

TRANSACTIONS OF SOCIETY OF ACTUARIES 1954 REPORTS

II. MORTALITY ON POLICIES FOR LARGE AMOUNTS

THIS report deals with the findings of the latest in a series of inter-company studies of the mortality on policies for large amounts. In 1934, the Joint Committee on Mortality outlined a program for such investigations (*TASA XXXV*, 347-52). The first report covered the experience on the issues of 1934 and 1935 to anniversaries in 1936; it was presented in *TASA XXXVIII*, 186-87. Subsequent reports covering the experience on the issues of 1934 and later years traced to successive policy anniversaries appeared in the *Transactions* for each of the years from 1938 to 1942 inclusive (*TASA XXXIX*, 99-102; *TASA XL*, 224-26; *TASA XLI*, 210-13; *TASA XLII*, 136-39; *TASA XLIII*, 122-26). The studies were suspended for the duration of the war. In 1949, the experience on the issues of 1934 and later years was brought up to 1948 anniversaries, with subdivisions from 1941 to 1946 policy anniversaries (covering the war period) and from 1946 to 1948 anniversaries; it was presented in *TSA I*, 594-605. New instructions, clarifying and modifying slightly the definitions of the policies to be included and the classifications used in the investigation of policies for large amounts, were issued in connection with that study. The present study takes up the experience of the issues of 1934 through 1952 from 1948 to 1953 anniversaries on the basis of the revised instructions just referred to (see Appendix to Report, *TSA I*, 602-605).

As in previous studies, the expected deaths in the present investigation were calculated by use of the ungraduated rates of mortality for corresponding issue ages, years of issue and periods of exposure, derived or extrapolated from the Committee's data for the annual reports on the mortality of standard Ordinary medically examined issues for all amounts during the first fifteen policy years of insurance. (Since the present study covers some experience beyond the first fifteen policy years of insurance, it was necessary to draw on the unpublished experience between 1948 and 1951 anniversaries for mortality rates applicable to policy years beyond the fifteenth and to extrapolate these rates to cover the full range of the current experience.)

The names of the nineteen contributing companies and their proportionate contributions to the total exposure in this study are given in Table A of the Appendix. It may be noted that about 90% of the exposure in the present investigation was contributed by the sixteen companies which contribute to the annual studies of the mortality on standard Ordinary

medically examined issues during the first fifteen policy years of insurance, but the relative proportion of the experience contributed by each of the sixteen companies was somewhat different in the two investigations. There is reason to believe that the mortality of the sixteen companies contributing to the study of the standard Ordinary medically examined issues (all amounts), which forms the basis for the expected deaths in this study, is higher than the mortality on the corresponding standard Ordinary medically examined issues of the nineteen companies contributing to this study weighted in the proportions of their contributions to this study. As a result there may be an overstatement of the expected deaths, and therefore an understatement of the mortality ratios. It is estimated that this understatement of mortality ratios on policies for large amounts could not, however, have exceeded 2 percentage points in the aggregate.

The findings of the present study, covering the experience on the issues of 1934 and later years between anniversaries in 1948 and 1953 for a maximum of nineteen policy year durations, are based on an exposure of \$21,786,872,000 and actual claims of \$109,493,000, excluding war deaths in the Korean War. Such war deaths were excluded from the actual claims and also from the death rates used for computing the expected deaths.

As in previous reports, the experience has been analyzed by age at issue, duration, and classification amount, in each case with further subdivision into permanent and term insurance categories, the plan classification at the time of issue being retained during the life of a policy.

EXPERIENCE BY AGE AT ISSUE, DURATION, CLASSIFICATION AMOUNT AND PLAN OF INSURANCE

The results of the experience by age at issue and plan are summarized in Table 1, those by policy year duration and plan in Table 2, and those by classification amount and plan in Table 3. The number of lives terminated by death is shown in parentheses after the amount of actual claims in each plan of insurance category; duplications have been eliminated in arriving at the number of deaths for all plans combined, for all ages at issue combined, for all policy years combined, and for all classification amounts combined.

