

TRANSACTIONS OF SOCIETY OF ACTUARIES 1973 REPORTS

II. MORTALITY UNDER INDIVIDUAL IMMEDIATE ANNUITIES BETWEEN 1967 AND 1971 CONTRACT ANNIVERSARIES

ABSTRACT

1. This report gives the 1967-71 mortality experience of twenty-one large life insurance companies under individual immediate annuities issued in the United States and Canada during the years 1931-70, inclusive.

2. The average amount of annual income observed in first-contract-year exposures was about \$1,200 in the 1967-71 experience, up 9 per cent over that in 1963-67, and up 58 per cent over that in 1958-63. The sharp increase in average amount between the 1958-63 and the 1963-67 studies was noted previously.

3. As in earlier studies, the ratios of actual to expected mortality were generally lower (*a*) in the first five contract years than later, (*b*) at the older attained ages than at the younger, (*c*) at annual incomes \$2,500 and over than at incomes under \$2,500 (data available only since the 1963-67 study), and (*d*) by amounts of annual income than by number of contracts (found only since the 1958-63 study). These findings appear to reflect the effects of self-selection by healthy purchasers of annuities. This self-selection tends to increase with age at ages 70 and over. As noted in the previous study, a trend has been observed toward larger annuity purchases since the late 1950's; such purchases were presumably made by better-to-do individuals, whose mortality is generally better than that of comparable persons selecting smaller amounts of annuity income.

4. In a new analysis the experience by income group was studied separately for issues of 1960 and later and for those of 1959 and prior years. For all male business and nonrefund female business, contracts issued in 1960-70 to provide annual incomes of \$2,500 and over showed lower mortality ratios than those issued in 1931-59.

5. As in the 1963-67 period, females showed generally lower mortality ratios than males. Since the 1963-67 period, aggregate mortality on female refund and nonrefund annuities combined decreased substantially, while corresponding male mortality changed relatively little.

6. The mortality ratios were generally lower on nonrefund than on refund annuities for males but were higher for females. The over-all mortality on female annuities largely reflected the experience in contract years 6 and over. At these durations aggregate mortality had changed relatively little since the previous study on nonrefund female annuities, while it had dropped sharply on the refund annuities.

7. A downtrend in annuitant mortality has been observed since the 1941-48 study—the experience period from which the *a*-1949 Ultimate Table was derived. Lower levels of mortality have become especially apparent in the 1963-

67 and 1967-71 periods. For contract years 6 and over of the present study, aggregate mortality based on amount is generally below 100 per cent for female annuities and nonrefund male annuities on the *a*-1949 Ultimate Table without projection and on the *a*-1949 Ultimate Table with Projection B. The corresponding mortality ratios on the 1971 IAM Table are generally above 100 per cent for both females and males. However, even on the 1971 IAM Table, ratios below 100 per cent are observable at the very high ages and in the early contract durations.

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INTRODUCTION

THIS report, the latest in a series of intercompany studies of mortality under individual immediate annuities, covers the experience between 1967 and 1971 anniversaries. The previous report (*TSA, 1969 Reports*, p. 5) covered the experience from 1963 to 1967 anniversaries. The present study includes the experience on individual immediate non-refund and refund annuity issues of 1931-70. Contracts providing for either cash or installment refund payments and annuities with a period certain are classified as refund annuities. The types of annuities excluded are the same as those in earlier studies (*TSA, 1964 Reports*, p. 80).

The study is on an attained-age basis, where attained age equals age at issue plus contract year less one. The age at issue was taken as the age nearest birthday on the issue date of the contract, or some reasonable approximation to that age.

Experience is reported by the use of ratios of actual to expected deaths. Expected deaths were calculated on the Annuity Table for 1949 Ultimate without projection and with Projection B, allowing for mortality improvement from the end of 1950 through the period from 1967 to 1971 anniversaries. Expected deaths were also calculated on the 1971 Individual Annuity Mortality Table. For each of these tables separate expected death rates are used for males and females.

The names of the twenty-one contributing companies and their proportionate contributions to the experience on nonrefund and refund annuities by sex are given in Table A of the Appendix, both by number of contracts and by amounts of annual income. The data exclude the experience of two past contributors and part of the experience of a very large continuing contributor but include the experience of one new contributor. However, these changes are thought to have virtually no effect on the over-all mortality.

The findings of the present study are based on exposures of 475,490 contract years and \$346,622,602 annual income years; 29,613 contracts involving \$17,614,451 of annual income were terminated by death. Compared with the previous study, the current study shows a decrease of 14 per cent in the exposures by contract years but an increase of 19 per cent in the exposures by amounts of annual income, probably reflecting some degree of monetary inflation.

An analysis of the exposures and deaths by sex, type of annuity, and duration group is given in Table B of the Appendix. As in recent studies, refund annuities accounted for 63 per cent of the total exposures by amounts of annual income. Annuities on females accounted for about 63

per cent of both the refund and the nonrefund annuity exposures by amounts of annual income.

Since the 1948-53 study there has been a steady increase in the average amount of annual income provided under immediate annuities, with a sharp rise apparent between 1958-63 and 1963-67 and a smaller rise thereafter. This is indicated in the accompanying tabulation, which presents figures derived from the first-contract-year exposures entering into the five most recent intercompany studies.

AVERAGE AMOUNT OF ANNUAL INCOME UNDER
INDIVIDUAL IMMEDIATE ANNUITIES
DERIVED FROM FIRST-CONTRACT-YEAR EXPOSURES
IN LAST FIVE INTERCOMPANY STUDIES

EXPERIENCE	NONREFUND		REFUND	
	Male	Female	Male	Female
1948-53	\$ 540	\$ 377	\$ 392	\$ 325
1953-58	760	507	529	427
1958-63	903	849	779	659
1963-67	1,403	1,150	1,126	967
1967-71	1,600	1,247	1,278	1,020

Details of the current study concerning exposures, actual deaths, and expected deaths are set forth in Table C of the Appendix.

EXPERIENCE IN RELATION TO THE ANNUITY TABLE FOR 1949 ULTIMATE
WITHOUT PROJECTION

Tables 1 and 2 present the mortality ratios on the Annuity Table for 1949 Ultimate (*a*-1949 Table) for nonrefund and refund annuities, respectively, and Table 3 gives the combined experience. The following are the main features of the 1967-71 experience:

1. For all contract years combined, the mortality ratios at ages 60 and over are generally less than 100 per cent. The ratios tend to be level or decreasing with advance in age.
2. For all ages combined, the mortality ratios tend to increase with contract duration. The ratios on male nonrefund and refund annuities combined show indications of a three- to five-year period of self-selection, and those on corresponding female annuities a period of at least ten years. The mortality ratios in contract years 1-2 are generally lower on nonrefund than on refund annuitants.
3. The aggregate mortality ratios by amounts of annual income are generally

TABLE 1
 INDIVIDUAL IMMEDIATE NONREFUND ANNUITIES
 ISSUES OF 1931-70
 EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES
 MORTALITY RATIOS ON ANNUITY TABLE FOR 1949 ULTIMATE

ATTAINED AGES	BASED ON NUMBER OF CONTRACTS						BASED ON AMOUNTS OF ANNUAL INCOME					
	Contract Years					All Contract Years	Contract Years					All Contract Years
	1-2	3-5	6-10	11 and Over	6 and Over		1-2	3-5	6-10	11 and Over	6 and Over	
Male												
Under 50.....	*	*	*	*	*	*	*	*	*	*	*	*
50-59.....	*	*	*	*	*	73%	*	*	*	*	*	116%
60-69.....	70%	91%	104%	125%	116%	96	68%	103%	101%	154%	115%	95
70-79.....	67	89	106	104	105	96	68	115	113	100	108	102
80-89.....	53	85	92	104	101	96	56	71	82	98	92	82
90 and over.....	*	73	78	77	77	76	*	75	60	68	66	64
All ages.....	61%	86%	96%	95%	95%	91%	61%	89%	89%	88%	88%	84%
Female												
Under 50.....	*	*	*	*	*	*	*	*	*	*	*	*
50-59.....	*	112%	*	*	208%	271%	*	287%	*	*	154%	206%
60-69.....	96%	78	124%	127%	125	103	66%	80	105%	137%	115	88
70-79.....	53	65	81	106	98	86	40	49	77	113	93	69
80-89.....	44	73	74	96	94	90	42	76	68	109	96	87
90 and over.....	*	67	74	88	87	87	*	77	75	85	83	82
All ages.....	55%	71%	79%	93%	92%	89%	43%	67%	73%	99%	91%	82%

NOTE: Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE 2
 INDIVIDUAL IMMEDIATE REFUND ANNUITIES
 ISSUES OF 1931-70
 EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES
 MORTALITY RATIOS ON ANNUITY TABLE FOR 1949 ULTIMATE

ATTAINED AGES	BASED ON NUMBER OF CONTRACTS						BASED ON AMOUNTS OF ANNUAL INCOME					
	Contract Years					All Contract Years	Contract Years					All Contract Years
	1-2	3-5	6-10	11 and Over	6 and Over		1-2	3-5	6-10	11 and Over	6 and Over	
Male												
49	*	*	*	*	*	*	*	*	*	*	*	*
Under 50.....	<i>150%</i>	<i>197%</i>	*	<i>105%</i>	<i>101%</i>	<i>132%</i>	<i>138%</i>	<i>259%</i>	*	<i>104%</i>	<i>75%</i>	<i>156%</i>
50-59.....	92	97	97%	116	107	99	109	89	97%	105	99	98
60-69.....	99	85	92	107	101	97	103	84	107	104	106	99
70-79.....	57	88	78	95	92	89	64	79	109	104	106	93
80-89.....	*	*	135	91	95	92	*	*	129	86	95	85
90 and over.....												
All ages.....	<i>86%</i>	<i>89%</i>	<i>90%</i>	<i>98%</i>	<i>96%</i>	<i>94%</i>	<i>92%</i>	<i>83%</i>	<i>108%</i>	<i>100%</i>	<i>104%</i>	<i>96%</i>
Female												
Under 50.....	*	*	*	*	<i>304%</i>	<i>405%</i>	*	*	*	*	<i>231%</i>	<i>272%</i>
50-59.....	<i>121%</i>	<i>158%</i>	<i>233%</i>	<i>145%</i>	<i>176%</i>	159	<i>96%</i>	<i>146%</i>	<i>238%</i>	<i>152%</i>	<i>199%</i>	152
60-69.....	66	90	83	101	93	86	71	99	74	88	80	84
70-79.....	67	82	78	91	87	84	68	81	80	91	86	82
80-89.....	60	70	75	93	91	88	55	66	66	88	82	76
90 and over.....	*	78	96	80	81	81	*	75	82	79	79	79
All ages.....	<i>65%</i>	<i>80%</i>	<i>80%</i>	<i>88%</i>	<i>87%</i>	<i>86%</i>	<i>64%</i>	<i>78%</i>	<i>74%</i>	<i>86%</i>	<i>83%</i>	<i>80%</i>

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death

* Fewer than ten contracts terminated by death.

TABLE 3
 INDIVIDUAL IMMEDIATE NONREFUND AND REFUND ANNUITIES COMBINED
 ISSUES OF 1931-70
 EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES
 MORTALITY RATIOS ON ANNUITY TABLE FOR 1949 ULTIMATE

ATTAINED AGES	BASED ON NUMBER OF CONTRACTS						BASED ON AMOUNTS OF ANNUAL INCOME					
	Contract Years					All Contract Years	Contract Years					All Contract Years
	1-2	3-5	6-10	11 and Over	6 and Over		1-2	3-5	6-10	11 and Over	6 and Over	
Male												
Under 50.....	*	*	*	*	*	<i>126%</i>	*	*	*	*	*	<i>191%</i>
50-59.....	<i>152%</i>	<i>153%</i>	<i>93%</i>	<i>89%</i>	<i>90%</i>	118	<i>147%</i>	<i>204%</i>	<i>96%</i>	<i>87%</i>	<i>92%</i>	<i>147%</i>
60-69.....	87	95	98	119	110	98	99	92	98	117	104	97
70-79.....	88	86	97	106	102	97	89	96	110	103	107	100
80-89.....	55	87	85	99	96	92	60	75	95	101	99	87
90 and over.....	*	57	102	84	85	84	*	53	83	75	77	73
All ages.....	<i>77%</i>	<i>88%</i>	<i>93%</i>	<i>97%</i>	<i>96%</i>	<i>93%</i>	<i>79%</i>	<i>85%</i>	<i>99%</i>	<i>94%</i>	<i>96%</i>	<i>91%</i>
Female												
Under 50.....	*	*	*	*	<i>388%</i>	<i>470%</i>	*	*	*	*	<i>246%</i>	<i>304%</i>
50-59.....	<i>141%</i>	<i>199%</i>	<i>223%</i>	<i>159%</i>	181	177	<i>105%</i>	<i>171%</i>	<i>216%</i>	<i>164%</i>	192	160
60-69.....	74	87	95	107	102	90	69	94	83	98	89	85
70-79.....	61	75	79	96	91	85	57	68	78	98	89	77
80-89.....	53	71	75	94	92	89	50	71	67	97	88	81
90 and over.....	*	73	83	84	84	84	*	76	78	82	81	81
All ages.....	<i>62%</i>	<i>77%</i>	<i>79%</i>	<i>91%</i>	<i>89%</i>	<i>87%</i>	<i>56%</i>	<i>73%</i>	<i>74%</i>	<i>92%</i>	<i>87%</i>	<i>81%</i>

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

lower than those by number of contracts on nonrefund annuities and on female refund annuities, but generally higher on male refund annuities.

4. Mortality ratios on nonrefund annuities are generally lower than on refund annuities for males; however, for females the nonrefund ratios are slightly higher for all contract years combined—and much higher for contract years 11 and over by amounts of annual income.

The accompanying tabulation gives an indication of the variation by company in the aggregate mortality ratios by amounts of annual income.

DISTRIBUTION OF CONTRIBUTING COMPANIES BY RELATIVE MORTALITY LEVEL
BASED ON AMOUNTS OF ANNUAL INCOME

MORTALITY RATIOS	MALES		FEMALES	
	Number of Companies	Proportion of Actual Deaths	Number of Companies	Proportion of Actual Deaths
Nonrefund Annuities				
Percentage points below average:				
Over 20.....	1	2.8%	1	0.8%
11-20.....	4	13.8	3	13.4
6-10.....	1	1.8	1	2.0
1-5.....	3	29.9	1	5.4
Percentage points above average:				
0-5.....	2	18.0	8	57.0
6-10.....	3	7.9	3	9.1
11-20.....	6	21.8	3	9.1
Over 20.....	1	4.0	1	3.2
Refund Annuities				
Percentage points below average:				
Over 20.....	5	10.1%	2	6.2%
11-20.....	3	9.4	2	4.0
6-10.....	0	0.0	1	4.5
1-5.....	3	13.7	2	5.9
Percentage points above average:				
0-5.....	1	2.3	3	25.4
6-10.....	2	19.3	5	27.3
11-20.....	4	27.4	3	22.3
Over 20.....	2	17.8	2	4.4

EXPERIENCE IN RELATION TO THE ANNUITY TABLE
FOR 1949 ULTIMATE WITH PROJECTION B

The mortality experience under individual immediate annuities during the period from 1967 to 1971 anniversaries was also computed on the basis

of the *a*-1949 Table with Projection B, assuming decreases in mortality from the end of 1950 through the 1967-71 period. The methods used in the computation of expected deaths on this basis are outlined on page 89. Mortality ratios are presented in Tables 4 and 5 for nonrefund and refund annuities, respectively, and in Table 6 for the combined experience.

The mortality ratios on the *a*-1949 Table with Projection B exhibit a definite tendency to decrease with advancing age, reflecting the reduction in the projection factors with increasing age. The ratios for each type of annuity in all contract years combined are generally above 100 per cent at ages under 70, and 100 per cent or less at ages 80 and over. At ages 70-79 the ratios are greater than 100 per cent for males but less than 100 per cent for females.

EXPERIENCE BY SIZE OF ANNUITY

The current study includes, for the second time, an analysis of the mortality experience by size of annuity (amount of annual income) and contract duration. This experience is presented in Tables 7 and 8 for nonrefund and refund annuities, respectively, and in Table 9 for the combined experience, based on the *a*-1949 Table without projection.

For all contract years combined, the mortality ratios generally tend to decrease with advance in income group. However, for males the ratios are generally lowest on annuities paying incomes of \$2,500-\$4,999 and "unknown" amounts of income. For females the ratios are lowest on nonrefund annuities paying incomes of \$2,500-\$4,999 and \$5,000 and over and on refund annuities paying incomes of \$5,000 and over.

In contract durations 6 and over, the ratios are lower on annuities paying \$2,500 and over than on those paying incomes under \$2,500 for all female business and for male nonrefund business, but the ratios are higher for male refund business. Male annuities providing "unknown" amounts of income show rather low ratios, as indicated in the tabulation at the top of page 68.

