TRANSACTIONS

1951 REPORTS OF MORTALITY AND MORBIDITY EXPERIENCE

REPORT OF THE COMMITTEE ON MORTALITY
UNDER ORDINARY INSURANCES
AND ANNUITIES

MORTALITY UNDER STANDARD ORDINARY INSURANCE ISSUES BETWEEN 1949 AND 1950 ANNIVERSARIES

THIS report is the latest in the series of annual studies of the mortality under standard Ordinary insurance. It covers the intercompany experience from anniversaries in 1949 to anniversaries in 1950 on

1. Standard medically examined Ordinary insurance during each of the first fifteen policy years
2. Standard Ordinary insurance during the sixteenth and subsequent policy years combined

The names of the contributing companies and their proportionate contributions to the total exposures in this study are given in Table A of the Appendix.

EXPERIENCE UNDER STANDARD MEDICALLY EXAMINED ISSUES DURING THE FIRST FIFTEEN YEARS OF INSURANCE

The current experience during the first fifteen policy years of insurance is based on an exposure of $42,123,004,000 and actual claims of $146,-969,000, excluding war deaths. Only 72 policies representing $214,000 in claims were excluded as deaths due to operations of war. It should be noted, however, that only a fraction of the exposure fell within the Korean War period.

Expected deaths were calculated on the 1946–1949 Select Basic Table (*TSA* II, 506). The mortality ratios on this table are presented in Table 1, by age groups at issue for all years of issue combined. The corresponding experience by year of issue (or by policy year) for all ages at issue combined is presented in Table 2. The detailed experience by age groups at issue for each year of issue (or each policy year) is set forth in Table B of the Appendix.

Table 1 indicates that during the period from 1949 to 1950 anniversaries the largest improvements in mortality as compared with the 1946–1949 Select Basic Table occurred at ages 15–29 and 55–64 at issue. If war

1

claims had not been excluded, only the mortality ratios for age groups 10–14, 15–19, and 20–24 at issue would have been increased by more than one percent but in no case by as much as two percent. No clear-cut differences in mortality by year of issue (or by policy year duration) are revealed in Table 2. The inclusion of war claims would not have increased the mortality ratio for any year of issue by as much as .6 percent.

The mortality trends by age groups at issue, year of issue, and policy

TABLE 1

STANDARD MEDICALLY EXAMINED ISSUES OF 1935 TO 1949

EXPERIENCE BETWEEN 1949 AND 1950 ANNIVERSARIES

BY AGE AT ISSUE

POLICY YEARS 1 TO 15 COMBINED

(Amounts Shown in $1,000 Units)

Ages at Issue	Exposed to Risk	Actual Deaths*	Expected Deaths on 1946–1949 Select Basic Table	Mortality Ratio
10–14	$ 1,145,177	$ 998	$ 1,039	96.1%
15–19	2,110,960	1,964	2,250	87.3
20–24	4,598,102	4,353	4,958	87.8
25–29	6,750,431	8,067	9,319	86.6
30–34	7,875,216	15,873	15,444	102.8
35–39	7,445,481	22,991	23,313	98.6
40–44	5,809,210	28,002	28,382	98.7
45–49	3,555,204	27,448	27,982	98.1
50–54	1,866,763	19,963	21,165	94.3
55–59	730,483	11,138	12,410	89.8
60–64	199,797	4,698	5,246	89.6
65 and over	36,180	1,474	1,359	108.5
All Ages	$42,123,004	$146,969	$152,867	96.1%

* Excludes deaths due to operations of war.

year durations during the four-year period from 1946 to 1950 anniversaries are summarized in Table 3. This table shows that during the four-year period here considered, over-all mortality has declined each year: from 103.0% to 99.4% to 98.1% to 96.1%. The table also brings out that there has been a continuous improvement in the mortality at ages under 30 at issue, that the mortality at ages 30–39 at issue has remained virtually unchanged and that there has been some, although irregular, improvement in mortality at ages 40 and over at issue. By year of issue the improvement has been most marked for policies issued during the war years and for policies issued in 1937 and prior years, on both of which relatively high mortality had been experienced during the period from 1946 to

1947 anniversaries. The trend of mortality by policy year reflects apparently the same variations in mortality as those manifest in the analysis by year of issue.