The main features of the experience as brought out in Tables 1, 2, and 3 may be summarized as follows:

1. In the aggregate, the mortality on policies for large amounts was significantly lower than on corresponding standard Ordinary medically examined issues for all amounts of insurance. In particular, a standard deviation of 2% was associated with the aggregate mortality ratio of 88% on permanent plans, so that by the usual tests of statistical sig-

TABLE 1
LARGE AMOUNT ISSUES OF 1934 TO 1952
EXPERIENCE BETWEEN 1948 AND 1953 ANNIVERSARIES
BY AGE AT ISSUE AND PLAN OF INSURANCE
Expected Deaths Based on Corresponding Standard
Ordinary Medical Issues Experience
(Amounts Shown in \$1,000 Units)

AGES AT ISSUE	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	Actual† Claims	Expected Claims	Mortality Ratio	Actual† Claims	Expected Claims	Mor- tality Ratio	Actual† Claims	Expected Claims	Mortality Ratio
10-29	\$ 3,796 (52)	\$ 2,687	141%	\$ 447 (6)	\$ 221	*	\$ 4,243 (55)	\$ 2,908	146%
30-39	16,549 (288)	15,841	104	2,611 (58)	2,625	99%	19,160 (320)	18,466	104
40-49	39,642 (651)	44,152	90	7,263 (147)	7,686	94	46,905 (753)	51,838	90
50-59	30,319 (474)	39,307	77	3,189 (62)	4,278	75	33,508 (514)	43,585	77
60 and over	5,652 (107)	7,098	80	25 (1)	166	*	5,677 (107)	7,264	78
All	\$95,958 (1,507)	\$109,085	88%	\$13,535 (268)	\$14,976	90%	\$109,493 (1,671)	\$124,061	88%

† Number of lives involved shown in parentheses.

* Less than 10 lives terminated by death.

TABLE 2
 LARGE AMOUNT ISSUES OF 1934 TO 1952
 EXPERIENCE BETWEEN 1948 AND 1953 ANNIVERSARIES
 BY DURATION AND PLAN OF INSURANCE
 Expected Deaths Based on Corresponding Standard
 Ordinary Medical Issues Experience
 (Amounts Shown in \$1,000 Units)

POLICY YEARS	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	Actual† Claims	Expected Claims	Mortality Ratio	Actual† Claims	Expected Claims	Mortality Ratio	Actual† Claims	Expected Claims	Mortality Ratio
1- 2.....	\$ 8,953 (165)	\$ 9,151	98%	\$ 1,983 (38)	\$ 2,395	<i>83%</i>	\$ 10,936 (191)	\$ 11,546	95%
3- 5.....	16,945 (292)	17,231	98	3,764 (63)	3,662	103	20,709 (337)	20,893	99
6-10.....	24,768 (417)	27,534	90	2,945 (68)	3,595	82	27,713 (464)	31,129	89
11-15.....	28,768 (513)	35,539	81	3,050 (71)	3,603	85	31,818 (562)	39,142	81
16-19.....	16,524 (237)	19,630	84	1,793 (37)	1,721	<i>104</i>	18,317 (266)	21,351	86
All.....	\$95,958 (1,507)	\$109,085	88%	\$13,535 (268)	\$14,976	90%	\$109,493 (1,671)	\$124,061	88%

† Number of lives involved shown in parentheses.

NOTE.—Mortality ratio in italics where less than 50 but not less than 10 lives terminated by death.

TABLE 3
 LARGE AMOUNT ISSUES OF 1934 TO 1952
 EXPERIENCE BETWEEN 1948 AND 1953 ANNIVERSARIES
 BY CLASSIFICATION AMOUNT AND PLAN OF INSURANCE
 Expected Deaths Based on Corresponding Standard
 Ordinary Medical Issues Experience
 (Amounts Shown in \$1,000 Units)

CLASSIFICA- TION AMOUNT	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	Actual† Claims	Expected Claims	Mortality Ratio	Actual† Claims	Expected Claims	Mortality Ratio	Actual† Claims	Expected Claims	Mortality Ratio
\$50,000- 99,999	\$23,481 (630)	\$ 26,245	89%	\$ 4,057 (115)	\$ 3,883	104%	\$ 27,538 (715)	\$ 30,128	91%
\$100,000- 199,999	34,711 (660)	40,797	85	5,335 (111)	6,200	86	40,046 (734)	46,997	85
\$200,000- 499,999	28,880 (322)	30,882	94	3,048 (45)	3,791	80	31,928 (353)	34,673	92
\$500,000- 999,999	6,191 (41)	7,783	80	765 (6)	840	*	6,956 (45)	8,623	81
\$1,000,000 and over	2,695 (13)	3,378	80	330 (2)	262	*	3,025 (14)	3,640	83
All	\$95,958 (1,507)	\$109,085	88%	\$13,535 (268)	\$14,976	90%	\$109,493 (1,671)	\$124,061	88%

† Number of lives involved shown in parentheses.

* Less than 10 lives terminated by death.

