Relative to experience on all policies, however, there has been little change in large-amount mortality. Based on the corresponding Standard Ordinary experience on policies for all amounts, the large-amount ratios for the last three five-year periods have been 92, 89, and 92 percent, respectively.

## GUIDE TO TABLES

	TABLES IN TEXT*									TABLES IN APPENDIX†							
	1	2	3	4	5	6	7	8	9	B	C	D	E	F	G	H	J
Table variables:																	
Plan .....	1	2	3	4	5	.....	7	8	9	B	C	D	.....	.....	G	H	J
Sex .....	1	2	3	.....	.....	.....	7	8	.....	.....	.....	.....	.....	.....	.....	.....	J
Term element .....	1	2	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Age at issue .....	1	.....	.....	4	5	.....	7	8	.....	B	C	.....	E	F	G	.....	J
Policy year .....	.....	2	.....	.....	.....	.....	7	8	.....	B	.....	D	.....	.....	.....	H	.....
Classification amount .....	.....	.....	3	.....	.....	6	7	8	.....	.....	C	D	.....	F	.....	.....	.....
Purpose .....	.....	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	E	F	.....	.....	.....
Annual income .....	.....	.....	.....	.....	5	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Historic comparisons .....	.....	.....	.....	.....	.....	.....	7	8	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cause of death .....	.....	.....	.....	.....	.....	.....	.....	.....	9	.....	.....	.....	.....	.....	G	H	.....
Issue years included:																	
1934-77 .....	.....	.....	.....	.....	.....	.....	7	8	.....	.....	.....	.....	.....	.....	.....	.....	.....
1949-77 .....	1	2	3	.....	.....	.....	.....	.....	9	B	C	D	.....	.....	G	H	J
1959-77 .....	.....	.....	.....	4	5	6	.....	.....	.....	.....	.....	.....	E	F	.....	.....	.....
Basis of expected deaths:																	
1958-63 experience .....	.....	.....	.....	.....	.....	.....	.....	8	.....	B	C	D	.....	.....	.....	.....	.....
1973-78 experience .....	1	2	3	4	5	6	.....	.....	9	B	C	D	E	F	G	H	.....
1965-70 Basic Table .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	B	C	D	.....	.....	.....	.....	.....
1965-70 Basic Table, sex distinct .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J
Contemporaneous experience .....	.....	.....	.....	.....	.....	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

\* In addition, Table 10 provides historic detail of motor vehicle and aviation deaths.

† In addition, Table A lists the contributing companies and Table K indicates the mortality rates in the 1973-78 Experience Table.

For term plans the highest mortality ratio by cause of death was for accidents and homicides—154 percent. For permanent plans the highest mortality ratio was for malignant neoplasms—140 percent.

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#### DESCRIPTION OF STUDY

This report presents the findings of the latest in a series of intercompany studies of the mortality on policies of large amounts. Policies for large amounts are defined to be those issued as a result of one or more applications that total \$100,000 or more on one life during a 90-day period (\$50,000 for issues of 1973 and prior years).

The study includes experience on Standard Ordinary issues of 1949–77 between 1973 and 1978 policy anniversaries. The previous report (*TSA, 1975 Reports*, p. 57) covered the experience between 1968 and 1973 anniversaries. The experience is based on a total exposure of \$352 billion and claims of \$1,092 million on 19,023 policies.

The experience is analyzed by issue age, policy year, permanent plans (both with and without a term element), term plans, sex, classification amount, purpose of insurance, income, and underwriting basis. Classification amount is defined as the total of the following amounts: the amount of insurance indicated as being in force on the life when the policy was applied for (including previously issued policies in force in all companies), the amount currently being authorized for issue by the contributing company, and the amount likely to be authorized under any known concurrent applications to other companies. All kinds of individual and group insurance were included for this purpose, where the information was available. The information as to the purpose of the insurance and the estimated current annual income of the insured at the time of issue was coded only for issues of 1959 and subsequent years.

The study is limited to the experience of the first twenty-five policy years, since the volume of experience on large-amount policies at later durations was small.

Four different bases for expected deaths are used in the current study. The primary basis is a twenty-five-year select table constructed from the 1973–78 Standard Ordinary intercompany experience on policies for all amounts for male and female lives combined. This table and a description of its construction appear in the Appendix as Table K. In addition, Tables B, C, and D of the Appendix contain expected deaths and mortality ratios based on the 1965–70 Basic Tables for males and females combined (*TSA*,

1973 Reports, p. 199) and on a previous large-amount experience table (TSA, 1964 Reports, pp. 78–79). The latter table was constructed from the 1958–63 intercompany Standard Ordinary experience on policies for all amounts. Table J of the Appendix shows the mortality ratios using sex-distinct expected death bases as opposed to the combined bases used in all the other tables. The 1965–70 Male and Female Select and Ultimate Basic Tables were used. Table J was developed to examine the effect of the slightly larger proportion of female exposure in the current study compared with the previous study (the proportion of male exposure by amount decreased from 96 percent in the previous study to 93 percent in this study) and the effect of the larger proportion of male exposure in the large-amount study than in the all-amounts data (which are 87 percent male).

Two new codes, a reinsurance-status code and a territory code, were added to the compilation of the 1973–78 study. The purpose of the reinsurance-status code is to exclude shopped reinsurance and to examine the experience on this class of business separately when enough data are available. The purpose of the territory code is ultimately to exclude Canadian business. The current study, as well as the previous large-amount studies, includes Canadian business on large amounts. The Standard Ordinary insurance study excludes Canadian business, and eventually the large-amount study will exclude Canadian business also.

The experience includes three deaths for \$390,000 that were due to the operations of war.

The previous study included estimates of the number of lives terminated by death after eliminating duplicate policies on a single life. Since many of the contributing companies are no longer able to provide the information necessary to identify specific lives in the death claims, the tables in the current study indicate only number of policies terminated by death.

Fourteen companies contributed to the current study. Their names and the proportionate exposures contributed by each are indicated in table A of the Appendix. More than 93 percent of the exposure in the study was submitted by twelve companies that also contribute to the annual Standard Ordinary mortality studies. There are, however, some marked differences in the relative proportions of the experience contributed by these companies to the two investigations. Since the level of mortality varies among companies, the basis of expected deaths differs from what it would have been if each company's experience on Standard Ordinary issues for all amounts had been weighted in proportion to its contribution to the study of policies for large amounts.

The following tabulation indicates the variation in the 1973-78 aggregate large-amount mortality ratios for the contributing companies from the 1973-78 large-amount all-company average of 92.3 percent.

	Number of Companies	Proportion of Actual Deaths
Percentage points below average:		
More than 15 .....	1	11%
10-15 .....	2	14
5-10 .....	3	11
0-5 .....	0	0
Percentage points above average:		
0-5 .....	2	16
5-10 .....	2	21
10-15 .....	3	26
More than 15 .....	1	0

#### RESULTS OF STUDY

The Guide to Tables that appears on the second page of this report provides a complete listing of all the tables included in the study. Table 1 summarizes the experience by age at issue, sex, and plan; Table 2 summarizes the experience by policy year, sex, and plan; Table 3 summarizes the experience by classification amount, sex, and plan. The number of policies terminated by death is shown in parentheses after the amounts of actual claims.

Each of these tables is divided into several sections. Section A presents the data for males and females combined. Results are shown separately for permanent plans, term plans, and combined. The data for permanent plans include any term riders on these plans. Sections B and C present the same data for males and females separately. Section D shows the experience on male lives for permanent plans without a supplemental term element, and Section E shows the experience on male lives for permanent plans with a supplemental term element. Because of the relatively small volume of experience on female lives with a supplemental term element, no corresponding analyses of female experience are presented.

#### *Aggregate Experience*

Aggregate large-amount mortality is somewhat lower than the mortality on policies for all amounts. On the basis of the 1973-78 Experience Table on policies for all amounts, the aggregate large-amount mortality ratio

TABLE I  
 LARGE-AMOUNT ISSUES OF 1949-77  
 EXPERIENCE BETWEEN 1973 AND 1978 ANNIVERSARIES  
 BY AGE AT ISSUE AND PLAN OF INSURANCE  
 Expected Deaths Based on 1973-78 Standard Ordinary Issues Experience  
 (Amounts Shown in \$1,000 Units)

ISSUE AGE	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E
A. Male and Female Lives									
0-9 .....	\$ 2,417 (36)	\$ 1,519	<i>159%</i>	\$ 0 (0)	\$ 15	*	\$ 2,417 (36)	\$ 1,533	<i>158%</i>
10-19 .....	4,061 (71)	3,966	102	186 (3)	287	*	4,247 (74)	4,253	100
20-29 .....	41,287 (793)	34,749	119	14,991 (229)	13,536	111%	56,278 (1,022)	48,285	117
30-39 .....	184,545 (3,672)	196,822	94	70,676 (1,178)	66,443	106	255,221 (4,850)	263,265	97
40-49 .....	320,977 (5,618)	360,331	89	88,563 (1,352)	87,507	101	409,540 (6,970)	447,838	91
50-59 .....	257,558 (4,221)	284,732	90	32,125 (568)	40,589	79	289,683 (4,789)	325,321	89
60-69 .....	65,774 (1,138)	81,660	81	3,737 (58)	4,943	76	69,511 (1,196)	86,603	80
70 and over .....	4,934 (85)	6,029	82	300 (1)	513	*	5,234 (86)	6,542	80
All .....	\$881,553 (15,634)	\$969,808	91%	\$210,578 (3,389)	\$213,834	98%	\$1,092,131 (19,023)	\$1,183,642	92%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.

\* Fewer than 10 policies terminated by death.

TABLE 1—Continued

ISSUE AGE	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E
	B. Male Lives								
0-9 .....	\$ 2,112 (30)	\$ 1,042	203%	\$ 0 (0)	\$ 9	*	\$ 2,112 (30)	\$ 1,051	201%
10-19 .....	3,566 (64)	3,105	115	186 (3)	253	*	3,752 (67)	3,358	112
20-29 .....	38,292 (748)	32,933	116	12,870 (218)	13,006	99%	51,162 (966)	45,939	111
30-39 .....	175,982 (3,563)	187,428	94	68,371 (1,152)	63,987	107	244,353 (4,715)	251,415	97
40-49 .....	304,834 (5,367)	332,718	92	86,856 (1,320)	83,641	104	391,690 (6,687)	416,359	94
50-59 .....	236,332 (3,916)	251,382	94	30,993 (547)	38,030	81	267,325 (4,463)	289,412	92
60-69 .....	58,382 (998)	65,650	89	3,467 (54)	4,515	77	61,849 (1,052)	70,166	88
70 and over .....	4,364 (74)	4,479	97	300 (1)	438	*	4,664 (75)	4,917	95
All .....	\$823,864 (14,760)	\$878,736	94%	\$203,043 (3,295)	\$203,880	100%	\$1,026,907 (18,055)	\$1,082,617	95%
	C. Female Lives								
0-9 .....	\$ 305 (6)	\$ 477	*	\$ 0 (0)	\$ 5	*	\$ 305 (6)	\$ 482	*
10-19 .....	495 (7)	862	*	0 (0)	34	*	495 (7)	895	*
20-29 .....	2,995 (45)	1,816	165%	2,121 (11)	530	400%	5,116 (56)	2,346	218%
30-39 .....	8,563 (109)	9,394	91	2,305 (26)	2,454	94	10,868 (135)	11,848	92
40-49 .....	16,143 (251)	27,613	58	1,707 (32)	3,862	44	17,850 (283)	31,475	57
50-59 .....	21,226 (305)	33,350	64	1,132 (21)	2,559	44	22,358 (326)	35,909	62
60-69 .....	7,392 (140)	16,010	46	270 (4)	428	*	7,662 (144)	16,438	47
70 and over .....	570 (11)	1,550	37	0 (0)	75	*	570 (11)	1,625	35
All .....	\$ 57,689 (874)	\$ 91,071	63%	\$ 7,535 (94)	\$ 9,947	76%	\$ 65,224 (968)	\$ 101,018	65%

TABLE 1—Continued

ISSUE AGE	PERMANENT PLANS							
	Actual Claims		Expected Claims	A/E	Actual Claims		Expected Claims	A/E
	D. Male Lives without Term Element			E. Male Lives with Term Element				
0-9 .....	\$ 2,112	(30)	\$ 1,028	<i>205%</i>	\$ 0	(0)	\$ 14	*
10-19 .....	3,317	(57)	2,985	111	249	(7)	119	*
20-29 .....	29,138	(504)	24,059	121	9,154	(244)	8,873	103%
30-39 .....	136,744	(2,491)	141,938	96	39,218	(1,071)	45,490	86
40-49 .....	269,784	(4,513)	291,320	93	35,025	(853)	41,397	85
50-59 .....	222,771	(3,633)	238,319	93	13,561	(283)	13,061	104
60-69 .....	56,722	(974)	64,347	88	1,660	(24)	1,303	127
70 and over .....	4,364	(74)	4,438	98	0	(0)	41	*
All .....	\$724,952	(12,276)	\$768,434	94%	\$ 98,867	(2,482)	\$110,299	90%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.

\* Fewer than 10 policies terminated by death.



TABLE 2  
 LARGE-AMOUNT ISSUES OF 1949-77  
 EXPERIENCE BETWEEN 1973 AND 1978 ANNIVERSARIES  
 BY DURATION AND PLAN OF INSURANCE  
 Expected Deaths Based on 1973-78 Standard Ordinary Issues Experience  
 (Amounts Shown in \$1,000 Units)

POLICY YEARS	PERMANENT PLANS			TERM PLANS			ALL PLANS			
	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E	
A. Male and Female Lives										
1-2 .....	\$ 77,670 (811)	\$ 81,004	96%	\$ 46,488 (481)	\$ 48,217	96%	\$ 124,158 (1,292)	\$ 129,261	96%	
3-5 .....	136,067 (1,784)	149,850	91	52,116 (720)	52,953	98	188,183 (2,504)	202,803	93	
6-10 .....	204,846 (3,054)	224,976	91	50,851 (810)	48,565	105	255,697 (3,864)	273,542	93	
11-15 .....	167,507 (3,136)	189,623	88	29,177 (590)	29,558	99	196,684 (3,726)	219,181	90	
16-20 .....	181,061 (3,889)	193,977	93	18,210 (441)	19,301	94	199,271 (4,330)	213,277	93	
21-25 .....	114,402 (2,960)	130,337	88	13,736 (347)	15,240	90	128,138 (3,307)	145,577	88	
All .....	\$881,553 (15,634)	\$969,808	91%	\$210,578 (3,389)	\$213,834	98%	\$1,092,131 (19,023)	\$1,183,642	92%	

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.  
 \* Fewer than 10 policies terminated by death.

TABLE 2—Continued

POLICY YEARS	PERMANENT PLANS			TERM PLANS			ALL PLANS			
	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E	
B. Male Lives										
1-2 .....	\$ 72,853 (762)	\$ 72,039	101%	\$ 43,618 (458)	\$ 45,470	96%	\$ 116,471 (1,220)	\$ 117,509	99%	
3-5 .....	125,902 (1,673)	134,786	93	49,905 (690)	50,347	99	175,807 (2,363)	185,133	95	
6-10 .....	191,502 (2,862)	204,761	94	49,695 (792)	46,239	107	241,197 (3,654)	251,000	96	
11-15 .....	154,246 (2,953)	171,615	90	28,281 (576)	28,244	100	182,527 (3,529)	199,859	91	
16-20 .....	169,992 (3,674)	176,871	96	17,908 (433)	18,764	95	187,900 (4,107)	195,636	96	
21-25 .....	109,369 (2,836)	118,665	92	13,636 (346)	14,815	92	123,005 (3,182)	133,480	92	
All .....	\$823,864 (14,760)	\$878,736	94%	\$203,043 (3,295)	\$203,880	100%	\$1,026,907 (18,055)	\$1,082,617	95%	
C. Female Lives										
1-2 .....	\$ 4,817 (49)	\$ 9,005	53%	\$ 2,870 (23)	\$ 2,741	105%	\$ 7,687 (72)	\$ 11,746	65%	
3-5 .....	10,165 (111)	15,064	67	2,211 (30)	2,604	85	12,376 (141)	17,669	70	
6-10 .....	13,344 (192)	20,215	66	1,156 (18)	2,327	50	14,500 (210)	22,542	64	
11-15 .....	13,261 (183)	18,008	74	896 (14)	1,314	68	14,157 (197)	19,322	73	
16-20 .....	11,069 (215)	17,106	65	302 (8)	536	*	11,371 (223)	17,642	64	
21-25 .....	5,033 (124)	11,673	43	100 (1)	425	*	5,133 (125)	12,097	42	
All .....	\$ 57,689 (874)	\$ 91,071	63%	\$ 7,535 (94)	\$ 9,947	76%	\$ 65,224 (968)	\$ 101,018	65%	

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.

\* Fewer than 10 policies terminated by death.

TABLE 2—Continued

POLICY YEARS	PERMANENT PLANS					
	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E
	D. Male Lives without Term Element			E. Male Lives with Term Element		
1-2 .....	\$ 61,838 (607)	\$ 61,704	100%	\$ 11,015 (155)	\$ 10,335	107%
3-5 .....	108,918 (1,348)	17,456	93	16,984 (325)	17,330	98
6-10 .....	167,172 (2,338)	180,524	93	24,330 (524)	24,237	100
11-15 .....	135,878 (2,450)	150,858	90	18,368 (503)	20,757	88
16-20 .....	152,205 (3,134)	153,999	99	17,742 (538)	22,870	78
21-25 .....	98,941 (2,399)	103,894	95	10,428 (437)	14,771	71
All .....	\$724,952 (12,276)	\$768,434	94%	\$ 98,867 (2,482)	\$110,299	90%

TABLE 3  
 LARGE-AMOUNT ISSUES OF 1949-77  
 EXPERIENCE BETWEEN 1973 AND 1978 ANNIVERSARIES  
 BY CLASSIFICATION AMOUNT AND PLAN OF INSURANCE  
 Expected Deaths Based on 1973-78 Standard Ordinary Issues Experience  
 (Amounts Shown in \$1,000 Units)

CLASSIFICATION AMOUNT	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E
	A. Male and Female Lives								
\$ 50,000-\$ 99,999	\$192,674 (5,306)	\$217,311	89%	\$ 39,281 (1,084)	\$ 38,936	101%	\$ 231,955 (6,390)	\$ 256,247	91%
100,000- 199,999	299,807 (6,111)	332,052	90	73,686 (1,385)	74,995	98	373,493 (7,496)	407,048	92
200,000- 499,999	239,098 (3,186)	260,894	92	53,237 (623)	56,753	94	292,335 (3,809)	317,647	92
500,000- 999,999	76,866 (622)	78,838	97	21,812 (132)	18,248	120	98,678 (754)	97,086	102
1,000,000 and over	50,622 (159)	61,323	83	14,802 (70)	15,941	93	65,424 (229)	77,263	85
All	\$859,067 (15,384)	\$950,417	90%	\$202,818 (3,294)	\$204,874	99%	\$1,061,885 (18,678)	\$1,155,291	92%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death. Totals are slightly less than Tables 1 and 2 because some of the data could not be classified.

