

**TRANSACTIONS OF SOCIETY OF ACTUARIES
1958 REPORTS**

**REPORT OF THE COMMITTEE ON GROUP
ANNUITY MORTALITY**

GROUP ANNUITY MORTALITY

THE current report includes only the regular matured life study and has been prepared on the same general basis as previous reports and thus is limited to the experience of single life matured annuities under Group Annuity contracts. This report continues the practice of showing comparisons with the *Ga*-1951 Male and Female Tables, respectively, (without projection) as well as with the 1937 Standard Annuity Table.

As in the two previous years' reports, experience under plans which do not have a stated normal retirement date and under which annuities are purchased at the actual retirement dates of the employees has been excluded from the study in order to secure increased homogeneity.

Tables 1 and 2 show the experience for the year 1957 at attained five year age groups for lives retiring on or after normal retirement date and for lives retiring prior to normal retirement date, respectively. Since there was a significant amount of experience reported in 1957 which actually occurred in 1956, the ratios relating to the 1956 experience shown in these tables have been adjusted to recognize this experience and these ratios are intended to supersede those included in last year's report.

Table 3 compares the experience for the year 1957 for lives retiring on or after normal retirement date with the corresponding experience for other periods. This table includes the experience for the year 1956 on two bases: as shown in last year's report, and adjusted to include 1956 experience reported in 1957. The Committee has reason to believe that any such adjustment of the 1957 experience would be much less significant.

In general, the 1957 experience seems to indicate a continuation of the previous trend toward improvement in mortality of retired lives. The improvement on female lives is substantial. However, the 1957 experience for male lives retired on or after normal retirement date as shown in Table 1 shows no improvement over the corresponding 1956 experience.

The companies which contributed experience for the investigation covered by this report are listed on the next page.

CONTRIBUTING COMPANIES

Aetna Life Insurance Company
Bankers Life Company
Canada Life Assurance Company
Confederation Life Association
Connecticut General Life Insurance Company
Equitable Life Assurance Society
Great-West Life Assurance Company
John Hancock Mutual Life Insurance Company
Massachusetts Mutual Life Insurance Company
Metropolitan Life Insurance Company
North American Life Assurance Company
Pacific Mutual Life Insurance Company
Prudential Insurance Company of America
Sun Life Assurance Company of Canada
The Travelers Insurance Company

TABLE 1
 INTERCOMPANY GROUP ANNUITY MORTALITY—MATURED LIFE EXPERIENCE FOR THE YEAR 1957
 RETIREMENT ON OR AFTER NORMAL RETIREMENT DATE

ATTAINED AGES	NUMBER OF LIVES		AMOUNT OF ANNUAL INCOME		COMPARISON WITH 1937 STANDARD ANNUITY TABLE				COMPARISON WITH Ga-1951 TABLE (WITHOUT PROJECTION)			
					By Number of Lives		By Amount of Annual Income		By Number of Lives		By Amount of Annual Income	
	Exposed	Actual Deaths	Exposed	Actual Deaths	Expected Deaths	Ratio# Act./Exp.	Expected Deaths	Ratio# Act./Exp.	Expected Deaths	Ratio# Act./Exp.	Expected Deaths	Ratio# Act./Exp.
MEN												
50 & under	6.67	0	\$ 1,193	\$ 0	.05	(*) * %	\$ 6	(*) * %	.01	(*) * %	\$ 3	(*) * %
51-55....	46.42	0	69,687	0	.58	(*) *	894	(*) *	.47	(*) *	678	(*) *
56-60....	435.90	12	704,591	25,805	8.05	(127) 149	12,964	(95) 199	6.28	(161) 191	10,177	(121) 254
61-65....	20,002.37	560	18,804,513	482,424	564.07	(94) 99	527,636	(100) 91	476.56	(112) 118	445,184	(119) 108
66-70....	75,912.09	2,658	60,792,327	1,961,319	2,709.28	(96) 98	2,154,654	(91) 91	2,472.16	(105) 108	1,962,893	(100) 100
71-75....	41,067.40	2,189	27,550,305	1,433,696	2,101.92	(102) 104	1,408,368	(100) 102	2,089.64	(103) 105	1,399,669	(100) 102
76-80....	14,880.31	1,227	9,628,396	848,456	1,090.37	(114) 113	709,701	(109) 120	1,188.49	(105) 103	774,945	(100) 109
81-85....	4,161.01	503	2,958,527	366,855	435.32	(121) 116	312,232	(128) 117	509.82	(103) 99	365,841	(109) 100
86-90....	871.09	126	769,678	105,413	129.38	(132) 97	115,664	(135) 91	149.68	(114) 84	133,595	(117) 79
91-95....	128.00	38	111,289	41,341	26.32	(122) 144	22,877	(110) 181	29.13	(110) 130	25,322	(99) 163
96 & over.	14.17	3	9,797	1,905	4.41	(*) *	3,093	(*) *	4.58	(*) *	3,203	(*) *
All Ages	157,525.43	7,316	\$121,400,303	\$5,267,214	7,069.75	(103) 103%	\$5,268,089	(100) 100%	6,926.82	(105) 106%	\$5,121,510	(103) 103%