NOTE.—Mortality ratio in italics where less than 50 but not less than 10 lives terminated by death.

nificance, the aggregate mortality on permanent plans can be regarded as having been significantly lower than 95% of that on corresponding standard Ordinary medically examined issues. Since a standard deviation of 5% was associated with the aggregate mortality ratio of 90% on term plans, that ratio was within the normal range of variation of the mortality on corresponding standard Ordinary medically examined issues.

2. In general, the mortality ratios decreased with advancing age at issue. The mortality for ages under 30 at issue exceeded that on corresponding standard Ordinary medically examined issues, on both permanent and term plans; however, because of the relatively small numbers of claims the mortality ratios at these ages were not statistically significant. On the other hand, the very low mortality ratios (80% or less) experienced at ages 50 and over were statistically significant. The very favorable experience on policies for large amounts at ages 50 and over is believed to reflect the effects of very careful selection of older applicants by means of multiple medical examinations, electrocardiograms, X-rays of the chest, free use of physicians' statements, etc. To a very minor extent the highly favorable experience at these ages may also reflect an understatement of mortality ratios due to the fact that the mortality on standard Ordinary medically examined issues of the companies contributing to the large amounts study may have been somewhat lower than that of all the companies contributing to the study of the corresponding standard Ordinary medically examined issues (all amounts).
3. There was no clear-cut trend in the mortality by policy year duration, although the mortality ratios for the first five policy years were generally somewhat higher than those for the subsequent policy years.
4. Because of the relatively small numbers of claims in the classification amounts \$500,000 and over, it is difficult to draw a definite conclusion about the trend in the mortality by classification amount. The classification amounts \$500,000 and over on the permanent plans had the most favorable mortality ratios.

Details of the mortality on policies for large amounts by age at issue and policy year duration, by age at issue and classification amount, and by policy year duration and classification amount, each by plan of insurance, are presented in Tables B, C, and D of the Appendix.

COMPARISON WITH PREVIOUS EXPERIENCE

A comparison of the experience between 1948 and 1953 anniversaries with that for the period between 1941 and 1948 anniversaries and that for

the period between 1934 and 1941 anniversaries is given in Table 4, by age at issue, policy year duration, classification amount and plan of insurance. The main features of the comparison as brought out in this table may be summarized as follows:

1. In the aggregate, there has been remarkably little variation over the years in the mortality ratios on permanent plan policies for large

TABLE 4

COMPARISON OF MORTALITY RATIOS ON LARGE AMOUNT ISSUES OF 1934 TO 1952 EXPERIENCE BETWEEN 1934-41, 1941-48 AND 1948-53 ANNIVERSARIES BY AGE AT ISSUE, DURATION, CLASSIFICATION AMOUNT AND PLAN OF INSURANCE
Expected Deaths Based on Corresponding Standard Ordinary Medical Issues Experience

	PERMANENT PLANS			TERM PLANS			ALL PLANS		
	1934-41	1941-48	1948-53	1934-41	1941-48	1948-53	1934-41	1941-48	1948-53
<i>Ages at Issue</i>									
10-39.....	80%	100%	110%	168%	168%	107%	93%	108%	109%
40-49.....	73	89	90	114	107	94	81	92	90
50 and over.....	95	78	78	107	91	72	96	79	77
All.....	85%	86%	88%	119%	112%	90%	90%	89%	88%
<i>Policy Years</i>									
1-2.....	†	90%	98%	†	81%	83%	†	89%	95%
3-5.....	†	95	98	†	139	103	†	101	99
6-10.....	†	84	90	†	109	82	†	87	89
11 and over.....	†	78	82	†	105	91	†	80	83
All.....	†	86%	88%	†	112%	90%	†	89%	88%
<i>Classification Amount</i>									
\$ 50,000-\$ 99,999.....	†	91%	89%	†	118%	104%	84%	95%	91%
\$100,000-\$199,999.....	†	90	85	†	100	86	104	91	85
\$200,000-\$499,999.....	†	89	94	†	128	80	88	93	92
\$500,000 and over.....	†	61	80	†	94	*	72	64	81
All.....	†	86%	88%	†	112%	90%	90%	89%	88%

† Not available.

* Less than 10 lives terminated by death.

NOTE.—Mortality ratio in italics where less than 50 but not less than 10 lives terminated by death.

amounts; however, the aggregate mortality ratio of 88% for the period between 1948 and 1953 anniversaries was the highest of the ratios for the three periods considered. On the other hand, the mortality ratios on term policies for large amounts have declined during this period.

