

**TRANSACTIONS OF SOCIETY OF ACTUARIES  
1959 REPORTS**

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

**GROUP ANNUITY MORTALITY**

**T**HE current report includes only the regular matured life study and like the previous reports is limited to the experience of single life matured annuities under Group Annuity contracts. 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. The mortality experience is compared with the *Ga*-1951 male and female tables (without projection) as well as with the 1937 Standard Annuity Table.

Tables 1 and 2 show the experience for the year 1958 by attained five year age groups for lives retiring on and after normal retirement date, and for lives retiring prior to normal retirement date, respectively. Table 3 compares the experience for the year 1958 for lives retiring on and after normal retirement date with the corresponding experience for earlier years.

In general the 1958 experience seems to indicate a continuation of the previous trend toward improvement in mortality of retired lives.

The companies which contributed experience for the investigation covered by this report are listed on page 175.

## 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 1958  
 RETIREMENT ON OR AFTER NORMAL RETIREMENT DATE

ATTAINED AGES	NUMBER OF LIVES		AMOUNT OF ANNUAL INCOME		COMPARISON WITH 1937 STANDARD ANNUITY TABLE				COMPARISON WITH G4-1951 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	9.76	0	\$ 7,356	\$ 0	.07	(*) * %	\$ 57	(*) * %	.02	(*) * %	\$ 36	(*) * %
51-55 . . . .	59.60	1	72,479	139	.77	(*) * %	940	(*) * %	.59	(*) * %	716	(*) * %
56-60 . . . .	590.53	14	810,351	7,090	10.67	(149) 131	14,628	(199) 48	8.38	(191) 167	11,486	(254) 62
61-65 . . . .	20,996.50	544	22,107,687	515,350	591.71	(99) 92	618,844	(91) 83	499.87	(118) 109	521,696	(108) 99
66-70 . . . .	82,373.15	2,809	70,002,242	2,242,912	2,945.02	(98) 95	2,484,919	(91) 90	2,687.93	(108) 105	2,264,518	(100) 99
71-75 . . . .	45,632.31	2,380	31,396,722	1,581,672	2,342.68	(104) 102	1,604,595	(102) 99	2,330.79	(105) 102	1,594,599	(102) 99
76-80 . . . .	17,257.34	1,423	11,183,235	842,064	1,262.83	(113) 113	818,429	(120) 103	1,375.92	(103) 103	891,769	(109) 94
81-85 . . . .	4,955.62	604	3,501,887	432,521	518.29	(116) 117	367,439	(117) 118	606.90	(99) 100	430,253	(100) 101
86-90 . . . .	1,021.10	173	852,420	133,017	151.31	(97) 114	127,373	(91) 104	175.07	(84) 99	147,219	(79) 90
91-95 . . . .	162.84	49	158,064	37,289	33.24	(144) 147	31,867	(181) 117	36.84	(130) 133	35,375	(163) 105
96 & over.	17.00	2	9,461	1,451	5.20	(*) *	2,914	(*) *	5.42	(*) *	3,036	(*) *
All Ages	173,075.75	7,999	\$140,101,904	\$5,793,505	7,861.79	(103) 102%†	\$6,072,005	(100) 95%†	7,727.73	(106) 104%†	\$5,900,703	(103) 98%†

TABLE 1—Continued

ATTAINED AGES	NUMBER OF LIVES		AMOUNT OF ANNUAL INCOME		COMPARISON WITH 1937 STANDARD ANNUITY TABLE				COMPARISON WITH GG-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	13.92	0	\$ 14,394	\$ 0	.07	(*) * %	\$ 59	(*) * %	.01	(*) * %	\$ 27	(*) * %
51-55....	214.86	2	107,398	836	1.97	(*) *	975	(*) *	.98	(*) *	489	(*) *
56-60....	1,878.50	8	1,066,065	6,270	23.49	(44) *	13,427	(39) *	13.22	(79) *	7,532	(70) *
61-65....	7,982.62	87	3,902,030	38,786	142.31	(54) 61	68,969	(65) 56	94.15	(82) 92	45,479	(98) 85
66-70....	14,580.57	235	5,882,460	106,586	356.08	(65) 66	143,031	(66) 75	264.07	(88) 89	105,852	(89) 101
71-75....	6,541.28	180	2,523,129	67,378	230.24	(88) 78	88,731	(75) 76	219.04	(93) 82	84,362	(79) 80
76-80....	2,086.52	115	861,909	53,364	105.02	(126) 110	43,410	(121) 123	121.38	(109) 95	50,116	(104) 106
81-85....	660.10	59	322,988	25,210	48.14	(99) 123	23,671	(79) 107	60.84	(78) 97	29,999	(63) 84
86-90....	141.42	23	75,633	10,720	14.62	(132) 157	7,857	(146) 136	19.01	(102) 121	10,229	(112) 105
91-95....	28.00	7	15,073	4,146	4.14	(*) *	2,153	(*) *	5.52	(*) *	2,865	(*) *
96 & over.	3.00	1	1,220	300	.62	(*) *	254	(*) *	.87	(*) *	358	(*) *
All Ages	34,130.79	717	\$ 14,772,299	\$ 313,596	926.70	(78) 77%	\$ 392,537	(75) 80%	799.09	(91) 90%	\$ 337,308	(88) 93%

\* Less than 10 deaths.