\* Fewer than 10 policies terminated by death.

TABLE 3—Continued

CLASSIFICATION AMOUNT	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E
	B. Male Lives								
\$ 50,000—\$ 99,999 .....	\$177,303 (4,905)	\$191,610	93%	\$ 37,858 (1,044)	\$ 36,363	104%	\$ 215,161 (5,949)	\$ 227,973	94%
100,000— 199,999 .....	281,965 (5,820)	301,361	94	71,079 (1,350)	71,613	99	353,044 (7,170)	372,974	95
200,000— 499,999 .....	226,631 (3,059)	241,162	94	51,682 (612)	55,033	94	278,313 (3,671)	296,196	94
500,000— 999,999 .....	72,184 (596)	72,222	100	20,112 (129)	17,529	115	92,296 (725)	89,752	103
1,000,000 and over .....	44,947 (149)	54,964	82	14,802 (70)	15,032	98	59,749 (219)	69,996	85
All .....	\$803,030 (14,529)	\$861,319	93%	\$195,533 (3,205)	\$195,572	100%	\$ 998,563 (17,734)	\$1,056,890	94%
	C. Female Lives								
\$ 50,000—\$ 99,999 .....	\$ 15,371 (401)	\$ 25,701	60%	\$ 1,423 (40)	\$ 2,573	55%	\$ 16,794 (441)	\$ 28,274	59%
100,000— 199,999 .....	17,842 (291)	30,692	58	2,607 (35)	3,379	77	20,449 (326)	34,070	60
200,000— 499,999 .....	12,467 (127)	19,731	63	1,555 (11)	1,719	90	14,022 (138)	21,451	65
500,000— 999,999 .....	4,682 (26)	6,616	71	1,700 (3)	715	*	6,382 (29)	7,331	87
1,000,000 and over .....	5,675 (10)	6,359	89	0 (0)	908	*	5,675 (10)	7,267	78
All .....	\$ 56,037 (855)	\$ 89,099	63%	\$ 7,285 (89)	\$ 9,295	78%	\$ 63,322 (944)	\$ 98,394	64%

TABLE 3—Continued

CLASSIFICATION AMOUNT	PERMANENT PLANS									
	Actual Claims		Expected Claims		A/E	Actual Claims		Expected Claims		A/E
	D. Male Lives without Term Element					E. Male Lives with Term Element				
\$ 50,000—\$ 99,999 .....	\$145,665	(3,778)	\$157,581	92%	\$ 31,618	(1,126)	\$ 34,028	93%		
100,000— 199,999 .....	246,625	(4,891)	257,704	96	35,315	(928)	43,654	81		
200,000— 499,999 .....	205,918	(2,742)	221,186	93	20,713	(317)	19,976	104		
500,000— 999,999 .....	68,006	(566)	67,249	101	4,178	(30)	4,973	84		
1,000,000 and over .....	44,157	(145)	52,580	84	790	(4)	2,384	*		
All .....	\$710,371	(12,122)	\$756,300	94%	\$ 92,614	(2,405)	\$105,015	88%		

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NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10–49 policies terminated by death. Totals are slightly less than Tables 1 and 2 because some of the data could not be classified.

\* Fewer than 10 policies terminated by death.

was 92 percent. If the experience table had been based on the same proportions of business by contributing company as in the large-amount study, the aggregate ratio would have been about 96 percent.

#### *Term Insurance versus Permanent Insurance*

The mortality ratio on large-amount term plans was 98 percent, while the mortality ratio on large-amount permanent plans was 91 percent. This differential of 7 percentage points compares with differentials of 1 percentage point in the previous study and 10 percentage points in the study before that.

The exposure in the study is still predominantly permanent insurance—70 percent is permanent compared with 74 percent in the last study.

#### *Experience by Issue Age (Table 1)*

For both permanent and term insurance the large-amount mortality ratios decrease with advancing issue age, probably reflecting more careful medical selection of large-amount risks at the higher ages.

#### *Experience by Policy Year (Table 2)*

The large-amount mortality ratios (for permanent and term insurance for males and for permanent insurance for females) are essentially flat by duration. Female term insurance has a high mortality ratio in the first five policy years, but the number of deaths is few. It may, however, suggest some possible antiselection in the purchase of term insurance by females.

The total exposure decreases sharply by duration. Eighty-two percent of the exposure by amount is in the first ten policy years. Thirty-one percent of the exposure by amount is in the first two policy years.

#### *Experience by Classification Amount (Table 3)*

For male lives, the mortality ratios for both permanent and term plans were highest in the \$500,000–\$999,999 category. The lowest mortality ratios were for the \$1 million and over classification amount group—suggesting the effect of careful underwriting for very large amounts.

#### *Experience by Sex (Tables 1–3)*

Since 93 percent of the total exposure by amount was from policies issued on male lives, the male experience closely parallels that for both sexes combined. The aggregate male mortality ratio was 95 percent and the aggregate female mortality ratio was 65 percent.

The female experience is based on an exposure of \$24.4 billion and claims of \$65.2 million on 968 policies. Female mortality ratios were rel-

atively high for issue ages 20–39. In interpreting the mortality ratio for females, it should be kept in mind that the expected deaths are based on a combined mortality table constructed from data heavily weighted with male policies.

*Experience on Male Lives by Term Element Classification (Tables 1–3)*

Overall, about 18 percent of the total exposure on permanent policies on male lives is derived from policies with a supplemental term element. The proportion is highest (24 percent) for issue-age groups 20–29 and 30–39, and lowest (3 percent) for issue-age groups below 20 and 60 and over.

As shown in Sections D and E of Tables 1–3, the mortality ratio for permanent plans on male lives without a term element, 94 percent, was 4 percentage points higher than the ratio for corresponding plans with a term element. This pattern is in contrast with the relationship of male mortality for permanent plans, 94 percent, to that of term plans, 100 percent. The previous large-amount study also showed more favorable mortality on permanent plans with a term element than on permanent plans without a term element—by a margin of 7 percentage points.

*Experience by Purpose of Insurance and Income of Insured (Tables 4 and 5)*

An analysis of experience by purpose of insurance was made for issues of 1959–77. Purpose of insurance was divided into the following categories:

*Personal insurance.*—Insurance where the beneficiary is (a) wife, child, or other close relative; (b) estate; or (c) business involving a sole proprietorship.

*Business insurance.*—Insurance intended for the repurchase of the insured's interest in an organization having not more than five principal owners (partnership or closed corporation).

*Keyman or deferred compensation insurance.*—Insurance intended primarily for keyman or deferred compensation purposes.

*Creditor or other insurance.*—Insurance taken out to insure the repayment of a loan where either the creditor is the designated beneficiary or the policy is assigned to the creditor. Also included here is any insurance the purpose of which does not fit the other categories.

Table 4 shows the experience for males and females combined according to purpose of insurance, plan of insurance, and issue-age group. Compared with personal insurance, which had a mortality ratio of 98 percent, business insurance, keyman insurance, and creditor insurance had lower mor-



TABLE 4

LARGE-AMOUNT ISSUES OF 1959-77  
EXPERIENCE BETWEEN 1973 AND 1978 ANNIVERSARIES  
BY PURPOSE OF INSURANCE, PLAN OF INSURANCE, AND AGE AT ISSUE  
Expected Deaths Based on 1973-78 Standard Ordinary Issues Experience  
(Amounts Shown in \$1,000 Units)

ISSUE AGE	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	Actual Claims		A/E	Actual Claims		A/E	Actual Claims		A/E
A. Personal Insurance									
0-29	\$ 30,827	(538)	126%	\$ 10,523	(164)	105%	\$ 41,350	(702)	120%
30-39	85,201	(1,552)	100	41,533	(661)	104	126,734	(2,213)	101
40-49	115,068	(1,874)	91	43,688	(701)	104	158,756	(2,575)	94
50 and over	108,593	(1,680)	95	16,753	(291)	91	125,346	(1,971)	94
All	\$339,689	(5,644)	97%	\$112,497	(1,817)	102%	\$452,186	(7,461)	98%
B. Business Insurance									
0-29	\$ 2,652	(28)	143%	\$ 1,215	(17)	140%	\$ 3,867	(45)	142%
30-39	13,802	(214)	88	7,265	(104)	105	21,067	(318)	93
40-49	35,806	(458)	85	15,425	(165)	121	51,231	(623)	93
50 and over	37,414	(507)	77	5,900	(91)	77	43,314	(598)	77
All	\$ 89,674	(1,207)	83%	\$ 29,805	(377)	106%	\$119,479	(1,584)	88%
C. Keyman Insurance									
0-29	\$ 1,721	(23)	90%	\$ 600	(6)	*	\$ 2,321	(29)	91%
30-39	8,985	(127)	73	3,425	(41)	74%	12,410	(168)	73
40-49	27,541	(309)	85	6,568	(76)	76	34,109	(385)	83
50 and over	34,182	(375)	93	4,530	(65)	78	38,712	(440)	91
All	\$ 72,429	(834)	87%	\$ 15,123	(188)	77%	\$ 87,552	(1,022)	85%
D. Creditor and Other Insurance									
0-29	\$ 3,503	(75)	98%	\$ 1,752	(18)	151%	\$ 5,255	(93)	111%
30-39	14,952	(265)	90	5,435	(68)	125	20,387	(333)	97
40-49	36,333	(532)	96	4,752	(68)	78	41,085	(600)	93
50 and over	34,986	(588)	77	2,440	(29)	71	37,426	(617)	76
All	\$ 89,774	(1,460)	86%	\$ 14,379	(183)	96%	\$104,153	(1,643)	88%
E. All Purposes									
0-29	\$ 42,898	(751)	120%	\$ 14,597	(214)	109%	\$ 57,495	(965)	117%
30-39	151,755	(2,760)	96	64,291	(1,015)	104	216,046	(3,775)	98
40-49	266,005	(4,130)	90	80,287	(1,168)	102	346,292	(5,298)	92
50 and over	274,350	(4,281)	88	33,608	(560)	82	307,958	(4,841)	87
All	\$735,008	(11,922)	92%	\$192,783	(2,957)	99%	\$927,791	(14,879)	93%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death. "All purposes" data include data where purpose was undetermined.

\* Fewer than 10 policies terminated by death.

tality ratios: 88, 85, and 88 percent, respectively. For business insurance the mortality on term plans was significantly higher than for permanent plans. For other purposes, the difference between permanent and term were small.

Table 5 shows the experience for males and females combined according to estimated annual income at issue, plan of insurance, and issue-age group. For all issue ages combined, the lowest mortality ratios were for income levels under \$10,000. The highest mortality ratios were for income levels of \$100,000 and over. Between these two income levels the mortality ratios are relatively uniform. In the previous study the \$100,000 and over income group displayed the lowest mortality. Due to recent inflation there is probably a relatively larger concentration of low-duration policies included in the higher-income categories than in the previous study.

The experience is analyzed by annual income and purpose of insurance concurrently in Table E of the Appendix, with issue-age group as an additional variable. For personal insurance, the mortality ratios increased with advancing annual income. For business and keyman insurance, the ratios were relatively flat with advancing income. Because of its relatively small volume, creditor or other insurance is not shown separately in the table.

#### *Experience by Annual Income and Classification Amount (Table 6)*

The experience by annual income and classification amount shows no significant variations other than those previously described for income and classification amount separately. An analysis of classification amounts and purpose of insurance is shown in Table F of the Appendix, with issue-age group as an additional variable. Creditor or other insurance is not shown in the table.

#### *Experience by Underwriting Status*

Whereas the last study essentially consisted entirely of medically examined business, the exposure amounts in the current study were 90 percent medically examined, 7 percent paramedically examined, 0.3 percent nonmedical, and 3 percent unknown underwriting status. The overall mortality ratios were 93 percent for medical issues, 83 percent for paramedical issues, 82 percent for nonmedical issues, and 93 percent for unknown underwriting status. The nonmedical term mortality ratio was 127 percent, although there were only 15 policies terminated by death. The nonmedical permanent mortality ratio was 75 percent, based on 63 policies terminated by death.

TABLE 5

LARGE-AMOUNT ISSUES OF 1959-77  
EXPERIENCE BETWEEN 1973 AND 1978 ANNIVERSARIES  
BY ESTIMATED ANNUAL INCOME AT ISSUE, AGE AT ISSUE, AND PLAN OF INSURANCE  
Expected Deaths Based on 1973-78 Standard Ordinary Issues Experience  
(Amounts Shown in \$1,000 Units)

ESTIMATED ANNUAL INCOME AT ISSUE	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	Actual Claims	A/E		Actual Claims	A/E		Actual Claims	A/E	
A. Issue Ages 0-29									
Under \$10,000 .....	\$ 14,301	(256)	127%	\$ 3,050	(58)	113%	\$ 17,351	(314)	124%
\$ 10,000-\$19,999 .....	11,301	(223)	118	5,058	(85)	100	16,359	(308)	111
20,000- 29,999 .....	4,185	(61)	111	2,290	(28)	116	6,475	(89)	113
30,000- 49,999 .....	3,292	(34)	159	1,165	(8)	*	4,457	(42)	149
50,000- 99,999 .....	2,230	(20)	196	475	(3)	*	2,705	(23)	176
100,000 and over .....	458	(6)	*	500	(1)	*	958	(7)	*
Not accurately determined .....	5,800	(118)	93	1,997	(29)	99	7,797	(147)	95
All .....	\$ 41,567	(718)	120%	\$ 14,535	(212)	110%	\$ 56,102	(930)	117%
B. Issue Ages 30-39									
Under \$10,000 .....	\$ 9,760	(215)	98%	\$ 2,024	(46)	58%	\$ 11,784	(261)	88%
\$ 10,000-\$19,999 .....	29,505	(698)	93	13,740	(293)	94	43,245	(991)	94
20,000- 29,999 .....	25,726	(505)	90	12,610	(208)	100	38,336	(713)	93
30,000- 49,999 .....	26,897	(373)	102	11,041	(145)	103	37,938	(518)	102
50,000- 99,999 .....	16,230	(177)	103	8,512	(74)	128	24,742	(251)	110
100,000 and over .....	6,051	(27)	104	3,263	(20)	125	9,314	(47)	110
Not accurately determined .....	27,795	(520)	92	11,396	(175)	121	39,191	(695)	99
All .....	\$141,964	(2,515)	96%	\$ 62,586	(961)	104%	\$204,550	(3,476)	98%
C. Issue Ages 40-49									
Under \$10,000 .....	\$ 7,474	(165)	63%	\$ 1,794	(47)	65%	\$ 9,268	(212)	63%
\$ 10,000-\$19,999 .....	28,330	(626)	93	11,765	(258)	113	40,095	(884)	98
20,000- 29,999 .....	40,754	(737)	93	11,884	(217)	89	52,638	(954)	92
30,000- 49,999 .....	45,985	(697)	81	15,673	(193)	101	61,658	(890)	86
50,000- 99,999 .....	47,128	(521)	97	12,422	(139)	93	59,550	(660)	96
100,000 and over .....	26,782	(158)	119	10,220	(58)	150	37,002	(216)	126
Not accurately determined .....	51,571	(847)	81	14,524	(207)	103	66,095	(1,054)	85
All .....	\$248,024	(3,751)	89%	\$ 78,282	(1,119)	103%	\$326,306	(4,870)	92%
D. Issue Ages 50 and Over									
Under \$10,000 .....	\$ 6,895	(122)	57%	\$ 1,365	(27)	113%	\$ 8,260	(149)	62%
\$ 10,000-\$19,999 .....	16,291	(354)	95	3,457	(74)	109	19,748	(428)	97
20,000- 29,999 .....	32,073	(596)	103	4,759	(93)	93	36,832	(689)	101
30,000- 49,999 .....	42,946	(719)	87	5,418	(90)	80	48,364	(809)	86
50,000- 99,999 .....	54,601	(726)	89	6,931	(92)	84	61,532	(818)	89
100,000 and over .....	36,153	(271)	87	3,543	(41)	56	39,696	(312)	83
Not accurately determined .....	70,788	(1,175)	87	7,157	(121)	80	77,945	(1,296)	86
All .....	\$259,747	(3,963)	88%	\$ 32,630	(538)	82%	\$292,377	(4,501)	88%
E. All Issue Ages									
Under \$10,000 .....	\$ 38,430	(758)	85%	\$ 8,233	(178)	81%	\$ 46,663	(936)	84%
\$ 10,000-\$19,999 .....	85,427	(1,901)	96	34,020	(710)	102	119,447	(2,611)	98
20,000- 29,999 .....	102,738	(1,899)	96	31,543	(546)	95	134,281	(2,445)	96
30,000- 49,999 .....	119,120	(1,823)	89	33,297	(436)	98	152,417	(2,259)	91
50,000- 99,999 .....	120,189	(1,444)	95	28,340	(308)	99	148,529	(1,752)	96
100,000 and over .....	69,444	(462)	99	17,526	(120)	110	86,970	(582)	101
Not accurately determined .....	155,954	(2,660)	86	35,074	(532)	101	191,028	(3,192)	88
All .....	\$691,302	(10,947)	92%	\$188,033	(2,830)	99%	\$879,335	(13,777)	93%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.

\* Fewer than 10 policies terminated by death.