2. During the period between 1934 and 1941 anniversaries, in the experi-

ence on the permanent plans the mortality ratio was relatively highest at issue ages 50 and over; in the later two periods the mortality ratio at these ages was relatively lowest and quite favorable. On the other hand, the mortality ratio on the permanent plans at issue ages under 40 was quite favorable during the period between 1934 and 1941 anniversaries but relatively highest in the later two periods.

3. Mortality on the term plans has declined most sharply at the younger ages, where it nevertheless remains highest; the mortality ratio on term plans at ages 50 and over, which was relatively lowest (but over 100%) during the period between 1934 and 1941 anniversaries, has also declined materially.
4. There has been no clear-cut trend in mortality by policy year, which has been generally highest in the first five policy year durations.
5. The indications are that policies involving classification amounts of \$500,000 and over were very carefully underwritten with resulting favorable mortality.

EXPERIENCE BY CAUSE OF DEATH

An analysis of the experience by cause of death on policies for large amounts is presented in Table 5. The expected deaths by cause were calculated on the basis of the corresponding distribution of deaths by cause on standard Ordinary medically examined issues during the period from 1950 to 1953 anniversaries. (For policy years beyond the fifteenth it was necessary to extrapolate from the published figures.)

From Table 5 it will be noted that accidents and homicide were the only causes to show higher mortality on policies for large amounts than on corresponding standard Ordinary medically examined issues, when comparisons are limited to causes responsible for more than a few deaths. In the previous study of the experience under large amount policies the mortality from these causes was also found to be higher than average. In the current study the excess mortality from accidents and homicide was not limited to any specific age range. Of the 192 deaths due to accidents and homicide, 45 resulted from aviation accidents and 67 from motor vehicle accidents. This unusually high proportion of aviation deaths was associated with an appreciable amount of private flying, as indicated in Table 6.

The private aircraft were generally owned either by the insured or by a company with which the insured was connected. Of the \$2,096,000 paid on the 31 lives where the insured at death was a pilot or passenger in a private aircraft, only \$74,000 (9 lives) represented payment of reduced amounts due to aviation exclusion provisions, and \$50,000 (1 life) repre-

TABLE 5
 LARGE AMOUNT ISSUES OF 1934 TO 1952
 EXPERIENCE BETWEEN 1948 AND 1953 ANNIVERSARIES
 BY CAUSE OF DEATH
 Expected Deaths Based on Corresponding Standard
 Ordinary Medical Issues Experience†
 (Amounts Shown in \$1,000 Units)

Cause of Death	Committee 1950 Code	Number of Lives Who Died	Proportion of All Deaths	Actual Claims	Expected Claims	Ratio of Actual to Ex- pected
PERMANENT PLANS						
Tuberculosis (all forms)	01, 02	6	0%	\$ 283	\$ 514	*
Malignant neoplasms...	18-33	314	21	22,056	22,777	97%
Diabetes mellitus.....	37	12	1	992	683	<i>145</i>
Vascular lesions of central nervous system...	42	103	7	7,046	7,202	98
Diseases of the heart and circulatory system...	49-55	669	45	41,152	50,797	81
Pneumonia and influenza.....	56-59	21	1	1,038	1,126	<i>92</i>
Accidents and homicide.	88-96, 98	168	11	10,021	8,121	123
Suicide.....	97	44	3	3,100	3,282	<i>94</i>
All other causes and Unknown.....	Residual	170	11	10,270	14,583	70
All Causes.....		1,507	100%	\$ 95,958	\$109,085	88%
TERM PLANS						
Tuberculosis (all forms)	01, 02	0	0%	\$ 0	\$ 68	*
Malignant neoplasms...	18-33	43	16	2,294	3,129	<i>73%</i>
Diabetes mellitus.....	37	0	0	0	75	*
Vascular lesions of central nervous system...	42	14	5	550	814	<i>68</i>
Diseases of the heart and circulatory system...	49-55	125	47	6,694	6,834	98
Pneumonia and influenza.....	56-59	4	1	175	139	*
Accidents and homicide.	88-96, 98	34	13	1,517	1,385	<i>110</i>
Suicide.....	97	13	5	580	513	<i>113</i>
All other causes and Unknown.....	Residual	35	13	1,725	2,019	<i>85</i>
All Causes.....		268	100%	\$ 13,535	\$ 14,976	90%

† Distribution of expected deaths by cause based on 1950-1953 experience.

* Less than 10 lives terminated by death.

NOTE.—Mortality ratio in italics where less than 50 but not less than 10 lives terminated by death.

