

**TRANSACTIONS OF SOCIETY OF ACTUARIES  
1966 REPORTS**

**REPORT OF THE COMMITTEE ON MORTALITY  
UNDER ORDINARY INSURANCES  
AND ANNUITIES**

**MORTALITY UNDER LIFE INCOME SETTLEMENTS AND  
MATURED DEFERRED ANNUITIES BETWEEN  
1960 AND 1965 ANNIVERSARIES**

**T**HIS report covers the intercompany experience under the following three major categories of contracts between 1960 and 1965 anniversaries:

1. Life income settlements arising out of death claims, subdivided into
  - a) Payee elections.
  - b) Nonpayee elections.The companies were asked to omit data where the type of election was not known.
2. Life income settlements arising out of the maturity of endowment or retirement income policies or the cash surrender of insurance or annuity contracts.
3. Maturities of deferred annuity contracts (including maturities at optional retirement dates) with a death benefit prior to maturity and a cash value at maturity substantially equal to the reserve.

Each of the categories is subdivided into contracts with a guaranteed period or refund provision and contracts without such provisions. This study marks the first time that life income settlements without a guaranteed period or refund provision have been included in Categories 1 and 2. The limited volume of these data precluded making the more extensive analyses made on refund contracts. Accordingly, only brief summaries are shown comparing the nonrefund and refund settlements in the aggregate.

The results for male and female lives are shown separately. Categories 2 and 3 are further subdivided into pension trust issues and other issues. The experience is shown both by number of contracts and by amount of annual income.

Expected deaths were calculated on the Annuity Table for 1949 Ultimate, which was designed to represent the mortality in 1949 under immediate nonrefund annuities after the first contract year. Sections of the report also present an analysis based on this table with Projection B, allowing for mortality improvement from 1950 to the study period.

Previous studies are listed below:

1934-40 anniversaries—*TASA*, XLII, 172-80 (limited to life income settlements)

1940-45 anniversaries—*TASA*, XLVIII, 133-65

1945-50 anniversaries—*TSA 1951 Reports*, 19-71

1950-55 anniversaries—*TSA 1956 Reports*, 37-109

1955-60 anniversaries—*TSA 1961 Reports*, 40-82

Table A of the Appendix shows the names of the nineteen contributing companies and their proportionate contributions. Table B of the Appendix shows the distribution of the contributing companies' aggregate mortality ratios by number of contracts.

#### LIFE INCOME SETTLEMENTS ARISING FROM DEATH CLAIMS

The exposures, actual deaths, and expected deaths are shown in Table C of the Appendix for contracts with a guaranteed period or a refund provision and in Table F for contracts without such provisions. Females accounted for 97 per cent of the exposure by amount on refund settlements and 96 per cent on nonrefund settlements. A substantial proportion of the experience on refund settlements is in the "certain" period, which may run up to twenty years.

Tables 1 and 2 present summaries of the mortality ratios on refund settlements by attained age and duration groups for males and females, respectively; payee elections and nonpayee elections are shown separately. Combined ratios are not shown; since the ratios for payee and nonpayee elections are quite different, the combination of the two would be affected by the proportion of each included, and this proportion varies appreciably among the contributing companies.

Table 3 compares the aggregate experience for refund and nonrefund settlements. Refund settlements accounted for 99 per cent of the exposure by number of contracts on settlements from death claims.

#### *Male Lives*

Of the total exposure by amount in Table 1, 38 per cent was on payee and 62 per cent on nonpayee elections, compared with 35 and 65 per cent in the last study.

The mortality by number of contracts on payee elections remained at

nearly the same level as that in the last study. The higher mortality ratio by amount resulted from the experience at durations 6 and over. The mortality on nonpayee elections exceeded that on payee elections in the aggregate by 28 percentage points by number and 12 percentage points by amount. These differences are considerably less than the corresponding differences of 42 and 75 percentage points in the last study. Though the data on male lives are still relatively limited, the exposures by amount increased 50 and 30 per cent over the last study for payee and nonpayee elections, respectively.

The experience on nonrefund settlements as shown in Table 3 was too limited to justify any conclusions.

