

**TRANSACTIONS OF SOCIETY OF ACTUARIES
1956 REPORTS**

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

GROUP ANNUITY MORTALITY

REGULAR MATURED LIFE STUDY

THE current study 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.

Several of the contributing companies have undertaken plans which do not have a stated normal retirement date and under which annuities are purchased at the actual retirement dates of the employees. In the past, such annuities have been included in the experience as "retirements on or after normal retirement date." The Committee determined this year that experience under plans of this type should be excluded from the study in order to secure increased homogeneity in that classification. Some of the contributing companies adjusted their experience in that respect for years prior to 1955 as well as for the year 1955.

As in other recent reports, there have been included adjustments of the figures previously reported for years prior to the latest year shown. In most cases these adjustments have resulted in slight increases in the rates of mortality previously reported, principally because of the inclusion of deaths reported late. The extent of these changes may be seen by comparing Table 5 with the corresponding table in the earlier reports.

Tables 1 and 2 show the experience for the year 1955 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. Tables 3 and 4 show the experience for the five years 1951-1955 combined, in the same form as in Tables 1 and 2. Table 5 compares the experience for the year 1955 for lives retiring on and after normal retirement date with the corresponding experience for other periods.

The 1955 experience shows in general a continuation of the previous trend toward improvement in mortality of retired lives.

TABLE 1
INTERCOMPANY GROUP ANNUITY MORTALITY—MATURED LIFE EXPERIENCE FOR THE YEAR 1955
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 and under.....	6 42	0	\$ 10,510	\$ 0	.04	(*) *	\$ 93	(*) *	.03	(*) *	\$ 64	(*) *
51-55.....	31 33	0	51,453	0	.39	(*) *	161	(*) *	.31	(*) *	505	(*) *
56-60.....	375 50	6	614,204	3,999	6 87	(170) *	11,255	(126) *	5 40	(218) *	8,836	(161) *
61-65.....	17,592 11	411	14,913,946	314,176	496 64	(105) 83%	419,229	(97) 75%	419 74	(124) 98%	353,862	(115) 89%
66-70.....	64,538 61	2,265	46,808,876	1,498,436	2,294 72	(101) 99	1,653,687	(97) 91	2,091 85	(110) 108	1,505,168	(106) 100
71-75.....	31,980 51	1,781	20,558,201	1,098,937	1,630 25	(108) 109	1,044,517	(111) 105	1,619 11	(108) 110	1,036,459	(111) 106
76-80.....	10,956 49	906	7,319,498	597,219	802 38	(116) 113	537 314	(112) 111	874 32	(106) 104	585,920	(103) 102
81-85.....	3,119 58	389	2,465,221	271,151	325 51	(126) 120	258,883	(122) 105	381 22	(108) 102	303,217	(104) 89
86-90.....	669 00	121	613,148	104,593	99 13	(115) 122	90,925	(108) 115	114 71	(99) 105	105,195	(93) 99
91-95.....	93 00	25	81,133	25,896	18 98	(177) 132	16,428	(131) 158	21 04	(160) 119	18,226	(119) 142
96 and over.....	7 08	2	5,708	1,350	2 05	(*) *	1,679	(*) *	2 16	(*) *	1,768	(*) *
All Ages.....	129,369 63	5,906	\$93,441,898	\$3,915,757	5,676 96	(107) 104% 105%†	\$4,034,371	(105) 97% 103%†	5,529 89	(110) 107% 108%†	\$3,919,220	(107) 100% 105%†
WOMEN												
50 and under.....	3 83	0	\$ 1,029	\$ 0	.03	(*) *	\$ 6	(*) *	.00	(*) *	\$ 2	(*) *
51-55.....	207 87	1	105,237	46	1 94	(*) *	963	(*) *	.90	(*) *	481	(*) *
56-60.....	1,601 49	15	813,008	5,839	20 13	(58) 75%	10,242	(54) 57%	11 31	(104) 133%	5,751	(97) 102%
61-65.....	6,336 08	78	2,784,844	35,684	112 70	(53) 69	48,970	(53) 73	74 40	(80) 105	32,210	(81) 111
66-70.....	9,329 03	163	3,534,981	63,342	226 74	(74) 72	85,796	(65) 74	167 82	(100) 97	63,501	(88) 100
71-75.....	3,838 72	111	1,502,464	44,611	134 25	(86) 83	52,762	(80) 85	127 11	(91) 87	50,108	(84) 89
76-80.....	1,250 23	76	539,334	37,785	63 85	(91) 119	27,784	(91) 136	74 25	(78) 102	32,356	(79) 117
81-85.....	405 00	46	230,725	30,563	29 42	(150) 156	16,667	(108) 183	37 20	(118) 124	21,089	(85) 145
86-90.....	90 00	13	49,466	5,596	9 31	(148) 140	5,123	(113) 109	12 09	(113) 108	6,675	(86) 84
91-95.....	16 00	2	7,519	745	2 34	(*) *	1 148	(*) *	3 14	(*) *	1,538	(*) *
96 and over.....	1 92	0	569	0	.57	(*) *	157	(*) *	.88	(*) *	237	(*) *
All Ages.....	23,080 77	505	\$ 9,569,176	\$ 224,211	601 28	(79) 84% 77%†	\$ 249 618	(72) 90% 72%†	509 10	(93) 99% 92%†	\$ 213,948	(84) 105% 84%†