COMPARISON WITH PREVIOUS STUDIES

A comparison of the experience under individual immediate annuities for successive periods between 1941 and 1971 anniversaries is presented in Tables 10 and 11 for nonrefund and refund annuities, respectively, and in Table 12 for the combined experience.

The tables show mortality ratios on the *a*-1949 Table without projection and with Projection B. Because exposures were not available to calculate exact expected deaths for the 1941-48 period, the expected deaths previously calculated on the 1937 Standard Annuity Table were

MORTALITY RATIOS FOR SIXTH AND SUBSEQUENT CONTRACT DURATIONS
 BASED ON THE *a*-1949 TABLE WITHOUT PROJECTION

	BY NUMBER OF CONTRACTS		BY AMOUNTS OF ANNUAL INCOME	
	Male	Female	Male	Female
Nonrefund annuities providing annual incomes of				
Under \$2,500	98%	92%	93%	93%
\$2,500 and over	91	82	87	85
Unknown	77	91	62	90
All amounts	95	92	88	91
Refund annuities providing annual incomes of				
Under \$2,500	98	88	98	85
\$2,500 and over	101	76	126	70
Unknown	84	85	77	85
All amounts	96	87	104	83

converted to the *a*-1949 Table by assuming that the ratio of expected deaths on the two tables in each age-duration group was the same as the ratio which was available for the 1953-58 period.

Since the distribution of the exposures by attained age and duration has changed markedly from the earlier to the later periods, "adjusted" mortality ratios were computed for all ages combined. The adjusted ratio for all ages combined within a particular duration group is the weighted average of the ratios for component age groups, the weights being the corresponding expected deaths in the present study experience. Therefore, the adjusted ratios are approximations to the mortality ratios for all ages combined, on the assumption that the distribution of exposures over the four attained-age groups shown was the same in the earlier periods as in the current period.

The mortality ratios shown for the 1953-58 period in Table 12 on the *a*-1949 Table with Projection B were calculated by weighting the non-refund and refund ratios for the expected deaths on the *a*-1949 Table without projection.

The following comments are based on the mortality ratios in Tables 10 and 11 on the *a*-1949 Table without projection:

Male nonrefund.--The over-all ratios by number and amount increased slightly over those in the 1963-67 study but remained below the ratios of the 1958-63 period and earlier. For contract durations 1-5 the ratios remained the same or increased slightly over the 1963-67 period, after having shown a marked dip in the 1958-63 period. The ratios increased above the 1963-67 level at ages

TABLE 4
 INDIVIDUAL IMMEDIATE NONREFUND ANNUITIES
 ISSUES OF 1931-70
 EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES
 MORTALITY RATIOS ON ANNUITY TABLE FOR 1949 ULTIMATE
 WITH PROJECTION B

ATTAINED AGES	BASED ON NUMBER OF CONTRACTS						BASED ON AMOUNTS OF ANNUAL INCOME					
	Contract Years					All Contract Years	Contract Years					All Contract Years
	1-2	3-5	6-10	11 and Over	6 and Over		1-2	3-5	6-10	11 and Over	6 and Over	
Male												
Under 50.....	*	*	*	*	*	*	*	*	*	*	*	*
50-59.....	*	*	*	*	*	89%	*	*	*	*	*	146%
60-69.....	85%	111%	128%	153%	142%	118	83%	126%	123%	188%	141%	116
70-79.....	78	102	122	119	120	111	79	132	130	114	124	117
80-89.....	56	90	97	109	106	100	59	75	86	103	96	86
90 and over.....	*	73	78	77	77	76	*	75	60	68	66	64
All ages.....	68%	95%	104%	100%	101%	98%	67%	97%	95%	92%	93%	90%
Female												
Under 50.....	*	*	*	*	*	*	*	*	*	*	*	*
50-59.....	*	524%	*	*	276%	351%	*	363%	*	*	194%	260%
60-69.....	118%	96	151%	155%	153	126	81%	98	128%	167%	141	107
70-79.....	60	75	92	120	112	98	46	56	88	128	107	79
80-89.....	47	77	78	101	98	95	44	80	72	114	100	91
90 and over.....	*	67	74	88	87	87	*	77	75	84	83	82
All ages.....	62%	79%	85%	97%	95%	93%	48%	73%	78%	102%	95%	87%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE 5
 INDIVIDUAL IMMEDIATE REFUND ANNUITIES
 ISSUES OF 1931-70
 EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES
 MORTALITY RATIOS ON ANNUITY TABLE FOR 1949 ULTIMATE
 WITH PROJECTION B

ATTAINED AGES	BASED ON NUMBER OF CONTRACTS						BASED ON AMOUNTS OF ANNUAL INCOME					
	Contract Years					All Contract Years	Contract Years					All Contract Years
	1-2	3-5	6-10	11 and Over	6 and Over		1-2	3-5	6-10	11 and Over	6 and Over	
Male												
70 Under 50...	*	*	*	*	*	*	*	*	*	*	*	*
50-59...	<i>189%</i>	<i>245%</i>	*	<i>133%</i>	<i>126%</i>	<i>165%</i>	<i>175%</i>	<i>327%</i>	*	<i>131%</i>	<i>95%</i>	<i>197%</i>
60-69...	113	118	<i>116%</i>	142	131	121	134	108	<i>118%</i>	129	122	120
70-79...	115	98	106	122	116	112	119	96	124	119	122	114
80-89...	60	94	83	100	97	94	68	84	115	109	111	98
90 and over...	*	*	135	91	95	92	*	*	129	86	95	85
All ages...	<i>99%</i>	<i>101%</i>	<i>101%</i>	<i>104%</i>	<i>103%</i>	<i>103%</i>	<i>105%</i>	<i>93%</i>	<i>120%</i>	<i>106%</i>	<i>112%</i>	<i>106%</i>
Female												
Under 50...	*	*	*	*	<i>415%</i>	<i>553%</i>	*	*	*	*	<i>292%</i>	<i>345%</i>
50-59...	<i>152%</i>	<i>200%</i>	<i>297%</i>	<i>184%</i>	<i>224%</i>	<i>201%</i>	<i>122%</i>	<i>184%</i>	<i>300%</i>	<i>192%</i>	<i>251%</i>	<i>191%</i>
60-69...	81	110	102	123	114	105	87	121	90	108	98	103
70-79...	77	94	90	103	100	96	78	93	92	104	99	94
80-89...	63	74	80	98	96	93	59	70	70	92	87	81
90 and over...	*	78	96	80	81	81	*	75	82	79	79	79
All ages...	<i>74%</i>	<i>90%</i>	<i>88%</i>	<i>92%</i>	<i>92%</i>	<i>91%</i>	<i>72%</i>	<i>87%</i>	<i>82%</i>	<i>90%</i>	<i>88%</i>	<i>86%</i>

NOTE: Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE 6
 INDIVIDUAL IMMEDIATE NONREFUND AND REFUND ANNUITIES COMBINED
 ISSUES OF 1931-70
 EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES
 MORTALITY RATIOS ON ANNUITY TABLE FOR 1949 ULTIMATE
 WITH PROJECTION B

ATTAINED AGES	BASED ON NUMBER OF CONTRACTS						BASED ON AMOUNTS OF ANNUAL INCOME					
	Contract Years					All Contract Years	Contract Years					All Contract Years
	1-2	3-5	6-10	11 and Over	6 and Over		1-2	3-5	6-10	11 and Over	6 and Over	
Male												
Under 50.....	*	*	*	*	*	<i>174%</i>	*	*	*	*	*	<i>623%</i>
50-59.....	<i>190%</i>	<i>189%</i>	<i>113%</i>	<i>113%</i>	<i>113%</i>	146	<i>186%</i>	<i>257%</i>	<i>121%</i>	<i>110%</i>	<i>115%</i>	185
60-69.....	107	117	120	145	134	120	121	113	120	143	127	119
70-79.....	101	99	112	121	118	112	102	110	126	117	123	115
80-89.....	58	92	90	104	101	97	63	79	100	106	104	92
90 and over.....	*	57	102	84	85	84	*	53	83	75	77	73
All ages.....	<i>88%</i>	<i>99%</i>	<i>102%</i>	<i>102%</i>	<i>102%</i>	100%	<i>89%</i>	<i>95%</i>	<i>108%</i>	<i>99%</i>	<i>103%</i>	<i>99%</i>
Female												
Under 50.....	*	*	*	*	<i>528%</i>	<i>644%</i>	*	*	*	*	<i>309%</i>	<i>386%</i>
50-59.....	<i>177%</i>	<i>252%</i>	<i>289%</i>	<i>202%</i>	232	225	<i>132%</i>	<i>216%</i>	<i>273%</i>	<i>206%</i>	243	202
60-69.....	90	106	116	131	124	110	85	115	101	120	109	104
70-79.....	71	87	91	109	104	97	65	78	90	112	102	88
80-89.....	57	76	79	99	97	94	53	75	71	102	93	86
90 and over.....	*	73	83	84	84	84	*	76	78	82	81	81
All ages.....	<i>70%</i>	<i>86%</i>	<i>87%</i>	<i>94%</i>	<i>94%</i>	<i>92%</i>	<i>63%</i>	<i>81%</i>	<i>80%</i>	<i>96%</i>	<i>92%</i>	<i>86%</i>

NOTE: Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE 7 INDIVIDUAL IMMEDIATE NONREFUND ANNUITIES
ISSUES OF 1931-70
EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES
MORTALITY RATIOS ON ANNUITY TABLE FOR 1949 ULTIMATE

INCOME GROUP	BASED ON NUMBER OF CONTRACTS					BASED ON AMOUNTS OF ANNUAL INCOME				
	Contract Years				All Contract Years	Contract Years				All Contract Years
	1-5	6-10	11 and Over	6 and Over		1-5	6-10	11 and Over	6 and Over	
Male										
Under \$1,000.....	79%	104%	97%	98%	95%	78%	105%	92%	95%	91%
\$1,000-\$1,499.....	81	96	98	97	91	80	96	99	98	91
\$1,500-\$2,499.....	73	86	87	86	80	70	85	86	86	79
\$2,500-\$4,999.....	56	89	81	85	72	58	89	77	84	72
\$5,000 and over.....	84	93	110	101	92	90	82	98	89	90
Unknown.....	91	38*	82	77	77	93	42	65	62	65
\$2,500 and over.....	67	90	91	91	80	79	85	89	87	83
All.....	77%	96%	95%	95%	91%	78%	89%	88%	88%	84%
Female										
Under \$1,000.....	73%	80%	93%	92%	90%	70%	78%	93%	91%	88%
\$1,000-\$1,499.....	53	75	98	89	76	53	76	98	89	76
\$1,500-\$2,499.....	64	100	108	104	88	64	98	108	103	87
\$2,500-\$4,999.....	60	64	94	79	71	59	66	97	82	72
\$5,000 and over.....	46	59	148	94	71	45	44	188	90	69
Unknown.....	71	47*	94	91	90	63	53	96	90	89
\$2,500 and over.....	56	63	102	82	71	52	55	126	85	71
All.....	66%	79%	93%	92%	89%	59%	73%	99%	91%	82%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE 8—INDIVIDUAL IMMEDIATE REFUND ANNUITIES
ISSUES OF 1931-70
EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES
MORTALITY RATIOS ON ANNUITY TABLE FOR 1949 ULTIMATE

INCOME GROUP	BASED ON NUMBER OF CONTRACTS					BASED ON AMOUNTS OF ANNUAL INCOME				
	Contract Years				All Contract Years	Contract Years				All Contract Years
	1-5	6-10	11 and Over	6 and Over		1-5	6-10	11 and Over	6 and Over	
Male										
Under \$1,000.....	90%	94%	99%	98%	96%	91%	95%	100%	99%	96%
\$1,000-\$1,499.....	86	84	105	95	90	86	83	105	94	90
\$1,500-\$2,499.....	87	99	102	100	94	87	98	103	100	93
\$2,500-\$4,999.....	89	95	92	94	91	87	93	89	92	89
\$5,000 and over.....	73	116	115	116	91	80	161	134	151	112
Unknown.....	81	51	89	84	84	108	80	76	77	83
\$2,500 and over.....	83	102	99	101	91	83	133	115	126	102
All.....	88%	90%	98%	96%	94%	87%	108%	100%	104%	96%
Female										
Under \$1,000.....	75%	81%	89%	88%	87%	76%	80%	87%	86%	84%
\$1,000-\$1,499.....	69	77	91	86	79	68	77	91	86	79
\$1,500-\$2,499.....	70	84	76	79	75	71	84	75	79	75
\$2,500-\$4,999.....	92	83	75	79	85	90	84	74	79	85
\$5,000 and over.....	68	67	73	69	69	57	50	75	58	57
Unknown.....	91	68	86	85	86	67	50	89	85	84
\$2,500 and over.....	86	78	74	76	81	74	66	75	70	72
All.....	75%	80%	88%	87%	86%	73%	74%	86%	83%	80%

Note.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE 9—INDIVIDUAL IMMEDIATE NONREFUND AND REFUND ANNUITIES COMBINED
ISSUES OF 1931-70
EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES
MORTALITY RATIOS ON ANNUITY TABLE FOR 1949 ULTIMATE

INCOME GROUP	BASED ON NUMBER OF CONTRACTS					BASED ON AMOUNTS OF ANNUAL INCOME				
	Contract Years				All Contract Years	Contract Years				All Contract Years
	1-5	6-10	11 and Over	6 and Over		1-5	6-10	11 and Over	6 and Over	
Male										
Under \$1,000.....	86%	98%	98%	98%	96%	87%	99%	97%	97%	94%
\$1,000-\$1,499.....	84	89	102	96	90	84	89	102	96	90
\$1,500-\$2,499.....	81	92	94	93	87	80	92	93	92	86
\$2,500-\$4,999.....	76	92	86	89	82	75	91	82	88	81
\$5,000 and over.....	78	105	112	108	92	86	122	113	118	101
Unknown.....	84	47	87	81	81	104	66	71	71	75
\$2,500 and over.....	77	97	94	96	86	81	109	100	105	93
All.....	84%	93%	97%	96%	93%	83%	99%	94%	96%	91%
Female										
Under \$1,000.....	75%	81%	91%	90%	88%	74%	79%	90%	88%	86%
\$1,000-\$1,499.....	62	76	94	88	77	62	76	94	88	78
\$1,500-\$2,499.....	67	93	91	92	81	68	92	91	91	81
\$2,500-\$4,999.....	78	73	84	79	79	77	75	86	81	79
\$5,000 and over.....	58	63	108	81	70	52	47	132	74	63
Unknown.....	84	60	89	87	87	60	51	91	87	85
\$2,500 and over.....	73	70	89	79	77	65	61	101	78	71
All.....	71%	79%	91%	89%	87%	67%	74%	92%	87%	81%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

60-79 both by number and amount in each duration group. At ages 80 and over, the ratios for all contract durations remained at the 1963-67 level by number but decreased by amount.

Female nonrefund.—The over-all ratios decreased slightly since the 1963-67 study and remained below the ratios of the 1958-63 period and earlier. For contract years 1-5 the decrease since the 1963-67 period was greater by amount than by number. Generally, the ratios at ages under 70 were higher than in the 1963-67 study, and the ratios at ages 80 and over were the same or lower.

Male refund.—For all contract years the over-all ratios decreased by number but remained level by amount; at ages 80 and over the ratios were lower in 1967-71 than in any preceding period.

Female refund.—The over-all ratios decreased since the 1963-67 study. The decreases were somewhat greater for durations 6 and over than for durations 1-5. The ratios at ages under 60 were higher than in most of the previous studies shown, and the ratios at ages 60 and over were lower than in almost all the previous studies.

Generally reduced levels of annuitant mortality are apparent for the 1963-67 and 1967-71 periods as compared with earlier periods. For contract durations 1-5 annuitant mortality on males decreased to a lower level beginning with the 1958-63 period, and mortality on females has been at a lower level since the 1963-67 period. For contract durations 6 and over, over-all mortality decreased on both males and females in the 1963-67 period, and 1967-71 mortality on male and female nonrefund annuities and on female refund annuities is 5-17 percentage points below the *a*-1949 Table.

The previously mentioned reductions in male select mortality since the 1958-63 period and in female select and over-all mortality since the 1963-67 period suggest that a shift may have occurred in the market for annuities. The sharp increase in average annual income under first-year exposures between the 1958-63 and 1963-67 periods and the smaller increase thereafter strongly support the notion of a shift to increased annuity purchases by better-to-do lives in the late 1950's, apart from the monetary inflation during the same period.