TABLE 1  
LIFE INCOME SETTLEMENTS WITH A GUARANTEED PERIOD OR A REFUND  
PROVISION ARISING FROM DEATH CLAIMS—MALE LIVES  
EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES  
MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE

ATTAINED AGES	BY NUMBER OF CONTRACTS				BY AMOUNT OF ANNUAL INCOME			
	Durations				Durations			
	1-2	3-5	6 and Over	All	1-2	3-5	6 and Over	All
Payee Elections								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	*	*	125%	132%	*	*	154%	141%
60-69.....	113%	90%	103	102	106%	91%	85	90
70-79.....	*	*	105	102	*	*	138	130
80 and over.....	*	*	107	106	*	*	96	95
All.....	112%	86%	107%	105%	105%	82%	117%	116%
Nonpayee Elections								
Under 50.....	*	*	161%	164%	*	*	279%	231%
50-59.....	*	150%	151	148	*	219%	145	149
60-69.....	376%	*	134	150	428%	*	126	143
70-79.....	*	*	107	106	*	*	103	101
80 and over.....	*	*	129	126	*	*	106	96
All.....	209%	122%	130%	133%	157%	119%	126%	128%

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

*Female Lives*

Of the total exposure by amount in Table 2, 45 per cent was on payee and 55 per cent was on nonpayee elections, compared with 48 and 52 per cent in the last study.

The aggregate mortality ratios on payee elections remained at approximately the same level as those in the last study. However, the ratios on nonpayee elections decreased by about 8 percentage points, with the greatest reductions occurring at ages under 50 and 70-79.

The differences between the mortality ratios for nonpayee and payee elections are 7 and 9 percentage points by number and amount, respectively, compared to 17 percentage points for each in the last study. How-

TABLE 2  
LIFE INCOME SETTLEMENTS WITH A GUARANTEED PERIOD OR A REFUND  
PROVISION ARISING FROM DEATH CLAIMS—FEMALE LIVES  
EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES  
MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE

ATTAINED AGES	BY NUMBER OF CONTRACTS				BY AMOUNT OF ANNUAL INCOME			
	Durations				Durations			
	1-2	3-5	6 and Over	All	1-2	3-5	6 and Over	All
Payee Elections								
Under 50.....	*	320%	186%	222%	*	207%	145%	190%
50-59.....	85%	145	155	144	115%	154	169	157
60-69.....	72	76	96	91	71	76	102	95
70-79.....	84	82	95	94	82	79	95	93
80 and over.....	73	89	99	99	72	69	101	100
All.....	80%	86%	98%	97%	81%	80%	100%	97%
Nonpayee Elections								
Under 50.....	*	222%	169%	168%	*	324%	139%	166%
50-59.....	142%	118	137	134	164%	114	134	135
60-69.....	107	94	106	104	112	90	118	112
70-79.....	94	106	99	100	89	93	102	100
80 and over.....	93	84	106	104	85	85	110	107
All.....	102%	100%	105%	104%	99%	93%	109%	106%

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

ever, the differences for all ages combined are notably higher at the early durations, where the effects of selection are most evident. Except for payee elections at durations 1 and 2, the mortality ratios at ages under 60 were well above those at ages 60 and over, and particularly high ratios occurred at ages under 50.

Again, in Table 3 the volume of data on nonrefund settlements was quite small relative to that for refund settlements. The excess of nonpayee over payee election mortality ratios is considerably greater for nonrefund issues.

TABLE 3  
LIFE INCOME SETTLEMENTS ARISING FROM DEATH CLAIMS  
EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES  
MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE  
(All Ages and Durations Combined)

	BY NUMBER OF CONTRACTS		BY AMOUNT OF ANNUAL INCOME	
	Males	Females	Males	Females
<i>With a guaranteed period or refund provision:</i>				
Payee elections.....	105% (320)	97% (9,165)	116%	97%
Nonpayee elections.....	133 (346)	104 (8,357)	128	106
<i>Without a guaranteed period or refund provision:</i>				
Payee elections.....	140 (15)	90 (245)	123	88
Nonpayee elections.....	73 (5)	120 (169)	93	110

NOTE.—Number of contracts terminated by death shown in parentheses.