* Less than 10 deaths.

† Percentages in parentheses are for the year 1954 on the basis of the adjusted experience referred to in the text.

‡ Percentages for the year 1954 as previously published in the 1955 Report.

TABLE 2
INTERCOMPANY GROUP ANNUITY MORTALITY—MATURED LIFE EXPERIENCE FOR THE YEAR 1955
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 and under.....	189.88	7	\$ 38,625	\$ 1,201	1.40	(*) *	\$ 311	(*) *	.83	(*) *	\$ 207	(*) *
51-55.....	728.27	30	350,499	9,322	9.19	(302) 326%	4,425	(177) 211%	6.99	(399) 429%	3,370	(233) 277%
56-60.....	5,360.99	223	2,912,185	83,904	95.21	(235) 234	52,130	(168) 161	74.67	(300) 299	40,909	(214) 205
61-65.....	12,222.13	539	8,259,468	373,197	306.26	(188) 176	207,228	(172) 180	250.90	(229) 215	169,772	(210) 220
66-70.....	9,533.61	458	5,720,548	224,330	339.29	(142) 135	202,169	(129) 111	309.35	(155) 148	184,038	(138) 122
71-75.....	3,760.43	213	2,157,253	125,699	190.24	(125) 112	109,238	(108) 115	188.62	(127) 113	108,301	(109) 116
76-80.....	1,191.00	103	819,426	64,448	87.90	(137) 117	60,916	(120) 106	96.00	(125) 107	66,673	(110) 97
81-85.....	344.00	47	274,864	31,225	35.91	(119) 131	29,386	(121) 106	42.07	(102) 112	34,438	(103) 91
86 and over.....	58.00	3	56,531	2,208	8.58	(165) *	8,173	(150) *	9.95	(143) *	9,477	(130) *
All Ages.....	33,388.31	1,623	\$20,589,399	\$915,534	1,073.98	(162) 151% 160%†	\$673,976	(141) 136% 140%†	979.38	(178) 166% 175%†	\$617,185	(153) 148% 152%†
WOMEN												
50 and under.....	116.43	0	\$ 23,726	\$ 0	.62	(*) *	\$ 124	(*) *	.22	(*) *	\$ 58	(*) *
51-55.....	559.76	11	144,270	2,881	4.65	(*) 237%	1,203	(*) 239%	2.28	(*) 482%	601	(*) 479%
56-60.....	1,340.10	11	407,029	4,146	15.90	(135) 69	4,849	(112) 86	8.72	(245) 126	2,656	(205) 156
61-65.....	1,933.33	36	652,849	11,531	33.19	(116) 108	11,228	(151) 103	21.52	(178) 167	7,315	(232) 158
66-70.....	1,397.87	32	463,229	10,995	34.00	(118) 94	11,269	(154) 98	25.18	(159) 127	8,345	(208) 132
71-75.....	513.76	15	182,957	4,716	18.03	(98) 83	6,485	(101) 73	17.13	(104) 88	6,193	(106) 76
76-80.....	164.17	12	70,620	2,186	8.38	(*) 143	3,662	(*) 60	9.80	(*) 122	4,275	(*) 51
81-85.....	30.00	4	17,911	1,471	2.16	(*) *	1,254	(*) *	2.72	(*) *	1,580	(*) *
86 and over.....	9.00	2	5,260	1,950	.90	(*) *	546	(*) *	1.17	(*) *	711	(*) *
All Ages.....	6,064.42	123	\$ 1,967,851	\$ 39,876	117.83	(121) 104% 121%†	\$ 40,620	(140) 98% 140%†	88.74	(162) 139% 161%†	\$ 31,734	(179) 126% 179%†