The detailed figures for expected deaths and the mortality ratios on the 1946–1949 Select Basic Table for the experience from anniversaries in

TABLE 2

STANDARD MEDICALLY EXAMINED ISSUES OF 1935 TO 1949

EXPERIENCE BETWEEN 1949 AND 1950 ANNIVERSARIES

BY YEAR OF ISSUE

ALL AGES COMBINED

(Amounts Shown in $1,000 Units)

Year of Issue	Policy Year	Exposed to Risk	Actual Deaths*	Expected Deaths on 1946–1949 Select Basic Table	Mortality Ratio
1935........	15	$ 1,836,795	$ 13,976	$ 15,304	91.3%
1936........	14	2,051,886	13,833	14,618	94.6
1937........	13	2,214,433	13,832	13,814	100.1
1938........	12	2,142,515	11,526	12,099	95.3
1939........	11	1,845,290	8,383	9,316	90.0
1940........	10	2,108,795	9,493	9,252	102.6
1941........	9	2,624,630	9,939	10,377	95.8
1942........	8	1,891,941	7,336	7,565	97.0
1943........	7	2,210,495	8,904	8,632	103.2
1944........	6	2,565,234	8,790	9,659	91.0
1945........	5	2,910,164	9,377	9,629	97.4
1946........	4	4,415,319	10,729	10,751	99.8
1947........	3	4,391,846	8,881	9,631	92.2
1948........	2	4,239,136	6,673	6,959	95.9
1949........	1	4,674,525	5,297	5,261	100.7
All Years of Issue	....	$42,123,004	$146,969	$152,867	96.1%

* Excludes deaths due to operations of war.

1946 to 1947, 1947 to 1948, and 1948 to 1949 are set forth in Table C of the Appendix.

EXPERIENCE UNDER STANDARD ISSUES DURING THE 16TH
AND SUBSEQUENT POLICY YEARS

The current experience during the 16th and subsequent policy years is based on an exposure of $18,893,095,000 and actual claims of $356,269,000 excluding war deaths. Only six policies representing $18,000 in claims were excluded as deaths due to operations of war.

Expected deaths were calculated on the 1946–1949 Ultimate Basic Table (*TSA* II, 507) and also on the Commissioners 1941 Standard Or-

dinary Mortality Table. The mortality ratios on these tables are presented in Table 4 by attained age groups. This table indicates that during the period from 1949 to 1950 anniversaries, the largest improvements in mortality as compared with the 1946–1949 Ultimate Basic Table occurred at attained ages 30–39 and 80–89.

The mortality trends by attained age groups during the four-year period from 1946 to 1950 anniversaries are summarized in Table 5. This

TABLE 3

TREND OF EXPERIENCE BETWEEN 1946 AND 1950 ANNIVERSARIES
DURING FIRST 15 POLICY YEARS

MORTALITY RATIOS ON 1946–1949 SELECT BASIC TABLE
FOR EXPERIENCE YEARS INDICATED

AGES AT ISSUE	EXPERIENCE IN POLICY YEAR ENDING IN			
	1947	1948	1949	1950*
	By Age at Issue—Policy Years 1 to 15 Combined			
10–19	110.5%	98.1%	97.1%	90.1%
20–29	100.6	98.6	97.5	87.0
30–39	100.3	100.7	100.2	100.3
40–49	105.4	101.0	95.2	98.4
50–59	102.3	95.3	101.0	92.6
60 and over	101.4	102.2	98.1	93.4
All Ages	103.0%	99.4%	98.1%	96.1%
YEARS OF ISSUE	By Year of Issue—All Ages Combined			
1946 or later	99.4%	97.1%	98.3%	96.9%
1942–1945	107.1	100.6	97.9	97.0
1938–1941	98.0	99.4	100.3	95.9
1937 and prior	104.0	99.3	96.7	95.2
All Years of Issue	103.0%	99.4%	98.1%	96.1%
POLICY YEARS	By Policy Year—All Ages Combined			
1– 2	100.1%	97.1%	100.6%	98.0%
3– 5	109.0	101.8	96.4	96.6
6–10	99.5	98.9	100.4	97.8
11–15	103.9	99.3	96.9	94.5
All Policy Years	103.0%	99.4%	98.1%	96.1%

* Excludes deaths due to operations of war.

TABLE 4

STANDARD ISSUES DURING 16TH AND SUBSEQUENT POLICY YEARS
EXPERIENCE BETWEEN 1949 AND 1950 ANNIVERSARIES BY
ATTAINED AGE
ALL POLICY YEARS COMBINED
(Amounts Shown in $1,000 Units)

ATTAINED AGES	EXPOSED TO RISK	ACTUAL DEATHS*	EXPECTED DEATHS ON		MORTALITY RATIO ON	
			CSO Table	1946–1949 Ultimate Basic Table	CSO Table	1946–1949 Ultimate Basic Table
25–29	$ 193,769	$ 237	$ 616	$ 233	38.5%	101.7%
30–34	431,394	520	1,726	642	30.1	81.0
35–39	966,041	1,817	5,085	1,965	35.7	92.5
40–44	1,852,790	5,998	13,272	6,139	45.2	97.7
45–49	2,672,540	14,630	26,804	15,160	54.6	96.5
50–54	3,173,486	30,691	45,871	30,001	66.9	102.3
55–59	3,313,471	49,458	69,834	52,151	70.8	94.8
60–64	2,735,811	66,144	85,163	68,522	77.7	96.5
65–69	1,777,598	62,662	81,971	65,833	76.4	95.2
70–74	1,054,745	56,257	72,463	57,581	77.6	97.7
75–79	498,811	41,619	50,795	40,355	81.9	103.1
80–84	176,530	19,151	26,328	21,388	72.7	89.5
85–89	40,161	5,692	8,681	7,183	65.6	79.2
90–95	5,948	1,393	1,843	1,435	75.6	97.1
All Ages	$18,893,095	$356,269	$490,452	$368,588	72.6%	96.7%

* Excludes deaths due to operations of war.