TABLE 1—Continued

ATTAINED AGES	NUMBER OF LIVES		AMOUNT OF ANNUAL INCOME		COMPARISON WITH 1937 STANDARD ANNUITY TABLE				COMPARISON WITH GA-1951 TABLE (WITHOUT PROJECTION)			
					By Number of Lives		By Amount of Annual Income		By Number of Lives		By Amount of Annual Income	
	Exposed	Actual Deaths	Exposed	Actual Deaths	Expected Deaths	Ratio# Act./Exp.	Expected Deaths	Ratio# Act./Exp.	Expected Deaths	Ratio# Act./Exp.	Expected Deaths	Ratio# Act./Exp.
WOMEN												
50 & under	8.57	0	\$ 7,104	\$ 0	.03	(*) * %	\$ 25	(*) * %	.00	(*) * %	\$ 11	(*) * %
51-55	193.12	1	106,974	49	1.77	(*) *	975	(*) *	.84	(*) *	489	(*) *
56-60	1,804.16	10	978,851	4,829	22.60	(66) 44	12,285	(66) 39	12.62	(116) 79	6,884	(117) 70
61-65	7,564.49	73	3,516,633	40,032	134.86	(70) 54	62,011	(82) 65	89.19	(106) 82	40,849	(125) 98
66-70	12,602.25	200	5,001,749	79,844	307.06	(76) 65	121,341	(77) 66	227.52	(102) 88	89,739	(103) 89
71-75	5,548.44	172	2,139,960	56,641	194.95	(86) 88	75,163	(82) 75	185.18	(90) 93	71,405	(86) 79
76-80	1,707.08	109	716,334	43,777	86.52	(135) 126	36,319	(152) 121	100.21	(117) 109	42,036	(130) 104
81-85	557.92	40	283,284	16,369	40.52	(137) 99	20,630	(179) 79	51.18	(109) 78	26,116	(141) 63
86-90	116.00	16	64,270	9,855	12.12	(181) 132	6,769	(163) 146	15.76	(139) 102	8,821	(125) 112
91-95	22.00	4	9,337	1,867	3.18	(*) *	1,346	(*) *	4.28	(*) *	1,790	(*) *
96 & over	3.00	0	1,220	0	.58	(*) *	238	(*) *	.80	(*) *	330	(*) *
All Ages	30,127.03	625	\$ 12,825,716	\$ 253,263	804.19	(88) 78%	\$ 337,102	(95) 75%	687.58	(103) 91%	\$ 288,470	(111) 88%

* Less than 10 deaths.

† Percentages in parentheses are for the year 1956 as adjusted in 1957.