* Less than 10 deaths.

† Percentages in parentheses are for the year 1954 on the basis of the adjusted experience referred to in the text.

‡ Percentages for the year 1954 as previously published in the 1955 Report.

TABLE 3
INTERCOMPANY GROUP ANNUITY MORTALITY—MATURED LIFE EXPERIENCE FOR THE YEARS 1951-1955
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 and under...	31.75	1	\$ 30,683	\$ 360	28	*	\$ 262	*	18	*	\$ 176	*
51-55.....	194.09	1	390,900	2,979	2 35	*	4,985	*	1 91	*	3,803	*
56-60.....	1,786.58	46	2,617,016	58,767	32 60	141%	47,138	125%	25 57	180%	37,004	159%
61-65.....	75,979.25	2,097	59,129,574	1,595,783	2,142.47	98	1,659,620	96	1,810.02	116	1,400,306	114
66-70.....	261,731.37	9,560	177,734,368	6,162,570	9,298.90	103	6,278,643	98	8,475.46	113	5,727,348	108
71-75.....	121,078.32	6,722	76,695,951	4,171,149	6,168.33	109	3,900,966	107	6,125.17	110	3,881,905	107
76-80.....	41,601.29	3,518	28,757,496	2,414,282	3,046.03	115	2,111,699	114	3,319.12	106	2,303,088	105
81-85.....	11,828.12	1,557	9,821,839	1,204,830	1,236.76	126	1,034,625	116	1,448.43	107	1,212,122	99
86-90.....	2,613.99	491	2,328,523	427,043	386.64	127	343,645	124	447.50	110	397,775	107
91-95.....	345.00	104	346,620	121,249	70.54	147	70,029	173	78.19	133	77,714	156
96 and over...	32.92	11	27,197	8,646	10.21	108	9,261	93	10.59	104	9,364	92
All Ages...	517,222.68	24,108	\$357,880,167	\$16,167,658	22,395.11	108%	\$15,460,873	105%	21,742.14	111%	\$15,050,605	107%
WOMEN												
50 and under...	15.17	0	\$ 4,612	\$ 0	09	*	\$ 26	*	01	*	\$ 11	*
51-55.....	908.26	5	437,479	1,331	8 38	*	3,984	*	3 88	*	1,991	*
56-60.....	7,041.74	60	3,380,226	26,267	88.34	68%	42,558	62%	49.88	120%	23,879	110%
61-65.....	25,497.38	322	10,934,914	143,803	449.83	72	191,135	75	296.40	109	125,442	115
66-70.....	34,240.17	635	12,892,754	251,075	831.66	76	313,432	80	615.32	103	232,081	108
71-75.....	13,237.16	417	5,323,478	164,905	463.67	90	187,151	88	439.44	95	177,877	93
76-80.....	4,831.31	289	2,333,821	147,474	245.81	118	119,759	123	285.24	101	139,248	106
81-85.....	1,474.92	171	806,970	93,458	107.42	159	58,550	160	135.77	126	74,116	126
86-90.....	340.25	52	171,220	23,406	35.30	147	17,766	132	45.83	113	23,133	101
91-95.....	54.00	12	27,500	4,266	7.68	156	3,976	107	10.30	117	5,296	81
96 and over...	5.92	0	2,481	0	1.47	*	588	*	2.16	*	854	*
All Ages...	87,646.28	1,963	\$ 36,315,455	\$ 855,985	2,239.65	88%	\$ 938,919	91%	1,884.23	104%	\$ 803,928	106%

* Less than 10 deaths.