TABLE 6  
 LARGE-AMOUNT ISSUES OF 1959-77  
 EXPERIENCE BETWEEN 1973 AND 1978 ANNIVERSARIES  
 BY ESTIMATED ANNUAL INCOME AT ISSUE AND CLASSIFICATION AMOUNT OF INSURANCE  
 ALL PLANS OF INSURANCE  
 Expected Deaths Based on 1973-78 Standard Ordinary Issues Experience  
 (Amounts Shown in \$1,000 Units)

Estimated Annual Income at Issue	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E
	\$50,000-\$99,999			\$100,000-\$199,999			\$200,000-\$499,999		
Under \$10,000 .....	22,873 (620)	\$ 24,759	92%	\$ 15,545 (248)	\$ 19,015	82%	\$ 5,673 (61)	\$ 7,532	75%
\$ 10,000-\$19,999 .....	50,177 (1,356)	49,909	101	56,283 (1,094)	58,904	96	11,883 (154)	12,050	99
20,000- 29,999 .....	27,771 (676)	27,010	103	72,903 (1,351)	75,201	97	31,656 (406)	34,394	92
30,000- 49,999 .....	13,966 (313)	14,708	95	61,225 (1,077)	67,718	90	63,908 (798)	71,559	89
50,000- 99,999 .....	5,966 (137)	5,446	110	29,325 (490)	30,662	96	70,486 (830)	75,392	93
100,000 and over .....	1,032 (22)	974	106	4,603 (67)	4,964	93	20,536 (219)	21,557	95
Not accurately determined	50,617 (1,275)	65,859	77	54,351 (1,051)	58,874	92	35,137 (399)	38,350	92
All .....	\$172,402 (4,399)	\$188,665	91%	\$294,235 (5,378)	\$315,337	93%	\$239,279 (2,867)	\$260,835	92%
	\$500,000-\$999,999			\$1,000,000 and Over			All Classification Groups		
Under \$10,000 .....	\$ 1,297 (5)	\$ 1,967	*	\$ 1,275 (2)	\$ 2,158	*	\$ 46,663 (936)	\$ 55,431	84%
\$ 10,000-\$19,999 .....	1,104 (7)	889	*	0 (0)	233	*	119,447 (2,611)	121,985	98
20,000- 29,999 .....	1,951 (12)	3,099	63%	0 (0)	694	*	134,281 (2,445)	140,398	96
30,000- 49,999 .....	9,518 (65)	11,068	86	3,800 (6)	3,174	*	152,417 (2,259)	168,227	91
50,000- 99,999 .....	34,360 (258)	30,144	114	8,142 (36)	13,812	59%	148,279 (1,751)	155,456	95
100,000 and over .....	23,803 (160)	21,943	108	36,996 (114)	36,913	100	86,970 (582)	86,351	101
Not accurately determined	13,568 (94)	13,380	101	7,609 (30)	11,359	67	161,282 (2,849)	187,821	86
All .....	\$85,601 (601)	\$82,489	104%	\$57,822 (188)	\$68,343	85%	\$849,339 (13,433)	\$915,669	93%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.

\* Fewer than 10 policies terminated by death.

*Experience by Reinsurance Status*

The current study was compiled with a coding for reinsurance status. Companies were asked to identify policies that were issued standard that would not have been issued standard without the reinsurance. These policies were excluded from the large-amount study but were tabulated separately. The mortality ratio on these policies was only 12 percent, but the exposure was very small and the results are not meaningful (only 10 policies terminated by death).

*Experience in Canada*

The current study was compiled with a coding to indicate whether the policies were issued in Canada or the United States. Although many of the contributing companies were not able to make this distinction, the Canadian business that was identified produced a mortality ratio of 125 percent compared with the overall ratio for the study of 92 percent. The result for Canada was based on only 81 policies terminated by death. There was a larger proportion of term insurance in the Canadian business—55 percent compared with 30 percent for the United States and Canada combined. However, in contrast to the combined experience, the Canadian mortality ratio was higher on permanent insurance than on term insurance—131 percent versus 117 percent.

The purpose of the separation into United States and Canadian business is to be consistent with the Standard Ordinary insurance study for all amounts. A few years ago the Standard Ordinary insurance study for all amounts was changed to include United States experience only. Eventually the large-amount study will be on this basis also.

*Comparison with Previous Studies (Tables 7 and 8)*

For permanent plans the large-amount experience between 1973 and 1978 anniversaries, relative to all-amounts experience, was about the same as the last study. For term plans the overall ratios were higher than in the last study but were more in line with those for earlier studies. Historic ratios of large-amount experience to corresponding Standard Ordinary experience on policies for all amounts are shown in Table 7. (In this table, the ratios for the period 1963–68, which were originally based on the 1958–63 Experience Table, were increased by 4 percent to approximate the relationship to the 1963–68 Standard Ordinary experience.) The overall mortality ratio for all plans has stayed in the 88–94 percent range since the large-amount study was begun in 1941.

Tables B, C, and D of the Appendix show expected deaths and mortality ratios calculated on the basis of the 1958–63 Standard Ordinary Experi-

TABLE 7

COMPARISON OF MORTALITY RATIOS DURING THE FIRST TWENTY-FIVE POLICY YEARS ON LARGE-AMOUNT ISSUES OF 1934-77  
EXPERIENCE BETWEEN 1941 AND 1978 ANNIVERSARIES BY AGE AT ISSUE, DURATION, CLASSIFICATION AMOUNT, AND PLAN OF INSURANCE  
Expected Deaths Based on Corresponding Standard Ordinary Issues Experience\*  
Male and Female Lives Combined

	PERMANENT PLANS							TERM PLANS							ALL PLANS							
	1941-48	1948-53	1953-58	1958-63	1963-68*	1968-73	1973-78	1941-48	1948-53	1953-58	1958-63	1963-68*	1968-73	1973-78	1941-48	1948-53	1953-58	1958-63	1963-68*	1968-73	1973-78	
Sex:																						
Male .....	†	†	91%	96%	93%	92%	94%	‡	‡	114%	106%	102%	90%	100%	†	†	94%	97%	95%	91%	95%	
Female .....	†	†	58	61	56	60	63	‡	‡	‡	46	35	81	76	†	†	59	60	55	63	65	
Ages at issue:																						
0-9 .....	†	†	‡	‡	145%	143%	159%	†	†	†	‡	‡	‡	‡	†	†	†	‡	145%	145%	158%	
10-39 .....	100%	110%	97%	110%	105	101	98	168%	107%	136%	123%	101%	92%	107%	108%	109%	103%	112%	105	99	100	
40-49 .....	89	90	91	95	91	88	89	107	94	117	102	103	88	101	92	90	96	96	93	88	91	
50 and over .....	78	78	83	83	82	82	88	91	72	102	92	92	89	79	79	77	85	84	83	83	87	
Policy years:																						
1-2 .....	90%	98%	75%	93%	95%	88%	96%	81%	83%	126%	83%	94%	96%	96%	89%	95%	85%	92%	95%	90%	96%	
3-5 .....	95	98	89	96	91	85	91	139	103	112	126	102	90	98	101	99	94	101	93	87	93	
6-10 .....	84	90	97	96	90	95	91	109	82	119	105	96	83	105	87	89	101	97	92	93	93	
11-15 .....	78	81	86	92	90	89	88	105	85	110	111	113	93	99	80	81	89	95	93	89	90	
16-25 .....	‡	84	89	88	89	85	91	‡	104	128	88	94	89	92	‡	86	93	88	90	86	91	
Classification amount:																						
\$ 50,000-\$ 99,999 .....	91%	89%	92%	96%	94%	91%	89%	118%	104%	119%	102%	108%	102%	101%	95%	91%	96%	97%	97%	93%	91%	
100,000- 199,999 .....	90	85	94	93	88	88	90	100	86	113	100	96	84	98	91	85	97	94	90	87	92	
200,000- 499,999 .....	89	94	85	89	89	92	92	128	80	119	96	96	85	94	93	92	90	90	91	91	92	
500,000 and over .....	61	80	75	94	90	82	91	94	‡	120	151	105	92	107	64	81	80	101	93	84	94	
All .....	86%	88%	89%	93%	90%	89%	91%	112%	90%	116%	104%	100%	90%	98%	89%	88%	93%	94%	92%	89%	92%	

NOTE.—Mortality ratio in italics where 10-49 lives (policies for 1973-78) terminated by death.

\* Previously published 1963-68 large-amount mortality ratios were based on 1958-63 Standard Ordinary experience. To obtain an approximation for 1963-68 ratios based on 1963-68 Standard Ordinary experience, the ratios based on 1958-63 experience have been increased by 4%.

† Not available.

‡ Fewer than 10 lives (policies for 1973-78) terminated by death.

TABLE 8

COMPARISON OF MORTALITY RATIOS  
 EXPERIENCE BETWEEN 1958 AND 1978 ANNIVERSARIES  
 DURING THE FIRST TWENTY-FIVE POLICY YEARS ON LARGE-AMOUNT ISSUES OF 1934-77  
 BY AGE AT ISSUE, DURATION, CLASSIFICATION AMOUNT, AND PLAN OF INSURANCE  
 Expected Deaths Based on 1958-63 Standard Ordinary Issues Experience  
 (Amounts Shown in \$1,000 Units)

	PERMANENT PLANS				TERM PLANS				ALL PLANS			
	1958-63	1963-68	1968-73	1973-78	1958-63	1963-68	1968-73	1973-78	1958-63	1963-68	1968-73	1973-78
Sex:												
Male	96%	90%	83%	71%	106%	98%	82%	76%	97%	91%	83%	72%
Female	61	54	54	47	46	34	73	58	60	53	56	48
All	93%	87%	80%	68%	104%	96%	82%	76%	94%	88%	80%	69%
Age at issue:												
0-9	*	140%	142%	150%	*	*	*	*	*	139%	114%	148%
10-19	111%	108	125	100	*	*	*	*	109%	111	118	98
20-29	130	114	108	101	196%	113%	96%	99%	138	114	105	101
30-39	108	99	92	72	117	95	86	86	109	99	91	76
40-49	95	87	79	67	102	99	80	76	96	89	79	69
50-59	82	77	71	65	92	95	81	56	83	79	72	64
60-69	85	83	78	60	88	50	66	55	85	82	77	60
70 and over	*	142	78	63	*	*	*	*	*	142	76	62
All	93%	87%	80%	68%	104%	96%	82%	75%	94%	88%	80%	70%
Policy years:												
1-2	93%	91%	81%	71%	83%	90%	90%	77%	92%	91%	84%	73%
3-5	96	87	76	65	126	98	82	76	101	89	77	68
6-10	96	87	86	68	105	92	75	79	97	88	84	70
11-15	92	87	80	66	111	109	84	74	95	90	81	67
16-20	85	85	76	69	87	92	81	70	86	86	77	69
21-25	92	88	80	71	89	88	79	72	91	88	80	71
All	93%	87%	80%	68%	104%	96%	82%	76%	94%	88%	80%	69%
Classification amount:												
\$ 50,000-\$ 99,999	96%	90%	82%	67%	102%	104%	94%	78%	97%	93%	85%	69%
100,000- 199,999	93	85	80	68	100	92	76	76	94	86	79	70
200,000- 499,999	89	86	83	69	96	92	77	72	90	87	82	69
500,000 and over	94	87	73	67	151	101	83	80	101	89	75	70
All	93%	87%	80%	68%	104%	96%	82%	76%	94%	88%	80%	69%

NOTE.—Mortality ratio in italics where 10-49 lives (policies for 1973-78) terminated by death.

\* Fewer than 10 lives (policies for 1973-78) terminated by death.

ence Table, the 1973–78 Standard Ordinary Experience Table, and the 1965–70 Select and Ultimate Basic Tables. Table 8 summarizes the experience of the last three studies plus the current study using a common basis (the 1958–63 Experience Table for Standard Ordinary issues) for all of the expected deaths in each of the studies. Table 8 shows the absolute improvement in large-amount mortality that has been experienced. For permanent plans there has been a 12 percentage point reduction in the overall mortality ratio compared with the last study, and for term plans there has been a 6 percentage point reduction.

*Experience by Cause of Death (Table 9)*

The overall experience by cause of death is presented in Table 9. Data on causes of death are shown in detail by issue age in Table G and by policy year in Table H of the Appendix. For this purpose, the expected deaths for the first fifteen policy years were distributed by policy year by cause of death on the basis of the corresponding distribution of actual deaths on Standard Ordinary medically examined issues for all amounts during the period between 1972 and 1977 anniversaries. For policy years sixteen and over, this expected distribution by causes of death was based on the corresponding 1972–77 ultimate experience on medical and nonmedical issues combined.

Table 9 shows that for large-amount term insurance plans the highest ratio was for accidents and homicides—154 percent. Suicide was the next highest ratio—116 percent. Table 9 also shows that for large-amount permanent plans, the highest ratio was malignant neoplasms—140 percent. The mortality ratio for suicides was only 56 percent.

Motor vehicle and aviation accidental deaths continue to account for the majority of the total large-amount accidental deaths. Table 10 shows the number of deaths from these causes, as well as the percentages of total deaths from accidents and homicides represented by each, in the current and prior studies.

Public Health Service data indicate that fatalities due to motor vehicle accidents accounted for 47 percent of all accidental deaths in the general population of the United States during 1973–78. The corresponding figure for the large-amount experience was only 37 percent. In contrast, aviation accidents accounted for 23 percent of all accidental deaths in the large-amount experience, compared with less than 2 percent in the general population.

Deaths due to heart and circulatory diseases accounted for the greatest number of policies (38 percent) and amounts (35 percent). The aggregate mortality ratio for this cause group was 15 percentage points higher than



**TABLE 9**  
**LARGE-AMOUNT ISSUES OF 1949-77**  
**EXPERIENCE BETWEEN 1973 AND 1978 ANNIVERSARIES**  
**BY CAUSE OF DEATH**

Expected Deaths Based on 1973-78 Standard Ordinary Issues Experience  
(Amounts Shown in \$1,000 Units)

Cause of Death	Committee 1970 Code	Number of Deaths	Proportion of All Deaths	Actual Claims	Expected Claims	A-E
Permanent Plans						
Tuberculosis	01-02	4	0%	\$ 204	\$ 180	*
Malignant neoplasms	18-33	4,308	28	253,231	180,873	140%
Diabetes mellitus	37	66	0	3,277	9,265	35
Cerebrovascular diseases	53	760	5	39,552	68,001	58
Heart and circulatory diseases	48-52, 54-55	6,104	39	316,794	294,671	108
Pneumonia and influenza	56-57	203	1	9,309	47,336	20
Accidents and homicides	88-96, 98	1,571	10	112,822	108,035	104
Suicide	97	573	4	33,628	60,326	56
All other causes and unknown <sup>+</sup>	Residual	2,045	13	112,736	201,121	56
All causes		15,634	100%	\$ 881,553	\$ 969,808	91%
Term Plans						
Tuberculosis	01-02	1	0%	\$ 25	\$ 23	*
Malignant neoplasms	18-33	830	24	47,257	44,631	106%
Diabetes mellitus	37	13	0	628	1,094	57
Cerebrovascular diseases	53	139	4	7,808	10,648	73
Heart and circulatory diseases	48-52, 54-55	1,103	33	60,369	58,691	103
Pneumonia and influenza	56-57	29	1	1,600	7,218	22
Accidents and homicides	88-96, 98	612	18	49,265	31,941	154
Suicide	97	237	7	17,265	14,892	116
All other causes and unknown <sup>‡</sup>	Residual	425	13	26,361	44,696	59
All causes		3,389	100%	\$ 210,578	\$ 213,834	98%
All Plans						
Tuberculosis	01-02	5	0%	\$ 229	\$ 202	*
Malignant neoplasms	18-33	5,138	27	300,488	225,501	133%
Diabetes mellitus	37	79	0	3,905	10,362	38
Cerebrovascular diseases	53	899	5	47,360	78,652	60
Heart and circulatory diseases	48-52, 54-55	7,207	38	377,163	353,357	107
Pneumonia and influenza	56-57	232	1	10,909	54,556	20
Accidents and homicides	88-96, 98	2,183	11	162,087	139,982	116
Suicide	97	810	4	50,893	75,223	68
All other causes and unknown <sup>§</sup>	Residual	2,470	13	139,097	245,807	57
All causes		19,023	100%	\$1,092,131	\$1,183,642	92%

NOTE.—Mortality ratio in italics where 10-49 policies terminated by death.

\* Fewer than 10 policies terminated by death.

† Includes 1 war death for \$59,000.

‡ Includes 2 war deaths for \$331,000.

§ Includes 3 war deaths for \$390,000.

that for all causes combined. The mortality was slightly higher on permanent plans than on term plans. Malignant neoplasms were the second leading cause of death, accounting for 27 percent by number of deaths and 28 percent by amount. The mortality ratio of 133 percent was 41 percentage points higher than the aggregate. The malignant neoplasm mortality ratios were 140 percent for permanent plans and 106 percent for term plans. As shown in Table H of the Appendix, the ratios increase sharply with duration.

TABLE 10  
MOTOR VEHICLE AND AVIATION ACCIDENT DEATHS  
INCLUDED IN ACCIDENTS AND HOMICIDES

EXPERIENCE PERIOD	MOTOR VEHICLE ACCIDENTAL DEATHS		AVIATION ACCIDENTAL DEATHS		MOTOR VEHICLE AND AVIATION ACCIDENTAL DEATHS	
	Number	Percent of All Accidents and Homicides	Number	Percent of All Accidents and Homicides	Number	Percent of All Accidents and Homicides
1948-53 .....	67	35%	45	23%	112	58%
1953-58 .....	123	45	47	17	170	62
1958-63 .....	242	39	165	26	407	65
1963-68 .....	359	38	221	23	580	61
1968-73 .....	514	37	266	19	780	56
1973-78 .....	693*	32*	419*	19*	1,112*	51*

\* The 1973-78 figures are based on the number of policies terminated by these causes of death whereas the 1948-73 figures are based on the number of lives.