Tables 10 and 11 indicate that the over-all male mortality ratios on both nonrefund and refund annuities by amounts of annual income for the 1967-71 period had changed relatively little since the 1963-67 period, but the over-all female ratios had decreased 4 percentage points on nonrefund annuities and 12 percentage points on refund annuities. At contract durations 6 and over, the mortality by amount on nonrefund female annuities decreased 1 percentage point to a ratio of 91 per cent, while mortality on refund female annuities decreased 14 percentage points to a

TABLE 10
 COMPARISON OF MORTALITY RATIOS ON INDIVIDUAL IMMEDIATE
 NONREFUND ANNUITIES—MALE
 EXPERIENCE BETWEEN 1941 AND 1971 ANNIVERSARIES
 EXPECTED DEATHS BASED ON ANNUITY TABLE FOR 1949 ULTIMATE
 BASED ON NUMBER OF CONTRACTS

ATTAINED AGES	WITHOUT PROJECTION						WITH PROJECTION B			
	1941-48	1948-53	1953-58	1958-63	1963-67	1967-71	1953-58	1958-63	1963-67	1967-71
Contract Years 1-5										
Under 60	146%	89%	134%	*	106%	*	142%	*	128%	*
60-69	106	92	113	54%	73	82%	120	61%	85	101%
70-79	99	88	98	72	74	81	102	78	83	93
80 and over	92	64	81	53	79	73	82	54	82	76
All ages	100%	80%	95%	59%	76%	77%	98%	63%	84%	86%
All ages adjusted	97%	77%	92%	59%	77%	77%	94%	63%	83%	86%
Contract Years 6 and Over										
Under 60	130%	103%	131%	231%	134%	*	140%	262%	159%	*
60-69	127	89	91	97	67	116%	97	109	78	142%
70-79	111	113	106	101	92	105	110	108	103	120
80 and over	106	93	98	104	90	92	100	106	93	95
All ages	111%	101%	100%	103%	90%	95%	103%	107%	94%	101%
All ages adjusted	108%	97%	100%	104%	90%	95%	102%	107%	95%	101%
All Contract Years										
Under 60	136%	99%	132%	169%	119%	74%	141%	192%	142%	92%
60-69	120	90	97	83	70	96	103	93	82	118
70-79	108	109	105	96	86	96	109	103	96	111
80 and over	103	90	97	100	89	89	99	102	91	92
All ages	109%	97%	100%	98%	87%	91%	102%	102%	92%	98%
All ages adjusted	105%	95%	99%	98%	87%	91%	102%	102%	92%	98%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death
 * Fewer than ten contracts terminated by death.

TABLE 10—Continued—NONREFUND—MALE
 BASED ON AMOUNTS OF ANNUAL INCOME

ATTAINED AGES	WITHOUT PROJECTION						WITH PROJECTION B			
	1941-48	1948-53	1953-58	1958-63	1963-67	1967-71	1953-58	1958-63	1963-67	1967-71
Contract Years 1-5										
Under 60	128%	127%	211%	*	101%	*	225%	*	122%	*
60-69	104	123	90	66%	72	88%	95	73%	84	107%
70-79	94	83	78	71	75	96	81	77	84	110
80 and over	82	76	96	49	77	65	98	50	80	68
All ages	93%	86%	89%	58%	76%	78%	91%	61%	82%	86%
All ages adjusted	89%	84%	90%	58%	76%	78%	93%	61%	82%	86%
Contract Years 6 and Over										
Under 60	148%	95%	168%	334%	98%	*	180%	379%	118%	*
60-69	133	101	127	116	92	115%	135	129	108	141%
70-79	106	128	97	101	81	108	101	109	90	124
80 and over	116	93	107	98	87	82	108	100	89	85
All ages	114%	105%	106%	100%	86%	88%	108%	103%	90%	93%
All ages adjusted	115%	100%	106%	99%	86%	88%	107%	103%	90%	93%
All Contract Years										
Under 60	141%	106%	180%	189%	101%	145%	193%	214%	121%	183%
60-69	123	108	115	93	77	95	122	104	90	116
70-79	103	118	93	92	78	102	96	99	87	117
80 and over	110	91	106	90	84	77	107	92	87	80
All ages	109%	102%	103%	91%	82%	84%	105%	94%	87%	90%
All ages adjusted	109%	99%	104%	91%	82%	84%	106%	95%	87%	90%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE 10—Continued—NONREFUND—FEMALE
BASED ON NUMBER OF CONTRACTS

ATTAINED AGES	WITHOUT PROJECTION						WITH PROJECTION B			
	1941-48	1948-53	1953-58	1958-63	1963-67	1967-71	1953-58	1958-63	1963-67	1967-71
Contract Years 1-5										
Under 60	118%	98%	247%	214%	214%	351%	263%	238%	262%	445%
60-69	98	83	93	81	84	86	98	90	99	105
70-79	90	75	90	81	68	61	93	88	76	70
80 and over	87	61	66	77	64	64	68	79	67	67
All ages	93%	73%	83%	80%	69%	66%	86%	85%	76%	73%
All ages adjusted	90%	69%	80%	80%	68%	66%	82%	84%	74%	73%
Contract Years 6 and Over										
Under 60	137%	121%	146%	134%	142%	267%	156%	152%	172%	355%
60-69	122	109	97	122	102	125	102	136	119	153
70-79	113	109	101	105	97	98	105	113	107	112
80 and over	110	101	96	102	91	91	97	104	93	93
All ages	113%	104%	97%	103%	92%	92%	99%	106%	96%	95%
All ages adjusted	110%	102%	97%	103%	92%	92%	98%	105%	95%	95%
All Contract Years										
Under 60	128%	114%	165%	154%	176%	308%	176%	174%	215%	400%
60-69	113	102	96	112	93	103	102	125	109	126
70-79	108	105	100	103	90	86	104	111	100	98
80 and over	107	99	95	102	90	89	96	104	92	91
All ages	109%	101%	97%	102%	96%	89%	99%	105%	94%	93%
All ages adjusted	107%	100%	96%	102%	90%	89%	97%	105%	93%	93%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

TABLE 10—Continued—NONREFUND—FEMALE
 BASED ON AMOUNTS OF ANNUAL INCOME

ATTAINED AGES	WITHOUT PROJECTION						WITH PROJECTION B			
	1941-48	1948-53	1953-58	1958-63	1963-67	1967-71	1953-58	1958-63	1963-67	1967-71
Contract Years 1-5										
Under 60	110%	<i>94%</i>	<i>111%</i>	<i>207%</i>	<i>382%</i>	<i>257%</i>	<i>118%</i>	<i>235%</i>	<i>460%</i>	<i>324%</i>
60-69	104	93	85	59	55	74	90	66	64	91
70-79	100	75	86	71	63	46	89	77	71	52
80 and over	79	63	65	75	68	65	66	77	71	69
All ages	95%	73%	77%	73%	67%	59%	79%	77%	73%	65%
All ages adjusted	90%	70%	75%	73%	66%	59%	76%	77%	72%	65%
Contract Years 6 and Over										
Under 60	175%	112%	<i>101%</i>	<i>132%</i>	<i>119%</i>	<i>168%</i>	<i>108%</i>	<i>151%</i>	<i>143%</i>	<i>211%</i>
60-69	114	109	87	127	80	115	92	141	94	141
70-79	124	112	100	111	88	93	104	119	98	107
80 and over	102	101	97	99	93	90	98	101	95	93
All ages	113%	105%	97%	102%	92%	91%	99%	105%	96%	95%
All ages adjusted	106%	103%	97%	101%	92%	91%	99%	104%	95%	95%
All Contract Years										
Under 60	148%	106%	103%	<i>160%</i>	<i>301%</i>	<i>227%</i>	110%	<i>182%</i>	<i>362%</i>	<i>286%</i>
60-69	111	104	87	102	63	88	92	114	73	107
70-79	119	106	98	102	77	69	102	110	85	79
80 and over	99	98	95	98	89	85	96	100	92	88
All ages	109%	101%	96%	99%	86%	82%	98%	102%	90%	87%
All ages adjusted	104%	100%	95%	99%	86%	82%	97%	103%	90%	87%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

TABLE 11
 COMPARISON OF MORTALITY RATIOS ON INDIVIDUAL IMMEDIATE
 REFUND ANNUITIES—MALE
 EXPERIENCE BETWEEN 1941 AND 1971 ANNIVERSARIES
 EXPECTED DEATHS BASED ON ANNUITY TABLE FOR 1949 ULTIMATE
 BASED ON NUMBER OF CONTRACTS

ATTAINED AGES	WITHOUT PROJECTION						WITH PROJECTION B			
	1941-48	1948-53	1953-58	1958-63	1963-67	1967-71	1953-58	1958-63	1963-67	1967-71
Contract Years 1-5										
Under 60	135%	136%	185%	170%	174%	181%	197%	192%	210%	228%
60-69	126	121	112	102	104	95	119	114	122	116
70-79	108	110	117	90	86	90	122	98	96	104
80 and over	104	94	75	83	74	75	76	86	78	79
All ages	114%	110%	105%	93%	91%	88%	109%	100%	102%	100%
All ages adjusted	112%	108%	104%	92%	89%	88%	107%	99%	98%	100%
Contract Years 6 and Over										
Under 60	148%	128%	134%	102%	120%	97%	143%	116%	145%	122%
60-69	136	128	140	119	105	107	149	133	123	131
70-79	121	122	120	110	104	101	124	118	115	116
80 and over	109	97	101	100	104	93	102	102	107	96
All ages	120%	111%	111%	104%	104%	96%	114%	109%	111%	103%
All ages adjusted	114%	106%	109%	104%	104%	96%	111%	108%	110%	103%
All Contract Years										
Under 60	142%	130%	142%	115%	140%	132%	152%	131%	169%	167%
60-69	132	126	134	113	104	99	142	126	122	121
70-79	118	120	119	108	99	97	124	117	110	112
80 and over	108	97	100	99	102	90	101	101	105	94
All ages	118%	111%	111%	103%	102%	94%	114%	108%	109%	103%
All ages adjusted	114%	108%	110%	104%	102%	94%	113%	109%	109%	103%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

TABLE 11—Continued—REFUND—MALE
BASED ON AMOUNTS OF ANNUAL INCOME

ATTAINED AGES	WITHOUT PROJECTION						WITH PROJECTION B			
	1941-48	1948-53	1953-58	1958-63	1963-67	1967-71	1953-58	1958-63	1963-67	1967-71
Contract Years 1-5										
Under 60	166%	215%	241%	127%	117%	235%	257%	144%	140%	297%
60-69	124	140	114	102	91	98	121	114	107	120
70-79	118	110	110	98	85	91	114	107	96	105
80 and over	100	109	92	86	75	70	94	89	78	73
All ages	117%	122%	108%	96%	84%	87%	112%	103%	94%	98%
All ages adjusted	113%	118%	106%	95%	83%	87%	109%	102%	92%	98%
Contract Years 6 and Over										
Under 60	170%	154%	178%	125%	167%	86%	190%	142%	201%	109%
60-69	159	138	134	138	124	99	142	155	145	122
70-79	139	128	117	115	102	106	122	124	114	122
80 and over	121	100	107	103	103	103	108	106	106	107
All ages	136%	116%	114%	109%	105%	104%	117%	114%	111%	112%
All ages adjusted	129%	112%	112%	109%	104%	104%	115%	114%	111%	112%
All Contract Years										
Under 60	168%	171%	189%	126%	135%	182%	201%	143%	162%	229%
60-69	145	139	129	121	98	98	136	135	115	120
70-79	133	124	116	111	94	99	120	120	105	114
80 and over	116	101	105	101	96	91	107	104	100	95
All ages	130%	117%	113%	107%	96%	96%	116%	112%	104%	106%
All ages adjusted	126%	115%	113%	107%	96%	96%	116%	114%	104%	106%

Note.—Mortality ratio in italics where 10-49 contracts terminated by death.

TABLE 11—Continued—REFUND—FEMALE
BASED ON NUMBER OF CONTRACTS

ATTAINED AGES	WITHOUT PROJECTION						WITH PROJECTION B			
	1941-48	1948-53	1953-58	1958-63	1963-67	1967-71	1953-58	1958-63	1963-67	1967-71
Contract Years 1-5										
Under 60	136%	93%	<i>104%</i>	<i>149%</i>	<i>119%</i>	169%	<i>111%</i>	<i>168%</i>	<i>144%</i>	<i>215%</i>
60-69	114	125	100	82	79	80	106	91	93	98
70-79	106	95	82	91	73	76	85	99	81	88
80 and over	108	96	72	98	77	67	73	101	81	71
All ages	110%	102%	82%	93%	77%	75%	85%	100%	85%	84%
All ages adjusted	109%	101%	82%	93%	76%	75%	84%	99%	84%	84%
Contract Years 6 and Over										
Under 60	172%	172%	160%	171%	140%	190%	171%	194%	168%	243%
60-69	127	125	113	120	103	93	120	134	121	114
70-79	118	114	110	104	96	87	115	112	107	100
80 and over	110	107	101	102	99	87	102	104	102	89
All ages	117%	112%	105%	103%	99%	87%	107%	107%	103%	92%
All ages adjusted	112%	109%	103%	103%	99%	87%	105%	106%	103%	92%
All Contract Years										
Under 60	156%	152%	151%	166%	131%	180%	161%	188%	158%	229%
60-69	122	125	111	112	93	86	118	125	109	105
70-79	115	111	108	103	92	84	113	111	102	96
80 and over	110	106	100	102	98	85	101	104	101	88
All ages	115%	111%	104%	103%	97%	86%	106%	107%	102%	91%
All ages adjusted	112%	108%	102%	103%	97%	86%	104%	107%	102%	91%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

TABLE 11—Continued—REFUND—FEMALE
 BASED ON AMOUNTS OF ANNUAL INCOME

ATTAINED AGES	WITHOUT PROJECTION						WITH PROJECTION B			
	1941-48	1948-53	1953-58	1958-63	1963-67	1967-71	1953-58	1958-63	1963-67	1967-71
Contract Years 1-5										
Under 60	147%	92%	92%	113%	72%	137%	98%	128%	87%	173%
60-69	119	135	106	83	107	87	112	93	126	106
70-79	107	93	117	103	73	76	121	112	81	87
80 and over	106	99	82	92	71	63	83	95	75	67
All ages	111%	103%	101%	96%	78%	73%	105%	102%	86%	81%
All ages adjusted	109%	102%	100%	95%	77%	73%	102%	102%	84%	81%
Contract Years 6 and Over										
Under 60	179%	186%	183%	179%	138%	202%	196%	204%	165%	255%
60-69	122	119	118	118	109	80	125	132	127	98
70-79	122	120	112	107	91	86	117	115	102	99
80 and over	114	106	104	105	98	81	105	107	101	84
All ages	120%	113%	108%	106%	97%	83%	110%	110%	102%	88%
All ages adjusted	116%	110%	107%	106%	97%	83%	109%	110%	102%	88%
All Contract Years										
Under 60	167%	160%	164%	157%	96%	162%	175%	179%	116%	205%
60-69	121	122	115	108	108	84	122	120	127	103
70-79	118	116	113	107	84	82	117	115	94	94
80 and over	113	106	103	104	94	77	104	106	97	80
All ages	118%	112%	107%	105%	92%	80%	110%	110%	98%	86%
All ages adjusted	115%	110%	107%	106%	92%	80%	109%	110%	98%	86%

Note.—Mortality ratio in italics where 10-49 contracts terminated by death.