TABLE 5

TREND OF EXPERIENCE BETWEEN 1946 AND 1950
ANNIVERSARIES FOR 16TH AND SUBSEQUENT
POLICY YEARS
MORTALITY RATIOS ON 1946–1949 ULTIMATE BASIC
TABLE FOR EXPERIENCE YEARS INDICATED
ALL POLICY YEARS COMBINED

ATTAINED AGES	EXPERIENCE IN POLICY YEAR ENDING IN			
	1947	1948	1949	1950*
Under 40	100.0%	99.6%	98.7%	90.6%
40–49	100.5	101.0	98.0	96.8
50–59	100.9	102.7	98.2	97.6
60–69	98.3	102.3	98.9	95.9
70–79	102.3	104.4	95.4	99.9
80 and over	100.8	94.5	97.6	87.4
All Ages	100.3%	102.2%	97.7%	96.7%

* Excludes deaths due to operations of war.

table shows that during the four-year period over-all mortality first increased slightly from 100.3% to 102.2% and then declined to 97.7% and further to 96.7%. The table also brings out that mortality has improved in every decennial age group considered.

The detailed figures for expected deaths and the mortality ratios on the 1946–1949 Ultimate Basic Table for the experience from anniversaries in 1946 to 1947, 1947 to 1948, and 1948 to 1949 are set forth in Table D of the Appendix.

VARIATIONS IN EXPERIENCE BY INDIVIDUAL COMPANIES

There was considerable variation in the experience of individual companies. Under standard medically examined issues during the first 15 policy years the mortality ratios of individual companies for all ages and durations combined varied in the range from 81% to 109% of the 1946–1949 Select Basic Table. Under standard issues during the 16th and subsequent policy years the corresponding mortality ratios ranged from 85% to 105% of the 1946–1949 Ultimate Basic Table. There did not appear to be any clear-cut correlation between the level of mortality on standard medically examined issues during the first 15 policy years and that on standard issues during the 16th and subsequent policy years.

Many different factors are, of course, responsible for the variation in the experience of individual companies. In addition to chance fluctuations the more important factors causing variations are believed to be: different proportions of male and female risks, different underwriting standards, different geographical and socio-economic distributions of risks and different proportions of medical and nonmedical business.

Because of the growth in the volume of nonmedical business in recent years, the Committee obtained from the contributing companies data as to the proportions of medical and nonmedical business for the standard issues of 1949. On these issues the proportion of nonmedical business in individual companies varied from zero to 48% in the important nonmedical age range from 20 to 34 at issue. It had been suggested that where a substantial proportion of business in a particular age range was issued without a medical examination, the experience on medically examined business was likely to be higher than where only a small proportion of the business was issued without a medical examination. An analysis of the individual company experiences in the present study does not, however, bear out this hypothesis, perhaps merely because the effect on mortality of the proportion of nonmedical business cannot be segregated from the effect of other factors.

APPENDIX

TABLE A

CONTRIBUTING COMPANIES
PROPORTION OF TOTAL EXPOSURES*
CONTRIBUTED BY EACH

Company	First 15 Policy Years	16th and Subsequent Policy Years
Metropolitan............	26.4%	26.2%
Prudential..............	14.0	11.2
New York Life..........	10.6	....
Northwestern Mutual.....	8.6	10.4
Equitable, N.Y..........	7.9	12.5
Mutual Life, N.Y........	4.6	7.1
John Hancock...........	4.1	3.4
Penn Mutual............	3.9	4.6
Mutual Benefit..........	3.8	4.3
Massachusetts Mutual....	3.5	5.1
Travelers...............	3.3	4.6
Aetna..................	2.5	3.3
Connecticut Mutual......	2.5	2.1
Provident Mutual........	1.7	2.4
Sun Life, Canada........	1.3	1.8
Connecticut General......	1.3	1.0
Total.................	100.0%	100.0%

* By Amounts of Insurance.