TABLE 4

INTERCOMPANY GROUP ANNUITY MORTALITY—MATURED LIFE EXPERIENCE FOR THE YEARS 1951-1955
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 and under.....	762.07	21	\$ 140,076	\$ 2,920	5.62	374%	\$ 1,122	260%	3.46	607%	\$ 738	396%
51-55.....	3,278.92	121	1,408,730	43,908	41.35	293	17,842	246	31.44	385	13,580	323
56-60.....	23,598.67	982	11,852,531	400,870	416.61	236	211,404	190	326.58	301	165,845	242
61-65.....	48,730.26	2,268	30,751,392	1,288,431	1,221.63	186	772,377	167	1,000.79	227	632,921	204
66-70.....	36,678.47	1,847	21,261,941	952,199	1,298.45	142	746,480	128	1,182.50	156	683,007	139
71-75.....	13,533.45	878	8,000,766	486,468	686.85	128	407,575	119	681.53	129	404,710	120
76-80.....	4,743.57	420	3,345,381	272,202	348.63	120	246,517	110	380.30	110	269,137	101
81-85.....	1,214.75	159	1,165,953	134,710	125.97	126	123,044	109	147.53	108	144,156	93
86 and over.....	168.42	24	166,100	41,147	24.99	96	23,959	172	29.00	83	27,792	148
All Ages.....	132,708.58	6,720	\$78,092,870	\$3,622,855	4,170.10	161%	\$2,550,320	142%	3,783.13	178%	\$ 2,341,886	155%
WOMEN												
50 and under.....	475.97	5	\$ 96,798	\$ 782	2.39	*	\$ 492	*	96	*	225	*
51-55.....	2,192.10	36	526,482	10,063	18.23	197%	4,401	229%	8.88	405%	2,181	461%
56-60.....	5,436.12	76	1,576,928	22,005	64.63	118	18,914	116	35.63	213	10,387	212
61-65.....	7,445.35	154	2,565,057	61,849	127.09	121	43,857	141	82.51	187	28,511	217
66-70.....	4,738.60	126	1,596,767	43,110	114.91	110	38,734	111	84.97	148	28,639	151
71-75.....	1,762.75	70	649,528	22,331	61.95	113	22,976	97	58.82	119	21,930	102
76-80.....	574.18	39	275,579	16,575	28.83	135	14,021	118	33.41	117	16,247	102
81-85.....	111.50	12	63,799	6,928	8.23	146	4,622	150	10.36	116	5,850	118
86 and over.....	23.00	5	19,079	5,015	2.36	*	1,995	*	3.06	*	2,601	*
All Ages.....	22,759.57	523	\$ 7,370,017	\$ 188,658	428.62	122%	\$ 150,012	126%	318.60	164%	\$ 116,571	162%

* Less than 10 deaths.

TABLE 5
INTERCOMPANY GROUP ANNUITY MORTALITY—MATURED LIFE EXPERIENCE TO 12-31-55
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)			
					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	78,126.80	3,715	52,113,911	2,436,229	3,333.62	111	2,259,804	108	3,225.19	115	2,208,663	110
1952	89,278.86	4,203	60,286,247	2,910,597	3,835.71	110	2,616,108	111	3,716.71	113	2,545,909	114
1953	102,781.12	4,816	70,030,092	3,213,408	4,438.64	109	3,022,594	106	4,306.17	112	2,942,700	109
1954	117,666.27	5,468	82,008,019	3,691,667	5,110.18	107	3,527,696	105	4,964.18	110	3,434,113	107
1955	129,369.63	5,906	93,441,898	3,915,757	5,676.96	104	4,034,671	97	5,529.89	107	3,919,220	100
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	12,711.09	310	5,329,808	143,094	317.05	98	136,231	105	264.97	117	116,586	123
1952	14,719.79	357	6,102,507	154,467	370.82	96	157,061	98	309.73	115	134,587	115
1953	17,112.52	386	7,070,474	180,269	435.09	89	182,209	99	365.21	106	155,879	116
1954	20,022.11	405	8,243,490	153,944	515.41	79	213,800	72	434.32	93	182,928	84
1955	23,080.77	505	9,569,176	224,211	601.28	84	249,618	90	509.10	99	213,948	105