† Percentages in parentheses are for the year 1957.

TABLE 2

INTERCOMPANY GROUP ANNUITY MORTALITY—MATURED LIFE EXPERIENCE FOR THE YEAR 1958  
RETIREMENT PRIOR TO 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	208.46	6	\$ 48,296	\$ 1,015	1.51	(759) * %	\$ 377	(718) * %	.85	(1348) * %	\$ 241	(1090) * %
51-55 . . . .	991.85	34	557,919	15,334	12.65	(315) 269	7,073	(199) 217	9.61	(413) 354	5,380	(262) 285
56-60 . . . .	7,645.55	248	4,848,516	124,786	135.39	(199) 183	86,711	(152) 144	106.17	(254) 234	68,030	(193) 183
61-65 . . . .	18,251.57	728	14,040,555	456,742	458.47	(171) 159	353,214	(156) 129	375.67	(209) 194	289,475	(191) 158
66-70 . . . .	12,887.12	618	8,780,522	396,182	457.68	(140) 135	309,720	(110) 128	417.09	(153) 148	281,794	(121) 141
71-75 . . . .	6,210.49	365	3,464,137	182,016	316.58	(130) 115	176,570	(148) 103	314.40	(131) 116	175,355	(149) 104
76-80 . . . .	1,853.41	177	1,126,691	108,434	135.14	(118) 131	82,141	(121) 132	147.06	(108) 120	89,401	(111) 121
81-85 . . . .	565.00	76	399,881	40,475	58.93	(119) 129	41,697	(121) 97	69.12	(102) 110	48,839	(103) 83
86 & over..	112.00	15	115,281	15,323	16.74	(180) 90	17,585	(131) 87	19.36	(157) 77	20,270	(114) 76
All Ages	48,725.45	2,267	\$33,381,798	\$1,340,307	1,593.09	(151) 142%	\$1,075,088	(137) 125%	1,459.33	(165) 155%	\$ 978,785	(150) 137%

TABLE 2—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	138.58	2	\$ 23,296	\$ 78	.74	( * ) * %	\$ 131	( * ) * %	.35	( * ) * %	\$ 58	( * ) * %
51-55 . . . .	734.88	6	222,589	1,153	6.20	( * ) * %	1,880	( * ) * %	3.06	( * ) * %	931	( * ) * %
56-60 . . . .	2,111.56	26	671,324	6,831	25.14	(162) 103	8,059	(143) 85	13.83	(297) 188	4,423	(261) 154
61-65 . . . .	3,371.41	61	1,260,197	20,994	57.95	(103) 105	21,684	(71) 97	37.80	(158) 161	14,133	(110) 149
66-70 . . . .	2,125.50	42	728,602	18,353	51.91	(94) 81	17,762	(107) 103	38.48	(127) 109	13,162	(145) 139
71-75 . . . .	941.33	42	315,944	14,168	32.93	(86) 128	11,110	(53) 128	31.20	(91) 135	10,559	(56) 134
76-80 . . . .	273.00	15	103,889	5,357	13.67	(120) 110	5,261	(106) 102	15.78	(103) 95	6,084	(91) 88
81-85 . . . .	79.00	7	42,420	2,348	5.64	( * ) * %	3,027	( * ) * %	7.06	( * ) * %	3,825	( * ) * %
86 & over . .	12.00	2	5,948	1,317	1.34	( * ) * %	664	( * ) * %	1.75	( * ) * %	869	( * ) * %
All Ages	9,787.26	203	\$ 3,374,209	\$ 70,599	195.52	(106) 104%	\$ 69,578	(89) 101%	149.31	(139) 136%	\$ 54,044	(115) 131%

\* Less than 10 deaths.

† Percentages in parentheses are for the year 1957.

**TABLE 3**  
**INTERCOMPANY GROUP ANNUITY MORTALITY—MATURED LIFE EXPERIENCE TO 12-31-58**  
**RETIREMENT ON OR AFTER NORMAL RETIREMENT DATE**

CALENDAR YEARS	NUMBER OF LIVES		AMOUNT OF ANNUAL INCOME		COMPARISON WITH 1947 STANDARD ANNUITY TABLE				COMPARISON WITH <i>Ga</i> -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												
1924-1940	56,297.34	2,923	\$ 59,377,823	\$ 2,964,846	2,369.53	123%	\$ 2,553,456	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	143,411.03	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
1958	173,075.75	7,999	140,101,904	5,793,505	7,861.79	102	6,072,005	95	7,727.73	104	5,900,703	98
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	26,732.72	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
1958	34,130.79	717	14,772,299	313,596	926.70	77	392,537	80	799.09	90	337,308	93