TABLE B

STANDARD MEDICALLY EXAMINED ISSUES OF 1935 TO 1949
EXPERIENCE BETWEEN 1949 AND 1950 ANNIVERSARIES BY YEAR OF ISSUE
AND AGE AT ISSUE
EXPECTED DEATHS BY 1946–1949 SELECT BASIC TABLE
(Amounts Shown in $1,000 Units)

Issue Year	Policy Year	Ages at Issue	Exposed to Risk	Actual Deaths*	Expected Deaths	Mortality Ratio
1935.	15	10–14	$ 74,850	$ 90	$ 87	103%
		15–19	116,153	146	163	90
		20–24	239,526	354	448	79
		25–29	322,452	784	951	82
		30–34	330,700	1,466	1,670	88
		35–39	296,472	2,248	2,434	92
		40–44	222,459	2,624	2,950	89
		45–49	133,552	2,855	2,827	101
		50–54	63,766	1,796	1,926	93
		55–59	27,031	1,109	1,179	94
		60–64	8,633	357	550	65
		65 and over	1,201	147	119	124
		All Ages	$1,836,795	$13,976	$15,304	91%
1936.	14	10–14	$ 80,515	$ 99	$ 92	108%
		15–19	129,808	144	166	87
		20–24	273,247	317	443	72
		25–29	358,388	902	917	98
		30–34	364,574	1,608	1,564	103
		35–39	327,620	2,065	2,280	91
		40–44	261,440	2,741	2,941	93
		45–49	148,232	2,824	2,699	105
		50–54	69,550	1,723	1,834	94
		55–59	28,680	923	1,104	84
		60–64	8,444	435	462	94
		65 and over	1,388	52	116	45
		All Ages	$2,051,886	$13,833	$14,618	95%
1937.	13	10–14	$ 87,499	$ 114	$ 99	115%
		15–19	141,914	144	172	84
		20–24	312,155	415	440	94
		25–29	390,501	869	867	100
		30–34	398,310	1,734	1,498	116
		35–39	338,462	2,218	2,085	106
		40–44	265,408	2,655	2,614	102
		45–49	157,649	2,281	2,535	90
		50–54	79,384	1,735	1,845	94
		55–59	32,517	1,097	1,110	99
		60–64	9,086	426	438	97
		65 and over	1,548	144	111	130
		All Ages	$2,214,433	$13,832	$13,814	100%

* Excludes deaths due to operations of war.

8

Issue Year	Policy Year	Ages at Issue	Exposed to Risk	Actual Deaths*	Expected Deaths	Mortality Ratio
1938.......	12	10–14	$ 88,173	$ 114	$ 99	115%
		15–19	128,249	124	149	83
		20–24	283,908	341	369	92
		25–29	374,164	642	733	88
		30–34	401,867	1,410	1,338	105
		35–39	337,939	1,842	1,892	97
		40–44	253,238	2,145	2,211	97
		45–49	156,902	2,005	2,286	88
		50–54	75,749	1,359	1,547	88
		55–59	30,449	973	923	105
		60–64	10,204	494	445	111
		65 and over	1,673	77	107	72
		All Ages	$2,142,515	$11,526	$12,099	95%
1939.......	11	10–14	$ 77,456	$ 88	$ 85	104%
		15–19	121,853	118	136	87
		20–24	263,508	233	314	74
		25–29	326,165	486	581	84
		30–34	327,050	902	965	93
		35–39	278,034	1,237	1,396	89
		40–44	206,055	1,681	1,605	105
		45–49	133,965	1,430	1,738	82
		50–54	73,020	1,240	1,320	94
		55–59	28,473	580	759	76
		60–64	8,294	314	334	94
		65 and over	1,417	74	83	89
		All Ages	$1,845,290	$ 8,383	$ 9,316	90%
1940.......	10	10–14	$ 80,460	$ 83	$ 87	95%
		15–19	141,396	209	154	136
		20–24	310,377	294	345	85
		25–29	377,797	544	597	91
		30–34	371,428	971	940	103
		35–39	315,999	1,373	1,381	99
		40–44	234,282	1,933	1,586	122
		45–49	151,938	1,601	1,694	95
		50–54	80,624	1,266	1,263	100
		55–59	33,299	755	768	98
		60–64	9,437	411	344	119
		65 and over	1,758	53	93	57
		All Ages	$2,108,795	$ 9,493	$ 9,252	103%
1941.......	9	10–14	$ 88,481	$ 89	$ 90	99%
		15–19	190,078	155	205	76
		20–24	385,513	357	409	87
		25–29	456,739	577	662	87
		30–34	469,432	1,077	1,061	102
		35–39	403,507	1,791	1,578	113
		40–44	283,969	1,840	1,712	107
		45–49	191,982	1,769	1,881	94
		50–54	99,418	1,175	1,406	84
		55–59	39,844	718	822	87
		60–64	13,158	304	432	70
		65 and over	2,509	87	119	73
		All Ages	$2,624,630	$ 9,939	$10,377	96%