TABLE 5—Continued

Cause of Death	Committee 1950 Code	Number of Lives Who Died	Propor- tion of All Deaths	Actual Claims	Expected Claims	Ratio of Actual to Ex- pected
ALL PLANS						
Tuberculosis (all forms)	01, 02	6	0%	\$ 283	\$ 582	*
Malignant neoplasms...	18-33	341	20	24,350	25,906	94%
Diabetes mellitus.....	37	12	1	992	758	131
Vascular lesions of cen- tral nervous system...	42	112	7	7,596	8,016	95
Diseases of the heart and circulatory system....	49-55	735	44	47,846	57,631	83
Pneumonia and influen- za.....	56-59	24	1	1,213	1,265	96
Accidents and homicide.	88-96, 98	192	12	11,538	9,506	121
Suicide.....	97	53	3	3,680	3,795	97
All other causes and Un- known.....	Residual	196	12	11,995	16,602	72
All Causes.....		1,671	100%	\$109,493	\$124,061	88%

sent payment under a policy on which an extra premium was charged because of the aviation hazard.

Mortality from diseases of the heart and circulatory system was significantly lower on permanent plan policies for large amounts than on corresponding standard Ordinary medically examined issues. In the pre-

TABLE 6
LARGE AMOUNT ISSUES OF 1934 TO 1952
EXPERIENCE BETWEEN 1948 AND 1953 ANNIVERSARIES
DEATHS FROM AVIATION ACCIDENTS

Aviation Status at Death	Number of Lives	Amounts Paid
Pilot of Private Aircraft.....	23	\$1,175,000
Passenger in Private Aircraft.....	8	921,000
Passenger in Commercial Scheduled Air Transport.....	13	749,000
Passenger in Military Aircraft.....	1	50,000
All.....	45	\$2,895,000

vious study of the mortality under large amount policies the relative mortality from these causes was also found to be low. The low mortality from these causes appears to be a reflection of the very careful selection of large amount risks at the older ages.

APPENDIX

TABLE A
CONTRIBUTING COMPANIES

Company	Proportion of Total Exposures
Northwestern Mutual.....	14.5%
Equitable, N.Y.....	10.2
Mutual Benefit.....	9.3
Prudential.....	7.8
New England Mutual.....	6.9
Massachusetts Mutual.....	6.6
Metropolitan.....	6.4
John Hancock.....	5.3
Connecticut Mutual.....	4.8
Mutual Life, N.Y.....	4.7
New York Life.....	4.7
Aetna.....	3.4
Connecticut General.....	3.3
Travelers.....	3.2
Penn Mutual.....	3.1
Provident Mutual.....	2.5
Sun Life, Canada.....	1.6
Phoenix Mutual.....	.9
Canada Life.....	.8
Total.....	100.0%

TABLE B

LARGE AMOUNT ISSUES OF 1934 TO 1952
 EXPERIENCE BETWEEN 1948 AND 1953 ANNIVERSARIES
 BY AGE AT ISSUE, DURATION, AND PLAN OF INSURANCE
 EXPECTED DEATHS BASED ON CORRESPONDING STANDARD
 ORDINARY MEDICAL ISSUES EXPERIENCE
 (Amounts Shown in \$1,000 Units)