SPECIAL STUDY OF EXPERIENCE ON RETIREMENTS PRIOR
TO NORMAL RETIREMENT DATE

A separate study of mortality experience on male lives retiring prior to the normal retirement date, by duration after actual retirement date, has been prepared this year. The experience, to which most of the companies contributing to the regular matured life study contributed, covers the five calendar years 1951 through 1955 inclusive, and is limited to the experience of single life matured annuities on males under Group Annuity contracts. The duration used is a mean duration, *i.e.*, calendar year of experience minus calendar year of retirement. Accordingly, duration 0 covers on the average the first six months after retirement, duration 1 covers on the average the experience from 6 months to 18 months after retirement, etc.

Comparisons were made with the *Ga*-1951 Male Table, without projection, as well as with a table of mortality rates derived from the experience during the years 1951 through 1955 on the retirement data included in this special study. The basic data for this latter table were the exposures and deaths (by lives) for mean durations after retirement of five years or more. Exclusion of the first five years experience is not intended to imply that ultimate mortality rates are applicable thereafter, but is merely a convenient device to show the effect of initial selection over that five year period. The crude death rates obtained were graduated using the same methods and constants which were used to graduate the *Ga*-1951 Male Table for the older ages. These rates are exhibited in Table 6 in the same format as was used for the underlying experience on which the *Ga*-1951 Table was based (*TSA* IV, 290).

Table 7 shows, for those companies contributing to this special study, the same data as are included in Table 4 separately for mean durations 0, 1, 2, 3, 4, 5-9, 10 and over. The approximately one-half year period of observation at duration 0 is reflected in the smaller exposures and expected deaths for that duration. Table 8 shows the experience analyzed by age at retirement for the same mean durations as in Table 7.

It is interesting to note that Table 8 shows relatively lower mortality ratios in the first few years following retirement for those who retired at or near ages 55, 60, and 65 than for those who retired at intermediate ages such as 57 or 62.

TABLE 6

1951-1955 GROUP ANNUITY EXPERIENCE ON MALE LIVES RETIRED PRIOR TO
NORMAL RETIREMENT DATE EXCLUDING EXPERIENCE DURING THE
FIRST FIVE YEARS OF MEAN DURATION AFTER RETIREMENT

Age	Crude Data 1,000 q_x	Graduated Rates 1,000 q_x	Second Differences	Expected Deaths	Actual Deaths	Ratio Act./Exp.
50.....	27.027	20.53076	1	1.316
51.....	19.608	20.861	.046	9.29	9	.969
52.....	44.118	21.238	.057			
53.....	12.658	21.672	.145			
54.....	21.053	22.251	.202			
55.....	15.504	23.032	.256			
56.....	11.834	24.069	.275	74.99	69	.920
57.....	33.981	25.381	.224			
58.....	20.921	26.917	.235			
59.....	33.557	28.688	.200			
60.....	25.455	30.659	.252			
61.....	35.687	32.882	.118	459.55	453	.986
62.....	33.983	35.223	.105			
63.....	39.077	37.669	.034			
64.....	39.365	40.149	.027			
65.....	39.814	42.656	-.018			
66.....	52.017	45.145	-.237	1,061.79	1,069	1.007
67.....	47.753	47.397	-.019			
68.....	47.499	49.630	.220			
69.....	50.870	52.083	.329			
70.....	53.303	54.865	.369			
71.....	57.319	58.016	.336	760.12	767	1.009
72.....	64.197	61.503	.281			
73.....	71.305	65.271	.306			
74.....	62.369	69.345	.465			
75.....	74.632	73.884	.509			
76.....	79.231	78.932	.569	403.83	400	.991
77.....	73.284	84.549	.634			
78.....	93.182	90.800	.621			
79.....	76.495	97.672	.624			
80.....	142.105	105.168	.538			
81.....	135.922	113.202	.581	149.02	157	1.054
82.....	118.590	121.817	.677			
83.....	119.816	131.109	.774			
84.....	138.686	141.175	.868			
85.....	174.312	152.109	.965			
86.....	119.403	164.008	1.082	26.25	22	.838
87.....	194.444	176.989	1.193			
88.....	136.364	191.163	1.321			
89.....	214.286	206.658	1.450			
90.....	125.000	223.603	1.596			
91.....	333.333	242.144	1.750	2.64	2	.758
92.....	.....	262.435	1.921		
93.....	.....	284.647	2.107		
94.....	.....	308.966	2.309		
95.....	.....	335.594	.....		
Over-all comparison.....				2,948.24	2,949	1.000