#### LIFE INCOME SETTLEMENTS ARISING FROM MATURITIES AND SURRENDERS

The exposures, actual deaths, and expected deaths are shown in Table D of the Appendix for settlements with a guaranteed period or a refund provision and in Table F for settlements without such provisions. Of the total exposure by amount on refund settlements of non-pension trust issues, 64 per cent was on male lives; the corresponding figure on pension trust issues was 91 per cent.

Pension trust issues now account for 17 per cent of the combined refund settlements exposure by amount, compared to 12 and 4 per cent in the last two studies. Of the total exposure on nonrefund settlements, 10 per cent was accounted for by pension trust issues. For nonrefund settlements, 51 per cent of the exposure on non-pension trust issues was on male lives, compared with 78 per cent on pension trust issues.

Tables 4 and 5 present summaries of the mortality ratios on refund settlements by attained age and duration groups for males and females, respectively. The tables show non-pension trust issues and pension trust issues separately. No combination is shown, since the two types of business are dissimilar in several ways.

Table 6 compares the aggregate experience for refund and nonrefund settlements. Refund settlements accounted for 98 per cent of the total exposure by number of contracts on settlements from maturities and surrenders.

TABLE 4  
LIFE INCOME SETTLEMENTS WITH A GUARANTEED PERIOD OR A REFUND  
PROVISION ARISING FROM MATURITIES AND SURRENDERS—MALE LIVES  
EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES  
MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE

ATTAINED AGES	BY NUMBER OF CONTRACTS				BY AMOUNT OF ANNUAL INCOME			
	Durations				Durations			
	1-2	3-5	6 and Over	All	1-2	3-5	6 and Over	All
	Other than Pension Trust Issues							
Under 50.....	*	*	*	<i>230%</i>	*	*	*	<i>242%</i>
50-59.....	<i>120%</i>	<i>129%</i>	<i>94%</i>	119	<i>109%</i>	<i>125%</i>	<i>76%</i>	113
60-69.....	78	91	86	86	75	89	84	84
70-79.....	78	81	90	89	75	80	87	86
80 and over.....	<i>61</i>	97	97	96	<i>60</i>	100	95	95
All.....	81%	92%	91%	91%	77%	90%	89%	88%
	Pension Trust Issues							
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	<i>124%</i>	<i>283%</i>	<i>503%</i>	<i>249%</i>	<i>100%</i>	<i>302%</i>	<i>367%</i>	<i>206%</i>
60-69.....	119	116	171	122	104	102	163	106
70-79.....	72	90	104	101	67	94	98	95
80 and over.....	*	*	95	95	*	*	90	87
All.....	115%	111%	109%	111%	97%	100%	100%	100%

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

*Male Lives*

Table 4 shows that, at ages 60 and over, mortality on non-pension trust issues was appreciably below the level of the *a*-1949 Table. The aggregate mortality ratio by amount was 88 per cent, compared with 98 per cent in the last study. For the current study, the mortality at durations 1 and 2 was generally considerably lower than that at the later durations.

On pension trust issues, the mortality ratios for all ages combined are generally above 100 per cent by number but approximately equal to 100

TABLE 5  
LIFE INCOME SETTLEMENTS WITH A GUARANTEED PERIOD OR A REFUND PROVISION ARISING FROM MATURITIES AND SURRENDERS—FEMALE LIVES  
EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES  
MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE

ATTAINED AGES	BY NUMBER OF CONTRACTS				BY AMOUNT OF ANNUAL INCOME			
	Durations				Durations			
	1-2	3-5	6 and Over	All	1-2	3-5	6 and Over	All
Other than Pension Trust Issues								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	<i>100%</i>	<i>102%</i>	<i>111%</i>	<i>105%</i>	<i>114%</i>	<i>109%</i>	<i>149%</i>	<i>124%</i>
60-69.....	<i>69</i>	<i>71</i>	<i>82</i>	<i>77</i>	<i>66</i>	<i>75</i>	<i>84</i>	<i>79</i>
70-79.....	<i>60</i>	<i>53</i>	<i>85</i>	<i>84</i>	<i>67</i>	<i>53</i>	<i>82</i>	<i>81</i>
80 and over.....	*	<i>72</i>	<i>97</i>	<i>97</i>	*	<i>77</i>	<i>95</i>	<i>94</i>
All.....	<i>72%</i>	<i>71%</i>	<i>89%</i>	<i>87%</i>	<i>70%</i>	<i>74%</i>	<i>87%</i>	<i>85%</i>
Pension Trust Issues								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	*	*	*	<i>233%</i>	*	*	*	<i>166%</i>
60-69.....	<i>87%</i>	<i>81%</i>	<i>131%</i>	<i>90</i>	<i>87%</i>	<i>94%</i>	<i>170%</i>	<i>101</i>
70-79.....	*	<i>87</i>	<i>116</i>	<i>109</i>	*	<i>63</i>	<i>104</i>	<i>95</i>
80 and over.....	*	*	<i>94</i>	<i>87</i>	*	*	<i>72</i>	<i>67</i>
All.....	<i>88%</i>	<i>85%</i>	<i>116%</i>	<i>100%</i>	<i>84%</i>	<i>88%</i>	<i>109%</i>	<i>97%</i>