TABLE 2

INTERCOMPANY GROUP ANNUITY MORTALITY—MATURED LIFE EXPERIENCE FOR THE YEAR 1957
RETIREMENT PRIOR TO NORMAL RETIREMENT DATE

ATTAINED AGES	NUMBER OF LIVES		AMOUNT OF ANNUAL INCOME		COMPARISON WITH 1937 STANDARD ANNUITY TABLE				COMPARISON WITH G2-1951 TABLE (WITHOUT PROJECTION)			
					By Number of Lives		By Amount of Annual Income		By Number of Lives		By Amount of Annual Income	
	Exposed	Actual Deaths	Exposed	Actual Deaths	Expected Deaths	Ratio# Act./Exp.	Expected Deaths	Ratio# Act./Exp.	Expected Deaths	Ratio# Act./Exp.	Expected Deaths	Ratio# Act./Exp.
MEN												
50 & under	214.36	12	\$ 47,315	\$ 2,737	1.58	(*) 759%	\$ 381	(*) 718%	.89	(*) 1348%	\$ 251	(*) 1090%
51-55	848.62	34	463,957	11,740	10.81	(277) 315	5,894	(186) 199	8.23	(364) 413	4,487	(244) 262
56-60	6,101.04	216	3,800,325	103,288	108.43	(219) 199	68,158	(187) 152	85.06	(279) 254	53,482	(238) 193
61-65	15,580.13	671	11,766,316	462,823	391.52	(174) 171	296,142	(142) 156	320.83	(213) 209	242,746	(174) 191
66-70	11,589.84	576	7,455,046	291,049	412.74	(143) 140	263,680	(133) 110	376.38	(157) 153	240,092	(146) 121
71-75	5,458.83	361	3,099,038	232,799	277.47	(125) 130	157,812	(134) 148	275.38	(127) 131	156,690	(135) 149
76-80	1,565.50	135	943,135	84,626	114.87	(134) 118	69,678	(131) 121	125.27	(123) 108	76,140	(120) 111
81-85	496.75	62	366,446	46,103	51.99	(113) 119	38,074	(132) 121	60.91	(96) 102	44,564	(113) 103
86 & over.	86.00	24	101,715	20,293	13.34	(163) 180	15,440	(154) 131	15.32	(141) 157	17,805	(133) 114
All Ages	41,941.07	2,091	\$ 28,043,293	\$1,255,458	1,382.75	(155) 151%	\$ 915,259	(141) 137%	1,268.27	(169) 165%	\$ 836,257	(154) 150%

TABLE 2—Continued

ATTAINED AGES	NUMBER OF LIVES		AMOUNT OF ANNUAL INCOME		COMPARISON WITH 1937 STANDARD ANNUITY TABLE				COMPARISON WITH G _a -1951 TABLE (WITHOUT PROJECTION)			
					By Number of Lives		By Amount of Annual Income		By Number of Lives		By Amount of Annual Income	
	Exposed	Actual Deaths	Exposed	Actual Deaths	Expected Deaths	Ratio# Act./Exp.	Expected Deaths	Ratio# Act./Exp.	Expected Deaths	Ratio# Act./Exp.	Expected Deaths	Ratio# Act./Exp.
WOMEN												
50 & under	121.30	1	\$ 20,523	\$ 68	.62	(*) * %	\$ 111	(*) * %	.25	(*) * %	\$ 49	(*) * %
51-55	611.30	3	169,685	868	5.10	(208) *	1,413	(305) *	2.51	(424) *	698	(616) *
56-60	1,818.55	35	566,996	9,695	21.59	(78) 162	6,778	(77) 143	11.78	(143) 297	3,715	(140) 261
61-65	2,728.86	48	999,290	12,190	46.71	(117) 103	17,057	(99) 71	30.38	(181) 158	11,079	(153) 110
66-70	1,870.31	43	634,501	16,547	45.66	(87) 94	15,419	(96) 107	33.80	(118) 127	11,409	(130) 145
71-75	769.50	23	262,752	4,840	26.87	(113) 86	9,163	(113) 53	25.38	(119) 91	8,657	(119) 56
76-80	231.92	14	97,166	5,249	11.69	(173) 120	4,954	(151) 106	13.55	(148) 103	5,749	(130) 91
81-85	56.00	6	29,378	1,971	3.95	(*) *	2,080	(*) *	4.96	(*) *	2,626	(*) *
86 & over . .	11.00	0	5,006	0	1.16	(*) *	536	(*) *	1.50	(*) *	701	(*) *
All Ages	8,218.74	173	\$ 2,785,297	\$ 51,428	163.35	(111) 106%	\$ 57,511	(115) 89%	124.11	(146) 139%	\$ 44,683	(147) 115%