TABLE 7

INTERCOMPANY GROUP ANNUITY MORTALITY—MATURED LIFE EXPERIENCE FOR THE YEARS 1951-1955
RETIREMENT PRIOR TO NORMAL RETIREMENT DATE—MALE LIVES BY MEAN DURATION

ATTAINED AGES	NUMBER OF LIVES		AMOUNT OF ANNUAL INCOME		COMPARISON WITH MORTALITY RATES SHOWN IN TABLE 6				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.
DURATION 0												
50 and under.....	150.14	4	\$ 51,310	\$ 1,044	2.87	*	\$ 1,025	*	53	*	\$ 276	*
51-55.....	1,193.09	56	567,608	28,239	27.08	207%	12,866	219%	11.93	469%	5,652	500%
56-60.....	4,212.81	203	2,847,828	100,381	118.39	171	81,188	124	58.89	345	40,521	248
61-65.....	5,437.34	359	4,252,283	204,923	201.58	178	157,475	130	107.87	333	84,151	244
66-70.....	1,020.44	61	502,867	28,345	49.16	124	24,181	117	31.72	192	15,562	182
71-75.....	83.95	7	49,547	4,817	5.27	*	3,088	*	4.11	*	2,399	*
76 and over.....	14.74	1	10,754	996	1.40	*	1,222	*	1.29	*	1,155	*
All Ages.....	12,112.51	691	\$ 8,282,197	\$368,745	405.75	170%	\$281,045	131%	216.34	319%	\$149,716	246%
DURATION 1												
50 and under.....	207.67	8	\$ 44,416	\$ 923	3.99	*	\$ 878	*	90	*	\$ 226	*
51-55.....	898.00	29	426,810	7,998	20.20	144%	9,574	84%	8.77	331%	4,109	195%
56-60.....	6,114.00	297	3,275,405	109,248	166.99	178	90,762	120	82.35	361	44,956	243
61-65.....	9,922.01	516	7,347,656	347,517	370.31	139	275,076	126	198.94	259	148,040	235
66-70.....	2,395.75	113	1,204,414	54,876	115.70	98	57,951	95	74.81	151	37,280	147
71-75.....	163.00	11	80,895	8,184	10.17	108	5,065	162	7.85	140	3,948	207
76 and over.....	33.00	4	17,272	888	3.14	*	2,060	*	2.90	*	1,942	*
All Ages.....	19,733.43	978	\$12,396,868	\$529,634	690.50	142%	\$441,366	120%	376.52	260%	\$240,501	220%
DURATION 2												
50 and under.....	141.68	4	\$ 17,683	\$ 342	2.71	*	\$ 342	*	60	*	\$ 68	*
51-55.....	321.00	16	154,365	4,244	7.05	227%	3,380	126%	2.93	546%	1,386	306%
56-60.....	4,720.18	196	2,140,084	83,623	128.70	152	58,658	143	63.56	308	29,003	288
61-65.....	8,524.49	398	5,855,647	249,200	321.52	124	221,564	112	173.35	230	119,654	208
66-70.....	3,293.26	162	1,954,162	70,781	157.91	103	92,692	76	101.35	160	58,812	120
71-75.....	304.00	19	138,440	8,583	18.63	102	8,455	102	14.29	133	6,502	132
76 and over.....	44.00	4	18,173	1,549	4.25	*	1,956	*	3.92	*	1,800	*
All Ages.....	17,348.61	799	\$10,278,554	\$418,322	640.77	125%	\$387,047	108%	360.00	222%	\$217,225	193%

* Less than 10 deaths.