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

per cent by amount. Ages 70 and over, representing 44 per cent of the exposure by amount, had the lowest mortality ratios—generally less than 100 per cent.

Table 6 shows that the mortality ratios for all nonrefund settlements are well below the level of the *a*-1949 Table. The ratios are also lower than the corresponding ratios for nonrefund contracts on matured deferred annuities (shown in Table 10).

### Female Lives

The mortality ratios on non-pension trust issues (shown in Table 5) are generally less than 90 per cent. They are considerably lower than

TABLE 6  
LIFE INCOME SETTLEMENTS ARISING FROM MATURITIES AND SURRENDERS  
EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES  
MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE  
(All Ages and Durations Combined)

	BY NUMBER OF CONTRACTS		BY AMOUNT OF ANNUAL INCOME	
	Males	Females	Males	Females
<i>With</i> a guaranteed period or refund provision:				
Other than pension trust . . .	91% (12,418)	87% (6,723)	88%	85%
Pension trust . . . . .	111 (4,162)	100 (313)	100	97
<i>Without</i> a guaranteed period or refund provision:				
Other than pension trust . . .	86 (299)	87 (258)	76	81
Pension trust . . . . .	51 (22)	55 (6)	35	27

NOTE.—Number of contracts terminated by death shown in parentheses.

those in the previous study at durations 1-5 but about the same at durations 6 and over. As a result, in contrast to the previous study, the ratios at durations 6 and over are well above the ratios at durations 1-5.

The experience on pension trust issues to females was small. The aggregate ratios were slightly lower than those in the last study. The excess in ratios over the non-pension trust issues also decreased, compared to the last study.

The mortality experience shown in Table 6 on nonrefund issues was approximately the same as that on refund issues and lower than the corresponding experience on matured deferred annuities (shown in Table 10).

### TREND OF MORTALITY UNDER LIFE INCOME SETTLEMENTS

Table 7 presents summaries of the mortality ratios on refund settlements in broad age and duration groups for each of the last five study



TABLE 7

TREND OF MORTALITY UNDER LIFE INCOME SETTLEMENTS  
WITH A GUARANTEED PERIOD OR A REFUND PROVISION  
EXCLUDING MATURITIES AND SURRENDERS UNDER PENSION TRUST ISSUES  
EXPERIENCE BETWEEN ANNIVERSARIES IN INDICATED YEARS  
MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE

ATTAINED AGES	DURATIONS 1-5					DURATIONS 6 AND OVER					ALL DURATIONS				
	1940-45	1945-50	1950-55	1955-60	1960-65	1940-45	1945-50	1950-55	1955-60	1960-65	1940-45	1945-50	1950-55	1955-60	1960-65
MALE PAYEE ELECTIONS ARISING FROM MATURITIES, SURRENDERS, AND DEATH CLAIMS															
By Number of Contracts															
Under 60 . . . . .	<i>108%</i>	87%	90%	84%	126%	*	<i>117%</i>	98%	104%	108%	<i>112%</i>	93%	92%	90%	122%
60-69 . . . . .	108	102	87	90	86	<i>108%</i>	105	98	100	87	109	102	90	93	86
70 and over . . . . .	104	87	96	99	81	111	108	101	100	93	108	102	100	100	92
All . . . . .	107%	96%	90%	92%	88%	111%	108%	101%	100%	92%	108%	102%	96%	97%	91%
By Amount of Annual Income															
Under 60 . . . . .	<i>109%</i>	78%	89%	90%	118%	*	<i>89%</i>	111%	111%	105%	<i>103%</i>	79%	94%	95%	115%
60-69 . . . . .	92	111	87	91	84	<i>98%</i>	104	98	102	84	93	110	90	94	84
70 and over . . . . .	93	82	98	95	80	118	112	100	101	90	107	103	100	100	89
All . . . . .	94%	101%	90%	92%	85%	114%	110%	100%	102%	89%	100%	105%	95%	98%	88%