TABLE 12
 COMPARISON OF MORTALITY RATIOS ON INDIVIDUAL IMMEDIATE
 NONREFUND AND REFUND ANNUITIES COMBINED—MALE
 EXPERIENCE BETWEEN 1941 AND 1971 ANNIVERSARIES
 EXPECTED DEATHS BASED ON ANNUITY TABLE FOR 1949 ULTIMATE
 BASED ON NUMBER OF CONTRACTS

ATTAINED AGES	WITHOUT PROJECTION						WITH PROJECTION B			
	1941-48	1948-53	1953-58	1958-63	1963-67	1967-71	1953-58	1958-63	1963-67	1967-71
Contract Years 1-5										
Under 60	137%	125%	169%	128%	155%	157%	180%	142%	187%	197%
60-69	120	113	113	89	96	92	119	100	113	112
70-79	105	102	109	83	81	87	114	91	91	100
80 and over	100	81	78	69	76	74	79	72	80	78
All ages	109%	100%	100%	80%	85%	84%	104%	86%	95%	95%
All ages adjusted	107%	97%	99%	80%	84%	84%	102%	86%	92%	95%
Contract Years 6 and Over										
Under 60	144%	123%	133%	126%	122%	89%	142%	145%	147%	112%
60-69	133	117	127	113	95	110	135	126	111	134
70-79	117	119	115	107	100	102	119	116	111	118
80 and over	108	96	100	101	99	92	101	104	101	96
All ages	117%	107%	107%	104%	99%	96%	110%	108%	104%	102%
All ages adjusted	112%	103%	105%	103%	99%	96%	107%	108%	104%	102%
All Contract Years										
Under 60	141%	123%	139%	127%	136%	119%	149%	144%	164%	149%
60-69	128	116	123	105	96	98	131	117	112	120
70-79	114	116	114	104	95	97	118	112	106	112
80 and over	106	94	99	99	96	90	100	101	99	93
All ages	115%	106%	106%	101%	96%	93%	109%	106%	102%	100%
All ages adjusted	111%	103%	106%	101%	96%	93%	108%	106%	102%	100%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

TABLE 12—Continued—NONREFUND AND REFUND—MALE
BASED ON AMOUNTS OF ANNUAL INCOME

ATTAINED AGES	WITHOUT PROJECTION						WITH PROJECTION B			
	1941-48	1948-53	1953-58	1958-63	1963-67	1967-71	1953-58	1958-63	1963-67	1967-71
Contract Years 1-5										
Under 60	157%	193%	231%	<i>96%</i>	113%	204%	246%	<i>108%</i>	135%	257%
60-69	117	135	105	93	86	95	111	103	101	116
70-79	107	97	94	85	81	93	97	93	91	107
80 and over	92	91	94	64	76	67	96	66	79	71
All ages	107%	106%	98%	77%	81%	83%	101%	83%	89%	93%
All ages adjusted	103%	102%	98%	77%	80%	83%	100%	82%	87%	93%
Contract Years 6 and Over										
Under 60	164%	142%	176%	158%	157%	139%	188%	179%	189%	149%
60-69	149	127	132	132	115	104	140	148	135	127
70-79	123	128	109	110	95	107	113	119	105	123
80 and over	119	97	107	101	95	92	108	103	98	95
All ages	126%	112%	110%	105%	96%	96%	113%	110%	101%	103%
All ages adjusted	121%	106%	109%	105%	96%	96%	111%	109%	101%	103%
All Contract Years										
Under 60	161%	157%	187%	138%	127%	174%	199%	156%	153%	219%
60-69	137	130	124	113	93	97	131	127	109	119
70-79	119	121	106	104	88	100	110	112	98	115
80 and over	113	96	106	96	90	84	107	98	93	87
All ages	121%	111%	108%	100%	90%	91%	111%	104%	97%	99%
All ages adjusted	118%	107%	108%	100%	90%	91%	111%	105%	96%	99%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

TABLE 12—Continued—NONREFUND AND REFUND—FEMALE
 BASED ON NUMBER OF CONTRACTS

ATTAINED AGES	WITHOUT PROJECTION						WITH PROJECTION B				
	1941-48	1948-53	1953-58	1958-63	1963-67	1967-71	1953-58	1958-63	1963-67	1967-71	
Contract Years 1-5											
Under 60	132%	95%	137%	161%	135%	197%	147%	179%	163%	251%	
60-69	108	111	97	82	81	81	103	93	95	100	
70-79	100	88	85	87	71	70	88	97	79	81	
80 and over	102	84	70	89	71	65	71	92	75	69	
All ages	104%	92%	83%	88%	74%	71%	85%	96%	81%	80%	
All ages adjusted	102%	90%	81%	88%	73%	71%	83%	95%	80%	80%	
Contract Years 6 and Over											
Under 60	163%	162%	157%	165%	140%	202%	168%	187%	169%	260%	
60-69	125	120	108	120	103	102	115	134	121	124	
70-79	116	112	107	104	96	91	111	113	107	104	
80 and over	110	104	99	102	96	89	100	104	98	91	
All ages	116%	109%	102%	103%	96%	89%	104%	107%	100%	94%	
All ages adjusted	111%	106%	100%	103%	96%	89%	102%	106%	100%	94%	
All Contract Years											
Under 60	149%	144%	154%	164%	138%	200%	164%	185%	166%	255%	
60-69	119	118	107	112	93	90	113	126	109	110	
70-79	112	109	105	103	91	85	110	111	101	97	
80 and over	109	103	98	102	95	87	99	104	97	89	
All ages	113%	107%	101%	103%	94%	87%	103%	106%	99%	92%	
All ages adjusted	110%	105%	100%	103%	94%	87%	101%	106%	98%	92%	

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

TABLE 12—Continued—NONREFUND AND REFUND—FEMALE
 BASED ON AMOUNTS OF ANNUAL INCOME

ATTAINED AGES	WITHOUT PROJECTION						WITH PROJECTION B			
	1941-48	1948-53	1953-58	1958-63	1963-67	1967-71	1953-58	1958-63	1963-67	1967-71
Contract Years 1-5										
Under 60	138%	93%	96%	129%	128%	156%	103%	146%	154%	197%
60-69	113	119	99	75	91	83	104	85	107	102
70-79	104	85	103	88	69	64	107	97	77	73
80 and over	96	82	74	83	70	64	75	86	73	67
All ages	105%	90%	90%	85%	73%	67%	93%	91%	80%	74%
All ages adjusted	102%	88%	89%	85%	73%	67%	91%	91%	79%	74%
Contract Years 6 and Over										
Under 60	178%	171%	166%	172%	135%	197%	177%	195%	162%	249%
60-69	119	116	108	120	102	89	114	134	120	109
70-79	123	117	107	109	90	89	112	118	100	102
80 and over	109	104	100	102	96	86	102	104	98	88
All ages	117%	109%	103%	104%	95%	87%	105%	108%	99%	92%
All ages adjusted	112%	107%	102%	104%	95%	87%	104%	107%	99%	92%
All Contract Years										
Under 60	162%	148%	151%	158%	131%	172%	161%	179%	157%	217%
60-69	117	117	106	106	95	85	112	119	112	104
70-79	119	112	107	105	81	77	111	114	91	88
80 and over	107	102	99	101	92	81	100	103	94	84
All ages	114%	107%	102%	103%	90%	81%	104%	106%	95%	86%
All ages adjusted	111%	106%	102%	103%	90%	81%	103%	107%	94%	86%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

ratio of 83 per cent. The finding of a lower mortality ratio on refund than on nonrefund female annuities was surprising, and it occasioned some investigation, with the following results:

1. Of four companies queried whose full contributions were used, none could find evidence of substantial computer underreporting or misreporting of deaths during the refund period or thereafter.
2. Of four contributing companies queried, none found evidence of substantial overpayments of benefits on lives dying after the end of the refund period.
3. Two contributing companies reported a recent trend toward large-amount refund annuity purchases by females.
4. One company mentioned a long-term bias of its sales personnel in favor of applying pension plan proceeds to the purchase of annuities with a ten-year refund feature.

The recent trend in annuitant mortality by sex—of virtually level mortality on males and decreasing mortality on females—is consistent with mortality trends observed in the general population at the older ages.

EXPERIENCE ON ISSUES OF 1960 AND LATER AND ISSUES OF 1959 AND PRIOR YEARS

In a new analysis Table 13 presents the 1967–71 experience by income groups for issues of 1960 and later separately from that for issues of 1959 and prior. This separation was made to permit a monitoring of experience on 1960 and later issues, in response to the rise in average amounts of annual income purchased during the late 1950's and early 1960's found in the previous study, and the downtrend in mortality at durations 6 and over observed for 1963–67 anniversaries.

In the aggregate, issues of 1960–70 show lower mortality than do issues of 1931–59 on each type of annuity. By amount, at durations 6 and over, the 1960–70 issues show lower over-all mortality ratios than do 1931–59 issues for female business, but about the same or higher ratios for male business. When the comparison is limited to experience by amount at durations 6 and over on contracts providing incomes of \$2,500 and over, the 1960–70 issues show much lower mortality ratios than 1931–59 issues for nonrefund female business, slightly lower ratios for nonrefund male and refund female business, and a slightly higher ratio for refund male business. Particularly low mortality ratios are apparent for female contracts issued in 1960–70 to pay incomes of \$5,000 or more and incomes of “unknown” amounts.

SELECT MORTALITY

The select mortality by duration during the 1963–67 and 1967–71 periods is given in Tables 14 and 15 for nonrefund and refund annuities,

respectively. Since the experience in many of the age-duration classifications for each of these periods is relatively small, it was felt advisable to present the combined experience from 1963 to 1971 anniversaries as well.

Self-selection is very pronounced on female nonrefund annuities in the first contract duration; self-selection on this business persisted for about five contract years at attained ages 60-69 and for over five years at ages 70 and over. Self-selection by male buyers of nonrefund annuities is also marked; it persisted in some degree for two contract years at ages 60-69, four years at ages 70-79, and over five years at ages 80 and over. Self-selection is less marked on refund annuities, but ultimate mortality for females is nevertheless not reached until at least three years have elapsed at ages 60-69, four years at ages 70-79, and over five years at ages 80 and over. For males, ultimate mortality, which is comparatively high, is not reached until at least five years have elapsed at ages 60 and over.

EXPERIENCE IN RELATION TO THE 1971 INDIVIDUAL ANNUITY MORTALITY TABLE

The mortality experience under individual immediate annuities during the period from 1967 to 1971 anniversaries was also calculated on the basis of a recently developed table, the 1971 Individual Annuity Mortality Table (1971 IAM Table). Tables 16 and 17 present mortality ratios for nonrefund and refund annuities, respectively, on the 1971 IAM Table in comparison with ratios on the *a*-1949 Table without projection and the *a*-1949 Table with Projection B.

In contract years 6 and over, the over-all mortality ratios based on amount of annual income are generally below 100 per cent for female annuities and nonrefund male annuities both on the *a*-1949 Table without projection and on the *a*-1949 Table with Projection B. The corresponding mortality ratios on the 1971 IAM Table are generally above 100 per cent for each type of annuity. However, even on the 1971 IAM Table, ratios below 100 per cent are observable at the very high ages and in the early contract durations.

IMPROVEMENT RATES AND PROJECTION FACTORS ACCORDING TO PROJECTION B

Expected deaths on the *a*-1949 Table with Projection B were calculated from those on the *a*-1949 Table without projection by multiplying the latter by projection factors reflecting the improvement in mortality, according to Projection B, through the period covered by the present study.

In the calculation of the projection factors, the assumptions detailed in the paper "A New Mortality Basis for Annuities" (*TSA*, I, 424) were

TABLE 13—INDIVIDUAL IMMEDIATE ANNUITIES
EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES
EXPECTED DEATHS ON ANNUITY TABLE FOR 1949 ULTIMATE
ISSUES OF 1931-59

INCOME GROUP	BASED ON NUMBER OF CONTRACTS				BASED ON AMOUNTS OF ANNUAL INCOME			
	Contract Years			All Contract Years	Contract Years			All Contract Years
	6-10†	11 and Over	6 and Over		6-10†	11 and over	6 and Over	
Male Nonrefund								
Under \$1,000.....	105%	97%	97%	97%	109%	92%	92%	92%
\$1,000-\$1,499.....	*	99	98	98	*	100	98	98
\$1,500-\$2,499.....	*	89	86	86	*	88	86	86
\$2,500-\$4,999.....	*	85	86	86	*	81	82	82
\$5,000 and over.....	*	113	104	104	*	104	98	98
Unknown.....	*	82	80	80	*	65	66	66
\$2,500 and over.....	*	95%	92%	92%	*	94%	91%	91%
All.....	84%	95%	95%	95%	69%	89%	88%	88%
Female Nonrefund								
Under \$1,000.....	84%	93%	93%	93%	84%	93%	93%	93%
\$1,000-\$1,499.....	*	98	97	97	*	98	96	96
\$1,500-\$2,499.....	136	110	111	111	129	110	111	111
\$2,500-\$4,999.....	*	94	91	91	*	97	94	94
\$5,000 and over.....	*	148	141	141	*	195	188	188
Unknown.....	*	94	93	93	*	96	94	94
\$2,500 and over.....	*	102%	99%	99%	*	127%	124%	124%
All.....	79%	94%	93%	93%	84%	99%	99%	99%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

† Durations 9 and 10 only.

* Fewer than ten contracts terminated by death.

TABLE 13—Continued—ISSUES OF 1931-59

INCOME GROUP	BASED ON NUMBER OF CONTRACTS				BASED ON AMOUNTS OF ANNUAL INCOME			
	Contract Years			All Contract Years	Contract Years			All Contract Years
	6-10†	11 and Over	6 and Over		6-10†	11 and over	6 and Over	
Male Refund								
Under \$1,000.....	82%	99%	99%	99%	75%	101%	100%	100%
\$1,000-\$1,499.....	*	106	105	105	*	106	105	105
\$1,500-\$2,499.....	*	103	99	99	*	103	100	100
\$2,500-\$4,999.....	*	93	94	94	*	92	91	91
\$5,000 and over.....	*	119	115	115	*	138	145	145
Unknown.....	*	90	88	88	*	77	75	75
\$2,500 and over.....	*	101%	100%	100%	*	118%	123%	123%
All.....	69%	98%	97%	97%	95%	101%	101%	101%
Female Refund								
Under \$1,000.....	80%	89%	89%	89%	78%	87%	87%	87%
\$1,000-\$1,499.....	*	91	90	90	*	92	91	91
\$1,500-\$2,499.....	*	77	75	75	*	77	75	75
\$2,500-\$4,999.....	*	73	70	70	*	72	69	69
\$5,000 and over.....	*	77	75	75	*	80	78	78
Unknown.....	70	86	86	86	88	89	89	89
\$2,500 and over.....	*	74%	71%	71%	*	75%	72%	72%
All.....	74%	88%	88%	88%	62%	86%	86%	86%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

† Durations 9 and 10 only.

* Fewer than ten contracts terminated by death.

TABLE 13 *Continued*—ISSUES OF 1960-70

INCOME GROUP	BASED ON NUMBER OF CONTRACTS					BASED ON AMOUNTS OF ANNUAL INCOME				
	Contract Years				All Contract Years	Contract Years				All Contract Years
	1-5	6-10	11 and Over†	6 and Over		1-5	6-10	11 and Over†	6 and Over	
Male Nonrefund										
Under \$1,000.....	79%	104%	<i>161%</i>	106%	92%	78%	104%	<i>147%</i>	106%	90%
\$1,000-\$1,499.....	81	98	*	97	87	80	99	*	98	87
\$1,500-\$2,499.....	73	89	*	86	77	70	87	*	85	76
\$2,500-\$4,999.....	<i>56</i>	<i>88</i>	*	<i>85</i>	68	<i>58</i>	<i>89</i>	*	<i>85</i>	69
\$5,000 and over.....	<i>84</i>	<i>99</i>	*	<i>97</i>	89	<i>90</i>	<i>86</i>	*	<i>82</i>	88
Unknown.....	<i>91</i>	<i>41</i>	*	<i>45</i>	62	<i>93</i>	<i>29</i>	*	<i>31</i>	60
\$2,500 and over.....	67%	92%	*	89%	76%	79%	87%	*	83%	81%
All.....	77%	97%	<i>115%</i>	98%	86%	78%	90%	<i>39%</i>	88%	82%
Female Nonrefund										
Under \$1,000.....	73%	79%	<i>88%</i>	80%	76%	70%	78%	<i>91%</i>	78%	74%
\$1,000-\$1,499.....	53	77	*	77	62	53	78	*	78	63
\$1,500-\$2,499.....	64	97	*	95	76	64	95	*	94	75
\$2,500-\$4,999.....	<i>60</i>	<i>66</i>	*	<i>67</i>	63	<i>59</i>	<i>68</i>	*	<i>69</i>	63
\$5,000 and over.....	<i>46</i>	<i>58</i>	*	<i>61</i>	52	<i>45</i>	<i>38</i>	*	<i>40</i>	43
Unknown.....	<i>71</i>	<i>48</i>	*	<i>52</i>	58	<i>63</i>	<i>58</i>	*	<i>60</i>	61
\$2,500 and over.....	56%	64%	*	65%	60%	52%	53%	*	55%	53%
All.....	66%	79%	<i>82%</i>	79%	72%	59%	72%	<i>86%</i>	72%	64%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

† Duration 11 only.

TABLE 13—Continued—ISSUES OF 1960-70

INCOME GROUP	BASED ON NUMBER OF CONTRACTS					BASED ON AMOUNTS OF ANNUAL INCOME				
	Contract Years				All Contract Years	Contract Years				All Contract Years
	1-5	6-10	11 and Over†	6 and Over		1-5	6-10	11 and Over†	6 and Over	
Male Refund										
Under \$1,000	90%	96%	68%	95%	92%	91%	96%	55%	95%	93%
\$1,000-\$1,499	86	85	*	84	85	86	83	*	83	85
\$1,500-\$2,499	87	102	*	101	92	87	101	*	101	92
\$2,500-\$4,999	89	95	*	94	90	87	93	*	92	88
\$5,000 and over	73	119	*	116	87	80	158	*	155	106
Unknown	81	59	*	56	67	108	90	*	87	99
\$2,500 and over	83%	103%	*	102%	89%	83%	131%	*	128%	98%
All	88%	92%	60%	91%	89%	87%	109%	48%	107%	94%
Female Refund										
Under \$1,000	75%	81%	88%	82%	78%	76%	81%	80%	81%	78%
\$1,000-\$1,499	69	78	*	78	72	68	78	*	78	71
\$1,500-\$2,499	70	87	*	85	75	71	87	*	85	75
\$2,500-\$4,999	92	87	*	89	91	90	88	*	91	90
\$5,000 and over	68	68	*	66	67	57	51	*	50	54
Unknown	91	67	*	66	77	67	37	*	35	51
\$2,500 and over	86%	81%	*	82%	85%	74%	68%	*	68%	72%
All	75%	81%	81%	81%	77%	73%	75%	65%	75%	74%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

† Duration 11 only.