APPENDIX

TABLE A

CONTRIBUTING COMPANIES—1973-78 LARGE-AMOUNT STUDY

Company	Proportion of Permanent Insurance Exposures	Proportion of Term Insurance Exposures	Proportion of Total Exposures
Northwestern Mutual .....	15.05%	13.33%	14.54%
New York Life .....	12.71	18.34	14.38
Massachusetts Mutual .....	12.52	10.51	11.92
Equitable, N.Y. ....	12.25	8.72	11.20
Prudential .....	9.65	14.73	11.16
Connecticut General .....	7.08	4.42	6.29
Metropolitan .....	4.71	9.25	6.06
Mutual of New York .....	5.98	4.73	5.61
Mutual Benefit .....	6.24	2.94	5.26
Aetna .....	4.43	3.56	4.17
John Hancock .....	3.47	4.09	3.65
Penn Mutual .....	3.35	3.92	3.52
Provident Mutual .....	2.52	1.37	2.18
Western-Southern Life .....	0.03	0.07	0.05
Total .....	100.00%	100.00%	100.00%

TABLE B

LARGE-AMOUNT ISSUES OF 1949-77  
EXPERIENCE BETWEEN 1973 AND 1978 ANNIVERSARIES  
BY AGE AT ISSUE, POLICY YEAR, AND PLAN OF INSURANCE

Expected Deaths Based on  
(A) 1973-78 Standard Ordinary Issues Experience  
(B) 1958-63 Standard Ordinary Issues Experience  
(C) 1965-70 Basic Tables Select and Ultimate Experience  
(Amounts Shown in \$1,000 Units)

## PERMANENT PLANS

POLICY YEARS	ACTUAL CLAIMS		TABLE (A)		TABLE (B)		TABLE (C)	
			Expected Claims	A/E	Expected Claims	A/E	Expected Claims	A/E
Issue Ages 0-9								
1-2	\$ 422	(5)	\$ 300	*	\$ 456		\$ 806	-
3-5	782	(9)	237	*	316		345	-
6-10	250	(4)	336	*	311		352	-
11-15	315	(5)	307	*	243		300	-
16-20	578	(11)	243	<i>238%</i>	203	<i>285%</i>	236	<i>245%</i>
21-25	70	(2)	96	*	87		98	-
All	\$ 2,417	(36)	\$ 1,519	<i>159%</i>	\$ 1,616	<i>150%</i>	\$ 2,138	<i>113%</i>
Issue Ages 10-19								
1-2	\$ 752	(11)	\$ 660	<i>114%</i>	\$ 677	<i>111%</i>	\$ 646	<i>116%</i>
3-5	788	(11)	953	<i>83</i>	1,041	<i>76</i>	900	<i>88</i>
6-10	885	(17)	1,194	<i>74</i>	1,182	<i>75</i>	1,181	<i>75</i>
11-15	845	(16)	559	<i>151</i>	555	<i>152</i>	592	<i>143</i>
16-20	410	(9)	366	*	369	*	403	-
21-25	381	(7)	234	*	250	*	260	*
All	\$ 4,061	(71)	\$ 3,966	<i>102%</i>	\$ 4,073	<i>100%</i>	\$ 3,983	<i>102%</i>
Issue Ages 20-29								
1-2	\$ 6,268	(89)	\$ 6,129	<i>102%</i>	\$ 6,200	<i>101%</i>	\$ 6,167	<i>102%</i>
3-5	10,830	(166)	8,085	<i>134</i>	9,162	<i>118</i>	8,763	<i>124</i>
6-10	8,804	(167)	8,101	<i>109</i>	9,545	<i>92</i>	8,923	<i>99</i>
11-15	5,809	(124)	4,879	<i>119</i>	6,159	<i>94</i>	5,910	<i>98</i>
16-20	6,344	(147)	4,402	<i>144</i>	5,665	<i>112</i>	5,533	<i>115</i>
21-25	3,232	(100)	3,153	<i>103</i>	4,079	<i>79</i>	3,770	<i>86</i>
All	\$ 41,287	(793)	\$ 34,749	<i>119%</i>	\$ 40,809	<i>101%</i>	\$ 39,067	<i>106%</i>
Issue Ages 30-39								
1-2	\$ 13,555	(159)	\$ 16,442	<i>82%</i>	\$ 19,232	<i>70%</i>	\$ 19,250	<i>70%</i>
3-5	27,920	(394)	28,564	<i>98</i>	34,499	<i>81</i>	33,276	<i>84</i>
6-10	43,315	(706)	42,229	<i>103</i>	52,968	<i>82</i>	51,180	<i>85</i>
11-15	35,197	(769)	37,662	<i>93</i>	51,660	<i>68</i>	47,843	<i>74</i>
16-20	38,729	(894)	42,239	<i>92</i>	58,136	<i>67</i>	53,486	<i>72</i>
21-25	25,829	(750)	29,686	<i>87</i>	38,089	<i>68</i>	35,727	<i>72</i>
All	\$ 184,545	(3,672)	\$ 196,822	<i>94%</i>	\$ 254,583	<i>72%</i>	\$ 240,761	<i>77%</i>

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.

\* Fewer than 10 policies terminated by death.

TABLE B—Continued

## PERMANENT PLANS—Continued

POLICY YEARS	ACTUAL CLAIMS		TABLE (A)		TABLE (B)		TABLE (C)	
			Expected Claims	A/E	Expected Claims	A/E	Expected Claims	A/E
Issue Ages 40-49								
1-2 .....	\$ 25,236	(256)	\$ 25,819	98%	\$ 34,667	73%	\$ 32,568	77%
3-5 .....	48,160	(565)	53,811	89	71,166	68	66,480	72
6-10 .....	73,763	(1,048)	84,993	87	112,329	66	109,208	68
11-15 .....	61,414	(1,128)	72,093	85	96,187	64	93,011	66
16-20 .....	68,696	(1,415)	73,734	93	99,494	69	94,275	73
21-25 .....	43,708	(1,206)	49,881	88	62,090	70	57,822	76
All ...	\$ 320,977	(5,618)	\$ 360,331	89%	\$ 475,933	67%	\$ 453,365	71%
Issue Ages 50-59								
1-2 .....	\$ 24,307	(212)	\$ 22,819	107%	\$ 34,389	71%	\$ 30,688	79%
3-5 .....	36,760	(490)	43,382	85	67,290	55	58,391	63
6-10 .....	59,533	(841)	66,859	89	95,100	63	88,505	67
11-15 .....	47,964	(825)	54,661	88	72,555	66	68,897	70
16-20 .....	53,784	(1,119)	57,754	93	76,658	70	73,298	73
21-25 .....	35,210	(734)	39,258	90	47,452	74	45,343	78
All ...	\$ 257,558	(4,221)	\$ 284,732	90%	\$ 393,443	65%	\$ 365,123	71%
Issue Ages 60-69								
1-2 .....	\$ 6,545	(70)	\$ 7,968	82%	\$ 11,668	56%	\$ 12,175	54%
3-5 .....	9,505	(130)	13,208	72	20,066	47	20,899	45
6-10 .....	16,693	(242)	19,341	86	25,678	65	26,068	64
11-15 .....	14,574	(243)	18,245	80	23,093	63	22,381	65
16-20 .....	12,495	(293)	14,989	83	19,711	63	19,410	64
21-25 .....	5,962	(160)	7,909	75	9,429	63	9,053	66
All ...	\$ 65,774	(1,138)	\$ 81,660	81%	\$ 109,646	60%	\$ 109,986	60%
Issue Ages 70 and Over								
1-2 .....	\$ 585	(9)	\$ 908	*	\$ 1,020	*	\$ 903	*
3-5 .....	1,322	(19)	1,612	82%	1,361	97%	1,631	81%
6-10 .....	1,603	(29)	1,924	83	2,679	60	2,807	57
11-15 .....	1,389	(26)	1,215	114	2,321	60	1,793	77
16-20 .....	25	(1)	250	*	342	*	268	*
21-25 .....	10	(1)	120	*	153	*	121	*
All ...	\$ 4,934	(85)	\$ 6,029	82%	\$ 7,875	63%	\$ 7,524	66%
All Issue Ages								
1-2 .....	\$ 77,670	(811)	\$ 81,044	96%	\$ 108,309	72%	\$ 103,203	75%
3-5 .....	136,067	(1,784)	149,850	91	204,901	66	190,685	71
6-10 .....	204,846	(3,054)	224,976	91	299,793	68	288,226	71
11-15 .....	167,507	(3,136)	189,623	88	252,772	66	240,727	70
16-20 .....	181,061	(3,889)	193,977	93	260,577	69	246,911	73
21-25 .....	114,402	(2,960)	130,337	88	161,628	71	152,195	75
All ...	\$ 881,553	(15,634)	\$ 969,808	91%	\$1,287,979	68%	\$1,221,946	72%

TABLE B—Continued

## TERM PLANS

POLICY YEARS	ACTUAL CLAIMS		TABLE (A)		TABLE (B)		TABLE (C)	
			Expected Claims	A/E	Expected Claims	A/E	Expected Claims	A/E
Issue Ages 0-09								
1-2 .....	\$ 0	(0)	\$ 1	*	\$ 2	*	\$ 3	*
3-5 .....	0	(0)	3	*	4	*	5	*
6-10 .....	0	(0)	2	*	2	*	2	*
11-15 .....	0	(0)	5	*	4	*	4	*
16-20 .....	0	(0)	4	*	3	*	4	*
21-25 .....	0	(0)	0	*	0	*	0	*
All ...	\$ 0	(0)	\$ 15	*	\$ 15	*	\$ 17	*
Issue Ages 10-19								
1-2 .....	\$ 100	(1)	\$ 104	*	\$ 97	*	\$ 98	*
3-5 .....	36	(1)	97	*	96	*	91	*
6-10 .....	50	(1)	51	*	51	*	51	*
11-15 .....	0	(0)	22	*	23	*	25	*
16-20 .....	0	(0)	11	*	12	*	13	*
21-25 .....	0	(0)	1	*	1	*	1	*
All ...	\$ 186	(3)	\$ 287	*	\$ 280	*	\$ 279	*
Issue Ages 20-29								
1-2 .....	\$ 6,515	(63)	\$ 5,471	119%	\$ 5,594	116%	\$ 5,481	119%
3-5 .....	4,152	(64)	3,808	109	4,331	96	4,105	101
6-10 .....	2,126	(50)	2,467	86	2,903	73	2,719	78
11-15 .....	1,261	(25)	916	138	1,158	109	1,111	114
16-20 .....	577	(13)	517	112	670	86	652	88
21-25 .....	360	(14)	358	101	465	77	428	84
All ...	\$ 14,991	(229)	\$ 13,536	111%	\$ 15,120	99%	\$ 14,497	103%
Issue Ages 30-39								
1-2 .....	\$ 16,505	(178)	\$ 17,516	94%	\$ 20,375	81%	\$ 20,604	80%
3-5 .....	18,937	(255)	17,084	111	20,659	92	19,904	95
6-10 .....	14,965	(247)	14,537	103	18,189	82	17,601	85
11-15 .....	9,123	(197)	8,218	111	11,252	81	10,433	87
16-20 .....	5,982	(169)	5,307	113	7,303	82	6,721	89
21-25 .....	5,164	(132)	3,782	137	4,838	107	4,548	114
All ...	\$ 70,676	(1,178)	\$ 66,443	106%	\$ 82,615	86%	\$ 79,810	89%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.

\* Fewer than 10 policies terminated by death.

TABLE B—Continued

## TERM PLANS—Continued

POLICY YEARS	ACTUAL CLAIMS		TABLE (A)		TABLE (B)		TABLE (C)	
			Expected Claims	A/E	Expected Claims	A/E	Expected Claims	A/E
Issue Ages 40-49								
1-2 .....	\$ 18,236	(173)	\$ 16,573	110%	\$ 22,155	82%	\$ 20,925	87%
3-5 .....	20,616	(268)	21,152	97	28,078	73	26,252	79
6-10 .....	24,705	(355)	21,156	117	27,969	88	27,159	91
11-15 .....	11,001	(237)	12,993	85	17,361	63	16,778	66
16-20 .....	7,857	(172)	8,521	92	11,485	68	10,876	72
21-25 .....	6,148	(147)	7,112	86	8,853	69	8,243	75
All ...	\$ 88,563	(1,352)	\$ 87,507	101%	\$ 115,901	76%	\$ 110,233	80%
Issue Ages 50-59								
1-2 .....	\$ 5,019	(62)	\$ 7,637	66%	\$ 11,404	44%	\$ 10,247	49%
3-5 .....	7,673	(121)	9,479	81	14,585	53	12,784	60
6-10 .....	8,223	(143)	9,102	90	13,015	63	12,112	68
11-15 .....	6,032	(108)	6,224	97	8,260	73	7,849	77
16-20 .....	3,114	(80)	4,525	69	6,018	52	5,743	54
21-25 .....	2,064	(54)	3,622	57	4,382	47	4,180	49
All ...	\$ 32,125	(568)	\$ 40,589	79%	\$ 57,664	56%	\$ 52,915	61%
Issue Ages 60-69								
1-2 .....	\$ 113	(4)	\$ 869	*	\$ 1,274	*	\$ 1,294	*
3-5 .....	702	(11)	1,090	64%	1,688	42%	1,724	41%
6-10 .....	782	(14)	1,186	66	1,593	49	1,606	49
11-15 .....	1,460	(22)	1,061	138	1,348	108	1,299	112
16-20 .....	680	(7)	416	*	547	*	546	*
21-25 .....	0	(0)	321	*	375	*	365	*
All ...	\$ 3,737	(58)	\$ 4,943	76%	\$ 6,825	55%	\$ 6,835	55%
Issue Ages 70 and Over								
1-2 .....	\$ 0	(0)	\$ 46	*	\$ 52	*	\$ 45	*
3-5 .....	0	(0)	239	*	198	*	246	*
6-10 .....	0	(0)	65	*	66	*	83	*
11-15 .....	300	(1)	120	*	214	*	166	*
16-20 .....	0	(0)	0	*	0	*	0	*
21-25 .....	0	(0)	44	*	57	*	44	*
All ...	\$ 300	(1)	\$ 513	*	\$ 588	*	\$ 585	*
All Issue Ages								
1-2 .....	\$ 46,488	(481)	\$ 48,217	96%	\$ 60,953	76%	\$ 58,697	79%
3-5 .....	52,116	(720)	52,953	98	69,639	75	65,111	80
6-10 .....	50,851	(810)	48,565	105	63,788	80	61,334	83
11-15 .....	29,177	(590)	29,558	99	39,621	74	37,665	77
16-20 .....	18,210	(441)	19,301	94	26,037	70	24,555	74
21-25 .....	13,736	(347)	15,240	90	18,970	72	17,809	77
All ...	\$ 210,578	(3,389)	\$ 213,834	98%	\$ 279,008	75%	\$ 265,171	79%

TABLE B—Continued

ALL PLANS

POLICY YEARS	ACTUAL CLAIMS		TABLE (A)		TABLE (B)		TABLE (C)	
			Expected Claims	A/E	Expected Claims	A/E	Expected Claims	A/E
Issue Ages 0-99								
1-2 .....	\$ 422	(5)	\$ 301	*	\$ 458	*	\$ 809	*
3-5 .....	782	(9)	240	*	320	*	350	*
6-10 .....	250	(4)	337	*	313	*	354	*
11-15 .....	315	(5)	312	*	247	*	304	*
16-20 .....	578	(11)	247	234%	206	281%	240	241%
21-25 .....	70	(2)	96	*	88	*	98	*
All ...	\$ 2,417	(36)	\$ 1,533	158%	\$ 1,631	148%	\$ 2,155	112%
Issue Ages 10-19								
1-2 .....	\$ 852	(12)	\$ 765	111%	\$ 774	110%	\$ 745	114%
3-5 .....	824	(12)	1,050	78	1,137	72	991	83
6-10 .....	935	(18)	1,245	75	1,233	76	1,232	76
11-15 .....	845	(16)	581	145	578	146	617	137
16-20 .....	410	(9)	377	*	380	*	416	*
21-25 .....	381	(7)	235	*	251	*	262	*
All ...	\$ 4,247	(74)	\$ 4,253	100%	\$ 4,353	98%	\$ 4,262	100%
Issue Ages 20-29								
1-2 .....	\$ 12,783	(152)	\$ 11,600	110%	\$ 11,793	108%	\$ 11,648	110%
3-5 .....	14,982	(230)	11,892	126	13,493	111	12,868	116
6-10 .....	10,930	(217)	10,568	103	12,448	88	11,642	94
11-15 .....	7,070	(149)	5,795	122	7,317	97	7,021	101
16-20 .....	6,921	(160)	4,919	141	6,334	109	6,185	112
21-25 .....	3,592	(114)	3,511	102	4,544	79	4,198	86
All ...	\$ 56,278	(1,022)	\$ 48,285	117%	\$ 55,930	101%	\$ 53,564	105%
Issue Ages 30-39								
1-2 .....	\$ 30,060	(337)	\$ 33,958	89%	\$ 39,607	76%	\$ 39,854	75%
3-5 .....	46,857	(649)	45,647	103	55,157	85	53,179	88
6-10 .....	58,280	(953)	56,767	103	71,157	82	68,781	85
11-15 .....	44,320	(966)	45,880	97	62,912	70	58,276	76
16-20 .....	44,711	(1,063)	47,546	94	65,438	68	60,207	74
21-25 .....	30,993	(882)	33,468	93	42,926	72	40,274	77
All ...	\$ 255,221	(4,850)	\$ 263,265	97%	\$ 337,198	76%	\$ 320,572	80%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.

\* Fewer than 10 policies terminated by death.