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

TABLE 7—Continued

ATTAINED AGES	DURATIONS 1-5					DURATIONS 6 AND OVER					ALL DURATIONS				
	1940-45	1945-50	1950-55	1955-60	1960-65	1940-45	1945-50	1950-55	1955-60	1960-65	1940-45	1945-50	1950-55	1955-60	1960-65
MALE NONPAYEE ELECTIONS ARISING FROM DEATH CLAIMS															
By Number of Contracts															
200 Under 60.....	<i>252%</i>	<i>209%</i>	<i>203%</i>	<i>221%</i>	<i>147%</i>	<i>248%</i>	<i>280%</i>	<i>209%</i>	<i>213%</i>	<i>154%</i>	<i>249%</i>	<i>253%</i>	<i>207%</i>	<i>215%</i>	<i>152%</i>
60-69.....	<i>179</i>	<i>137</i>	<i>180</i>	<i>161</i>	<i>226</i>	<i>221</i>	<i>201</i>	<i>134</i>	<i>127</i>	<i>134</i>	<i>197</i>	<i>168</i>	<i>144</i>	<i>135</i>	<i>150</i>
70 and over...	<i>184</i>	<i>186</i>	<i>191</i>	<i>106</i>	<i>98</i>	*	<i>86</i>	<i>133</i>	<i>113</i>	<i>116</i>	<i>116</i>	<i>111</i>	<i>145</i>	<i>111</i>	<i>114</i>
All.....	<i>201%</i>	<i>171%</i>	<i>192%</i>	<i>156%</i>	<i>155%</i>	<i>158%</i>	<i>154%</i>	<i>153%</i>	<i>145%</i>	<i>130%</i>	<i>177%</i>	<i>160%</i>	<i>162%</i>	<i>148%</i>	<i>133%</i>
By Amount of Annual Income															
Under 60.....	<i>412%</i>	<i>118%</i>	<i>241%</i>	<i>336%</i>	<i>147%</i>	<i>343%</i>	<i>237%</i>	<i>240%</i>	<i>233%</i>	<i>181%</i>	<i>372%</i>	<i>185%</i>	<i>240%</i>	<i>265%</i>	<i>172%</i>
60-69.....	<i>168</i>	<i>206</i>	<i>121</i>	<i>194</i>	<i>231</i>	<i>210</i>	<i>215</i>	<i>77</i>	<i>136</i>	<i>126</i>	<i>180</i>	<i>209</i>	<i>88</i>	<i>151</i>	<i>143</i>
70 and over...	<i>190</i>	<i>269</i>	<i>169</i>	<i>109</i>	<i>60</i>	*	<i>117</i>	<i>170</i>	<i>132</i>	<i>104</i>	<i>238</i>	<i>159</i>	<i>169</i>	<i>125</i>	<i>99</i>
All.....	<i>217%</i>	<i>205%</i>	<i>183%</i>	<i>197%</i>	<i>136%</i>	<i>272%</i>	<i>162%</i>	<i>159%</i>	<i>162%</i>	<i>126%</i>	<i>245%</i>	<i>180%</i>	<i>166%</i>	<i>172%</i>	<i>128%</i>