Issue Year	Policy Year	Ages at Issue	Exposed to Risk	Actual Deaths*	Expected Deaths	Mortality Ratio
1942.......	8	10–14	$ 64,404	$ 57	$ 62	92%
		15–19	133,245	135	143	94
		20–24	218,985	177	226	78
		25–29	308,212	333	416	80
		30–34	333,090	704	686	103
		35–39	301,930	1,203	1,063	113
		40–44	225,590	1,120	1,220	92
		45–49	162,248	1,442	1,415	102
		50–54	92,117	1,284	1,186	108
		55–59	38,402	557	717	78
		60–64	11,157	185	323	57
		65 and over	2,561	139	108	129
		All Ages	$1,891,941	$ 7,336	$ 7,565	97%
1943........	7	10–14	$ 67,557	$ 34	$ 59	58%
		15–19	123,997	114	133	86
		20–24	178,363	154	175	88
		25–29	302,007	375	371	101
		30–34	380,332	696	688	101
		35–39	399,483	1,530	1,198	127
		40–44	334,385	1,746	1,595	109
		45–49	231,002	1,573	1,716	92
		50–54	126,560	1,402	1,439	97
		55–59	50,584	851	831	102
		60–64	13,675	290	335	87
		65 and over	2,550	139	92	151
		All Ages	$2,210,495	$ 8,904	$ 8,632	103%
1944.......	6	10–14	$ 81,114	$ 58	$ 67	87%
		15–19	132,469	133	140	95
		20–24	167,376	126	164	77
		25–29	287,789	269	337	80
		30–34	440,869	895	732	122
		35–39	498,752	1,255	1,372	91
		40–44	444,281	1,562	1,986	79
		45–49	282,257	1,877	1,905	99
		50–54	154,431	1,560	1,642	95
		55–59	58,459	746	901	83
		60–64	14,698	253	327	77
		65 and over	2,739	56	86	65
		All Ages	$2,565,234	$ 8,790	$ 9,659	91%
1945.......	5	10–14	$ 82,042	$ 80	$ 62	129%
		15–19	132,817	137	141	97
		20–24	188,042	137	184	74
		25–29	327,065	248	366	68
		30–34	530,816	930	791	118
		35–39	599,398	1,574	1,457	108
		40–44	494,106	1,929	1,957	99
		45–49	307,931	1,863	1,832	102
		50–54	166,450	1,439	1,568	92
		55–59	62,475	612	870	70
		60–64	16,070	327	320	102
		65 and over	2,952	101	81	125
		All Ages	$2,910,164	$ 9,377	$ 9,629	97%

* Excludes deaths due to operations of war.

10

Issue Year	Policy Year	Ages at Issue	Exposed to Risk	Actual Deaths*	Expected Deaths	Mortality Ratio
1946.......	4	10–14	$ 85,137	$ 24	$ 55	44%
		15–19	155,083	68	157	43
		20–24	482,664	501	454	104
		25–29	738,281	715	768	93
		30–34	868,646	1,033	1,121	92
		35–39	826,233	1,417	1,710	83
		40–44	623,375	2,116	2,051	103
		45–49	358,856	2,363	1,809	131
		50–54	186,706	1,405	1,445	97
		55–59	69,309	747	805	93
		60–64	17,916	261	303	86
		65 and over	3,113	79	73	108
		All Ages	$4,415,319	$10,729	$10,751	100%
1947.......	3	10–14	$ 77,634	$ 35	$ 46	76%
		15–19	174,573	178	168	106
		20–24	403,344	391	359	109
		25–29	651,366	491	632	78
		30–34	860,080	1,079	980	110
		35–39	849,540	1,360	1,512	90
		40–44	671,028	1,874	1,839	102
		45–49	392,190	1,469	1,675	88
		50–54	210,674	1,122	1,325	85
		55–59	78,850	473	751	63
		60–64	19,152	350	274	128
		65 and over	3,415	59	70	84
		All Ages	$4,391,846	$ 8,881	$ 9,631	92%
1948.......	2	10–14	$ 56,783	$ 10	$ 28	36%
		15–19	144,177	75	121	62
		20–24	406,551	245	313	78
		25–29	697,141	375	572	66
		30–34	855,809	730	779	94
		35–39	794,598	1,021	1,104	92
		40–44	626,779	1,273	1,247	102
		45–49	365,905	1,159	1,156	100
		50–54	193,667	851	862	99
		55–59	73,840	588	505	116
		60–64	20,223	230	213	108
		65 and over	3,663	116	59	197
		All Ages	$4,239,136	$ 6,673	$ 6,959	96%
1949.......	1	10–14	$ 53,072	$ 23	$ 21	110%
		15–19	145,148	84	102	82
		20–24	484,543	311	315	99
		25–29	832,364	457	549	83
		30–34	942,213	638	631	101
		35–39	877,514	857	851	101
		40–44	662,815	763	868	88
		45–49	380,595	937	814	115
		50–54	194,647	606	557	109
		55–59	78,271	409	365	112
		60–64	19,650	61	146	42
		65 and over	3,693	151	42	360
		All Ages	$4,674,525	$ 5,297	$ 5,261	101%

TABLE C

STANDARD MEDICALLY EXAMINED ISSUES OF 1932 TO 1948
EXPECTED DEATHS AND MORTALITY RATIOS BY 1946–49 SELECT BASIC TABLE*
FIRST FIFTEEN POLICY YEARS DURING EACH OF THE
EXPERIENCE YEARS INDICATED
(Amounts Shown in $1,000 Units)