TABLE B—Continued

## ALL PLANS—Continued

POLICY YEARS	ACTUAL CLAIMS		TABLE (A)		TABLE (B)		TABLE (C)	
			Expected Claims	A/E	Expected Claims	A/E	Expected Claims	A/E
Issue Ages 40-49								
1-2 .....	\$ 43,472	(429)	\$ 42,391	103%	\$ 56,822	77%	\$ 53,493	81%
3-5 .....	68,776	(833)	74,964	92	99,244	69	92,732	74
6-10 .....	98,468	(1,403)	106,149	93	140,298	70	136,368	72
11-15 .....	72,415	(1,365)	85,086	85	113,548	64	109,790	66
16-20 .....	76,553	(1,587)	82,255	93	110,979	69	105,151	73
21-25 .....	49,856	(1,353)	56,994	87	70,943	70	66,065	75
All ...	\$ 409,540	(6,970)	\$ 447,838	91%	\$ 591,834	69%	\$ 563,598	73%
Issue Ages 50-59								
1-2 .....	\$ 29,326	(274)	\$ 30,456	96%	\$ 45,793	64%	\$ 40,935	72%
3-5 .....	44,433	(611)	52,861	84	81,875	54	71,174	62
6-10 .....	67,756	(984)	75,960	89	108,116	63	100,617	67
11-15 .....	53,996	(933)	60,885	89	80,815	67	76,746	70
16-20 .....	56,898	(1,199)	62,279	91	82,676	69	79,042	72
21-25 .....	37,274	(788)	42,880	87	51,833	72	49,523	75
All ...	\$ 289,683	(4,789)	\$ 325,321	89%	\$ 451,107	64%	\$ 418,038	69%
Issue Ages 60-69								
1-2 .....	\$ 6,658	(74)	\$ 8,837	75%	\$ 12,942	51%	\$ 13,469	49%
3-5 .....	10,207	(141)	14,298	71	21,754	47	22,624	45
6-10 .....	17,475	(256)	20,527	85	27,271	64	27,674	63
11-15 .....	16,034	(265)	19,306	83	24,441	66	23,680	68
16-20 .....	13,175	(300)	15,405	86	20,259	65	19,956	66
21-25 .....	5,962	(160)	8,229	72	9,803	61	9,418	63
All ...	\$ 69,511	(1,196)	\$ 86,603	80%	\$ 116,471	60%	\$ 116,820	60%
Issue Ages 70 and Over								
1-2 .....	\$ 585	(9)	\$ 953	*	\$ 1,071	*	\$ 948	*
3-5 .....	1,322	(19)	1,851	71%	1,559	85%	1,877	70%
6-10 .....	1,603	(29)	1,989	81	2,745	58	2,891	55
11-15 .....	1,689	(27)	1,334	127	2,535	67	1,959	86
16-20 .....	25	(1)	250	*	342	*	268	*
21-25 .....	10	(1)	164	*	210	*	165	*
All ...	\$ 5,234	(86)	\$ 6,542	80%	\$ 8,463	62%	\$ 8,108	65%
All Issue Ages								
1-2 .....	\$ 124,158	(1,292)	\$ 129,261	96%	\$ 169,261	73%	\$ 161,900	77%
3-5 .....	188,183	(2,504)	202,803	93	274,540	69	255,796	74
6-10 .....	255,697	(3,864)	273,542	93	363,581	70	349,560	73
11-15 .....	196,684	(3,726)	219,181	90	292,393	67	278,392	71
16-20 .....	199,271	(4,330)	213,277	93	286,614	70	271,465	73
21-25 .....	128,138	(3,307)	145,577	88	180,598	71	170,004	75
All ...	\$1,092,131	(19,023)	\$1,183,642	92%	\$1,566,987	70%	\$1,487,117	73%

TABLE C

LARGE-AMOUNT ISSUES OF 1949-77  
EXPERIENCE BETWEEN 1973 AND 1978 ANNIVERSARIES  
BY CLASSIFICATION AMOUNT, AGE AT ISSUE, AND PLAN OF INSURANCE

Expected Deaths Based on  
(A) 1973-78 Standard Ordinary Issues Experience  
(B) 1958-63 Standard Ordinary Issues Experience  
(C) 1965-70 Basic Tables Select and Ultimate Experience  
(Amounts Shown in \$1,000 Units)

## PERMANENT PLANS

CLASSIFICATION AMOUNT	ACTUAL CLAIMS	TABLE (A)		TABLE (B)		TABLE (C)	
		Expected Claims	A/E	Expected Claims	A/E	Expected Claims	A/E
Issue Ages 0-99							
\$ 50,000-\$ 99,999	\$ 914 (22)	\$ 536	<i>171%</i>	\$ 509	<i>180%</i>	\$ 606	<i>151%</i>
100,000- 199,999	883 (12)	674	<i>131</i>	742	<i>119</i>	1,030	<i>86</i>
200,000- 499,999	620 (2)	198	*	219	*	288	*
500,000- 999,999	0 (0)	46	*	52	*	71	*
1,000,000 and over	0 (0)	19	*	24	*	29	*
All	\$ 2,417 (36)	\$ 1,473	<i>164%</i>	\$ 1,547	<i>156%</i>	\$ 2,224	<i>119%</i>
Issue Ages 10-19							
\$ 50,000-\$ 99,999	\$ 1,759 (43)	\$ 1,286	<i>137%</i>	\$ 1,313	<i>134%</i>	\$ 1,310	<i>134%</i>
100,000- 199,999	1,352 (17)	1,790	<i>76</i>	1,840	<i>73</i>	1,792	<i>75</i>
200,000- 499,999	750.0 (8)	548	*	567	*	548	*
500,000- 999,999	0 (0)	119	*	120	*	115	*
1,000,000 and over	0 (0)	100	*	104	*	100	*
All	\$ 3,861 (68)	\$ 3,843	<i>100%</i>	\$ 3,945	<i>98%</i>	\$ 3,864	<i>100%</i>
Issue Ages 20-29							
\$ 50,000-\$ 99,999	\$ 15,591 (429)	\$ 14,176	<i>110%</i>	\$ 17,086	<i>91%</i>	\$ 16,285	<i>96%</i>
100,000- 199,999	15,439 (274)	13,403	<i>115</i>	15,591	<i>99</i>	14,948	<i>103</i>
200,000- 499,999	6,935 (64)	4,277	<i>162</i>	4,968	<i>140</i>	4,743	<i>146</i>
500,000- 999,999	1,558 (8)	904	*	1,042	*	1,001	*
1,000,000 and over	600 (1)	643	*	725	*	698	*
All	\$ 40,123 (776)	\$ 33,404	<i>120%</i>	\$ 39,412	<i>102%</i>	\$ 37,675	<i>106%</i>
Issue Ages 30-39							
\$ 50,000-\$ 99,999	\$ 50,462 (1,501)	\$ 54,448	<i>93%</i>	\$ 71,264	<i>71%</i>	\$ 67,027	<i>75%</i>
100,000- 199,999	71,800 (1,505)	81,244	<i>88</i>	105,604	<i>68</i>	99,680	<i>72</i>
200,000- 499,999	43,066 (555)	42,686	<i>101</i>	54,632	<i>79</i>	51,905	<i>83</i>
500,000- 999,999	9,749 (67)	8,860	<i>110</i>	11,253	<i>87</i>	10,715	<i>91</i>
1,000,000 and over	6,308 (11)	6,231	<i>101</i>	7,868	<i>80</i>	7,510	<i>84</i>
All	\$ 181,385 (3,639)	\$ 193,468	<i>94%</i>	\$ 250,620	<i>72%</i>	\$ 236,838	<i>77%</i>

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.

\* Fewer than 10 policies terminated by death.

TABLE C—Continued  
PERMANENT PLANS—Continued

CLASSIFICATION AMOUNT	ACTUAL CLAIMS	TABLE (A)		TABLE (B)		TABLE (C)	
		Expected Claims	A/E	Expected Claims	A/E	Expected Claims	A/E
Issue Ages 40-49							
\$ 50,000-\$ 99,999 ..	\$ 65,801 (1,825)	\$ 77,101	85%	\$ 101,564	65%	\$ 96,771	68%
100,000- 199,999 ..	109,279 (2,247)	124,783	88	164,752	66	156,987	70
200,000- 499,999 ..	89,175 (1,183)	101,739	88	134,469	66	128,146	70
500,000- 999,999 ..	30,108 (242)	29,745	101	39,378	76	37,516	80
1,000,000 and over ..	19,490 (43)	21,037	93	27,847	70	26,494	74
All .....	\$ 313,853 (5,540)	\$ 354,405	89%	\$ 468,010	67%	\$ 445,914	70%
Issue Ages 50-59							
\$ 50,000-\$ 99,999 ..	\$ 46,015 (1,175)	\$ 53,802	86%	\$ 73,103	63%	\$ 68,350	67
100,000- 199,999 ..	79,303 (2,100)	84,869	93	116,094	68	108,209	73
200,000- 499,999 ..	76,578 (1,044)	84,861	90	117,515	65	108,966	70
500,000- 999,999 ..	26,987 (235)	30,059	90	41,987	64	38,828	70
1,000,000 and over ..	20,986 (89)	24,981	84	35,308	59	32,433	65
All .....	\$ 249,869 (4,143)	\$ 278,572	90%	\$ 384,007	65%	\$ 356,786	70%
Issue Ages 60-69							
\$ 50,000-\$ 99,999 ..	\$ 11,152 (290)	\$ 15,083	74%	\$ 19,875	56%	\$ 19,835	56%
100,000- 199,999 ..	20,267 (424)	23,716	85	31,613	64	31,580	64
200,000- 499,999 ..	20,669 (308)	24,847	83	33,376	62	33,455	62
500,000- 999,999 ..	7,764 (66)	8,252	94	11,190	69	11,298	69
1,000,000 and over ..	3,138 (14)	7,570	41	10,309	30	10,404	30
All .....	\$ 62,990 (1,102)	\$ 79,468	79%	\$ 106,362	59%	\$ 106,571	59%
Issue Ages 70 and Over							
\$ 50,000-\$ 99,999 ..	\$ 980 (21)	\$ 878	112%	\$ 1,294	76%	\$ 1,203	81%
100,000- 199,999 ..	1,484 (32)	1,574	94	2,153	69	2,020	73
200,000- 499,999 ..	1,305 (22)	1,737	75	2,287	57	2,177	60
500,000- 999,999 ..	700 (4)	853	*	1,095	*	1,048	*
1,000,000 and over ..	100 (1)	742	*	794	*	833	*
All .....	\$ 4,569 (80)	\$ 5,785	79%	\$ 7,623	60%	\$ 7,281	63%
All Issue Ages							
\$ 50,000-\$ 99,999 ..	\$ 192,674 (5,306)	\$ 217,311	89%	\$ 286,008	67%	\$ 271,386	71%
100,000- 199,999 ..	299,807 (6,111)	332,052	90	438,389	68	416,245	72
200,000- 499,999 ..	239,098 (3,186)	260,894	92	348,033	69	330,229	72
500,000- 999,999 ..	76,866 (622)	78,838	97	106,118	72	100,592	76
1,000,000 and over ..	50,622 (159)	61,323	83	82,979	61	78,499	64
All .....	\$ 859,067 (15,384)	\$ 950,417	90%	\$1,261,527	68%	\$1,196,951	72%

TABLE C—Continued

TERM PLANS

CLASSIFICATION AMOUNT	ACTUAL CLAIMS		TABLE (A)		TABLE (B)		TABLE (C)	
			Expected Claims	A/E	Expected Claims	A/E	Expected Claims	A/E
Issue Ages 0-09								
\$ 50,000-\$ 99,999	\$ 0	(0)	\$ 3	*	\$ 4	*	\$ 4	*
100,000- 199,999	0	(0)	6	*	6	*	7	*
200,000- 499,999	0	(0)	4	*	4	*	4	*
500,000- 999,999	0	(0)	0	*	0	*	0	*
1,000,000 and over	0	(0)	1	*	2	*	2	*
All	\$ 0	(0)	\$ 15	*	\$ 15	*	\$ 17	*
Issue Ages 10-19								
\$ 50,000-\$ 99,999	\$ 86	(2)	\$ 74	*	\$ 75	*	\$ 74	*
100,000- 199,999	0	(0)	119	*	115	*	115	*
200,000- 499,999	100	(1)	37	*	36	*	35	*
500,000- 999,999	0	(0)	22	*	21	*	21	*
1,000,000 and over	0	(0)	10	*	10	*	10	*
All	\$ 186	(3)	\$ 261	*	\$ 256	*	\$ 255	*
Issue Ages 20-29								
\$ 50,000-\$ 99,999	\$ 4,167	(108)	\$ 4,018	104%	\$ 4,711	88%	\$ 4,475	93%
100,000- 199,999	6,034	(88)	6,329	95	6,949	87	6,699	90
200,000- 499,999	1,985	(19)	1,740	114	1,915	104	1,826	109
500,000- 999,999	1,700	(3)	332	*	367	*	349	*
1,000,000 and over	0	(0)	173	*	189	*	182	*
All	\$ 13,886	(218)	\$ 12,591	110%	\$ 14,133	98%	\$ 13,530	103%
Issue Ages 30-39								
\$ 50,000-\$ 99,999	\$ 13,658	(389)	\$ 13,698	100%	\$ 17,520	78%	\$ 16,678	82%
100,000- 199,999	27,598	(515)	26,784	103	33,338	83	32,262	86
200,000- 499,999	18,159	(200)	16,229	112	19,954	91	19,353	94
500,000- 999,999	4,821	(20)	3,866	125	4,746	102	4,597	105
1,000,000 and over	3,131	(14)	2,951	106	3,626	86	3,503	89
All	\$ 67,367	(1,138)	\$ 63,528	106%	\$ 79,184	85%	\$ 76,393	88%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.

\* Fewer than 10 policies terminated by death.

TABLE C—Continued  
 TERM PLANS—Continued

CLASSIFICATION AMOUNT	ACTUAL CLAIMS		TABLE (A)		TABLE (B)		TABLE (C)	
			Expected Claims	A/E	Expected Claims	A/E	Expected Claims	A/E
Issue Ages 40-49								
\$ 50,000-\$ 99,999 ..	\$ 14,726	(400)	\$ 14,495	102%	\$ 19,134	77%	\$ 18,219	81%
100,000- 199,999 ..	27,248	(538)	29,030	94	38,424	71	36,586	74
200,000- 499,999 ..	22,838	(266)	25,288	90	33,500	68	31,852	72
500,000- 999,999 ..	11,980	(83)	8,519	141	11,291	106	10,734	112
1,000,000 and over ..	9,281	(32)	6,894	135	9,169	101	8,709	107
All .....	\$ 86,073	(1,319)	\$ 84,226	102%	\$ 111,518	77%	\$ 106,100	81%
Issue Ages 50-59								
\$ 50,000-\$ 99,999 ..	\$ 6,222	(171)	\$ 6,008	104%	\$ 8,345	75%	\$ 7,735	80%
100,000- 199,999 ..	11,861	(226)	11,336	105	15,918	75	14,682	81
200,000- 499,999 ..	9,335	(128)	11,973	78	17,042	55	15,628	60
500,000- 999,999 ..	2,511	(24)	4,894	51	6,957	36	6,376	39
1,000,000 and over ..	1,390	(9)	4,752	*	6,941	*	6,300	*
All .....	\$ 31,319	(558)	\$ 38,963	80%	\$ 55,203	57%	\$ 50,720	62%
Issue Ages 60-69								
\$ 50,000-\$ 99,999 ..	\$ 422	(14)	\$ 544	78%	\$ 740	57%	\$ 739	57%
100,000- 199,999 ..	945	(18)	1,261	75	1,704	55	1,700	56
200,000- 499,999 ..	820	(9)	1,386	*	1,876	*	1,866	*
500,000- 999,999 ..	500	(1)	493	*	705	*	710	*
1,000,000 and over ..	1,000	(15)	1,093	91	1,550	65	1,567	64
All .....	\$ 3,687	(57)	\$ 4,777	77%	\$ 6,575	56%	\$ 6,582	56%
Issue Ages 70 and Over								
\$ 50,000-\$ 99,999 ..	\$ 0	(0)	\$ 97	*	\$ 88	*	\$ 108	*
100,000- 199,999 ..	0	(0)	130	*	133	*	135	*
200,000- 499,999 ..	0	(0)	97	*	88	*	106	*
500,000- 999,999 ..	300	(1)	123	*	218	*	169	*
1,000,000 and over ..	0	(0)	66	*	61	*	67	*
All .....	\$ 300	(1)	\$ 513	*	\$ 588	*	\$ 585	*
All Issue Ages								
\$ 50,000-\$ 99,999 ..	\$ 39,281	(1,084)	\$ 38,936	101%	\$ 50,617	78%	\$ 48,032	82%
100,000- 199,999 ..	73,686	(1,385)	74,995	98	96,586	76	92,185	80
200,000- 499,999 ..	53,237	(623)	56,753	94	74,415	72	70,670	75
500,000- 999,999 ..	21,812	(132)	18,248	120	24,305	90	22,957	95
1,000,000 and over ..	14,802	(70)	15,941	93	21,548	69	20,339	73
All .....	\$ 202,818	(3,294)	\$ 204,874	99%	\$ 267,471	76%	\$ 254,182	80%

TABLE C—Continued

## ALL PLANS

CLASSIFICATION AMOUNT	ACTUAL CLAIMS		TABLE (A)		TABLE (B)		TABLE (C)	
			Expected Claims	A E	Expected Claims	A E	Expected Claims	A E
Issue Ages 0-09								
\$ 50,000-\$ 99,999	\$ 914	(22)	\$ 540	<i>169%</i>	\$ 513	<i>178%</i>	\$ 610	<i>150%</i>
100,000- 199,999	883	(12)	680	<i>130</i>	748	<i>118</i>	1,037	<i>85</i>
200,000- 499,999	620	(2)	202	*	222	*	292	*
500,000- 999,999	0	(0)	46	*	52	*	71	*
1,000,000 and over	0	(0)	20	*	26	*	31	*
All .....	\$ 2,417	(36)	\$ 1,487	<i>163%</i>	\$ 1,562	<i>155%</i>	\$ 2,040	<i>118%</i>
Issue Ages 10-19								
\$ 50,000-\$ 99,999	\$ 1,845	(45)	\$ 1,359	<i>136%</i>	\$ 1,388	<i>133%</i>	\$ 1,384	<i>133%</i>
100,000- 199,999	1,352	(17)	1,910	<i>71</i>	1,955	<i>69</i>	1,906	<i>71</i>
200,000- 499,999	850	(9)	585	*	603	*	583	*
500,000- 999,999	0	(0)	141	*	141	*	136	*
1,000,000 and over	0	(0)	110	*	114	*	110	*
All .....	\$ 4,047	(72)	\$ 4,105	<i>99%</i>	\$ 4,202	<i>96%</i>	\$ 4,120	<i>98%</i>
Issue Ages 20-29								
\$ 50,000-\$ 99,999	\$ 19,758	(537)	\$ 18,194	<i>109%</i>	\$ 21,798	<i>91%</i>	\$ 20,760	<i>95%</i>
100,000- 199,999	21,473	(362)	19,732	<i>109</i>	22,540	<i>95</i>	21,647	<i>99</i>
200,000- 499,999	8,920	(83)	6,018	<i>148</i>	6,884	<i>130</i>	6,569	<i>136</i>
500,000- 999,999	3,258	(11)	1,236	<i>264</i>	1,410	<i>231</i>	1,350	<i>241</i>
1,000,000 and over	600	(1)	816	*	914	*	880	*
All .....	\$ 54,009	(994)	\$ 45,995	<i>117%</i>	\$ 53,545	<i>101%</i>	\$ 51,205	<i>105%</i>
Issue Ages 30-39								
\$ 50,000-\$ 99,999	\$ 64,120	(1,890)	\$ 68,147	<i>94%</i>	\$ 88,784	<i>72%</i>	\$ 83,705	<i>77%</i>
100,000- 199,999	99,398	(2,020)	108,028	<i>92</i>	138,941	<i>72</i>	131,942	<i>75</i>
200,000- 499,999	61,225	(755)	58,914	<i>104</i>	74,586	<i>82</i>	71,259	<i>86</i>
500,000- 999,999	14,570	(87)	12,726	<i>114</i>	15,999	<i>91</i>	15,312	<i>95</i>
1,000,000 and over	9,439	(25)	9,182	<i>103</i>	11,493	<i>82</i>	11,012	<i>86</i>
All .....	\$ 248,752	(4,777)	\$ 256,996	<i>97%</i>	\$ 329,804	<i>75%</i>	\$ 313,230	<i>79%</i>

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.