* Fewer than ten contracts terminated by death.

TABLE 14
 INDIVIDUAL IMMEDIATE NONREFUND ANNUITIES
 ISSUES OF 1931-70
 EXPERIENCE BETWEEN 1963 AND 1971 ANNIVERSARIES
 MORTALITY RATIOS ON ANNUITY TABLE FOR 1949 ULTIMATE
 BASED ON AMOUNTS OF ANNUAL INCOME

ATTAINED AGES	1963-67 ANNIVERSARIES							1967-71 ANNIVERSARIES							1963-71 ANNIVERSARIES						
	Contract Years																				
	1	2	3	4	5	1-5	6 and Over	1	2	3	4	5	1-5	6 and Over	1	2	3	4	5	1-5	6 and Over
	Male																				
Under 50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
50-59	<i>52%</i>	<i>63%</i>	<i>96%</i>	<i>96%</i>	<i>82%</i>	<i>104%</i>	<i>105%</i>	<i>26%</i>	<i>109%</i>	<i>140%</i>	<i>96%</i>	<i>57%</i>	<i>88%</i>	<i>115%</i>	<i>40%</i>	<i>179%</i>	<i>122%</i>	<i>96%</i>	<i>65%</i>	<i>102%</i>	<i>131%</i>
60-69	90	58	66	88	70	75	81	55	82	116	69	162	96	108	74	70	95	76	131	81	105
70-79	46	102	98	61	76	77	87	45	58	69	75	72	65	82	46	77	80	70	73	70	84
80 and over																					
All ages	<i>66%</i>	<i>82%</i>	<i>86%</i>	<i>73%</i>	<i>74%</i>	<i>76%</i>	<i>86%</i>	<i>48%</i>	<i>73%</i>	<i>92%</i>	<i>75%</i>	<i>100%</i>	<i>78%</i>	<i>88%</i>	<i>57%</i>	<i>77%</i>	<i>90%</i>	<i>74%</i>	<i>91%</i>	<i>77%</i>	<i>87%</i>
	Female																				
Under 50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
50-59	<i>53%</i>	<i>34%</i>	<i>75%</i>	*	<i>91%</i>	<i>386%</i>	<i>80%</i>	<i>49%</i>	<i>85%</i>	<i>52%</i>	<i>122%</i>	<i>66%</i>	<i>74</i>	<i>115</i>	<i>51%</i>	<i>290%</i>	<i>63%</i>	<i>96%</i>	<i>73%</i>	<i>65</i>	<i>135%</i>
60-69	36	62	92	58%	87	63	88	37	43	49	42	57	46	93	37	52	66	47	60	53	91
70-79	30	84	58	80	96	68	93	29	50	72	79	76	65	90	36	66	66	79	81	66	92
80 and over																					
All ages	<i>42%</i>	<i>71%</i>	<i>75%</i>	<i>69%</i>	<i>92%</i>	<i>67%</i>	<i>92%</i>	<i>35%</i>	<i>51%</i>	<i>61%</i>	<i>69%</i>	<i>70%</i>	<i>59%</i>	<i>91%</i>	<i>39%</i>	<i>60%</i>	<i>67%</i>	<i>69%</i>	<i>76%</i>	<i>62%</i>	<i>92%</i>

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE 15
 INDIVIDUAL IMMEDIATE REFUND ANNUITIES
 ISSUES OF 1931-70
 EXPERIENCE BETWEEN 1963 AND 1971 ANNIVERSARIES
 MORTALITY RATIOS ON ANNUITY TABLE FOR 1949 ULTIMATE
 BASED ON AMOUNTS OF ANNUAL INCOME

ATTAINED AGES	1963-67 ANNIVERSARIES								1967-71 ANNIVERSARIES								1963-71 ANNIVERSARIES							
	Contract Years																							
	1	2	3	4	5	1-5	6 and Over	1	2	3	4	5	1-5	6 and Over	1	2	3	4	5	1-5	6 and Over			
	Male																							
Under 50	*	*	*	*	*	*	440%	*	*	*	*	*	*	*	*	*	*	*	*	414%	311%			
50-59	<i>134%</i>	<i>131%</i>	<i>79%</i>	<i>83%</i>	<i>102%</i>	<i>111%</i>	128	<i>106%</i>	<i>247%</i>	<i>319%</i>	<i>87%</i>	<i>82%</i>	<i>99%</i>	<i>199%</i>	<i>75%</i>	<i>98%</i>	<i>180%</i>	<i>202%</i>	<i>82%</i>	<i>299%</i>	153	103		
60-69	92	98	76	113	113	91	124	69	112	87	88	80	91	98	99	105	83	80	97	100	95	110		
70-79	73	78	76	113	113	85	102	85	120	83	88	80	91	106	78	99	80	97	90	89	104	103		
80 and over	79	83	55	75	83	75	103	103	58	62	64	97	70	103	74	68	59	68	93	72	103	103		
All ages	82%	87%	70%	91%	99%	84%	105%	87%	98%	79%	77%	95%	87%	104%	84%	92%	75%	82%	96%	86%	104%	104%		
	Female																							
Under 50	*	*	*	*	*	*	132%	*	*	*	*	*	306%	231%	*	*	*	271%	*	177%	178%			
50-59	<i>95%</i>	<i>91%</i>	<i>115%</i>	<i>150%</i>	<i>85%</i>	<i>107%</i>	138	<i>62%</i>	<i>79%</i>	<i>75%</i>	<i>247%</i>	<i>123%</i>	<i>199%</i>	<i>81%</i>	<i>85%</i>	<i>99%</i>	<i>170%</i>	<i>134%</i>	<i>95%</i>	<i>96%</i>	<i>168%</i>			
60-69	105	91	76	77	98	73	109	61	74	82	126	87	80	86	85	91	134	95	96	96	93			
70-79	66	65	76	77	98	73	91	61	74	82	126	87	80	86	85	91	134	95	96	96	93			
80 and over	69	90	76	49	64	71	98	54	56	64	67	67	63	81	61	68	71	64	66	66	90			
All ages	75%	78%	82%	76%	80%	78%	97%	59%	68%	74%	79%	81%	73%	83%	68%	73%	77%	78%	81%	75%	90%			

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE 16
 INDIVIDUAL IMMEDIATE ANNUITIES
 ISSUES OF 1931-70
 EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES
 EXPECTED DEATHS ON ANNUITY TABLE FOR 1949 ULTIMATE,
 ANNUITY TABLE FOR 1949 ULTIMATE WITH PROJECTION B,
 AND 1971 INDIVIDUAL ANNUITY MORTALITY TABLE
 NONREFUND—MALE LIVES

ATTAINED AGES BY CONTRACT YEARS	ACTUAL DEATHS		MORTALITY RATIO ON					
			a-1949 Table		a-1949 Table with Projection B		1971 IAM Table	
	Number of Contracts	Amounts of Annual Income	Number of Con- tracts	Amounts of Annual Income	Number of Con- tracts	Amounts of Annual Income	Number of Con- tracts	Amounts of Annual Income
Years 1-2:								
Under 50	0	\$ 0	*	*	*	*	*	*
50-59	6	8,852	*	*	*	*	*	*
60-69	40	51,557	70%	68%	85%	83%	93%	90%
70-79	87	149,715	67	68	78	79	91	92
80-89	75	158,534	53	56	56	59	69	74
90 and over	3	5,039	*	*	*	*	*	*
All ages	211	\$ 373,697	61%	61%	68%	67%	81%	80%
Years 3-5:								
Under 50	0	\$ 0	*	*	*	*	*	*
50-59	2	1,027	*	*	*	*	*	*
60-69	75	104,890	91%	103%	111%	126%	121%	137%
70-79	192	369,979	89	115	102	132	119	154
80-89	236	354,137	85	71	90	75	112	93
90 and over	25	53,124	73	75	73	75	86	90
All ages	530	\$ 883,157	86%	89%	95%	97%	113%	116%
Years 6-10:								
Under 50	1	\$ 4,800	*	*	*	*	*	*
50-59	4	6,823	*	*	*	*	*	*
60-69	48	43,263	104%	101%	128%	123%	139%	134%
70-79	281	318,484	106	113	122	130	142	152
80-89	326	388,231	92	82	97	86	120	107
90 and over	73	107,049	78	60	78	60	94	71
All ages	733	\$ 868,650	96%	89%	104%	95%	125%	115%
Years 11 and over:								
Under 50	0	\$ 0	*	*	*	*	*	*
50-59	1	246	*	*	*	*	*	*
60-69	69	24,576	125%	154%	153%	188%	167%	205%
70-79	427	175,786	104	100	119	114	139	133
80-89	1,266	725,840	104	98	109	103	136	128
90 and over	640	347,007	77	68	77	68	89	78
All ages	2,403	\$ 1,273,455	95%	88%	100%	92%	120%	110%
Years 6 and over:								
Under 50	1	\$ 4,800	*	*	*	*	*	*
50-59	5	7,069	*	*	*	*	*	*
60-69	117	67,839	116%	115%	142%	141%	154%	153%
70-79	708	494,270	105	108	120	124	140	145
80-89	1,592	1,114,071	101	92	106	96	132	120
90 and over	713	454,056	77	66	77	66	89	76
All ages	3,136	\$ 2,142,105	95%	88%	101%	93%	121%	112%
All years:								
Under 50	1	\$ 4,800	*	*	*	*	*	*
50-59	13	16,948	73%	116%	89%	146%	89%	146%
60-69	232	224,286	96	95	118	116	128	126
70-79	987	1,013,964	96	102	111	117	130	136
80-89	1,903	1,626,742	96	82	100	86	125	107
90 and over	741	512,219	76	64	76	64	88	75
All ages	3,877	\$ 3,398,959	91%	84%	98%	90%	117%	108%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.
 * Fewer than ten contracts terminated by death.

TABLE 16—Continued
NONREFUND—FEMALE LIVES

ATTAINED AGES BY CONTRACT YEARS	ACTUAL DEATHS		MORTALITY RATIO ON					
			a-1949 Table		a-1949 Table with Projection B		1971 IAM Table	
	Number of Contracts	Amounts of Annual Income	Number of Con- tracts	Amounts of Annual Income	Number of Con- tracts	Amounts of Annual Income	Number of Con- tracts	Amounts of Annual Income
Years 1-2:								
Under 50	0	\$ 0	*	*	*	*	*	*
50-59	6	3,649	*	*	*	*	*	*
60-69	47	34,183	<i>96%</i>	<i>66%</i>	<i>118%</i>	<i>81%</i>	<i>132%</i>	<i>91%</i>
70-79	92	91,122	53	40	60	46	75	57
80-89	67	92,203	44	42	47	44	55	52
90 and over	2	2,726	*	*	*	*	*	*
All ages	214	\$ 223,883	<i>55%</i>	<i>43%</i>	<i>62%</i>	<i>48%</i>	<i>73%</i>	<i>58%</i>
Years 3-5:								
Under 50	1	\$ 2,100	*	*	*	*	*	*
50-59	12	9,831	<i>412%</i>	<i>287%</i>	<i>524%</i>	<i>363%</i>	<i>492%</i>	<i>343%</i>
60-69	55	55,743	78	80	96	98	108	111
70-79	205	185,788	65	49	75	56	92	69
80-89	264	376,301	73	76	77	80	90	94
90 and over	22	35,245	67	77	67	77	82	94
All ages	559	\$ 665,008	<i>71%</i>	<i>67%</i>	<i>79%</i>	<i>73%</i>	<i>94%</i>	<i>87%</i>
Years 6-10:								
Under 50	3	\$ 336	*	*	*	*	*	*
50-59	3	1,516	*	*	*	*	*	*
60-69	58	41,683	<i>124%</i>	<i>105%</i>	<i>151%</i>	<i>128%</i>	<i>173%</i>	<i>145%</i>
70-79	257	240,091	81	77	92	88	114	108
80-89	382	408,115	74	68	78	72	91	84
90 and over	99	129,988	74	75	74	75	89	90
All ages	802	\$ 821,729	<i>79%</i>	<i>73%</i>	<i>85%</i>	<i>78%</i>	<i>102%</i>	<i>93%</i>
Years 11 and over:								
Under 50	1	\$ 300	*	*	*	*	*	*
50-59	8	3,001	*	*	*	*	*	*
60-69	61	27,303	<i>127%</i>	<i>137%</i>	<i>155%</i>	<i>167%</i>	<i>176%</i>	<i>189%</i>
70-79	770	307,665	106	113	120	128	147	157
80-89	3,569	1,318,350	96	109	101	114	117	133
90 and over	3,240	1,005,003	88	84	88	84	112	108
All ages	7,649	\$ 2,661,622	<i>93%</i>	<i>99%</i>	<i>97%</i>	<i>102%</i>	<i>118%</i>	<i>125%</i>
Years 6 and over:								
Under 50	4	\$ 636	*	*	*	*	*	*
50-59	11	4,517	<i>208%</i>	<i>154%</i>	<i>276%</i>	<i>194%</i>	<i>260%</i>	<i>185%</i>
60-69	119	68,986	125	115	153	141	175	160
70-79	1,027	547,756	98	93	112	107	137	131
80-89	3,951	1,726,465	94	96	98	100	114	117
90 and over	3,339	1,134,991	87	83	87	83	111	105
All ages	8,451	\$ 3,483,351	<i>92%</i>	<i>91%</i>	<i>95%</i>	<i>95%</i>	<i>116%</i>	<i>115%</i>
All years:								
Under 50	5	\$ 2,736	*	*	*	*	*	*
50-59	29	17,997	<i>271%</i>	<i>206%</i>	<i>351%</i>	<i>260%</i>	<i>331%</i>	<i>247%</i>
60-69	221	158,912	103	88	126	107	143	121
70-79	1,324	824,666	86	69	98	79	121	98
80-89	4,282	2,194,969	90	87	95	91	110	107
90 and over	3,363	1,172,962	87	82	87	82	111	104
All ages	9,224	\$ 4,372,242	<i>89%</i>	<i>82%</i>	<i>93%</i>	<i>87%</i>	<i>113%</i>	<i>105%</i>

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE 17
 INDIVIDUAL IMMEDIATE ANNUITIES
 ISSUES OF 1931-70
 EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES
 EXPECTED DEATHS ON ANNUITY TABLE FOR 1949 ULTIMATE,
 ANNUITY TABLE FOR 1949 ULTIMATE WITH PROJECTION B,
 AND 1971 INDIVIDUAL ANNUITY MORTALITY TABLE
 REFUND—MALE LIVES

ATTAINED AGES BY CONTRACT YEARS	ACTUAL DEATHS		MORTALITY RATIO ON					
			a-1949 Table		a-1949 Table with Projection B		1971 IAM Table	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Years 1-2:								
Under 50	3	\$ 12,106	*	*	*	*	*	*
50-59	17	21,677	<i>150%</i>	<i>138%</i>	<i>189%</i>	<i>175%</i>	<i>189%</i>	<i>175%</i>
60-69	184	246,103	92	109	113	134	122	145
70-79	229	329,805	99	103	115	119	133	138
80-89	93	174,302	57	64	60	68	74	81
90 and over	6	15,863	*	*	*	*	*	*
All ages	532	\$ 799,856	86%	92%	99%	105%	114%	122%
Years 3-5:								
Under 50	3	\$ 5,260	*	*	*	*	*	*
50-59	24	41,531	<i>197%</i>	<i>259%</i>	<i>245%</i>	<i>327%</i>	<i>245%</i>	<i>328%</i>
60-69	244	243,259	97	89	118	108	129	118
70-79	341	419,147	85	84	98	96	114	112
80-89	272	383,462	88	79	94	84	116	104
90 and over	8	14,485	*	*	*	*	*	*
All ages	892	\$1,107,144	89%	83%	101%	93%	118%	110%
Years 6-10:								
Under 50	1	\$ 2,831	*	*	*	*	*	*
50-59	7	3,312	*	*	*	*	*	*
60-69	90	102,923	94%	97%	116%	118%	126%	129%
70-79	432	527,039	92	107	106	124	123	144
80-89	260	466,392	78	109	83	115	103	143
90 and over	88	113,085	135	129	135	129	162	155
All ages	878	\$1,215,582	90%	108%	101%	120%	119%	143%
Years 11 and over:								
Under 50	2	\$ 1,112	*	*	*	*	*	*
50-59	25	9,254	<i>105%</i>	<i>104%</i>	<i>133%</i>	<i>131%</i>	<i>133%</i>	<i>130%</i>
60-69	150	52,630	116	105	142	129	154	139
70-79	809	357,412	107	104	122	119	143	140
80-89	1,482	762,641	95	104	100	109	124	136
90 and over	700	289,859	91	86	91	86	105	100
All ages	3,168	\$1,472,908	98%	100%	104%	106%	125%	128%
Years 6 and over:								
Under 50	3	\$ 3,943	*	*	*	*	*	*
50-59	32	12,566	<i>101%</i>	<i>75%</i>	<i>126%</i>	<i>95%</i>	<i>126%</i>	<i>95%</i>
60-69	240	155,553	107	99	131	122	142	132
70-79	1,241	884,451	101	106	116	122	136	142
80-89	1,742	1,229,033	92	106	97	111	120	138
90 and over	788	402,944	95	95	95	95	110	111
All ages	4,046	\$2,688,490	96%	104%	103%	112%	124%	134%
All years:								
Under 50	9	\$ 21,309	*	*	*	*	*	*
50-59	73	75,774	<i>132%</i>	<i>156%</i>	<i>165%</i>	<i>197%</i>	<i>165%</i>	<i>198%</i>
60-69	668	644,915	99	99	131	120	131	131
70-79	1,811	1,633,403	97	99	112	114	131	132
80-89	2,107	1,786,797	89	93	94	98	117	122
90 and over	802	433,292	92	85	92	85	107	100
All ages	5,470	\$4,595,490	94%	96%	103%	106%	122%	125%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.
 * Fewer than ten contracts terminated by death.