TABLE 7—Continued

ATTAINED AGES	NUMBER OF LIVES		AMOUNT OF ANNUAL INCOME		COMPARISON WITH MORTALITY RATES SHOWN IN TABLE 6				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.
DURATION 3												
50 and under.....	97 00	1	\$ 10,487	\$ 80	1 88	*	\$ 208	*	47	*	\$ 46	*
51-55.....	230 00	4	97,034	1,187	5 08	*	2,138	*	2 15	*	896	*
56-60.....	3,438 50	128	1,457,270	58,833	96 23	133%	40,969	144%	47 86	267%	20,412	288%
61-65.....	6,885 41	317	4,234,378	178,957	263 50	120	163,171	110	142 78	222	88,707	202
66-70.....	3,867 08	189	2,347,802	101,998	185 64	102	111,886	91	119 22	159	71,344	143
71-75.....	447 00	34	200,091	10,143	27 24	125	12,310	82	20 82	163	9,492	107
76 and over.....	46 00	2	22,097	282	4 39	*	2,324	*	4 01	*	2,123	*
All Ages.....	15,010 99	675	\$ 8,369,159	\$351,480	583 96	116%	\$333,006	106%	337 31	200%	\$193,020	182%
DURATION 4												
50 and under.....	75 00	3	\$ 7,476	\$ 217	1 49	*	\$ 150	*	39	*	\$ 38	*
51-55.....	191 00	7	70,758	777	4 23	*	1,580	*	1 81	*	673	*
56-60.....	2,341 25	82	925,056	26,893	67 36	122%	26,592	101%	33 75	243%	13,318	202%
61-65.....	5,626 33	205	3,201,443	109,896	217 39	94	125,076	88	118 48	173	68,472	160
66-70.....	4,457 00	234	2,782,067	148,698	214 86	109	133,666	111	138 61	169	85,954	173
71-75.....	573 08	33	309,184	30,231	35 36	93	19,183	158	27 22	121	14,874	203
76 and over.....	53 00	7	26,700	2,842	5 13	*	2,797	*	4 72	*	2,590	*
All Ages.....	13,316 66	571	\$ 7,322,684	\$319,554	545 82	105%	\$409,044	103%	324 98	176%	\$185,919	172%

* Less than 10 deaths.

TABLE 7—Continued

ATTAINED AGES	NUMBER OF LIVES		AMOUNT OF ANNUAL INCOME		COMPARISON WITH MORTALITY RATES SHOWN IN TABLE 6				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.
DURATIONS 5-9												
50 and under	84.00	1	\$ 8,252	\$ 314	1.67	*	\$ 165	*	.60	*	\$ 43	*
51-55	392.00	8	81,585	1,055	8.64	*	1,819	*	3.70	*	775	*
56-60	2,406.00	64	1,031,510	18,708	69.93	92%	30,005	62%	34.78	184%	15,068	124%
61-65	11,182.33	432	5,032,910	179,292	430.50	100	195,078	92	234.30	184	106,604	168
66-70	18,465.84	915	10,681,781	474,932	917.28	100	531,086	89	608.09	150	352,280	135
71-75	5,878.33	375	3,147,991	192,882	367.09	102	195,552	99	285.26	131	151,753	127
76-80	532.00	52	320,019	30,342	45.19	115	27,160	112	40.48	128	24,167	126
81 and over	47.00	7	44,101	5,215	6.20	*	5,986	*	6.04	*	5,754	*
All Ages	38,987.50	1,854	\$20,348,149	\$902,740	1,846.50	100%	\$986,851	91%	1,213.25	153%	\$656,444	138%
DURATIONS 10 AND OVER												
50 and under	2.00	0	\$ 100	\$ 0	.04	*	\$ 2	*	.02	*	\$ 0	*
51-55	30.00	1	5,267	408	.65	*	117	*	.30	*	48	*
56-60	179.00	5	118,349	1,792	5.05	*	3,498	*	2.41	*	1,760	*
61-65	737.00	21	655,358	9,235	29.08	72%	25,231	37%	15.91	132%	13,740	67%
66-70	2,835.50	154	1,663,293	67,185	144.56	107	85,003	79	98.04	157	57,704	116
71-75	5,961.50	392	4,035,280	228,986	392.99	100	266,458	86	314.55	125	213,749	107
76-80	4,015.00	348	2,955,544	234,719	358.67	97	264,388	89	325.26	107	239,405	98
81-85	1,145.00	151	1,100,433	130,798	143.81	105	140,504	93	139.39	108	135,857	96
86 and over	152.00	23	150,584	38,931	27.86	83	26,762	145	26.15	88	25,165	155
All Ages	15,057.00	1,095	\$10,684,208	\$712,054	1,102.71	99%	\$811,963	88%	922.03	119%	\$687,428	104%