ISSUE YEAR	AGES AT ISSUE	EXPERIENCE IN POLICY YEAR ENDING IN					
		1947		1948		1949	
		Expected Deaths	Ratio of Actual to Expected Deaths	Expected Deaths	Ratio of Actual to Expected Deaths	Expected Deaths	Ratio of Actual to Expected Deaths
1932	10–14	$ 75	92%				
	15–19	139	78				
	20–24	311	100				
	25–29	678	91				
	30–34	1,228	97				
	35–39	2,039	93				
	40–44	2,580	93				
	45–49	2,714	161				
	50–54	1,907	100				
	55–59	1,280	93				
	60–64	539	119				
	65 and over	143	108				
	All Ages	$13,633	109%				
1933	10–14	$ 103	117%	$ 102	111%		
	15–19	142	110	153	109		
	20–24	280	131	321	83		
	25–29	596	92	682	90		
	30–34	1,005	94	1,173	89		
	35–39	1,548	106	1,804	119		
	40–44	1,949	93	2,271	106		
	45–49	2,057	106	2,314	94		
	50–54	1,538	103	1,673	102		
	55–59	1,100	113	1,175	95		
	60–64	484	138	496	128		
	65 and over	104	91	104	81		
	All Ages	$10,906	104%	$12,268	102%		
1934	10–14	$ 102	133%	$ 100	103%	$ 100	93%
	15–19	146	122	152	72	164	91
	20–24	335	87	380	85	436	83
	25–29	716	103	814	91	933	86
	30–34	1,249	116	1,404	102	1,638	109
	35–39	1,854	95	2,057	101	2,394	100
	40–44	2,332	93	2,595	102	2,991	96
	45–49	2,295	101	2,500	99	2,791	82
	50–54	1,799	99	1,918	81	1,917	104
	55–59	1,092	96	1,155	115	1,232	85
	60–64	499	107	522	112	560	75
	65 and over	116	155	107	130	94	106
	All Ages	$12,535	100%	$13,704	99%	$15,250	94%

* Exposures and actual deaths for experience in policy years ending in 1947, 1948, and 1949 are shown respectively in *TASA* XLIX, 471–474, *TSA* I, 586–590, and *TSA* II, 498–501.

TABLE C—*Continued*

ISSUE YEAR	AGES AT ISSUE	EXPERIENCE IN POLICY YEAR ENDING IN					
		1947		1948		1949	
		Expected Deaths	Ratio of Actual to Expected Deaths	Expected Deaths	Ratio of Actual to Expected Deaths	Expected Deaths	Ratio of Actual to Expected Deaths
1935..	10–14	$ 89	122%	$ 88	108%	$ 86	84%
	15–19	139	123	143	103	149	84
	20–24	319	109	342	89	389	96
	25–29	644	98	723	103	827	132
	30–34	1,122	101	1,255	91	1,417	87
	35–39	1,707	101	1,853	107	2,064	101
	40–44	2,037	100	2,249	108	2,512	88
	45–49	2,089	104	2,244	85	2,463	82
	50–54	1,497	86	1,628	92	1,740	91
	55–59	966	96	1,027	113	1,073	94
	60–64	461	72	479	92	503	122
	65 and over	110	88	113	72	111	119
	All Ages	$11,180	98%	$12,144	98%	$13,334	94%
1936..	10–14	$ 94	148%	$ 93	94%	$ 92	99%
	15–19	151	128	154	89	159	97
	20–24	334	108	361	112	387	92
	25–29	655	91	712	111	799	105
	30–34	1,102	105	1,228	102	1,371	94
	35–39	1,700	96	1,864	107	2,018	102
	40–44	2,140	103	2,344	93	2,587	108
	45–49	2,081	118	2,262	105	2,410	87
	50–54	1,464	128	1,559	102	1,686	103
	55–59	878	92	941	79	1,004	88
	60–64	437	111	438	109	444	109
	65 and over	103	59	104	61	112	40
	All Ages	$11,139	108%	$12,060	100%	$13,069	98%
1937..	10–14	$ 100	104%	$ 99	92%	$ 99	118%
	15–19	162	108	164	86	167	106
	20–24	358	99	378	90	407	82
	25–29	633	102	705	102	766	83
	30–34	1,032	102	1,191	106	1,325	103
	35–39	1,527	101	1,728	103	1,895	109
	40–44	1,865	98	2,112	91	2,310	100
	45–49	1,896	108	2,167	104	2,352	103
	50–54	1,383	108	1,544	84	1,663	106
	55–59	870	116	945	105	1,021	101
	60–64	397	91	416	78	420	88
	65 and over	106	129	97	190	99	108
	All Ages	$10,329	104%	$11,546	98%	$12,524	101%