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

TABLE 7—Continued

ATTAINED AGES	DURATIONS 1-5					DURATIONS 6 AND OVER					ALL DURATIONS				
	1940-45	1945-50	1950-55	1955-60	1960-65	1940-45	1945-50	1950-55	1955-60	1960-65	1940-45	1945-50	1950-55	1955-60	1960-65
FEMALE PAYEE ELECTIONS ARISING FROM MATURITIES, SURRENDERS, AND DEATH CLAIMS															
By Number of Contracts															
201 Under 60.....	144%	119%	96%	88%	115%	152%	145%	132%	119%	143%	146%	129%	113%	104%	130%
60-69.....	103	101	87	79	71	114	109	96	93	89	108	105	92	88	83
70 and over...	100	89	83	82	77	113	110	100	94	94	107	105	98	93	93
All.....	110%	101%	87%	81%	77%	116%	112%	100%	95%	94%	113%	108%	97%	92%	92%
By Amount of Annual Income															
Under 60.....	133%	112%	107%	79%	128%	151%	150%	143%	131%	159%	137%	126%	123%	105%	145%
60-69.....	106	104	87	83	73	118	114	101	95	95	110	109	94	90	88
70 and over...	102	90	85	87	74	104	106	101	96	94	104	102	98	95	93
All.....	109%	101%	89%	85%	77%	112%	111%	102%	97%	95%	111%	107%	98%	94%	93%

TABLE 7—Continued

ATTAINED AGES	DURATIONS 1-5					DURATIONS 6 AND OVER					ALL DURATIONS				
	1940-45	1945-50	1950-55	1955-60	1960-65	1940-45	1945-50	1950-55	1955-60	1960-65	1940-45	1945-50	1950-55	1955-60	1960-65
FEMALE NONPAYEE ELECTIONS ARISING FROM DEATH CLAIMS															
By Number of Contracts															
Under 60 . . . . .	166%	121%	144%	135%	134%	174%	140%	162%	151%	141%	170%	130%	154%	144%	139%
60-69 . . . . .	129	111	102	98	99	122	127	116	113	106	124	121	111	108	104
70 and over . . . . .	131	113	112	102	97	119	129	110	114	103	122	125	110	111	102
All . . . . .	138%	114%	114%	105%	101%	125%	129%	115%	116%	105%	129%	124%	115%	113%	104%
By Amount of Annual Income															
Under 60 . . . . .	158%	128%	148%	138%	145%	191%	159%	159%	155%	135%	172%	142%	153%	148%	139%
60-69 . . . . .	145	116	101	108	99	116	124	119	112	118	132	121	111	110	112
70 and over . . . . .	139	111	115	102	89	113	126	112	114	106	119	122	113	111	103
All . . . . .	145%	116%	115%	107%	95%	121%	129%	116%	116%	109%	130%	124%	116%	113%	106%

periods. Pension trust issues were excluded from the experience after 1950; the increasing importance of these issues and the different mortality experienced under them would obscure the trends. It was not possible to exclude the experience prior to 1950 under pension trust issues, but this experience was so small that its effect is negligible. Payee and nonpayee elections are shown separately; the experience on payee elections combines settlements arising from death claims and maturities and surrenders.

The mortality ratios in the experience for 1940-45 were converted from the 1937 Standard Annuity Table to the *a*-1949 Table and were first published on this basis in the last study.

For male payee elections the downward trend in aggregate mortality ratios by number and amount resumed in the 1960-65 period after slight increases in the 1955-60 period. However, a sizable increase occurred in the ratios for ages under 60 at the early durations.

For female payee elections the aggregate mortality ratios tended to level off, particularly at durations 6 and over. The ratios for ages under 60 did show sizable increases, but these ages account for only 13 per cent of the exposure.

Nonpayee elections generally showed definite decreases in mortality for both males and females.

No data are available for studying trends under settlements without a guaranteed period or refund provision.

#### MORTALITY RATIOS FOR LIFE INCOME SETTLEMENTS ON *a*-1949 TABLE WITH PROJECTION B

Tables 8 and 9 show the mortality ratios on refund settlements for males and females, respectively, based on the *a*-1949 Table with Projection B. The calculation of the basis for expected deaths is described on page 224.

For nonpayee elections arising from death claims the mortality ratios are still generally well above 100 per cent for both males and females, although some reductions have occurred since the last study. For all payee elections combined (excluding pension trust issues), the aggregate ratios were close to 100 per cent for both males and females. Settlements on female lives showed an increase of approximately 15 percentage points from the early durations, 1-5, to the later durations, 6 and over.