AGES AT ISSUE	POLICY YEARS	PERMANENT PLANS			TERM PLANS			ALL PLANS		
		Actual Claims	Expected Claims	Mortality Ratio	Actual Claims	Expected Claims	Mortality Ratio	Actual Claims	Expected Claims	Mortality Ratio
10-29.....	1- 2	474	\$ 405	<i>117%</i>	\$ 0	\$ 65	*	\$ 474	\$ 470	<i>101%</i>
	3- 5	972	573	<i>170</i>	57	61	*	1,029	634	<i>162</i>
	6-10	470	502	*	50	32	*	520	534	*
	11-15	922	792	<i>116</i>	90	45	*	1,012	837	<i>121</i>
	16-19	958	415	*	250	18	*	1,208	433	*
All		\$ 3,796	\$ 2,687	141%	\$ 447	\$ 221	*	\$ 4,243	\$ 2,908	146%
30-39.....	1- 2	\$ 1,666	\$ 1,479	<i>113%</i>	\$ 526	\$ 476	<i>111%</i>	\$ 2,192	\$ 1,955	<i>112%</i>
	3- 5	3,514	2,655	132	502	656	77	4,016	3,311	121
	6-10	4,009	3,795	106	582	620	<i>94</i>	4,591	4,415	104
	11-15	4,852	5,103	95	731	603	<i>121</i>	5,583	5,706	98
	16-19	2,508	2,809	<i>89</i>	270	270	*	2,778	3,079	90
All		\$16,549	\$ 15,841	104%	\$ 2,611	\$ 2,625	99%	\$ 19,160	\$ 18,466	104%
40-49.....	1- 2	\$ 3,718	\$ 3,339	111%	\$ 1,002	\$ 1,105	<i>91%</i>	\$ 4,720	\$ 4,444	106%
	3- 5	6,271	6,995	90	2,333	1,797	<i>130</i>	8,604	8,792	98
	6-10	11,108	11,526	96	1,519	1,844	<i>82</i>	12,627	13,370	94
	11-15	11,957	14,113	85	1,429	1,958	<i>73</i>	13,386	16,071	83
	16-19	6,588	8,179	81	980	982	<i>100</i>	7,568	9,161	83
All		\$39,642	\$ 44,152	90%	\$ 7,263	\$ 7,686	94%	\$ 46,905	\$ 51,838	90%
50-59.....	1- 2	\$ 2,645	\$ 3,265	<i>81%</i>	\$ 455	\$ 717	*	\$ 3,100	\$ 3,982	78%
	3- 5	5,220	6,107	85	872	1,085	<i>80%</i>	6,092	7,192	85
	6-10	7,945	10,114	79	794	1,068	<i>74</i>	8,739	11,182	78
	11-15	9,241	12,979	71	800	962	<i>83</i>	10,041	13,941	72
	16-19	5,268	6,842	77	268	446	*	5,536	7,288	76
All		\$30,319	\$ 39,307	77%	\$ 3,189	\$ 4,278	75%	\$ 33,508	\$ 43,585	77%
60 and over	1- 2	\$ 450	\$ 663	<i>68%</i>	\$ 0	\$ 32	*	\$ 450	\$ 695	<i>65%</i>
	3- 5	968	901	<i>107</i>	0	63	*	968	964	<i>100</i>
	6-10	1,236	1,597	<i>77</i>	0	31	*	1,236	1,628	<i>76</i>
	11-15	1,796	2,552	<i>70</i>	0	35	*	1,796	2,587	<i>69</i>
	16-19	1,202	1,385	<i>87</i>	25	5	*	1,227	1,390	<i>88</i>
All		\$ 5,652	\$ 7,098	80%	\$ 25	\$ 166	*	\$ 5,677	\$ 7,264	78%
All.....	1- 2	\$ 8,953	\$ 9,151	98%	\$ 1,983	\$ 2,395	<i>83%</i>	\$ 10,936	\$ 11,546	95%
	3- 5	16,945	17,231	98	3,764	3,662	103	20,709	20,893	99
	6-10	24,768	27,534	90	2,945	3,595	82	27,713	31,129	89
	11-15	28,768	35,539	81	3,050	3,603	85	31,818	39,142	81
	16-19	16,524	19,630	84	1,793	1,721	<i>104</i>	18,317	21,351	86
All		\$95,958	\$109,085	88%	\$13,535	\$14,976	90%	\$109,493	\$124,061	88%

* Less than 10 lives terminated by death.

NOTE.—Mortality ratio in italics where less than 50 but not less than 10 lives terminated by death.

TABLE C
 LARGE AMOUNT ISSUES OF 1934 TO 1952
 EXPERIENCE BETWEEN 1948 AND 1953 ANNIVERSARIES
 BY AGE AT ISSUE, CLASSIFICATION AMOUNT, AND PLAN OF INSURANCE
 EXPECTED DEATHS BASED ON CORRESPONDING STANDARD ORDINARY MEDICAL ISSUES EXPERIENCE
 (Amounts Shown in \$1,000 Units)