\* Fewer than 10 policies terminated by death.

TABLE C—Continued

## ALL PLANS—Continued

CLASSIFICATION AMOUNT	ACTUAL CLAIMS	TABLE (A)		TABLE (B)		TABLE (C)	
		Expected Claims	A/E	Expected Claims	A/E	Expected Claims	A/E
Issue Ages 40-49							
\$ 50,000-\$ 99,999 ..	\$ 80,527 (2,225)	\$ 91,596	88%	\$ 120,699	67%	\$ 114,990	70%
100,000- 199,999 ..	136,527 (2,785)	153,813	89	203,176	67	193,573	71
200,000- 499,999 ..	112,013 (1,449)	127,026	88	167,969	67	159,998	70
500,000- 999,999 ..	42,088 (325)	38,265	110	50,669	83	48,250	87
1,000,000 and over ..	28,771 (75)	27,931	103	37,016	78	35,203	82
All .....	\$ 399,926 (6,859)	\$ 438,630	91%	\$ 579,528	69%	\$ 552,014	72%
Issue Ages 50-59							
\$ 50,000-\$ 99,999 ..	\$ 52,237 (1,346)	\$ 59,810	87%	\$ 81,448	64%	\$ 76,085	69%
100,000- 199,999 ..	91,164 (1,826)	96,205	95	132,012	69	122,890	74
200,000- 499,999 ..	85,913 (1,172)	96,834	89	134,557	64	124,594	69
500,000- 999,999 ..	29,498 (259)	34,953	84	48,944	60	45,204	65
1,000,000 and over ..	22,376 (98)	29,733	75	42,249	53	38,733	58
All .....	\$ 281,188 (4,701)	\$ 317,534	89%	\$ 439,210	64%	\$ 407,506	69%
Issue Ages 60-69							
\$ 50,000-\$ 99,999 ..	\$ 11,574 (304)	\$ 15,627	74%	\$ 20,615	56%	\$ 20,574	56%
100,000- 199,999 ..	21,212 (442)	24,977	85	33,317	64	33,280	64
200,000- 499,999 ..	21,489 (317)	26,233	82	35,252	61	35,321	61
500,000- 999,999 ..	8,264 (67)	8,745	94	11,895	69	12,008	69
1,000,000 and over ..	4,138 (29)	8,664	48	11,859	35	11,971	35
All .....	\$ 66,677 (1,159)	\$ 84,245	79%	\$ 112,937	59%	\$ 113,153	59%
Issue Ages 70 and Over							
\$ 50,000-\$ 99,999 ..	\$ 980 (21)	\$ 975	101%	\$ 1,381	71%	\$ 1,311	75%
100,000- 199,999 ..	1,484 (32)	1,704	87	2,286	65	2,154	69
200,000- 499,999 ..	1,305 (22)	1,835	71	2,375	55	2,283	57
500,000- 999,999 ..	1,000 (5)	976	*	1,313	*	1,217	*
1,000,000 and over ..	100 (1)	808	*	855	*	900	*
All .....	\$ 4,869 (81)	\$ 6,298	77%	\$ 8,211	59%	\$ 7,865	62%
All Issue Ages							
\$ 50,000-\$ 99,999 ..	\$ 231,955 (6,390)	\$ 256,247	91%	\$ 336,625	69%	\$ 319,418	73%
100,000- 199,999 ..	373,493 (7,496)	407,048	92	534,975	70	508,430	73
200,000- 499,999 ..	292,335 (3,809)	317,647	92	422,448	69	400,899	73
500,000- 999,999 ..	98,678 (754)	97,086	102	130,423	76	123,548	80
1,000,000 and over ..	65,424 (229)	77,263	85	104,527	63	98,838	66
All .....	\$1,061,885 (18,678)	\$1,155,291	92%	\$1,528,998	69%	\$1,451,133	73%

TABLE D  
 LARGE-AMOUNT ISSUES OF 1949-77  
 EXPERIENCE BETWEEN 1973 AND 1978 ANNIVERSARIES  
 BY CLASSIFICATION AMOUNT, POLICY YEAR, AND PLAN OF INSURANCE  
 Expected Deaths Based on  
 (A) 1973-78 Standard Ordinary Issues Experience  
 (B) 1958-63 Standard Ordinary Issues Experience  
 (C) 1965-70 Basic Tables Select and Ultimate Experience  
 (Amounts Shown in \$1,000 Units)

PERMANENT PLANS

CLASSIFICATION AMOUNT	ACTUAL CLAIMS	TABLE (A)		TABLE (B)		TABLE (C)	
		Expected Claims	A/E	Expected Claims	A/E	Expected Claims	A/E
Policy Years 1-2							
\$ 50,000-\$ 99,999	\$ 5,227 (118)	\$ 4,933	106%	\$ 6,274	83%	\$ 6,029	87%
100,000- 199,999	19,945 (280)	21,536	93	27,847	72	26,935	74
200,000- 499,999	23,471 (211)	24,555	96	33,118	71	31,402	75
500,000- 999,999	7,718 (49)	9,546	81	13,120	59	12,362	62
1,000,000 and over	10,328 (22)	9,466	109	13,183	78	12,383	83
All	\$ 66,689 (680)	\$ 70,036	95%	\$ 93,541	71%	\$ 89,111	75%
Policy Years 3-5							
\$ 50,000-\$ 99,999	\$ 23,526 (546)	\$ 24,889	95%	\$ 33,263	71%	\$ 31,061	76%
100,000- 199,999	38,017 (613)	44,161	86	59,462	64	55,514	68
200,000- 499,999	39,438 (399)	44,404	89	61,240	64	56,873	69
500,000- 999,999	15,898 (97)	14,981	106	20,940	76	19,402	82
1,000,000 and over	9,202 (17)	13,060	70	18,350	50	16,969	54
All	\$ 126,081 (1,672)	\$ 141,496	89%	\$ 193,255	65%	\$ 179,819	70%
Policy Years 6-10							
\$ 50,000-\$ 99,999	\$ 41,768 (990)	\$ 50,565	83%	\$ 66,790	63%	\$ 64,194	65%
100,000- 199,999	68,557 (1,201)	73,186	94	69,887	71	93,225	74
200,000- 499,999	60,251 (691)	64,379	94	86,276	70	82,977	73
500,000- 999,999	18,361 (127)	19,882	92	26,841	68	25,796	71
1,000,000 and over	14,790 (40)	16,948	87	22,978	64	22,012	67
All	\$ 203,727 (3,049)	\$ 224,961	91%	\$ 299,771	68%	\$ 288,205	71%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.



TABLE D—Continued

PERMANENT PLANS—Continued

CLASSIFICATION AMOUNT	ACTUAL CLAIMS		TABLE (A)		TABLE (B)		TABLE (C)	
			Expected Claims	A/E	Expected Claims	A/E	Expected Claims	A/E
Policy Years 11–15								
\$ 50,000–\$ 99,999 ..	\$ 42,233	(1,098)	\$ 47,590	89%	\$ 63,370	67%	\$ 60,329	70%
100,000– 199,999 ..	63,879	(1,273)	68,988	93	92,135	69	87,658	73
200,000– 499,999 ..	41,823	(622)	49,361	85	65,833	64	62,726	67
500,000– 999,999 ..	13,484	(107)	14,251	95	18,988	71	18,097	75
1,000,000 and over ..	5,938	(35)	9,432	63	12,445	48	11,917	50
All .....	\$ 167,357	(3,135)	\$ 189,622	88%	\$ 252,771	66%	\$ 240,726	70%
Policy Years 16–20								
\$ 50,000–\$ 99,999 ..	\$ 47,080	(1,411)	\$ 51,377	92%	\$ 69,057	68%	\$ 65,317	72%
100,000– 199,999 ..	66,595	(1,555)	74,290	90	99,974	67	94,547	70
200,000– 499,999 ..	45,858	(744)	47,912	96	64,247	71	61,042	75
500,000– 999,999 ..	14,544	(153)	13,145	111	17,595	83	16,765	87
1,000,000 and over ..	6,734	(25)	7,241	93	9,688	70	9,224	73
All .....	\$ 180,811	(3,888)	\$ 193,965	93%	\$ 260,561	69%	\$ 246,895	73%
Policy Years 21–25								
\$ 50,000–\$ 99,999 ..	\$ 32,840	(1,143)	\$ 37,956	87%	\$ 47,255	69%	\$ 44,456	74%
100,000– 199,999 ..	42,814	(1,189)	49,891	86	62,085	69	58,366	73
200,000– 499,999 ..	28,257	(519)	30,282	93	37,319	76	35,209	80
500,000– 999,999 ..	6,861	(89)	7,032	98	8,634	79	8,170	84
1,000,000 and over ..	3,630	(20)	5,176	70	6,335	57	5,994	61
All .....	\$ 114,402	(2,960)	\$ 130,337	88%	\$ 161,628	71%	\$ 152,195	75%
All Policy Years								
\$ 50,000–\$ 99,999 ..	\$ 192,674	(5,306)	\$ 217,311	89%	\$ 286,008	67%	\$ 271,386	71%
100,000– 199,999 ..	299,807	(6,111)	332,052	90	438,389	68	416,245	72
200,000– 499,999 ..	239,098	(3,186)	260,894	92	348,033	69	330,229	72
500,000– 999,999 ..	76,866	(622)	78,838	97	106,118	72	100,592	76
1,000,000 and over ..	50,622	(159)	61,323	83	82,979	61	78,499	64
All .....	\$ 859,067	(15,384)	\$ 950,417	90%	\$1,261,527	68%	\$1,196,951	72%

TABLE D—Continued

TERM PLANS								
CLASSIFICATION AMOUNT	ACTUAL CLAIMS	TABLE (A)		TABLE (B)		TABLE (C)		
		Expected Claims	A-E	Expected Claims	A-E	Expected Claims	A-E	
Policy Years 1-2								
\$ 50,000-\$ 99,999	\$ 2,340 (52)	\$ 2,261	103%	\$ 2,771	84%	\$ 2,668	88%	
100,000- 199,999	15,612 (214)	16,296	96	19,803	79	19,348	81	
200,000- 499,999	11,964 (105)	14,388	83	18,407	65	17,665	68	
500,000- 999,999	7,987 (39)	4,835	<i>165</i>	6,360	<i>126</i>	6,040	<i>132</i>	
1,000,000 and over	3,521 (11)	4,737	<i>74</i>	6,402	55	6,030	58	
All	\$ 41,424 (421)	\$ 42,517	97%	\$ 53,742	77%	\$ 51,751	80%	
Policy Years 3-5								
\$ 50,000-\$ 99,999	\$ 8,703 (217)	\$ 8,150	107%	\$ 10,465	83%	\$ 9,831	89%	
100,000- 199,999	17,939 (276)	17,299	104	22,343	80	20,994	85	
200,000- 499,999	15,380 (157)	14,765	104	19,581	79	18,264	84	
500,000- 999,999	5,048 (28)	4,796	<i>105</i>	6,504	78	6,027	<i>84</i>	
1,000,000 and over	2,500 (8)	4,684	*	6,420	*	5,954	*	
All	\$ 49,570 (686)	\$ 49,695	100%	\$ 65,314	76%	\$ 61,070	81%	
Policy Years 6-10								
\$ 50,000-\$ 99,999	\$ 11,782 (298)	\$ 11,525	102%	\$ 14,927	79%	\$ 14,345	82%	
100,000- 199,999	16,393 (325)	17,043	96	22,254	74	21,420	77	
200,000- 499,999	12,034 (143)	12,220	98	16,177	74	15,554	77	
500,000- 999,999	4,461 (22)	3,894	<i>115</i>	5,198	86	4,991	89	
1,000,000 and over	6,031 (21)	3,882	<i>155</i>	5,231	<i>115</i>	5,021	<i>120</i>	
All	\$ 50,701 (809)	\$ 48,564	104%	\$ 63,786	79%	\$ 61,332	83%	

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.

\* Fewer than 10 policies terminated by death.

TABLE D—Continued

TERM PLANS—Continued

CLASSIFICATION AMOUNT	ACTUAL CLAIMS		TABLE (A)		TABLE (B)		TABLE (C)	
			Expected Claims	A/E	Expected Claims	A/E	Expected Claims	A/E
Policy Years 11-15								
\$ 50,000-\$ 99,999	\$ 6,996	(201)	\$ 6,859	102%	\$ 9,170	76%	\$ 8,709	80%
100,000- 199,999	10,994	(240)	11,124	99	14,924	74	14,187	77
200,000- 499,999	7,052	(105)	7,335	96	9,813	72	9,352	75
500,000- 999,999	2,535	(24)	2,415	105	3,279	77	3,089	82
1,000,000 and over	1,600	(20)	1,825	88	2,434	66	2,328	69
All	\$ 29,177	(590)	\$ 29,558	99%	\$ 39,621	74%	\$ 37,665	77%
Policy Years 16-20								
\$ 50,000-\$ 99,999	\$ 5,667	(180)	\$ 5,809	98%	\$ 7,845	72%	\$ 7,381	77%
100,000- 199,999	7,718	(192)	7,421	104	10,028	77	9,445	82
200,000- 499,999	3,620	(60)	4,385	83	5,906	61	5,581	65
500,000- 999,999	1,205	(9)	1,169	*	1,566	*	1,488	*
1,000,000 and over	0	(0)	515	*	692	*	659	*
All	\$ 18,210	(441)	\$ 19,301	94%	\$ 26,037	70%	\$ 24,555	74%
Policy Years 21-25								
\$ 50,000-\$ 99,999	\$ 3,793	(136)	\$ 4,332	88%	\$ 5,440	70%	\$ 5,097	74%
100,000- 199,999	5,030	(138)	5,813	87	7,234	70	6,791	74
200,000- 499,999	3,187	(53)	3,660	87	4,531	70	4,254	75
500,000- 999,999	576	(10)	1,139	51	1,398	41	1,322	44
1,000,000 and over	1,150	(10)	297	387	368	313	346	332
All	\$ 13,736	(347)	\$ 15,240	90%	\$ 18,970	72%	\$ 17,809	77%
All Policy Years								
\$ 50,000-\$ 99,999	\$ 39,281	(1,084)	\$ 38,936	101%	\$ 50,617	78%	\$ 48,032	82%
100,000- 199,999	73,686	(1,385)	74,995	98	96,586	76	92,185	80
200,000- 499,999	53,237	(623)	56,753	94	74,415	72	70,670	75
500,000- 999,999	21,812	(132)	18,248	120	24,305	90	22,957	95
1,000,000 and over	14,802	(70)	15,941	93	21,548	69	20,339	73
All	\$ 202,818	(3,294)	\$ 204,874	99%	\$ 267,471	76%	\$ 254,182	80%

TABLE D—Continued

## ALL PLANS

CLASSIFICATION AMOUNT	ACTUAL CLAIMS	TABLE (A)		TABLE (B)		TABLE (C)	
		Expected Claims	A/E	Expected Claims	A/E	Expected Claims	A/E
Policy Years 1-2							
\$ 50,000-\$ 99,999	\$ 7,567 (170)	\$ 7,194	105%	\$ 9,044	84%	\$ 8,697	87%
100,000- 199,999	35,557 (494)	37,832	94	47,649	75	46,283	77
200,000- 499,999	35,435 (316)	38,943	91	51,525	69	49,067	72
500,000- 999,999	15,705 (88)	14,381	109	19,480	81	18,402	85
1,000,000 and over	13,849 (33)	14,203	98	19,585	71	18,413	75
All .....	\$ 108,113 (1,101)	\$ 112,553	96%	\$ 147,283	73%	\$ 140,863	77%
Policy Years 3-5							
\$ 50,000-\$ 99,999	\$ 32,229 (763)	\$ 33,039	98%	\$ 43,728	74%	\$ 40,892	79%
100,000- 199,999	55,956 (889)	61,460	91	81,805	68	76,507	73
200,000- 499,999	54,818 (556)	59,170	93	80,821	68	75,137	73
500,000- 999,999	20,946 (125)	19,777	106	27,444	76	25,429	82
1,000,000 and over	11,702 (25)	17,744	66	24,771	47	22,923	51
All .....	\$ 175,651 (2,358)	\$ 191,190	92%	\$ 258,569	68%	\$ 240,889	73%
Policy Years 6-10							
\$ 50,000-\$ 99,999	\$ 53,550 (1,288)	\$ 62,090	86%	\$ 81,716	66%	\$ 78,539	68%
100,000- 199,999	84,950 (1,526)	90,229	94	119,141	71	114,646	74
200,000- 499,999	72,285 (834)	76,599	94	102,453	71	98,531	73
500,000- 999,999	22,822 (149)	23,776	96	32,038	71	30,787	74
1,000,000 and over	20,821 (61)	20,830	100	28,208	74	27,034	77
All .....	\$ 254,428 (3,858)	\$ 273,525	93%	\$ 363,557	70%	\$ 349,537	73%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.