* Less than 10 deaths.

Percentages in parentheses are for the year 1956 as adjusted in 1957.

TABLE 3
INTERCOMPANY GROUP ANNUITY MORTALITY -- MATURED LIFE EXPERIENCE TO 12-31-57
RETIREMENT ON OR AFTER NORMAL RETIREMENT DATE

CALENDAR YEARS	NUMBER OF LIVES		AMOUNT OF ANNUAL INCOME		COMPARISON WITH 1937 STANDARD ANNUITY TABLE				COMPARISON WITH GA-1951 TABLE (WITHOUT PROJECTION)			
	Exposed	Actual Deaths	Exposed	Actual Deaths	By Number of Lives		By Amount of Annual Income		By Number of Lives		By Amount of Annual Income	
					Expected Deaths	Ratio Act./Exp.	Expected Deaths	Ratio Act./Exp.	Expected Deaths	Ratio Act./Exp.	Expected Deaths	Ratio Act./Exp.
MEN												
1924-1940..	56,297.34	2,923	\$ 59,377,823	\$ 2,964,846	2,369.53	123%	\$ 2,553,459	116%	2,289.45	128%	\$ 2,485,673	119%
1941-1945..	114,397.15	5,905	86,810,361	4,792,550	4,908.85	120	3,918,035	122	4,766.51	124	3,862,496	124
1946-1950..	256,894.00	11,990	171,307,970	8,254,898	10,913.99	110	7,533,929	110	10,553.92	114	7,375,031	112
1951-1955..	517,925.53	24,294	358,230,640	16,262,942	22,419.88	108	15,474,282	105	21,765.02	112	15,063,360	108
1956*.....	143,318.57	6,314	107,174,386	4,491,121	6,360.03	99	4,636,682	97	6,213.37	102	4,505,675	100
1956#.....	143,411.03	6,523	107,338,309	4,631,712	6,362.08	103	4,643,253	100	6,214.96	105	4,512,024	103
1957.....	157,525.43	7,316	121,400,303	5,267,214	7,069.75	103	5,268,089	100	6,926.82	106	5,121,510	103
WOMEN												
1924-1940..	9,852.36	275	\$ 5,823,610	\$ 153,541	219.79	125%	\$ 127,454	120%	174.83	157%	\$ 99,999	154%
1941-1945..	17,593.08	491	8,937,855	239,864	416.16	118	214,271	112	339.17	145	176,096	136
1946-1950..	38,883.60	909	17,087,770	423,918	947.61	96	429,591	99	784.37	116	364,336	116
1951-1955..	87,676.96	1,983	36,229,335	861,270	2,241.26	88	937,052	92	1,884.60	105	802,246	107
1956*.....	26,598.82	598	11,195,675	273,157	699.51	85	292,497	93	594.64	101	250,209	109
1956#.....	26,732.72	615	11,236,846	277,785	702.35	88	293,373	95	596.78	103	250,852	111
1957.....	30,127.03	625	12,825,716	253,263	804.19	78	337,102	75	687.58	91	288,470	88

* As originally reported.

As adjusted in 1957.