AGES AT ISSUE	CLASSIFICATION AMOUNT	PERMANENT PLANS			TERM PLANS			ALL PLANS		
		Actual Claims	Expected Claims	Mortality Ratio	Actual Claims	Expected Claims	Mortality Ratio	Actual Claims	Expected Claims	Mortality Ratio
10-29	\$ 50,000- 99,999	\$ 866	\$ 1,062	<i>82%</i>	\$ 97	\$ 114	*	\$ 963	\$ 1,176	<i>82%</i>
	100,000-199,999	1,400	1,009	<i>139</i>	200	73	*	1,600	1,082	<i>148</i>
	200,000-499,999	813	452	*	0	29	*	813	481	*
	500,000-999,999	335	117	*	0	2	*	335	119	*
	1,000,000 and over	382	47	*	150	3	*	532	50	*
	All	\$ 3,796	\$ 2,687	141%	\$ 447	\$ 221	*	\$ 4,243	\$ 2,908	146%
30-39	\$ 50,000- 99,999	\$ 5,324	\$ 4,981	107%	\$ 1,168	\$ 973	<i>120%</i>	\$ 6,492	\$ 5,954	109%
	100,000-199,999	7,032	6,100	115	1,033	1,078	<i>96</i>	8,065	7,178	112
	200,000-499,999	3,256	3,705	<i>88</i>	285	474	*	3,541	4,179	<i>85</i>
	500,000-999,999	862	739	*	125	70	*	987	809	*
	1,000,000 and over	75	316	*	0	30	*	75	346	*
	All	\$16,549	\$ 15,841	104%	\$ 2,611	\$ 2,625	99%	\$ 19,160	\$ 18,466	104%
40-49	\$ 50,000- 99,999	\$ 9,190	\$ 9,914	93%	\$ 2,063	\$ 1,916	108%	\$ 11,253	\$ 11,830	95%
	100,000-199,999	14,107	16,935	83	2,855	3,296	87	16,962	20,231	84
	200,000-499,999	12,599	12,839	98	1,965	1,977	<i>99</i>	14,564	14,816	98
	500,000-999,999	2,258	3,042	<i>74</i>	380	390	*	2,638	3,432	<i>77</i>
	1,000,000 and over	1,488	1,422	*	0	107	*	1,488	1,529	*
	All	\$39,642	\$ 44,152	90%	\$ 7,263	\$ 7,686	94%	\$ 46,905	\$ 51,838	90%

* Less than 10 lives terminated by death.

NOTE.—Mortality ratio in italics where less than 50 but not less than 10 lives terminated by death.

TABLE C—Continued

AGES AT ISSUE	CLASSIFICATION AMOUNT	PERMANENT PLANS			TERM PLANS			ALL PLANS		
		Actual Claims	Expected Claims	Mortality Ratio	Actual Claims	Expected Claims	Mortality Ratio	Actual Claims	Expected Claims	Mortality Ratio
50-59	\$ 50,000- 99,999	\$ 6,710	\$ 8,221	82%	\$ 704	\$ 858	82%	\$ 7,414	\$ 9,079	82%
	100,000-199,999	9,715	14,181	69	1,247	1,720	73	10,962	15,901	69
	200,000-499,999	10,656	11,984	89	798	1,252	64	11,454	13,236	87
	500,000-999,999	2,488	3,460	72	260	334	*	2,748	3,794	72
	1,000,000 and over	750	1,461	*	180	114	*	930	1,575	*
	All	\$30,319	\$ 39,307	77%	\$ 3,189	\$ 4,278	75%	\$ 33,508	\$ 43,585	77%
60 and over	\$ 50,000- 99,999	\$ 1,391	\$ 2,067	67%	\$ 25	\$ 22	*	\$ 1,416	\$ 2,089	68%
	100,000-199,999	2,457	2,572	96	0	33	*	2,457	2,605	94
	200,000-499,999	1,556	1,902	82	0	59	*	1,556	1,961	79
	500,000-999,999	248	425	*	0	44	*	248	469	*
	1,000,000 and over	0	132	*	0	8	*	0	140	*
	All	\$ 5,652	\$ 7,098	80%	\$ 25	\$ 166	*	\$ 5,677	\$ 7,264	78%
All	\$ 50,000- 99,999	\$23,481	\$ 26,245	89%	\$ 4,057	\$ 3,883	104%	\$ 27,538	\$ 30,128	91%
	100,000-199,999	34,711	40,797	85	5,335	6,200	86	40,046	46,997	85
	200,000-499,999	28,880	30,882	94	3,048	3,791	80	31,928	34,673	92
	500,000-999,999	6,191	7,783	80	765	840	*	6,956	8,623	81
	1,000,000 and over	2,695	3,378	80	330	262	*	3,025	3,640	83
	All	\$95,958	\$109,085	88%	\$13,535	\$14,976	90%	\$109,493	\$124,061	88%

TABLE D
LARGE AMOUNT ISSUES OF 1934 TO 1952
EXPERIENCE BETWEEN 1948 AND 1953 ANNIVERSARIES
BY DURATION, CLASSIFICATION AMOUNT, AND PLAN OF INSURANCE
EXPECTED DEATHS BASED ON CORRESPONDING STANDARD ORDINARY MEDICAL ISSUES EXPERIENCE
(Amounts Shown in \$1,000 Units)