TABLE D—Continued

## ALL PLANS—Continued

CLASSIFICATION AMOUNT	ACTUAL CLAIMS		TABLE (A)		TABLE (B)		TABLE (C)	
			Expected Claims	A/E	Expected Claims	A/E	Expected Claims	A/E
Policy Years 11-15								
\$ 50,000-\$ 99,999 ..	\$ 49,229	(1,299)	\$ 54,449	90%	\$ 72,540	68%	\$ 69,038	71%
100,000- 199,999 ..	74,873	(1,513)	80,112	93	107,059	70	101,845	74
200,000- 499,999 ..	48,875	(727)	56,696	86	75,647	65	72,077	68
500,000- 999,999 ..	16,019	(131)	16,667	96	22,267	72	21,186	76
1,000,000 and over ..	7,538	(55)	11,257	67	14,880	51	14,245	53
All .....	\$ 196,534	(3,725)	\$ 219,180	90%	\$ 292,392	67%	\$ 278,391	71%
Policy Years 16-20								
\$ 50,000-\$ 99,999 ..	\$ 52,747	(1,591)	\$ 57,186	92%	\$ 76,902	69%	\$ 72,698	73%
100,000- 199,999 ..	74,313	(1,747)	81,712	91	110,002	68	103,992	71
200,000- 499,999 ..	49,478	(804)	52,298	95	70,152	71	66,623	74
500,000- 999,999 ..	15,749	(162)	14,314	110	19,162	82	18,253	86
1,000,000 and over ..	6,734	(25)	7,756	87	10,380	65	9,884	68
All .....	\$ 199,021	(4,329)	\$ 213,266	93%	\$ 286,598	69%	\$ 271,450	73%
Policy Years 21-25								
\$ 50,000-\$ 99,999 ..	\$ 36,633	(1,279)	\$ 42,288	87%	\$ 52,695	70%	\$ 49,553	74%
100,000- 199,999 ..	47,844	(1,327)	55,704	86	69,319	69	65,156	73
200,000- 499,999 ..	31,444	(572)	33,942	93	41,850	75	39,462	80
500,000- 999,999 ..	7,437	(99)	8,171	91	10,032	74	9,492	78
1,000,000 and over ..	4,780	(30)	5,473	87	6,703	71	6,340	75
All .....	\$ 128,138	(3,307)	\$ 145,577	88%	\$ 180,598	71%	\$ 170,004	75%
All Policy Years								
\$ 50,000-\$ 99,999 ..	\$ 231,955	(6,390)	\$ 256,247	91%	\$ 336,625	69%	\$ 319,418	73%
100,000- 199,999 ..	373,493	(7,496)	407,048	92	534,975	70	508,430	73
200,000- 499,999 ..	292,335	(3,809)	317,647	92	422,448	69	400,899	73
500,000- 999,999 ..	98,678	(754)	97,086	102	130,423	76	123,548	80
1,000,000 and over ..	65,424	(229)	77,263	85	104,527	63	98,838	66
All .....	\$1,061,885	(18,678)	\$1,155,291	92%	\$1,528,998	69%	\$1,451,133	73%

TABLE E  
 LARGE-AMOUNT ISSUES OF 1959-77  
 EXPERIENCE BETWEEN 1973 AND 1978 ANNIVERSARIES  
 BY AGE AT ISSUE, ESTIMATED ANNUAL INCOME AT ISSUE AND PURPOSE OF INSURANCE  
 Expected Deaths Based on 1973-78 Standard Ordinary Issues Experience  
 (Amounts Shown in \$1,000 Units)

ISSUE AGE	ESTIMATED ANNUAL INCOME AT ISSUE	PERSONAL INSURANCE		BUSINESS INSURANCE		KEYMAN INSURANCE		ALL INSURANCE	
		Actual Claims	A/E	Actual Claims	A/E	Actual Claims	A/E	Actual Claims	A/E
0-34	Under \$20,000	\$ 49,358 (1,005)	103%	\$ 3,831 (62)	111%	\$ 3,294 (49)	111%	\$ 60,092 (1,198)	106%
	\$ 20,000-\$49,999	29,505 (419)	114	4,500 (60)	98	1,955 (28)	57	37,750 (536)	105
	50,000- 99,999	8,628 (87)	169	2,310 (16)	190	698 (9)	*	11,883 (115)	156
	100,000 and over	1,628 (9)	*	650 (4)	*	246 (1)	*	3,218 (16)	112
	Not accurately determined	4,008 (75)	98	200 (3)	*	300 (5)	*	16,805 (329)	97
	All	\$ 93,127 (1,595)	110%	\$ 11,491 (145)	117%	\$ 6,487 (92)	81%	\$129,748 (2,194)	108%
35-49	Under \$20,000	\$ 54,155 (1,301)	90%	\$ 9,989 (197)	87%	\$ 6,726 (121)	85%	\$ 78,010 (1,772)	90%
	\$ 20,000-\$49,999	95,972 (1,659)	90	32,113 (460)	95	19,764 (244)	82	163,752 (2,670)	91
	50,000- 99,999	45,569 (529)	105	12,924 (131)	78	10,035 (87)	77	75,114 (819)	96
	100,000 and over	23,751 (162)	127	9,009 (43)	114	4,990 (32)	76	44,056 (254)	124
	Not accurately determined	14,266 (244)	91	639 (10)	71	838 (6)	*	77,726 (1,352)	86
	All	\$233,713 (3,895)	96%	\$ 64,674 (841)	92%	\$ 42,353 (473)	81%	\$438,658 (6,867)	93%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death. "All insurance" column includes data where the source of insurance was undetermined.

\* Fewer than 10 policies terminated by death.

TABLE E—Continued

ISSUE AGE	ESTIMATED ANNUAL INCOME AT ISSUE	PERSONAL INSURANCE		BUSINESS INSURANCE		KEYMAN INSURANCE		ALL INSURANCE	
		Actual Claims	A/E	Actual Claims	A/E	Actual Claims	A/E	Actual Claims	A/E
50 and over . . .	Under \$20,000	\$ 17,015 (352)	81%	\$ 5,141 (94)	94%	\$ 3,222 (63)	103%	\$ 28,008 (577)	83%
	\$ 20,000–\$49,999	43,437 (799)	98	17,650 (287)	82	12,989 (198)	92	85,196 (1,498)	92
	50,000– 99,999	31,535 (456)	97	12,334 (150)	73	12,173 (127)	92	61,282 (817)	88
	100,000 and over	20,575 (187)	93	7,539 (60)	68	9,628 (43)	86	39,696 (312)	83
	Not accurately determined	12,784 (177)	101	650 (7)	*	700 (9)	*	66,751 (1,168)	84
	All	\$125,346 (1,971)	94%	\$ 43,314 (598)	77%	\$ 38,712 (440)	91%	\$280,933 (4,372)	87%
All ages . . . . .	Under \$20,000	\$120,528 (2,658)	93%	\$ 18,961 (353)	93%	\$ 13,242 (233)	95%	\$166,110 (3,547)	94%
	\$ 20,000–\$49,999	168,914 (2,877)	96	54,263 (807)	91	34,708 (470)	83	286,698 (4,704)	93
	50,000– 99,999	85,732 (1,072)	106	27,568 (297)	79	22,906 (223)	85	148,279 (1,751)	95
	100,000 and over	45,954 (358)	107	17,198 (107)	88	14,858 (76)	82	86,970 (582)	101
	Not accurately determined	31,058 (496)	95	1,489 (20)	77	1,838 (20)	100	161,282 (2,849)	86
	All	\$452,186 (7,461)	98%	\$119,479 (1,584)	88%	\$ 87,552 (1,022)	85%	\$849,339 (13,433)	93%

TABLE F  
LARGE-AMOUNT ISSUES OF 1959-77  
EXPERIENCE BETWEEN 1973 AND 1978 ANNIVERSARIES  
BY AGE AT ISSUE, CLASSIFICATION AMOUNT, AND PURPOSE OF INSURANCE  
Expected Deaths Based on 1973-78 Standard Ordinary Issues Experience  
(Amounts Shown in \$1,000 Units)

ISSUE AGE	CLASSIFICATION AMOUNT	PERSONAL INSURANCE		BUSINESS INSURANCE		KEYMAN INSURANCE		ALL INSURANCE	
		Actual Claims	A/E	Actual Claims	A/E	Actual Claims	A/E	Actual Claims	A/E
0-34	\$ 50,000-\$ 99,999	\$ 27,730 (728)	103%	\$ 1,519 (36)	101%	\$ 846 (20)	84%	\$ 37,842 (994)	102%
	100,000- 199,999	38,774 (648)	98	3,972 (63)	106	3,202 (46)	106	52,739 (881)	99
	200,000- 499,999	20,059 (201)	142	4,160 (38)	136	1,999 (23)	81	28,868 (286)	130
	500,000- 999,999	2,964 (13)	129	1,740 (7)	*	440 (3)	*	6,599 (27)	141
	1,000,000 and over	3,600 (5)	*	100 (1)	*	0 (0)	*	3,700 (6)	*
	All	\$ 93,127 (1,595)	110%	\$ 11,491 (145)	117%	\$ 6,487 (92)	81%	\$129,748 (2,194)	108%
35-49	\$ 50,000-\$ 99,999	\$ 47,681 (1,268)	98%	\$ 6,982 (164)	103%	\$ 4,984 (111)	119%	\$ 84,679 (2,185)	90%
	100,000- 199,999	88,488 (1,642)	91	18,511 (330)	90	11,511 (172)	78	152,333 (2,826)	91
	200,000- 499,999	65,889 (808)	93	23,733 (279)	91	14,099 (149)	75	123,463 (1,467)	89
	500,000- 999,999	21,197 (143)	132	9,248 (56)	91	7,709 (50)	101	47,589 (312)	117
	1,000,000 and over	10,458 (34)	91	6,200 (12)	91	4,050 (8)	*	30,594 (77)	100
	All	\$233,713 (3,895)	96%	\$ 64,674 (841)	92%	\$42,353 (490)	81%	\$438,658 (6,867)	93%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death. "All insurance" column includes data where the source of insurance was undetermined.

\* Fewer than 10 policies terminated by death.



TABLE F—Continued

ISSUE AGE	CLASSIFICATION AMOUNT	PERSONAL INSURANCE			BUSINESS INSURANCE			KEYMAN INSURANCE			ALL INSURANCE	
		Actual Claims	A/E		Actual Claims	A/E		Actual Claims	A/E		Actual Claims	A/E
50 and over . . . . .	\$ 50,000–\$ 99,999	\$ 24,244 (580)	106%		\$ 4,182 (94)	90%		\$ 3,223 (75)	123%		\$ 49,881 (1,220)	87%
	100,000– 199,999	40,344 (726)	92		12,530 (231)	93		9,278 (154)	102		89,163 (1,671)	95
	200,000– 499,999	38,528 (510)	92		16,825 (206)	80		12,490 (144)	84		86,948 (1,114)	87
	500,000– 999,999	11,003 (97)	86		7,142 (55)	80		6,364 (47)	89		31,413 (262)	85
	1,000,000 and over	11,227 (58)	97		2,635 (12)	33		7,357 (20)	86		23,528 (105)	68
	All	\$125,346 (1,971)	94%		\$ 43,314 (598)	77%		\$38,712 (440)	91%		\$280,933 (4,372)	87%
All ages . . . . .	\$ 50,000–\$ 99,999	\$ 99,655 (2,576)	101%		\$ 12,683 (294)	98%		\$ 9,053 (206)	116%		\$172,402 (4,399)	91%
	100,000– 199,999	167,606 (3,016)	93		35,013 (624)	92		23,991 (372)	89		294,235 (5,378)	93
	200,000– 499,999	124,476 (1,519)	98		44,718 (523)	89		28,588 (316)	79		239,279 (2,867)	92
	500,000– 999,999	35,164 (253)	113		18,130 (118)	91		14,513 (100)	93		85,601 (601)	104
	1,000,000 and over	25,285 (97)	102		8,935 (25)	58		11,407 (28)	69		57,822 (188)	85
	All	\$452,186 (7,461)	98%		\$119,479 (1,584)	88%		\$87,552 (1,022)	85%		\$849,339 (13,433)	93%

TABLE G  
 LARGE-AMOUNT ISSUES OF 1949-77  
 EXPERIENCE BETWEEN 1973 AND 1978 ANNIVERSARIES  
 BY CAUSE OF DEATH, AGE AT ISSUE, AND PLAN OF INSURANCE  
 Expected Deaths Based on 1973-78 Standard Ordinary Issues Experience  
 (Amounts Shown in \$1,000 Units)

CAUSE OF DEATH	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E
	Issue Ages 0-29								
Tuberculosis .....	\$ 44 (1)	\$ 55 *		\$ 0 (0)	\$ 7 *		\$ 44 (1)	\$ 62 *	
Malignant neoplasms .....	7,389 (140)	6,208 119%		1,932 (43)	2,190 88%		9,321 (183)	8,399 111%	
Diabetes mellitus .....	171 (2)	89 *		0 (0)	10 *		171 (2)	100 *	
Cerebrovascular diseases .....	521 (17)	617 84		60 (1)	66 *		581 (18)	685 85	
Heart and circulatory .....	6,525 (165)	8,296 79		1,523 (32)	2,526 60		8,048 (197)	10,823 74	
Pneumonia and influenza .....	415 (9)	412 *		25 (1)	44 *		440 (10)	457 96	
Accidents and homicide .....	20,548 (344)	11,387 180		7,700 (104)	4,427 174		28,248 (448)	15,817 179	
Suicide .....	5,507 (101)	5,396 102		2,235 (30)	2,213 101		7,742 (131)	7,611 102	
War and residual .....	6,645 (121)	7,774 85		1,752 (19)	2,355 74		8,397 (142)	10,117 83	
All .....	\$ 47,765 (900)	\$ 40,234 119%		\$ 15,227 (232)	\$ 13,838 110%		\$ 62,992 (1,132)	\$ 54,071 116%	

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.  
 \* Fewer than 10 policies terminated by death.

TABLE G—Continued

CAUSE OF DEATH	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E
Issue Ages 30-39									
Tuberculosis	\$ 114 (2)	\$ 125 *		\$ 0 (0)	\$ 16 *		\$ 114 (2)	\$ 140 *	
Malignant neoplasms	44,791 (873)	25,610 175%		11,996 (216)	8,157 147%		56,787 (1,089)	33,765 168%	
Diabetes mellitus	734 (11)	3,054 24		250 (4)	386 *		984 (15)	3,442 29	
Cerebrovascular diseases	6,868 (143)	8,073 85		2,307 (36)	1,544 149		9,175 (179)	9,616 95	
Heart and circulatory	58,650 (1,326)	51,221 115		18,562 (372)	14,192 131		77,212 (1,698)	65,410 118	
Pneumonia and influenza	1,463 (38)	11,291 13		725 (11)	2,194 33		2,188 (49)	13,484 16	
Accidents and homicide	38,905 (597)	32,374 120		21,380 (276)	15,910 134		60,285 (873)	48,283 125	
Suicide	13,002 (236)	13,528 96		8,157 (125)	4,818 169		21,159 (361)	18,347 115	
War and residual	20,018 (446)	51,546 39		7,299 (138)	19,226 38		27,317 (584)	70,778 39	
All	\$184,545 (3,672)	\$196,822 94%		\$70,676 (1,178)	\$66,443 106%		\$255,221 (4,850)	\$263,265 97%	
Issue Ages 40-49									
Tuberculosis	\$ 46 (1)	\$ 0 *		\$ 25 (1)	\$ 0 *		\$ 71 (2)	\$ 0 *	
Malignant neoplasms	98,395 (1,637)	74,838 131%		22,030 (365)	22,750 97%		120,425 (2,002)	97,588 123%	
Diabetes mellitus	1,062 (27)	4,626 23		166 (4)	576 *		1,228 (31)	5,204 24	
Cerebrovascular diseases	11,930 (236)	27,905 43		2,485 (47)	5,294 47		14,415 (283)	33,200 43	
Heart and circulatory	121,590 (2,315)	107,277 113		28,715 (495)	25,995 110		150,305 (2,810)	133,273 113	
Pneumonia and influenza	3,612 (78)	15,844 23		545 (12)	3,239 17		4,157 (90)	19,083 22	
Accidents and homicide	32,424 (417)	44,482 73		16,592 (180)	9,704 171		49,016 (597)	54,188 90	
Suicide	10,060 (158)	27,570 36		6,358 (70)	6,225 102		16,418 (228)	33,796 49	
War and residual	41,858 (749)	57,789 72		11,647 (178)	13,724 85		53,505 (927)	71,506 75	
All	\$320,977 (5,618)	\$360,331 89%		\$88,563 (1,352)	\$87,507 101%		\$409,540 (6,970)	\$447,838 91%	

TABLE G—Continued

CAUSE OF DEATH	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E
	Issue Ages 50-59								
Tuberculosis .....	\$ 0 (0)	\$ 0	*	\$ 0 (0)	\$ 0	*	\$ 0 (0)	\$ 0	*
Malignant neoplasms .....	80,521 (1,303)	57,353	140%	10,252 (193)	10,157	101%	90,773 (1,496)	67,509	134%
Diabetes mellitus .....	1,108 (21)	1,259	88	212 (5)	103	*	1,320 (26)	1,360	97
Cerebrovascular diseases .....	13,118 (232)	27,010	49	1,736 (36)	3,552	49	14,854 (268)	30,562	49
Heart and circulatory .....	102,930 (1,787)	89,063	116	10,951 (190)	13,587	81	113,881 (1,977)	102,649	111
Pneumonia and influenza .....	2,372 (52)	13,256	18	255 (4)	1,499	*	2,627 (56)	14,755	18
Accidents and homicide .....	18,283 (179)	15,136	121	3,418 (49)	1,642	208	21,701 (228)	16,778	129
Suicide .....	4,603 (69)	13,441	34	515 (12)	1,625	32	5,118 (81)	15,066	34
War and residual .....	34,623 (578)	68,214	51	4,736 (79)	8,424	56	39,359 (657)	76,642	51
All .....	\$257,558 (4,221)	\$284,732	90%	\$32,075 (568)	\$40,589	79%	\$289,633 (4,789)	\$325,321	89%
	Issue Ages 60 and Over								
Tuberculosis .....	\$ 0 (0)	\$ 0	*	\$ 0 (0)	\$ 0	*	\$ 0 (0)	\$ 0	*
Malignant neoplasms .....	22,135 (355)	16,864	131%	1,047 (13)	1,377	76%	23,182 (368)	18,240	127%
Diabetes mellitus .....	202 (5)	237	*	0 (0)	19	*	202 (5)	256	*
Cerebrovascular diseases .....	7,115 (132)	4,396	162	1,220 (19)	192	635	8,335 (151)	4,589	182
Heart and circulatory .....	27,099 (511)	38,814	70	618 (14)	2,391	26	27,717 (525)	41,202	67
Pneumonia and influenza .....	1,447 (26)	6,533	22	50 (1)	242	*	1,497 (27)	6,777	22
Accidents and homicide .....	2,662 (34)	4,656	57	175 (3)	258	*	2,837 (37)	4,916	58
Suicide .....	456 (9)	391	*	0 (0)	11	*	456 (9)	403	*
War and residual .....	9,592 (151)	15,798	61	927 (9)	966	*	10,519 (160)	16,762	63
All .....	\$ 70,708 (1,223)	\$ 87,684	81%	\$ 4,037 (59)	\$ 5,456	74%	\$ 74,745 (1,282)	\$ 93,145	80%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.  
\* Fewer than 10 policies terminated by death.