TABLE 17—Continued
REFUND—FEMALE LIVES

ATTAINED AGES BY CONTRACT YEARS	ACTUAL DEATHS		MORTALITY RATIO ON					
			a-1949 Table		a-1949 Table with Projection B		1971 IAM Table	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Years 1-2:								
Under 50	3	\$ 4,983	*	*	*	*	*	*
50-59	15	13,037	121%	96%	152%	122%	145%	116%
60-69	99	94,468	66	71	81	87	89	95
70-79	200	224,330	67	68	77	78	93	96
80-89	138	168,320	60	55	63	59	75	69
90 and over	4	6,108	*	*	*	*	*	*
All ages	459	\$ 511,246	65%	64%	74%	72%	87%	85%
Years 3-5:								
Under 50	8	\$ 2,567	*	*	*	*	*	*
50-59	24	23,293	158%	146%	200%	184%	190%	176%
60-69	184	176,248	90	99	110	121	123	135
70-79	428	429,634	82	81	94	93	116	115
80-89	321	385,764	70	66	74	70	87	83
90 and over	25	39,005	78	75	78	75	92	90
All ages	990	\$1,056,511	80%	78%	90%	87%	107%	103%
Years 6-10:								
Under 50	2	\$ 1,139	*	*	*	*	*	*
50-59	23	23,095	233%	238%	297%	300%	279%	286%
60-69	96	74,759	83	74	102	90	115	101
70-79	392	334,818	78	80	90	92	111	113
80-89	396	363,103	75	66	80	70	94	82
90 and over	86	86,944	96	82	96	82	115	98
All ages	995	\$ 883,858	80%	74%	88%	82%	105%	97%
Years 11 and over:								
Under 50	8	\$ 3,672	*	*	*	*	*	*
50-59	26	12,541	145%	152%	184%	192%	177%	184%
60-69	157	66,082	101	88	123	108	138	121
70-79	1,311	518,382	91	91	103	104	127	128
80-89	4,299	1,372,042	93	88	98	92	114	108
90 and over	2,797	823,426	80	79	80	79	102	100
All ages	8,598	\$2,796,145	88%	86%	92%	90%	112%	109%
Years 6 and over:								
Under 50	10	\$ 4,811	304%	231%	415%	292%	488%	333%
50-59	49	35,636	176	199	224	251	214	239
60-69	253	140,841	93	80	114	98	128	109
70-79	1,703	853,200	87	86	100	99	123	122
80-89	4,695	1,735,145	91	82	96	87	112	101
90 and over	2,883	910,370	81	79	81	79	103	100
All ages	9,593	\$3,680,003	87%	83%	92%	88%	111%	106%
All years:								
Under 50	21	\$ 12,361	405%	272%	553%	345%	654%	392%
50-59	88	71,966	159	152	201	191	192	183
60-69	536	411,557	86	84	105	103	117	115
70-79	2,331	1,507,164	84	82	96	94	118	115
80-89	5,154	2,289,229	88	76	93	81	108	94
90 and over	2,912	955,483	81	79	81	79	102	99
All ages	11,042	\$5,247,760	86%	80%	91%	86%	110%	103%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

followed. Briefly, it was assumed that the mortality rates of the *a*-1949 Table continued throughout the calendar year 1950 and that the first decrease in mortality occurred at the beginning of 1951.

As a practical matter, the formula for the reduction in mortality rate is

$$100\% \left\{ 1 - \frac{1}{2} \left[\left(1 - \frac{S_x}{100} \right)^{1967-1950} + \left(1 - \frac{S_x}{100} \right)^{1971-1950} \right] \right\},$$

where S_x , defined as the annual rate of decrease in the mortality rate, expressed as a percentage, was used to represent the average improvement factor for the experience from 1967 to 1971 anniversaries. While it would have been desirable to apply projection factors separately to each calendar year's experience, the form of the data precluded such a procedure.

The tabulation below shows the annual rates of improvement in mortality according to Projection B and the projection factors which were applied to expected deaths for the 1967-71 experience. Factors at ages not shown were calculated by linear interpolation in the first column and substitution in the above formula.

PROJECTION B IMPROVEMENT FACTORS

Attained Age	Rate of Decrease per Year in Mortality Rate S_x	Reductions in Mortality Rate from 1950 through 1967-71
10-50.....	1.25%	21.23%
60.....	1.20	20.47
65.....	1.10	18.93
70.....	0.95	16.57
75.....	0.75	13.32
80.....	0.50	9.08
85.....	0.25	4.64
90.....	0.00	0.00

APPENDIX

TABLE A

CONTRIBUTING COMPANIES

PROPORTION OF TOTAL EXPOSURES CONTRIBUTED BY EACH

COMPANY	NONREFUND ANNUITIES				REFUND ANNUITIES			
	Males		Females		Males		Females	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Equitable, N.Y.	16.3%	15.6%	22.6%	19.2%	10.5%	22.2%	8.0%	13.0%
Manufacturers	12.4	14.6	6.9	10.5	16.2%	16.7	13.7	17.1
Metropolitan	9.9	11.7	7.3	10.3	14.3	9.6	13.4	11.9
New York Life	8.2	8.9	9.0	9.1	10.0	7.7	8.7	9.6
Prudential	7.9	7.4	5.7	6.3	7.5	7.7	10.1	10.3
Massachusetts Mutual	4.9	3.8	6.3	5.5	6.8	7.3	5.3	3.8
John Hancock	4.3	2.4	4.4	3.2	5.2	3.3	0.9	1.0
Connecticut General	4.1	4.0	4.0	4.0	0.9	1.3	0.9	1.0
Aetna Life	3.8	4.9	3.2	3.4	3.6	2.1	3.7	2.8
Connecticut Mutual	3.6	3.4	3.4	3.0	5.7	4.4	5.1	4.1
Mutual Life, N.Y.	3.2	3.1	3.4	3.1	3.2	2.9	4.4	3.6
Southwestern Life	2.8	6.3	1.5	3.1	4.5	5.7	2.8	3.8
Travelers	2.7	3.2	3.4	4.7	3.4	4.2	3.4	4.3
Penn Mutual	2.8	2.0	4.4	2.9	4.2	2.8	4.4	3.1
Northwestern Mutual	2.7	1.4	3.0	1.7	3.9	1.8	3.0	2.3
National Life	2.4	1.5	2.5	2.8	2.8	1.9	3.5	3.0
Phoenix Mutual	2.0	1.6	2.1	2.5	2.2	1.7	2.2	1.9
Sun Life	1.9	1.5	1.6	1.2	2.0	1.7	1.8	1.2
New England Mutual	1.6	0.8	2.5	1.5	1.7	1.0	2.1	1.4
Provident Mutual	1.4	1.0	2.0	1.4	1.5	1.3	1.8	1.1
Mutual Benefit	1.1	0.9	0.8	0.6	0.4	0.4	0.8	0.7
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE B
EXPOSURES AND DEATHS UNDER INDIVIDUAL IMMEDIATE ANNUITIES
ISSUES OF 1931-70
EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES

CONTRACT YEARS	NONREFUND ANNUITIES		REFUND ANNUITIES	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Exposures				
Males:				
1-5.....	16,678	\$24,911,924	37,661	\$ 46,411,756
6 and over.....	32,818	22,900,548	54,630	35,297,247
All contract years	49,496	\$47,812,472	92,291	\$ 81,709,003
Females:				
1-5.....	29,762	\$35,535,845	65,611	\$ 65,824,230
6 and over.....	92,041	44,273,870	146,289	71,467,182
All contract years	121,803	\$79,809,715	211,900	\$137,291,412
Deaths				
Males:				
1-5.....	741	\$ 1,256,854	1,424	\$ 1,907,000
6 and over.....	3,136	2,142,105	4,046	2,688,490
All contract years	3,877	\$ 3,398,959	5,470	\$ 4,595,490
Females:				
1-5.....	773	\$ 888,891	1,449	\$ 1,567,757
6 and over.....	8,451	3,483,351	9,593	3,680,003
All contract years	9,224	\$ 4,372,242	11,042	\$ 5,247,760

TABLE C
 INDIVIDUAL IMMEDIATE ANNUITIES
 ISSUES OF 1931-70
 EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES
 NONREFUND—MALE LIVES
 EXPECTED DEATHS ON ANNUITY TABLE FOR 1949 ULTIMATE

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Year 1:								
Under 50.....	45	\$ 18,514	0	\$ 0	0.15	\$ 81	*	*
50-59.....	161	234,737	3	5,426	1.87	2,749	*	*
60-69.....	1,160	1,550,230	11	9,843	28.10	38,131	<i>39%</i>	<i>26%</i>
70-79.....	1,158	2,044,744	31	60,932	60.92	110,609	<i>51</i>	<i>55</i>
80 and over.....	587	1,129,430	38	64,567	70.63	142,745	<i>54</i>	<i>45</i>
All ages.....	3,111	\$ 4,977,655	83	\$ 140,768	161.67	\$ 294,375	<i>51%</i>	<i>48%</i>
Year 2:								
Under 50.....	32	\$ 11,620	0	\$ 0	0.09	\$ 44	*	*
50-59.....	167	200,561	3	3,426	1.89	2,280	*	*
60-69.....	1,179	1,530,500	29	41,714	29.43	38,118	<i>99%</i>	<i>109%</i>
70-79.....	1,280	2,032,842	56	88,783	68.00	107,950	<i>82</i>	<i>82</i>
80 and over.....	675	1,375,886	40	99,006	83.87	171,735	<i>48</i>	<i>58</i>
All ages.....	3,333	\$ 5,151,409	128	\$ 232,929	183.28	\$ 320,127	<i>70%</i>	<i>73%</i>

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE C—Continued—NONREFUND—MALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Year 3:								
Under 50.....	26	\$ 8,062	0	\$ 0	0.06	\$ 30	*	*
50-59.....	149	165,564	1	382	1.68	1,914	*	*
60-69.....	1,210	1,586,832	33	56,397	30.76	40,317	<i>107%</i>	<i>140%</i>
70-79.....	1,370	2,125,016	59	131,592	72.50	112,985	81	116
80 and over.....	805	1,560,744	86	137,633	102.63	200,387	84	69
All ages.....	3,560	\$ 5,446,218	179	\$ 326,004	207.63	\$ 355,633	<i>86%</i>	<i>92%</i>
Year 4:								
Under 50.....	28	\$ 8,899	0	\$ 0	0.06	\$ 18	*	*
50-59.....	150	135,845	0	0	1.76	1,634	*	*
60-69.....	1,085	1,345,967	22	33,174	28.16	34,688	<i>78%</i>	<i>96%</i>
70-79.....	1,382	2,046,398	57	75,120	72.79	108,755	78	69
80 and over.....	793	1,413,891	88	141,811	103.97	188,620	85	75
All ages.....	3,438	\$ 4,951,000	167	\$ 250,105	206.74	\$ 333,715	<i>81%</i>	<i>75%</i>
Year 5:								
Under 50.....	21	\$ 7,872	0	\$ 0	0.02	\$ 14	*	*
50-59.....	121	109,328	1	645	1.42	1,321	*	*
60-69.....	909	1,033,888	20	15,319	23.70	26,785	<i>84%</i>	<i>57%</i>
70-79.....	1,386	1,917,132	76	163,267	71.61	100,658	106	162
80 and over.....	799	1,317,422	87	127,817	104.54	178,518	83	72
All ages.....	3,236	\$ 4,385,642	184	\$ 307,048	201.29	\$ 307,296	<i>91%</i>	<i>100%</i>

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE C—Continued—NONREFUND—MALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Year 6:								
Under 50.....	20	\$ 7,692	0	\$ 0	0.02	\$ 11	*	*
50-59.....	102	86,587	1	5,376	1.20	1,040	*	*
60-69.....	639	674,861	16	20,298	16.11	16,708	<i>99%</i>	<i>121%</i>
70-79.....	1,405	1,770,602	67	95,117	71.55	93,135	<i>94</i>	<i>102</i>
80 and over.....	759	1,199,525	89	120,934	100.31	165,381	<i>89</i>	<i>73</i>
All ages.....	2,925	\$ 3,739,267	173	\$ 241,725	189.19	\$ 276,275	<i>91%</i>	<i>87%</i>
Year 7:								
Under 50.....	25	\$ 21,736	1	\$ 4,800	0.03	\$ 71	*	*
50-59.....	87	61,644	0	0	1.06	762	*	*
60-69.....	461	459,219	13	7,445	11.63	11,216	<i>112%</i>	<i>66%</i>
70-79.....	1,233	1,353,625	79	97,108	63.57	73,332	<i>124</i>	<i>132</i>
80 and over.....	713	1,024,072	77	107,465	95.81	144,465	<i>80</i>	<i>74</i>
All ages.....	2,519	\$ 2,920,296	170	\$ 216,818	172.10	\$ 229,846	<i>99%</i>	<i>94%</i>
Year 8:								
Under 50.....	17	\$ 3,521	0	\$ 0	0.02	\$ 7	*	*
50-59.....	62	42,018	2	727	0.76	538	*	*
60-69.....	325	307,194	11	10,265	8.27	7,762	<i>133%</i>	<i>132%</i>
70-79.....	975	953,026	58	64,877	51.65	53,039	<i>112</i>	<i>122</i>
80 and over.....	667	859,346	98	118,926	91.67	128,803	<i>107</i>	<i>92</i>
All ages.....	2,046	\$ 2,165,105	169	\$ 194,795	152.37	\$ 190,149	<i>111%</i>	<i>102%</i>

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE C—Continued—NONREFUND—MALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Year 9:								
Under 50.....	11	\$ 1,482	0	\$ 0	0.01	\$ 3	*	*
50-59.....	43	20,044	0	0	0.52	232	*	*
60-69.....	228	177,145	6	4,549	5.66	4,262	*	*
70-79.....	785	614,781	32	24,108	42.77	34,293	75%	70%
80 and over.....	565	673,562	67	63,661	80.94	107,664	83	59
All ages.....	1,632	\$ 1,487,014	105	\$ 92,318	129.90	\$ 146,454	81%	63%
Year 10:								
Under 50.....	10	\$ 1,412	0	\$ 0	0.01	\$ 4	*	*
50-59.....	29	16,101	1	720	0.33	183	*	*
60-69.....	177	121,414	2	706	4.45	3,063	*	*
70-79.....	654	472,144	45	37,274	36.43	27,099	124%	138%
80 and over.....	532	589,729	68	84,294	79.34	104,830	86	80
All ages.....	1,402	\$ 1,200,800	116	\$ 122,994	120.56	\$ 135,179	96%	91%
Years 1-5:								
Under 50.....	152	\$ 54,967	0	\$ 0	0.38	\$ 187	*	*
50-59.....	748	846,035	8	9,879	8.62	9,898	*	*
60-69.....	5,543	7,047,417	115	156,447	140.15	178,039	82%	88%
70-79.....	6,576	10,166,132	279	519,694	345.82	541,017	81	96
80 and over.....	3,659	6,797,373	339	570,834	465.64	882,005	73	65
All ages.....	16,678	\$ 24,911,924	741	\$1,256,854	960.61	\$1,611,146	77%	78%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE C—Continued—NONREFUND—MALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Years 6-10:								
Under 50.....	83	\$ 35,843	1	\$ 4,800	0.09	\$ 96	*	*
50-59.....	323	226,394	4	6,823	3.87	2,755	*	*
60-69.....	1,830	1,739,833	48	43,263	46.12	43,011	<i>104%</i>	<i>101%</i>
70-79.....	5,052	5,164,178	281	318,484	265.97	280,898	106	113
80 and over.....	3,236	4,346,234	399	495,280	448.07	651,143	89	76
All ages.....	10,524	\$ 11,512,482	733	\$ 868,650	764.12	\$ 977,903	<i>96%</i>	<i>89%</i>
Years 1-10:								
Under 50.....	235	\$ 90,810	1	\$ 4,800	0.47	\$ 283	*	*
50-59.....	1,071	1,072,429	12	16,702	12.49	12,653	<i>96%</i>	<i>132%</i>
60-69.....	7,373	8,787,250	163	199,710	186.27	221,050	88	90
70-79.....	11,628	15,330,310	560	838,178	611.79	821,915	92	102
80 and over.....	6,895	11,143,607	738	1,066,114	913.71	1,533,148	81	70
All ages.....	27,202	\$ 36,424,406	1,474	\$2,125,504	1,724.73	\$2,589,049	<i>85%</i>	<i>82%</i>
Years 11 and over:								
Under 50.....	149	\$ 18,377	0	\$ 0	0.55	\$ 63	*	*
50-59.....	463	172,468	1	246	5.40	1,967	*	*
60-69.....	2,128	629,771	69	24,576	55.09	15,943	<i>125%</i>	<i>154%</i>
70-79.....	7,129	3,011,874	427	175,786	411.05	176,539	104	100
80 and over.....	12,425	7,555,576	1,906	1,072,847	2,054.29	1,252,576	93	86
All ages.....	22,294	\$ 11,388,066	2,403	\$1,273,455	2,526.38	\$1,447,088	<i>95%</i>	<i>88%</i>