TABLE C—*Continued*

Issue Year	Ages at Issue	Experience in Policy Year Ending in					
		1947		1948		1949	
		Expected Deaths	Ratio of Actual to Expected Deaths	Expected Deaths	Ratio of Actual to Expected Deaths	Expected Deaths	Ratio of Actual to Expected Deaths
1938	10–14	$ 95	122%	$ 99	109%	$ 98	103%
	15–19	145	117	144	73	145	104
	20–24	310	115	320	103	338	95
	25–29	554	114	596	114	664	90
	30–34	927	90	1,019	93	1,177	100
	35–39	1,367	101	1,496	78	1,696	100
	40–44	1,583	99	1,733	113	1,964	96
	45–49	1,646	92	1,809	88	2,055	92
	50–54	1,192	114	1,265	93	1,406	118
	55–59	734	94	779	98	832	88
	60–64	402	120	412	105	432	75
	65 and over	105	90	104	49	103	111
	All Ages	$ 9,060	102%	$ 9,776	95%	$10,910	98%
1939	10–14	$ 79	133%	$ 82	82%	$ 85	73%
	15–19	138	126	136	90	135	91
	20–24	283	120	286	84	295	95
	25–29	456	104	482	86	518	103
	30–34	699	105	755	97	830	103
	35–39	1,021	106	1,116	105	1,224	108
	40–44	1,170	95	1,281	100	1,405	110
	45–49	1,246	84	1,367	103	1,506	90
	50–54	1,008	100	1,074	92	1,153	85
	55–59	621	113	658	125	696	90
	60–64	284	50	309	89	321	118
	65 and over	83	169	85	134	88	138
	All Ages	$ 7,088	100%	$ 7,631	100%	$ 8,256	99%
1940	10–14	$ 73	114%	$ 79	92%	$ 82	94%
	15–19	159	94	156	89	154	94
	20–24	317	109	327	90	330	79
	25–29	482	84	520	88	549	76
	30–34	699	96	781	115	841	92
	35–39	990	91	1,139	101	1,241	111
	40–44	1,167	100	1,296	87	1,415	107
	45–49	1,204	77	1,373	120	1,502	93
	50–54	987	97	1,082	99	1,151	119
	55–59	602	107	658	84	701	87
	60–64	259	90	293	94	313	104
	65 and over	82	102	87	125	93	117
	All Ages	$ 7,021	94%	$ 7,791	100%	$ 8,372	100%

TABLE C—*Continued*

		EXPERIENCE IN POLICY YEAR ENDING IN					
		1947		1948		1949	
ISSUE YEAR	AGES AT ISSUE	Expected Deaths	Ratio of Actual to Expected Deaths	Expected Deaths	Ratio of Actual to Expected Deaths	Expected Deaths	Ratio of Actual to Expected Deaths
1941..	10–14	$ 74	112%	$ 79	148%	$ 86	83%
	15–19	211	102	209	90	205	84
	20–24	399	97	388	111	399	87
	25–29	564	89	576	88	619	137
	30–34	821	84	870	98	971	109
	35–39	1,170	94	1,243	105	1,424	99
	40–44	1,352	113	1,402	111	1,548	91
	45–49	1,402	100	1,491	112	1,694	123
	50–54	1,158	99	1,194	88	1,301	100
	55–59	675	87	688	102	755	104
	60–64	325	83	342	110	389	87
	65 and over	86	69	93	84	104	69
	All Ages	$ 8,237	97%	$ 8,575	103%	$ 9,495	104%
1942..	10–14	$ 50	94%	$ 54	98%	$ 56	105%
	15–19	158	108	154	98	144	103
	20–24	239	90	231	94	218	94
	25–29	379	99	381	110	383	87
	30–34	539	107	580	108	609	116
	35–39	792	124	863	113	913	89
	40–44	971	138	1,048	108	1,084	97
	45–49	1,041	96	1,129	81	1,203	83
	50–54	954	131	1,024	90	1,055	105
	55–59	592	104	625	76	637	74
	60–64	257	84	272	92	286	134
	65 and over	75	47	84	87	95	65
	All Ages	$ 6,047	113%	$ 6,445	96%	$ 6,683	95%
1943..	10–14	$ 50	102%	$ 57	114%	$ 55	122%
	15–19	153	85	153	95	133	85
	20–24	204	105	200	76	179	89
	25–29	362	109	372	83	359	83
	30–34	551	119	612	116	641	96
	35–39	909	103	1,031	90	1,109	92
	40–44	1,198	112	1,399	118	1,502	104
	45–49	1,256	127	1,436	89	1,559	101
	50–54	1,056	99	1,241	72	1,344	111
	55–59	652	82	750	131	785	119
	60–64	267	96	303	89	315	105
	65 and over	65	195	73	189	76	62
	All Ages	$ 6,723	108%	$ 7,627	99%	$ 8,057	102%