TABLE H  
 LARGE-AMOUNT ISSUES OF 1949-77  
 EXPERIENCE BETWEEN 1973 AND 1978 ANNIVERSARIES  
 BY CAUSE OF DEATH, POLICY YEAR, AND PLAN OF INSURANCE  
 Expected Deaths Based on 1973-78 Standard Ordinary Issues Experience  
 (Amounts Shown in \$1,000 Units)

CAUSE OF DEATH	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E
	Policy Years 1-5								
Tuberculosis .....	\$ 90 (2)	\$ 0	*	\$ 25 (1)	\$ 0	*	\$ 115 (3)	\$ 0	*
Malignant neoplasms .....	58,252 (678)	67,893	86%	17,418 (252)	23,632	74%	75,670 (930)	91,524	83%
Diabetes mellitus .....	450 (3)	0	*	0 (0)	0	*	450 (3)	0	*
Cerebrovascular diseases .....	7,885 (75)	7,222	109	3,218 (32)	1,828	176	11,103 (107)	9,052	123
Heart and circulatory .....	54,558 (722)	63,580	86	21,325 (280)	25,280	84	75,883 (1,002)	88,857	85
Pneumonia and influenza .....	1,002 (17)	3,882	26	750 (7)	1,681	*	1,752 (24)	5,564	31
Accidents and homicide .....	57,087 (642)	29,384	194	34,863 (376)	18,540	188	91,950 (1,018)	47,928	192
Suicide .....	11,501 (155)	15,551	74	9,466 (112)	7,394	128	20,967 (267)	22,948	91
War and residual .....	22,912 (301)	43,382	53	11,389 (141)	22,815	50	34,301 (442)	66,191	52
All .....	\$213,737 (2,595)	\$230,894	93%	\$98,454 (1,201)	\$101,170	97%	\$312,191 (3,796)	\$332,064	94%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.  
 \* Fewer than 10 policies terminated by death.

TABLE H—Continued

CAUSE OF DEATH	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E
	Policy Years 6-10								
Tuberculosis .....	\$ 50 (1)	\$ 0 *	*	\$ 0 (0)	\$ 0 *	*	\$ 50 (1)	\$ 0 *	*
Malignant neoplasms .....	68,767 (959)	55,708	123%	13,831 (218)	13,018	106%	82,598 (1,177)	68,726	120%
Diabetes mellitus .....	322 (7)	3 *	*	12 (1)	0 *	*	334 (8)	5 *	*
Cerebrovascular diseases .....	7,810 (108)	17,702	44	1,133 (25)	3,874	29	8,943 (133)	21,576	41
Heart and circulatory .....	63,211 (1,004)	63,722	99	15,401 (263)	13,027	118	78,612 (1,267)	76,750	102
Pneumonia and influenza .....	1,625 (27)	5,751	28	330 (7)	1,510	*	1,955 (34)	7,261	27
Accidents and homicide .....	29,999 (415)	25,487	118	8,959 (126)	6,394	140	38,958 (541)	31,880	122
Suicide .....	8,366 (139)	11,337	74	5,169 (67)	2,743	188	13,535 (206)	14,080	96
War and residual .....	24,646 (394)	45,266	54	6,166 (103)	7,999	77	30,812 (497)	53,264	58
All .....	\$204,796 (3,054)	\$224,976	91%	\$51,001 (810)	\$48,565	105%	\$255,797 (3,864)	\$273,542	94%
	Policy Years 11-15								
Tuberculosis .....	\$ 64 (1)	\$ 0 *	*	\$ 0 (0)	\$ 0 *	*	\$ 64 (1)	\$ 0 *	*
Malignant neoplasms .....	48,576 (907)	37,183	131%	7,879 (155)	5,856	135%	56,455 (1,062)	43,039	131%
Diabetes mellitus .....	285 (8)	176 *	*	100 (2)	17 *	*	385 (10)	195	197
Cerebrovascular diseases .....	6,802 (140)	13,522	50	2,095 (42)	1,818	115	8,897 (182)	15,339	58
Heart and circulatory .....	65,143 (1,221)	55,335	118	9,454 (212)	8,588	110	74,597 (1,433)	63,923	117
Pneumonia and influenza .....	2,285 (41)	5,250	44	275 (6)	831	*	2,560 (47)	6,082	42
Accidents and homicide .....	13,204 (252)	14,392	72	3,891 (66)	2,741	142	17,095 (318)	17,134	100
Suicide .....	6,697 (121)	17,200	39	1,814 (37)	2,963	61	8,511 (158)	20,163	42
War and residual .....	24,496 (445)	46,565	53	3,669 (70)	6,744	54	28,165 (515)	53,306	53
All .....	\$167,552 (3,136)	\$189,623	88%	\$29,177 (590)	\$29,558	99%	\$196,729 (3,726)	\$219,181	90%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.

\* Fewer than 10 policies terminated by death.

TABLE H—Continued

CAUSE OF DEATH	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E
	Policy Years 16-20								
Tuberculosis .....	\$ 0 (0)	\$ 155	*	\$ 0 (0)	\$ 20	*	\$ 0 (0)	\$ 174	*
Malignant neoplasms .....	48,781 (1,022)	12,364	395%	4,496 (111)	1,211	371%	53,277 (1,133)	13,574	392%
Diabetes mellitus .....	1,094 (20)	5,761	19	266 (6)	640	*	1,360 (26)	6,400	21
Cerebrovascular diseases .....	9,680 (218)	17,376	56	587 (17)	1,712	34	10,267 (235)	19,090	54
Heart and circulatory .....	80,527 (1,790)	65,833	122	7,728 (197)	6,454	120	88,255 (1,987)	72,285	122
Pneumonia and influenza .....	2,349 (70)	17,959	13	150 (5)	1,699	*	2,499 (75)	19,658	13
Accidents and homicide .....	8,749 (170)	23,621	37	1,172 (32)	2,399	49	9,921 (202)	26,021	38
Suicide .....	4,977 (98)	9,825	51	376 (11)	984	38	5,353 (109)	10,810	50
War and residual .....	24,909 (501)	41,083	61	3,385 (62)	4,182	81	28,294 (563)	45,265	63
All .....	\$181,066 (3,889)	\$193,977	93%	\$18,160 (441)	\$19,301	94%	\$199,226 (4,330)	\$213,277	93%
	Policy Years 21-25								
Tuberculosis .....	\$ 0 (0)	\$ 25	*	\$ 0 (0)	\$ 3	*	\$ 0 (0)	\$ 28	*
Malignant neoplasms .....	28,855 (742)	7,725	374%	3,633 (94)	914	397%	32,488 (836)	8,638	376%
Diabetes mellitus .....	1,126 (28)	3,325	34	250 (4)	437	*	1,376 (32)	3,762	37
Cerebrovascular diseases .....	7,375 (219)	12,179	61	775 (23)	1,416	55	8,150 (242)	13,595	60
Heart and circulatory .....	53,355 (1,367)	46,201	115	6,461 (151)	5,342	121	59,816 (1,518)	51,542	116
Pneumonia and influenza .....	2,048 (48)	14,494	14	95 (4)	1,497	*	2,143 (52)	15,991	13
Accidents and homicide .....	3,783 (92)	15,151	25	380 (12)	1,867	20	4,163 (104)	17,019	24
Suicide .....	2,087 (60)	6,413	33	440 (10)	808	54	2,527 (70)	7,222	35
War and residual .....	15,773 (404)	24,824	64	1,752 (49)	2,956	59	17,525 (453)	27,780	63
All .....	\$114,402 (2,960)	\$130,337	88%	\$13,786 (347)	\$15,240	90%	\$128,188 (3,307)	\$145,577	88%

TABLE J

LARGE-AMOUNT ISSUES OF 1949-77  
EXPERIENCE BETWEEN 1973 AND 1978 ANNIVERSARIES  
BY SEX, AGE AT ISSUE AND PLAN OF INSURANCE  
Expected Deaths Based on 1965-70 Male Basic Tables and Female Basic Tables Select and Ultimate  
(Amounts Shown in \$1,000 Units)

ISSUE AGE	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E	Actual Claims	Expected Claims	A/E
A. Male Lives, with and without Term Element									
0-09 .....	\$ 2,112 (30)	\$ 1,545	<i>137%</i>	\$ 0 (0)	\$ 12 *	*	\$ 2,112 (30)	\$ 1,557	<i>136%</i>
10-19 .....	3,566 (64)	3,411	105	186 (3)	274	*	3,752 (67)	3,686	102
20-29 .....	38,292 (748)	38,177	100	12,870 (218)	14,327	90%	51,162 (966)	52,504	97
30-39 .....	175,982 (3,563)	234,061	75	68,371 (1,152)	78,033	88	244,353 (4,715)	312,094	78
40-49 .....	304,834 (5,367)	430,814	71	86,856 (1,320)	108,013	80	391,690 (6,687)	538,827	73
50-59 .....	236,332 (3,916)	333,868	71	30,993 (547)	51,016	61	267,325 (4,463)	384,884	69
60-69 .....	58,382 (998)	91,848	64	3,467 (54)	6,495	53	61,849 (1,052)	98,343	63
70 and over .....	4,364 (74)	5,779	76	300 (1)	523	*	4,664 (75)	6,302	74
All .....	\$823,864 (14,760)	\$1,139,503	72%	\$203,043 (3,295)	\$258,693	78%	\$1,026,907 (18,055)	\$1,398,196	73%
B. Female Lives, with and without Term Element									
0-09 .....	\$ 305 (6)	\$ 558	*	\$ 0 (0)	\$ 4 *	*	\$ 305 (6)	\$ 562	*
10-19 .....	495 (7)	506	*	0 (0)	18 *	*	495 (7)	524	*
20-29 .....	2,995 (45)	1,617	<i>185%</i>	2,121 (11)	485	<i>437%</i>	5,116 (56)	2,102	<i>243%</i>
30-39 .....	8,563 (109)	8,404	102	2,305 (26)	2,431	95	10,868 (135)	10,835	100
40-49 .....	16,143 (251)	19,780	82	1,707 (32)	2,936	58	17,850 (283)	22,716	79
50-59 .....	21,226 (305)	24,064	88	1,132 (21)	1,929	59	22,358 (326)	25,993	86
60-69 .....	7,392 (140)	12,550	59	270 (4)	323	*	7,662 (144)	12,872	60
70 and over .....	570 (11)	1,575	36	0 (0)	64	*	570 (11)	1,639	35
All .....	\$ 57,689 (874)	\$ 69,053	84%	\$ 7,535 (94)	\$ 8,189	92%	\$ 65,224 (968)	\$ 77,243	84%

NOTE.—Number of policies terminated by death shown in parentheses. Mortality ratio in italics where 10-49 policies terminated by death.

\* Fewer than 10 policies terminated by death.



[Table K follows]

TABLE K

COMBINED MALE AND FEMALE BASIC MORTALITY TABLE USED TO CALCULATE EXPECTED DEATHS  
GRADUATED MORTALITY RATES PER \$1,000

POLICY YEAR	ISSUE AGES																
	0	1	2-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70 and Over
1	1.30	0.48	0.35	0.20	0.26	0.83	0.63	0.56	0.60	0.72	1.06	1.47	1.93	2.52	3.69	5.46	9.34
2	0.48	0.40	0.33	0.20	0.32	0.95	0.66	0.63	0.72	0.99	1.44	2.18	3.02	4.00	5.37	7.71	13.40
3	0.40	0.35	0.32	0.21	0.45	1.02	0.68	0.68	0.82	1.23	1.81	2.79	3.90	5.30	7.04	10.04	18.20
4	0.35	0.33	0.31	0.23	0.61	1.03	0.69	0.71	0.90	1.44	2.16	3.33	4.62	6.45	8.68	12.43	22.60
5	0.33	0.32	0.31	0.25	0.75	1.02	0.71	0.74	0.99	1.63	2.51	3.85	5.34	7.52	10.25	14.66	26.01
6	0.32	0.31	0.31	0.30	0.87	1.01	0.72	0.78	1.09	1.83	2.84	4.36	6.13	8.57	11.85	16.71	29.53
7	0.31	0.31	0.30	0.37	0.97	0.99	0.73	0.82	1.20	2.04	3.18	4.86	7.06	9.78	13.69	19.36	32.62
8	0.31	0.31	0.29	0.48	1.05	0.97	0.75	0.87	1.37	2.28	3.53	5.40	8.08	11.16	15.97	22.82	35.86
9	0.31	0.30	0.30	0.61	1.10	0.96	0.78	0.96	1.55	2.55	3.93	5.97	9.16	12.72	18.70	27.15	39.33
10	0.30	0.29	0.33	0.70	1.13	0.96	0.82	1.06	1.75	2.85	4.38	6.67	10.30	14.46	21.84	32.24	44.04
11	0.29	0.30	0.39	0.83	1.13	0.96	0.86	1.18	1.97	3.17	4.90	7.52	11.52	16.52	25.34	37.81	50.84
12	0.30	0.33	0.48	0.94	1.11	0.96	0.92	1.31	2.20	3.53	5.50	8.52	12.85	18.89	29.20	43.75	60.85
13	0.33	0.39	0.58	1.03	1.08	0.97	1.00	1.46	2.45	3.92	6.19	9.68	14.42	21.70	33.45	50.43	75.28
14	0.39	0.48	0.70	1.10	1.05	0.98	1.08	1.62	2.71	4.37	6.98	11.04	16.44	25.10	38.12	58.11	95.09
15	0.48	0.58	0.83	1.13	1.04	1.00	1.18	1.79	3.02	4.91	7.90	12.57	19.01	29.06	43.55	66.93	116.34
16	0.58	0.70	0.94	1.13	1.04	1.02	1.28	1.99	3.36	5.52	8.85	14.17	21.90	33.57	50.17	77.29	128.40
17	0.70	0.83	1.03	1.11	1.03	1.06	1.40	2.23	3.76	6.21	9.95	15.95	24.82	38.47	57.77	89.05	142.74
18	0.83	0.94	1.10	1.08	1.03	1.12	1.54	2.50	4.22	6.94	11.18	17.92	27.80	43.61	66.17	101.43	155.02
19	0.94	1.03	1.13	1.05	1.04	1.19	1.72	2.82	4.71	7.73	12.56	20.17	30.95	48.94	74.89	113.99	166.23
20	1.03	1.10	1.13	1.04	1.05	1.28	1.93	3.18	5.27	8.63	14.11	22.68	34.50	54.54	83.94	126.70	177.70
21	1.10	1.13	1.11	1.04	1.07	1.38	2.17	3.57	5.89	9.63	15.83	25.33	38.40	60.51	93.47	139.54	189.41
22	1.13	1.13	1.08	1.03	1.10	1.51	2.42	4.00	6.56	10.76	17.68	28.08	42.67	66.90	103.52	152.58	201.30
23	1.13	1.11	1.05	1.03	1.15	1.66	2.69	4.46	7.31	12.01	19.58	30.89	47.33	73.76	113.98	165.78	213.33
24	1.11	1.08	1.04	1.04	1.21	1.84	2.97	4.94	8.15	13.39	21.55	33.80	52.40	81.14	124.86	179.15	225.45
25	1.08	1.05	1.04	1.05	1.28	2.01	3.28	5.47	9.09	14.93	23.60	36.90	57.90	89.09	136.34	192.72	237.61

## NOTES TO TABLE K

The table was constructed from intercompany experience under Standard Ordinary issues between 1973 and 1978 anniversaries for male and female lives combined. Fifteen-year select data for issue ages 0, 1, 2-4, 5-9, 10-14, . . . , 65-69, and 70 and over and ultimate data for attained ages 15-19, 20-24, . . . , 90-94, and 95 and over were used. Medical and paramedical issues were combined for issue ages 20 and over; nonmedical issues were also included for issue ages below 20.

### *Policy Years 1-15*

Using the 1968-73 large-amount basic table to form crude mortality ratios, the data in quinquennial issue-age groups for policy years 1-15 were graduated in three separate issue-age pieces using a two-dimensional Whittaker-Henderson Type B graduation. A vertical (constant issue-age group) smoothing coefficient of 20 and a horizontal (constant policy-year group) smoothing coefficient of 10 were used. The three pieces were fit together "linearly" at the points of overlap.

Crude attained-age mortality rates at the younger ages were developed from the exposures and deaths for policy years 1-15 of issue ages 0, 1, 2-4, for policy years 10-15 of issue ages 5-9, and policy years 11-15 of issue ages 10-14. Using ratios to the 1968-73 basic table, graduated attained-age mortality rates were determined using a one-dimensional Whittaker-Henderson Type B graduation and a smoothing coefficient of 20. The mortality rates for attained ages 0-16 were taken directly from the graduation; the graduated rates were graded uniformly with the ultimate rates for attained ages 17-26. These attained-age rates were used directly in the table for the issue-age/policy-year cells mentioned above.

For consistency purposes, some of the policy year 15 claims for issue-age group 70 and over were redistributed to policy years 6-14 before graduating the crude ratios.

### *Policy Years 16-25*

The mortality rates for policy years 16-25 of issue ages 0, 1, 2-4, 5-9, and 10-14 were taken directly from the attained-age rates, discussed above, or the ultimate rates, discussed below.

To determine the mortality rates for policy years 16-25, ultimate mortality rates were determined from the ultimate data. The crude quinquennial rates were graduated using a one-dimensional Whittaker-Henderson Type B graduation with a smoothing coefficient of 0.05. Mortality rates for individual ages 17-97 were determined using Jenkin's fifth-difference modified osculatory interpolation formula.

Ratios of the select rates to the ultimate rates were formed for policy years 11-15. It was assumed that at some point the select rates for the twenty-five-year select table should equal the ultimate rates from the fifteen-year select and ultimate data. Using five consecutive ratios of 1.00 for selected policy years and the five ratios for policy years 11-15, a least-squares polynomial was developed subject to a maximum of 1.05. Mortality rates were determined for policy years 16-25 from these ratios and the ultimate rates.

Small modifications were made to the rates to improve smoothness and fit.

### *Tests of Fit*

The expected-to-actual ratio for the attained-age mortality rates at the younger issue ages for policy years 1-15 was 0.998. Nine of the twelve expected-to-actual ratios for the quinquennial issue-age groups over the first fifteen policy years were between 0.980 and 1.020; the overall ratio was 0.999. A model office was constructed to test the fit for policy years 16-25 using the exposures for policy year 15 as found in the 1978 Reports. Using the ultimate rates to calculate the "actual" deaths, the "expected-to-actual" ratio was 0.996.