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE C—Continued—NONREFUND—MALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Years 6 and over:								
Under 50.....	232	\$ 54,220	1	\$ 4,800	0.64	\$ 159	*	*
50-59.....	786	398,862	5	7,069	9.27	4,722	*	*
60-69.....	3,958	2,369,604	117	67,839	101.21	58,954	116%	115%
70-79.....	12,181	8,176,052	708	494,270	677.02	457,437	105	108
80 and over.....	15,661	11,901,810	2,305	1,568,127	2,502.36	1,903,719	92	82
All ages.....	32,818	\$ 22,900,548	3,136	\$ 2,142,105	3,290.50	\$ 2,424,991	95%	88%
All years:								
Under 50.....	384	\$ 109,187	1	\$ 4,800	1.02	\$ 346	*	*
50-59.....	1,534	1,244,897	13	16,948	17.89	14,620	73%	116%
60-69.....	9,501	9,417,021	232	224,286	241.36	236,993	96	95
70-79.....	18,757	18,342,184	987	1,013,964	1,022.84	998,454	96	102
80 and over.....	19,320	18,699,183	2,644	2,138,961	2,968.00	2,785,724	89	77
All ages.....	49,496	\$ 47,812,472	3,877	\$ 3,398,959	4,251.11	\$ 4,036,137	91%	84%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE C—Continued
 INDIVIDUAL IMMEDIATE ANNUITIES
 ISSUES OF 1931-70
 EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES
 NONREFUND—FEMALE LIVES
 EXPECTED DEATHS ON ANNUITY TABLE FOR 1949 ULTIMATE

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Year 1:								
Under 50.....	32	\$ 25,796	0	\$ 0	0.00	\$ 40	*	*
50-59.....	231	225,119	0	0	1.21	1,206	*	*
60-69.....	1,789	1,934,199	21	12,864	23.68	26,242	<i>89%</i>	<i>49%</i>
70-79.....	2,354	3,114,347	37	39,004	81.09	105,020	<i>46</i>	<i>37</i>
80 and over.....	805	1,198,359	24	31,277	70.62	106,314	<i>34</i>	<i>29</i>
All ages.....	5,211	\$ 6,497,820	82	\$ 83,145	176.60	\$ 238,822	<i>46%</i>	<i>35%</i>
Year 2:								
Under 50.....	31	\$ 35,132	0	\$ 0	0.01	\$ 66	*	*
50-59.....	238	214,266	6	3,649	1.27	1,165	*	*
60-69.....	1,845	1,845,666	26	21,319	25.11	25,204	<i>104%</i>	<i>85%</i>
70-79.....	2,684	3,525,459	55	52,118	93.82	121,879	<i>59</i>	<i>43</i>
80 and over.....	1,032	1,416,264	45	63,652	92.61	128,409	<i>49</i>	<i>50</i>
All ages.....	5,830	\$ 7,036,787	132	\$ 140,738	212.82	\$ 276,723	<i>62%</i>	<i>51%</i>

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE C—Continued—NONREFUND—FEMALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Year 3:								
Under 50.....	27	\$ 35,074	1	\$ 2,100	0.00	\$ 76	*	*
50-59.....	221	225,783	3	701	1.15	1,226	*	*
60-69.....	1,827	1,769,578	17	12,741	25.23	24,692	67%	52%
70-79.....	3,001	3,716,474	60	63,586	105.43	130,717	57	49
80 and over.....	1,245	1,666,565	76	110,228	114.54	153,660	66	72
All ages.....	6,321	\$ 7,413,474	157	\$ 189,356	246.35	\$ 310,371	64%	61%
Year 4:								
Under 50.....	25	\$ 30,405	0	\$ 0	0.01	\$ 73	*	*
50-59.....	196	246,910	4	4,556	1.00	1,353	*	*
60-69.....	1,702	1,753,896	18	29,548	24.18	24,312	74%	122%
70-79.....	2,976	3,628,594	67	54,175	105.87	129,420	63	42
80 and over.....	1,429	1,996,448	95	149,931	134.23	189,857	71	79
All ages.....	6,328	\$ 7,656,253	184	\$ 238,210	265.29	\$ 345,015	69%	69%
Year 5:								
Under 50.....	19	\$ 11,441	0	\$ 0	0.00	\$ 22	*	*
50-59.....	148	170,276	5	4,574	0.76	846	*	*
60-69.....	1,473	1,489,167	20	13,454	20.92	20,480	96%	66%
70-79.....	2,928	3,270,535	78	68,027	104.42	118,854	75	57
80 and over.....	1,504	1,990,092	115	151,387	146.65	200,214	78	76
All ages.....	6,072	\$ 6,931,511	218	\$ 237,442	272.75	\$ 340,416	80%	70%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE C—Continued—NONREFUND—FEMALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Year 6:								
Under 50.....	21	\$ 11,135	1	\$ 55	0.01	\$ 24	*	*
50-59.....	116	128,471	0	0	0.61	670	*	*
60-69.....	1,139	1,158,491	17	11,667	16.15	16,112	<i>105%</i>	<i>72%</i>
70-79.....	2,623	2,836,588	76	58,495	92.98	102,864	82	57
80 and over.....	1,531	1,964,400	126	163,690	151.31	203,789	83	80
All ages.....	5,430	\$ 6,099,085	220	\$ 233,907	261.06	\$ 323,459	<i>84%</i>	<i>72%</i>
Year 7:								
Under 50.....	20	\$ 5,682	0	\$ 0	0.01	\$ 8	*	*
50-59.....	78	73,575	0	0	0.42	370	*	*
60-69.....	837	830,141	18	19,771	12.04	11,542	<i>150%</i>	<i>171%</i>
70-79.....	2,108	2,175,821	49	45,783	74.93	79,022	65	58
80 and over.....	1,421	1,722,278	84	84,609	143.48	179,938	59	47
All ages.....	4,464	\$ 4,807,497	151	\$ 150,163	230.88	\$ 270,880	<i>65%</i>	<i>55%</i>
Year 8:								
Under 50.....	18	\$ 5,765	0	\$ 0	0.01	\$ 9	*	*
50-59.....	55	46,769	2	998	0.30	257	*	*
60-69.....	579	423,531	10	3,967	8.46	6,135	<i>118%</i>	<i>65%</i>
70-79.....	1,687	1,585,793	50	55,088	60.78	57,729	82	95
80 and over.....	1,241	1,380,709	99	113,049	129.92	150,099	76	75
All ages.....	3,580	\$ 3,442,567	161	\$ 173,102	199.47	\$ 214,229	<i>81%</i>	<i>81%</i>

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE C--Continued--NONREFUND--FEMALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Year 9:								
Under 50.....	13	\$ 4,164	2	\$ 281	0.01	\$ 7	*	*
50-59.....	46	34,060	1	518	0.26	188	*	*
60-69.....	393	248,300	5	5,405	5.82	3,623	*	*
70-79.....	1,337	1,141,469	41	51,467	49.31	42,201	83%	122%
80 and over.....	1,083	1,185,768	88	103,511	118.36	130,901	74	79
All ages.....	2,872	\$ 2,613,761	137	\$ 161,182	173.76	\$ 176,920	79%	91%
Year 10:								
Under 50.....	8	\$ 2,341	0	\$ 0	0.00	\$ 4	*	*
50-59.....	40	32,764	0	0	0.21	197	*	*
60-69.....	294	172,207	8	873	4.35	2,448	*	*
70-79.....	1,100	810,186	41	29,258	41.05	31,299	100%	93%
80 and over.....	987	979,811	84	73,244	108.36	109,712	78	67
All ages.....	2,429	\$ 1,997,309	133	\$ 103,375	153.97	\$ 143,660	86%	72%
Years 1-5:								
Under 50.....	134	\$ 137,848	1	\$ 2,100	0.02	\$ 277	*	*
50-59.....	1,034	1,082,354	18	13,480	5.39	5,796	334%	233%
60-69.....	8,636	8,792,506	102	89,926	119.12	120,930	86	74
70-79.....	13,943	17,255,409	297	276,910	490.63	605,890	61	46
80 and over.....	6,015	8,267,728	355	506,475	558.65	778,454	64	65
All ages.....	29,762	\$ 35,535,845	773	\$ 888,891	1,173.81	\$1,511,347	66%	59%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE C—Continued—NONREFUND—FEMALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Years 6-10:								
Under 50.....	80	\$ 29,087	3	\$ 336	0.04	\$ 52	*	*
50-59.....	335	315,639	3	1,516	1.80	1,682	*	*
60-69.....	3,242	2,832,670	58	41,683	46.82	39,860	124%	105%
70-79.....	8,855	8,549,857	257	240,091	319.05	313,115	81	77
80 and over.....	6,263	7,232,966	481	538,103	651.43	774,439	74	69
All ages.....	18,775	\$ 18,960,219	802	\$ 821,729	1,019.14	\$1,129,148	79%	73%
Years 1-10:								
Under 50.....	214	\$ 166,935	4	\$ 2,436	0.06	\$ 329	*	*
50-59.....	1,369	1,397,993	21	14,996	7.19	7,478	292%	201%
60-69.....	11,878	11,625,176	160	131,609	165.94	160,790	96	82
70-79.....	22,798	25,805,266	554	517,001	809.68	919,005	68	56
80 and over.....	12,278	15,500,694	836	1,044,578	1,210.08	1,552,893	69	67
All ages.....	48,537	\$ 54,496,064	1,575	\$1,710,620	2,192.95	\$2,640,495	72%	65%
Years 11 and over:								
Under 50.....	177	\$ 43,352	1	\$ 300	0.28	\$ 87	*	*
50-59.....	710	256,405	8	3,001	3.50	1,255	*	*
60-69.....	3,432	1,443,379	61	27,303	48.05	19,973	127%	137%
70-79.....	18,167	6,833,361	770	307,665	728.82	273,357	106	113
80 and over.....	50,780	16,737,154	6,809	2,323,353	7,402.25	2,399,254	92	97
All ages.....	73,266	\$ 25,313,651	7,649	\$2,661,622	8,182.90	\$2,693,926	93%	99%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE C—Continued—NONREFUND—FEMALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Years 6 and over:								
Under 50.....	257	\$ 72,439	4	\$ 636	0.32	\$ 139	*	*
50-59.....	1,045	572,044	11	4,517	5.30	2,937	208%	154%
60-69.....	6,674	4,276,049	119	68,986	94.87	59,833	125	115
70-79.....	27,022	15,383,218	1,027	547,756	1,047.87	586,472	98	93
80 and over.....	57,043	23,970,120	7,290	2,861,456	8,053.68	3,173,693	91	90
All ages.....	92,041	\$ 44,273,870	8,451	\$ 3,483,351	9,202.04	\$ 3,823,074	92%	91%
All years:								
Under 50.....	391	\$ 210,287	5	\$ 2,736	0.34	\$ 416	*	*
50-59.....	2,079	1,654,398	29	17,997	10.69	8,733	271%	206%
60-69.....	15,310	13,068,555	221	158,912	213.99	180,763	103	88
70-79.....	40,965	32,638,627	1,324	824,666	1,538.50	1,192,362	86	69
80 and over.....	63,058	32,237,848	7,645	3,367,931	8,612.33	3,952,147	89	85
All ages.....	121,803	\$ 79,809,715	9,224	\$ 4,372,242	10,375.85	\$ 5,334,421	89%	82%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE C—Continued
 INDIVIDUAL IMMEDIATE ANNUITIES
 ISSUES OF 1931-70
 EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES
 REFUND—MALE LIVES
 EXPECTED DEATHS ON ANNUITY TABLE FOR 1949 ULTIMATE

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Year 1:								
Under 50.....	182	\$ 184,696	1	\$ 9,351	0.50	\$ 543	*	*
50-59.....	516	743,308	6	4,137	6.07	8,568	*	*
60-69.....	4,232	4,838,188	92	119,467	98.90	112,541	93%	106%
70-79.....	2,203	3,051,890	99	130,548	109.08	153,974	91	85
80 and over.....	673	1,159,295	45	95,940	79.76	138,652	56	69
All ages.....	7,806	\$ 9,977,377	243	\$ 359,443	294.31	\$ 414,278	83%	87%
Year 2:								
Under 50.....	161	\$ 161,374	2	\$ 2,755	0.49	\$ 525	*	*
50-59.....	453	619,557	11	17,540	5.27	7,113	209%	247%
60-69.....	4,112	4,657,090	92	126,636	100.60	113,311	91	112
70-79.....	2,435	3,211,971	130	199,257	122.35	166,581	106	120
80 and over.....	796	1,322,908	54	94,225	95.77	163,850	56	58
All ages.....	7,957	\$ 9,972,900	289	\$ 440,413	324.48	\$ 451,380	89%	98%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE C—Continued—REFUND—MALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Year 3:								
Under 50.....	169	\$ 165,170	1	\$ 1,197	0.53	\$ 585	*	*
50-59.....	416	566,459	13	21,312	4.86	6,675	<i>267%</i>	<i>319%</i>
60-69.....	3,787	4,159,486	105	90,600	96.12	104,277	109	87
70-79.....	2,634	3,342,038	127	144,449	132.78	174,908	96	83
80 and over.....	910	1,497,142	78	115,341	110.69	186,778	70	62
All ages.....	7,916	\$ 9,730,295	324	\$ 372,899	344.98	\$ 473,223	<i>94%</i>	<i>79%</i>
Year 4:								
Under 50.....	163	\$ 143,610	1	\$ 308	0.51	\$ 489	*	*
50-59.....	346	447,713	4	3,219	4.00	5,363	*	*
60-69.....	3,297	3,636,870	73	77,372	86.74	94,051	<i>84%</i>	<i>82%</i>
70-79.....	2,652	3,185,745	104	145,511	134.23	166,170	77	88
80 and over.....	927	1,512,746	88	121,138	113.32	188,044	78	64
All ages.....	7,385	\$ 8,926,684	270	\$ 347,548	338.80	\$ 454,117	<i>80%</i>	<i>77%</i>
Year 5:								
Under 50.....	145	\$ 127,310	1	\$ 3,755	0.43	\$ 418	*	*
50-59.....	288	343,303	7	17,000	3.32	4,002	*	*
60-69.....	2,560	2,876,395	66	75,287	68.98	76,365	<i>96%</i>	<i>99%</i>
70-79.....	2,733	3,132,985	110	129,187	136.15	160,569	81	80
80 and over.....	871	1,324,507	114	161,468	106.85	166,313	107	97
All ages.....	6,597	\$ 7,804,500	298	\$ 386,697	315.73	\$ 407,667	<i>94%</i>	<i>95%</i>