TABLE C—*Continued*

ISSUE YEAR	AGES AT ISSUE	EXPERIENCE IN POLICY YEAR ENDING IN					
		1947		1948		1949	
		Expected Deaths	Ratio of Actual to Expected Deaths	Expected Deaths	Ratio of Actual to Expected Deaths	Expected Deaths	Ratio of Actual to Expected Deaths
1944	10–14	$ 54	102%	$ 58	83%	$ 59	115%
	15–19	154	103	155	134	141	100
	20–24	184	112	182	125	168	126
	25–29	322	83	329	129	329	103
	30–34	564	102	614	84	670	90
	35–39	979	83	1,100	102	1,233	91
	40–44	1,323	111	1,535	76	1,789	89
	45–49	1,302	127	1,488	117	1,698	86
	50–54	1,057	104	1,260	104	1,476	105
	55–59	611	98	722	125	829	114
	60–64	239	115	270	71	303	183
	65 and over	61	169	66	108	75	31
	All Ages	$ 6,850	106%	$ 7,779	102%	$ 8,770	98%
1945	10–14	$ 47	177%	$ 53	80%	$ 52	83%
	15–19	137	94	149	91	134	99
	20–24	187	72	199	87	182	76
	25–29	323	114	353	154	346	105
	30–34	557	81	657	101	697	100
	35–39	929	120	1,132	103	1,253	99
	40–44	1,081	113	1,422	101	1,642	93
	45–49	1,065	86	1,377	113	1,566	91
	50–54	813	114	1,101	99	1,301	106
	55–59	471	82	626	72	737	104
	60–64	196	79	259	163	283	56
	65 and over	50	44	61	103	69	78
	All Ages	$ 5,856	101%	$ 7,389	105%	$ 8,262	96%
1946	10–14	$ 38	74%	$ 47	91%	$ 50	90%
	15–19	141	106	155	126	150	118
	20–24	442	118	456	81	445	104
	25–29	636	99	708	99	739	83
	30–34	706	116	891	89	1,017	104
	35–39	924	101	1,257	88	1,502	106
	40–44	910	82	1,336	108	1,745	92
	45–49	852	99	1,227	109	1,575	92
	50–54	582	90	889	89	1,194	86
	55–59	355	104	515	71	686	107
	60–64	147	76	210	74	269	64
	65 and over	38	158	54	76	68	69
	All Ages	$ 5,771	99%	$ 7,745	95%	$ 9,440	95%

TABLE C—*Continued*

ISSUE YEAR	AGES AT ISSUE	EXPERIENCE IN POLICY YEAR ENDING IN					
		1947		1948		1949	
		Expected Deaths	Ratio of Actual to Expected Deaths	Expected Deaths	Ratio of Actual to Expected Deaths	Expected Deaths	Ratio of Actual to Expected Deaths
1947..	10–14			$ 34	112%	$ 38	63%
	15–19			153	101	149	113
	20–24			354	115	331	94
	25–29			528	91	563	111
	30–34			661	93	820	70
	35–39			902	107	1,217	103
	40–44			933	100	1,371	87
	45–49			885	104	1,266	88
	50–54			628	92	953	105
	55–59			386	104	555	139
	60–64			152	65	211	116
	65 and over			36	217	52	135
	All Ages			$ 5,652	100%	$ 7,526	98%
1948..	10–14					$ 22	91%
	15–19					103	106
	20–24					296	88
	25–29					507	125
	30–34					609	115
	35–39					801	86
	40–44					834	114
	45–49					800	123
	50–54					558	76
	55–59					355	115
	60–64					153	76
	65 and over					42	112
	All Ages					$ 5,080	105%

17

TABLE D

STANDARD ISSUES DURING 16TH AND SUBSEQUENT POLICY YEARS
EXPECTED DEATHS AND MORTALITY RATIOS BY 1946–1949 ULTIMATE BASIC
TABLE FOR EXPERIENCE YEARS INDICATED*
(Amounts Shown in $1,000 Units)

ATTAINED AGE GROUPS	EXPERIENCE IN POLICY YEAR ENDING IN					
	1947		1948		1949	
	Expected Deaths	Ratio of Actual to Expected Deaths	Expected Deaths	Ratio of Actual to Expected Deaths	Expected Deaths	Ratio of Actual to Expected Deaths
25–29....	$ 130	90%	$ 160	97%	$ 203	92%
30–34....	543	115	567	97	595	95
35–39....	1,968	96	1,925	101	1,851	101
40–44....	5,843	95	5,927	105	5,894	96
45–49....	13,704	103	14,005	99	14,207	99
50–54....	27,419	100	28,260	102	28,719	99
55–59....	44,515	101	46,759	103	49,222	97
60–64....	56,486	100	60,527	99	63,757	98
65–69....	53,262	96	56,964	106	60,588	99
70–74....	44,874	99	48,500	102	52,362	95
75–79....	30,509	107	32,979	107	35,996	96
80–84....	14,693	102	16,831	91	18,558	98
85–89....	4,623	94	5,443	102	6,121	99
90–95....	1,065	109	1,064	110	1,115	84
All Ages..	$299,634	100%	$319,911	102%	$339,188	98%

* Exposures and actual deaths for experience in policy years ending in 1947, 1948, and 1949 are shown respectively in *TASA* XLIX, 476, *TSA* I, 592, and *TSA* II, 503.

●

18