* Less than 10 deaths.

TABLE 8

INTERCOMPANY GROUP ANNUITY MORTALITY—MATURED LIFE EXPERIENCE
FOR THE YEARS 1951-1955

RETIREMENT PRIOR TO NORMAL RETIREMENT DATE—MALE LIVES BY
AGE AT RETIREMENT AND MEAN DURATION

Age At Retirement	Mean Duration						
	0	1	2	3	4	5-9	10 and over
ACTUAL DEATHS							
54½ and under . . .	31	37	40	27	29	73	47
55½	29	53	46	43	38	89	42
56½	23	39	37	34	25	74	30
57½	30	56	41	29	27	84	41
58½	37	66	52	36	32	101	63
59½	46	83	62	58	54	136	85
60½	67	90	77	68	53	218	151
61½	68	105	84	73	39	208	118
62½	98	116	82	82	71	206	134
63½	79	114	93	67	59	207	134
64½	78	91	66	55	55	180	89
65½	36	39	38	24	27	83	38
66½ and over . . .	69	89	81	79	62	195	123
All Ages	691	978	799	675	571	1,854	1,095
RATIO OF ACTUAL TO EXPECTED DEATHS (BY LIVES) Based on Mortality Rates from Table 6							
54½ and under . . .	313%	153%	176%	128%	142%	98%	84%
55½	145	158	137	134	126	96	120
56½	169	153	143	139	111	105	89
57½	203	203	152	114	106	100	94
58½	215	212	178	132	122	113	102
59½	195	169	136	134	133	98	87
60½	136	113	102	97	80	98	108
61½	166	153	132	123	67	104	97
62½	218	155	121	129	115	98	102
63½	174	149	134	106	97	94	109
64½	180	129	104	99	108	103	87
65½	133	96	106	83	102	88	81
66½ and over . . .	124	100	100	114	112	111	112
All Ages	170%	142%	125%	116%	105%	100%	99%

TABLE 8—*Continued*

Age at Retirement	Mean Duration						
	0	1	2	3	4	5-9	10 and over
RATIO OF ACTUAL TO EXPECTED DEATHS (BY LIVES) Based on Mortality Rates from Ga-1951 Table (without Projection)							
54½ and under....	920%	383%	414%	288%	309%	201%	134%
55½.....	319	335	282	271	252	185	178
56½.....	360	316	290	277	217	198	126
57½.....	420	411	303	223	207	182	126
58½.....	435	422	351	257	234	200	130
59½.....	390	333	264	257	249	164	105
60½.....	267	220	197	183	145	158	129
61½.....	324	293	248	224	116	160	115
62½.....	420	291	220	225	191	144	118
63½.....	326	272	235	176	153	133	125
64½.....	327	226	172	155	162	140	97
65½.....	233	160	167	125	148	116	90
66½ and over....	186	145	139	154	146	134	119
All Ages.....	319%	260%	222%	200%	176%	153%	119%

The following companies have contributed experience for the investigation covered by this report:

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
 Life Insurance Company of Virginia
 Massachusetts Mutual Life Insurance Company
 Metropolitan Life Insurance Company
 North American Life Assurance Company
 Occidental Life Insurance Company of California
 Pacific Mutual Life Insurance Company
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