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

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TABLE C—Continued—REFUND—MALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Year 6:								
Under 50.....	127	\$ 119,543	0	\$ 0	0.37	\$ 398	*	*
50-59.....	208	188,762	5	1,897	2.32	2,063	*	*
60-69.....	1,433	1,717,346	32	37,538	36.30	42,389	<i>88%</i>	<i>89%</i>
70-79.....	2,915	3,159,750	138	163,512	139.90	155,404	<i>99</i>	<i>105</i>
80-and over.....	803	1,238,792	75	118,251	99.09	156,128	<i>76</i>	<i>76</i>
All ages.....	5,486	\$ 6,424,193	250	\$ 321,198	277.98	\$ 356,382	<i>90%</i>	<i>90%</i>
Year 7:								
Under 50.....	106	\$ 97,233	0	\$ 0	0.30	\$ 351	*	*
50-59.....	163	175,102	0	0	1.86	2,030	*	*
60-69.....	968	1,142,775	24	43,216	24.76	28,993	<i>97%</i>	<i>149%</i>
70-79.....	2,221	2,449,684	100	156,563	109.14	124,801	<i>92</i>	<i>125</i>
80 and over.....	789	996,232	78	141,321	95.82	124,829	<i>81</i>	<i>113</i>
All ages.....	4,247	\$ 4,861,026	202	\$ 341,100	231.88	\$ 281,004	<i>87%</i>	<i>121%</i>
Year 8:								
Under 50.....	83	\$ 80,780	1	\$ 2,831	0.26	\$ 326	*	*
50-59.....	140	141,774	1	1,200	1.62	1,585	*	*
60-69.....	628	683,822	15	6,615	16.09	17,583	<i>93%</i>	<i>38%</i>
70-79.....	1,745	1,756,768	80	74,422	89.04	89,840	<i>90</i>	<i>83%</i>
80 and over.....	586	850,888	79	199,516	76.09	106,668	<i>104</i>	<i>187</i>
All ages.....	3,182	\$ 3,514,032	176	\$ 284,584	183.10	\$ 216,002	<i>96%</i>	<i>132%</i>

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

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TABLE C—Continued—REFUND—MALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Year 9:								
Under 50.....	71	\$ 54,906	0	\$ 0	0.18	\$ 246	*	*
50-59.....	106	95,924	1	215	1.18	1,080	*	*
60-69.....	421	430,583	6	3,597	10.62	11,071	*	*
70-79.....	1,354	1,287,458	57	77,129	71.62	67,409	80%	114%
80 and over.....	498	529,207	54	85,541	67.58	68,959	80%	124%
All ages.....	2,450	\$ 2,398,078	118	\$ 166,482	151.18	\$ 148,765	78%	112%
Year 10:								
Under 50.....	58	\$ 27,795	0	\$ 0	0.13	\$ 117	*	*
50-59.....	87	92,710	0	0	0.95	1,028	*	*
60-69.....	299	253,683	13	11,957	7.55	6,375	172%	188%
70-79.....	1,125	977,906	57	55,413	61.30	53,064	93	104
80 and over.....	432	454,457	62	34,848	58.98	60,136	105	58
All ages.....	2,001	\$ 1,806,551	132	\$ 102,218	128.91	\$ 120,720	102%	85%
Years 1-5:								
Under 50.....	820	\$ 782,160	6	\$ 17,366	2.46	\$ 2,560	*	*
50-59.....	2,019	2,720,340	41	63,208	23.52	31,721	174%	199%
60-69.....	17,988	20,168,029	428	489,362	451.34	500,545	95	98
70-79.....	12,657	15,924,629	570	748,952	634.59	822,202	90	91
80 and over.....	4,177	6,816,598	379	588,112	506.39	843,637	75	70
All ages.....	37,661	\$ 46,411,756	1,424	\$1,907,000	1,618.30	\$2,200,665	88%	87%

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TABLE C—Continued—REFUND—MALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Years 6-10:								
Under 50.....	445	\$ 380,257	1	\$ 2,831	1.24	\$ 1,438	*	*
50-59.....	704	694,272	7	3,312	7.93	7,786	*	*
60-69.....	3,749	4,228,209	90	102,923	95.32	106,411	94%	97%
70-79.....	9,360	9,631,566	432	527,039	471.00	490,518	92	107
80 and over.....	3,108	4,069,576	348	579,477	397.56	516,720	88	112
All ages.....	17,366	\$ 19,003,880	878	\$1,215,582	973.05	\$1,122,873	90%	108%
Years 1-10:								
Under 50.....	1,265	\$ 1,162,417	7	\$ 20,197	3.70	\$ 3,998	*	*
50-59.....	2,723	3,414,612	48	66,520	31.45	39,507	153%	168%
60-69.....	21,737	24,396,238	518	592,285	546.66	606,956	95	98
70-79.....	22,017	25,556,195	1,002	1,275,991	1,105.59	1,312,720	91	97
80 and over.....	7,285	10,886,174	727	1,167,589	903.95	1,360,357	80	86
All ages.....	55,027	\$ 65,415,636	2,302	\$3,122,582	2,591.35	\$3,323,538	89%	94%
Years 11 and over:								
Under 50.....	893	\$ 304,629	2	\$ 1,112	3.20	\$ 970	*	*
50-59.....	2,154	820,512	25	9,254	23.73	8,941	105%	104%
60-69.....	5,345	2,083,211	150	52,630	129.46	50,053	116	105
70-79.....	13,488	6,020,738	809	357,412	756.23	342,964	107	104
80 and over.....	15,384	7,064,277	2,182	1,052,500	2,330.05	1,071,015	94	98
All ages.....	37,264	\$ 16,293,367	3,168	\$1,472,908	3,242.67	\$1,473,943	98%	100%

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TABLE C—Continued—REFUND—MALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Years 6 and over:								
Under 50.....	1,338	\$ 684,886	3	\$ 3,943	4.44	\$ 2,408	*	*
50-59.....	2,858	1,514,784	32	12,566	31.66	16,727	101%	75%
60-69.....	9,094	6,311,420	240	155,553	224.78	156,464	107	99
70-79.....	22,848	15,652,304	1,241	884,451	1,227.23	833,482	101	106
80 and over.....	18,492	11,133,853	2,530	1,631,977	2,727.61	1,587,735	93	103
All ages.....	54,630	\$ 35,297,247	4,046	\$2,688,490	4,215.72	\$2,596,816	96%	104%
All years:								
Under 50.....	2,158	\$ 1,467,046	9	\$ 21,309	6.90	\$ 4,968	*	*
50-59.....	4,877	4,235,124	73	75,774	55.18	48,448	132%	156%
60-69.....	27,082	26,479,449	668	644,915	676.12	657,009	99	98
70-79.....	35,505	31,576,933	1,811	1,633,403	1,861.82	1,655,684	97	99
80 and over.....	22,669	17,950,451	2,909	2,220,089	3,234.00	2,431,372	90	91
All ages.....	92,291	\$ 81,709,003	5,470	\$4,595,490	5,834.02	\$4,797,481	94%	96%

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE C—Continued
 INDIVIDUAL IMMEDIATE ANNUITIES
 ISSUES OF 1931-70
 EXPERIENCE BETWEEN 1967 AND 1971 ANNIVERSARIES
 REFUND—FEMALE LIVES
 EXPECTED DEATHS ON ANNUITY TABLE FOR 1949 ULTIMATE

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Year 1:								
Under 50.....	282	\$ 287,698	2	\$ 4,487	0.48	\$ 585	*	*
50-59.....	1,240	1,376,621	8	4,205	6.40	7,248	*	*
60-69.....	5,714	5,119,664	35	39,763	71.80	64,290	<i>49%</i>	<i>62%</i>
70-79.....	4,083	4,427,246	79	93,397	137.98	153,535	57	61
80 and over.....	1,229	1,583,124	54	76,267	106.24	142,110	51	54
All ages.....	12,548	\$ 12,794,353	178	\$ 218,119	322.90	\$ 367,768	<i>55%</i>	<i>59%</i>
Year 2:								
Under 50.....	254	\$ 272,691	1	\$ 496	0.42	\$ 551	*	*
50-59.....	1,178	1,227,140	7	8,832	6.04	6,279	*	*
60-69.....	5,964	5,399,194	64	54,705	77.42	69,561	<i>83%</i>	<i>79%</i>
70-79.....	4,780	5,045,190	121	130,933	162.13	176,235	75	74
80 and over.....	1,533	1,970,505	88	98,161	134.23	175,932	66	56
All ages.....	13,709	\$ 13,914,720	281	\$ 293,127	380.24	\$ 428,558	<i>74%</i>	<i>68%</i>

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

* Fewer than ten contracts terminated by death.

TABLE C—Continued—REFUND—FEMALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Year 3:								
Under 50.....	251	\$ 261,930	3	\$ 1,903	0.42	\$ 517	*	*
50-59.....	1,142	1,209,100	7	7,017	5.93	6,163	*	*
60-69.....	5,887	5,184,075	57	51,606	79.17	68,812	72%	75%
70-79.....	5,227	5,269,535	131	151,257	178.09	183,808	74	82
80 and over.....	1,733	2,218,705	97	129,221	154.93	202,363	63	64
All ages.....	14,240	\$ 14,143,345	295	\$ 341,004	418.54	\$ 461,663	70%	74%
Year 4:								
Under 50.....	210	\$ 236,831	5	\$ 664	0.33	\$ 435	*	*
50-59.....	983	1,053,815	12	13,354	5.12	5,402	234%	247%
60-69.....	5,057	4,442,600	73	75,494	69.45	59,710	105	126
70-79.....	5,232	5,277,530	140	123,375	177.62	183,337	79	67
80 and over.....	1,815	2,252,257	129	150,321	165.86	213,239	78	70
All ages.....	13,297	\$ 13,263,033	359	\$ 363,208	418.38	\$ 462,123	86%	79%
Year 5:								
Under 50.....	172	\$ 208,702	0	\$ 0	0.25	\$ 378	*	*
50-59.....	804	853,252	5	2,922	4.16	4,402	*	*
60-69.....	4,060	3,665,828	54	49,148	56.45	49,506	96%	99%
70-79.....	4,979	4,726,806	157	155,002	169.22	162,737	93	95
80 and over.....	1,802	2,254,191	120	145,227	168.58	216,808	71	67
All ages.....	11,817	\$ 11,708,779	336	\$ 352,299	398.66	\$ 433,831	84%	81%

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TABLE C—Continued—REFUND—FEMALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Year 6:								
Under 50.....	151	\$ 178,650	1	\$ 419	0.24	\$ 326	*	*
50-59.....	604	634,480	5	2,685	3.17	3,293	*	*
60-69.....	2,853	2,699,282	38	33,871	38.61	35,672	<i>98%</i>	<i>95%</i>
70-79.....	4,450	3,961,745	101	99,164	147.44	134,188	69	74
80 and over.....	1,678	1,915,575	110	106,440	159.32	189,635	69	56
All ages.....	9,736	\$ 9,389,732	255	\$ 242,579	348.78	\$ 363,114	<i>73%</i>	<i>67%</i>
Year 7:								
Under 50.....	112	\$ 134,877	0	\$ 0	0.14	\$ 205	*	*
50-59.....	461	479,292	8	11,106	2.39	2,460	*	*
60-69.....	2,041	1,910,760	27	18,298	27.70	25,058	<i>97%</i>	<i>73%</i>
70-79.....	3,383	3,014,137	94	106,668	114.63	104,271	82	102
80 and over.....	1,409	1,537,420	109	121,448	135.43	155,922	80	78
All ages.....	7,406	\$ 7,076,486	238	\$ 257,520	280.29	\$ 287,916	<i>85%</i>	<i>89%</i>
Year 8:								
Under 50.....	101	\$ 121,682	0	\$ 0	0.16	\$ 207	*	*
50-59.....	342	326,285	4	1,602	1.72	1,707	*	*
60-69.....	1,519	1,362,534	10	8,087	20.95	18,289	<i>48%</i>	<i>44%</i>
70-79.....	2,742	2,204,902	64	36,217	94.41	77,817	68	47
80 and over.....	1,196	1,198,884	101	87,173	117.27	125,387	86	70
All ages.....	5,900	\$ 5,214,287	179	\$ 133,079	234.51	\$ 223,407	<i>76%</i>	<i>60%</i>

NOTE.—Mortality ratio in italics where 10-49 contracts terminated by death.

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TABLE C—Continued—REFUND FEMALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Year 9:								
Under 50	79	\$ 97,097	0	\$ 0	0.13	\$ 167	*	*
50-59	269	240,302	4	3,142	1.42	1,263	*	*
60-69	1,112	945,137	8	4,306	15.46	12,890	*	*
70-79	2,247	1,622,861	80	64,865	78.51	57,504	102%	113%
80 and over	1,053	954,467	82	86,697	103.16	98,075	79	88
All ages	4,760	\$ 3,859,864	174	\$ 159,010	198.68	\$ 169,899	88%	94%
Year 10:								
Under 50	71	\$ 67,850	1	\$ 720	0.07	\$ 113	*	*
50-59	223	182,514	2	4,560	1.18	979	*	*
60-69	900	695,275	13	10,197	12.47	9,320	104%	109%
70-79	1,909	1,313,612	53	27,904	67.79	46,679	78	60
80 and over	995	816,507	80	48,289	100.08	85,287	80	57
All ages	4,098	\$ 3,075,758	149	\$ 91,670	181.59	\$ 142,378	82%	64%
Years 1-5:								
Under 50	1,169	\$ 1,267,852	11	\$ 7,550	1.90	\$ 2,466	579%	306%
50-59	5,347	5,719,928	39	36,330	27.65	29,494	141	123
60-69	26,682	23,811,361	283	270,716	354.29	311,879	80	87
70-79	24,301	24,746,307	628	653,964	825.04	859,652	76	76
80 and over	8,112	10,278,782	488	599,197	729.84	950,452	67	63
All ages	65,611	\$ 65,824,230	1,449	\$1,567,757	1,938.72	\$2,153,943	75%	73%

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TABLE C—Continued—REFUND—FEMALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Years 6-10:								
Under 50.....	514	\$ 600,156	2	\$ 1,139	0.74	\$ 1,018	*	*
50-59.....	1,899	1,862,873	23	23,095	9.88	9,702	233%	238%
60-69.....	8,425	7,612,988	96	74,759	115.19	101,229	83	74
70-79.....	14,731	12,117,257	392	334,818	502.78	420,459	78	80
80 and over.....	6,331	6,422,853	482	450,047	615.26	654,306	78	69
All ages.....	31,900	\$ 28,616,127	995	\$ 883,858	1,243.85	\$1,186,714	80%	74%
Years 1-10:								
Under 50.....	1,683	\$ 1,868,008	13	\$ 8,689	2.64	\$ 3,484	492%	249%
50-59.....	7,246	7,582,801	62	59,425	37.53	39,196	165	152
60-69.....	35,107	31,424,349	379	345,475	469.48	413,108	81	84
70-79.....	39,032	36,863,564	1,020	988,782	1,327.82	1,280,111	77	77
80 and over.....	14,443	16,701,635	970	1,049,244	1,345.10	1,604,758	72	65
All ages.....	97,511	\$ 94,440,357	2,444	\$2,451,615	3,182.57	\$3,340,657	77%	73%
Years 11 and over:								
Under 50.....	1,301	\$ 531,592	8	\$ 3,672	2.55	\$ 1,061	*	*
50-59.....	3,566	1,605,016	26	12,541	17.89	8,249	145%	152%
60-69.....	11,525	5,579,273	157	66,082	155.89	74,985	101	88
70-79.....	37,432	14,866,027	1,311	518,382	1,448.56	566,895	91	91
80 and over.....	60,565	20,269,147	7,096	2,195,468	8,106.81	2,603,089	88	84
All ages.....	114,389	\$ 42,851,055	8,598	\$2,796,145	9,731.70	\$3,254,279	88%	86%

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TABLE C—Continued—REFUND—FEMALE LIVES

ATTAINED AGES BY CONTRACT YEAR	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income	Number of Contracts	Amounts of Annual Income
Years 6 and over:								
Under 50.....	1,815	\$ 1,131,748	10	\$ 4,811	3.29	\$ 2,079	<i>304%</i>	<i>231%</i>
50-59.....	5,465	3,467,889	49	35,636	27.77	17,951	<i>176</i>	<i>199</i>
60-69.....	19,950	13,192,261	253	140,841	271.08	176,214	93	80
70-79.....	52,163	26,983,284	1,703	853,200	1,951.34	987,354	87	86
80 and over.....	66,896	26,692,000	7,578	2,645,515	8,722.07	3,257,395	87	81
All ages.....	146,289	\$ 71,467,182	9,593	\$3,680,003	10,975.55	\$4,440,993	87%	83%
All years:								
Under 50.....	2,984	\$ 2,399,600	21	\$ 12,361	5.19	\$ 4,545	<i>405%</i>	<i>272%</i>
50-59.....	10,812	9,187,817	88	71,966	55.42	47,445	159	152
60-69.....	46,632	37,003,622	536	411,557	625.37	488,093	86	84
70-79.....	76,464	51,729,591	2,331	1,507,164	2,776.38	1,847,006	84	82
80 and over.....	75,008	36,970,782	8,066	3,244,712	9,451.91	4,207,847	85	77
All ages.....	211,900	\$137,291,412	11,042	\$5,247,760	12,914.27	\$6,594,936	86%	80%

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