POLICY YEARS	CLASSIFICATION AMOUNT	PERMANENT PLANS			TERM PLANS			ALL PLANS		
		Actual Claims	Expected Claims	Mortality Ratio	Actual Claims	Expected Claims	Mortality Ratio	Actual Claims	Expected Claims	Mortality Ratio
1- 2	\$ 50,000- 99,999	\$ 2,917	\$ 2,517	116%	\$ 516	\$ 718	72%	\$ 3,433	\$ 3,235	106%
	100,000-199,999	3,600	3,552	101	1,051	958	110	4,651	4,510	103
	200,000-499,999	2,174	2,337	93	416	526	*	2,590	2,863	90
	500,000-999,999	262	529	*	0	134	*	262	663	*
	1,000,000 and over	0	216	*	0	59	*	0	275	*
	All	\$ 8,953	\$ 9,151	98%	\$ 1,983	\$ 2,395	83%	\$ 10,936	\$ 11,546	95%
3- 5	\$ 50,000- 99,999	\$ 4,947	\$ 4,616	107%	\$ 1,181	\$ 1,063	111%	\$ 6,128	\$ 5,679	108%
	100,000-199,999	6,651	6,929	96	1,266	1,500	84	7,917	8,429	94
	200,000-499,999	4,670	4,408	106	802	785	*	5,472	5,193	105
	500,000-999,999	527	981	*	515	239	*	1,042	1,220	*
	1,000,000 and over	150	297	*	0	75	*	150	372	*
	All	\$16,945	\$ 17,231	98%	\$ 3,764	\$ 3,662	103%	\$ 20,709	\$ 20,893	99%
6-10	\$ 50,000- 99,999	\$ 5,981	\$ 6,684	89%	\$ 1,378	\$ 952	145%	\$ 7,359	\$ 7,636	96%
	100,000-199,999	9,015	10,761	84	1,142	1,533	74	10,157	12,294	83
	200,000-499,999	8,128	7,650	106	400	867	*	8,528	8,517	100
	500,000-999,999	1,159	1,939	*	25	196	*	1,184	2,135	*
	1,000,000 and over	485	500	*	0	47	*	485	547	*
	All	\$24,768	\$ 27,534	90%	\$ 2,945	\$ 3,595	82%	\$ 27,713	\$ 31,129	89%

* Less than 10 lives terminated by death.

NOTE.—Mortality ratio in italics where less than 50 but not less than 10 lives terminated by death.

TABLE D—Continued

POLICY YEARS	CLASSIFICATION AMOUNT	PERMANENT PLANS			TERM PLANS			ALL PLANS		
		Actual Claims	Expected Claims	Mortality Ratio	Actual Claims	Expected Claims	Mortality Ratio	Actual Claims	Expected Claims	Mortality Ratio
11-15.....	\$ 50,000- 99,999	\$ 6,303	\$ 8,171	77%	\$ 723	\$ 812	89%	\$ 7,026	\$ 8,983	78%
	100,000-199,999	11,088	12,975	85	1,167	1,549	75	12,255	14,524	84
	200,000-499,999	9,024	10,612	85	805	1,020	79	9,829	11,632	84
	500,000-999,999	2,125	2,561	83	175	176	*	2,300	2,737	84
	1,000,000 and over	228	1,220	*	180	46	*	408	1,266	*
	All	\$28,768	\$ 35,539	81%	\$ 3,050	\$ 3,603	85%	\$ 31,818	\$ 39,142	81%
16-19.....	\$ 50,000- 99,999	\$ 3,333	\$ 4,257	78%	\$ 259	\$ 338	*	\$ 3,592	\$ 4,595	78%
	100,000-199,999	4,357	6,580	66	709	660	107%	5,066	7,240	70
	200,000-499,999	4,884	5,875	83	625	593	105	5,509	6,468	85
	500,000-999,999	2,118	1,773	119	50	95	*	2,168	1,868	116
	1,000,000 and over	1,832	1,145	*	150	35	*	1,982	1,180	*
	All	\$16,524	\$ 19,630	84%	\$ 1,793	\$ 1,721	104%	\$ 18,317	\$ 21,351	86%
All.....	\$ 50,000- 99,999	\$23,481	\$ 26,245	89%	\$ 4,057	\$ 3,883	104%	\$ 27,538	\$ 30,128	91%
	100,000-199,999	34,711	40,797	85	5,335	6,200	86	40,046	46,997	85
	200,000-499,999	28,880	30,882	94	3,048	3,791	80	31,928	34,673	92
	500,000-999,999	6,191	7,783	80	765	840	*	6,956	8,623	81
	1,000,000 and over	2,695	3,378	80	330	262	*	3,025	3,640	83
	All	\$95,958	\$109,085	88%	\$13,535	\$14,976	90%	\$109,493	\$124,061	88%