It should be noted that an adjustment to the *a*-1949 Table was originally indicated for life income settlements because of the somewhat different basic mortality level among holders of such settlements as compared with holders of immediate nonrefund annuities (see *TSA*, I, 434-42).

TABLE 8  
LIFE INCOME SETTLEMENTS WITH A GUARANTEED PERIOD OR A REFUND  
PROVISION—MALE LIVES  
EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES  
MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE  
WITH PROJECTION B

ATTAINED AGES	BY NUMBER OF CONTRACTS				BY AMOUNT OF ANNUAL INCOME			
	Durations				Durations			
	1-2	3-5	6 and Over	All	1-2	3-5	6 and Over	All
Nonpayee Elections Arising from Death Claims								
Under 50.....	*	*	<i>188%</i>	<i>190%</i>	*	*	<i>327%</i>	<i>270%</i>
50-59.....	*	<i>176%</i>	177	172	*	<i>255%</i>	169	174
60-69.....	<i>429%</i>	*	154	172	<i>491%</i>	*	145	164
70-79.....	*	*	118	117	*	*	114	111
80 and over.....	*	*	132	130	*	*	109	99
All.....	<i>237%</i>	<i>137%</i>	<i>144%</i>	<i>148%</i>	<i>176%</i>	<i>135%</i>	<i>140%</i>	<i>142%</i>
Payee Elections Arising from Maturities and Surrenders (Excluding Pension Trust Issues) and Death Claims								
Under 50.....	*	*	<i>207%</i>	<i>198%</i>	*	*	<i>194%</i>	<i>176%</i>
50-59.....	<i>141%</i>	<i>151%</i>	118	140	<i>127%</i>	<i>145%</i>	114	133
60-69.....	90	104	99	99	86	102	96	96
70-79.....	86	90	100	98	83	88	97	96
80 and over.....	67	99	101	100	64	103	99	99
All.....	<i>93%</i>	<i>104%</i>	<i>100%</i>	<i>100%</i>	<i>87%</i>	<i>101%</i>	<i>98%</i>	<i>97%</i>
Payee Elections Arising from Maturities and Surrenders Pension Trust Issues								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	<i>144%</i>	<i>330%</i>	<i>584%</i>	<i>290%</i>	<i>116%</i>	<i>352%</i>	<i>427%</i>	<i>240%</i>
60-69.....	137	132	195	139	118	116	185	121
70-79.....	80	100	115	112	75	104	108	105
80 and over.....	*	*	100	100	*	*	95	92
All.....	<i>131%</i>	<i>126%</i>	<i>120%</i>	<i>124%</i>	<i>111%</i>	<i>113%</i>	<i>110%</i>	<i>111%</i>

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

TABLE 9  
LIFE INCOME SETTLEMENTS WITH A GUARANTEED PERIOD OR A REFUND  
PROVISION—FEMALE LIVES  
EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES  
MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE  
WITH PROJECTION B

ATTAINED AGES	BY NUMBER OF CONTRACTS				BY AMOUNT OF ANNUAL INCOME			
	Durations				Durations			
	1-2	3-5	6 and Over	All	1-2	3-5	6 and Over	All
<b>Nonpayee Elections Arising from Death Claims</b>								
Under 50.....	*	258%	197%	196%	*	379%	162%	194%
50-59.....	166%	138	160	156	191%	133	156	157
60-69.....	122	107	121	119	128	103	135	128
70-79.....	104	117	109	109	98	102	112	109
80 and over.....	97	87	110	108	89	88	114	110
All.....	113%	110%	113%	113%	108%	102%	117%	115%
<b>Payee Elections Arising from Maturities and Surrenders (Excluding Pension Trust Issues) and Death Claims</b>								
Under 50.....	*	278%	174%	210%	*	181%	130%	170%
50-59.....	110%	137	166	147	133%	151	191	169
60-69.....	80	83	101	95	78	86	109	100
70-79.....	87	81	99	98	87	82	99	97
80 and over.....	74	90	102	102	70	73	103	101
All.....	85%	88%	101%	100%	86%	87%	103%	101%
<b>Payee Elections Arising from Maturities and Surrenders Pension Trust Issues</b>								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	*	*	*	269%	*	*	*	192%
60-69.....	99%	92%	150%	102	100%	107%	194%	115
70-79.....	*	97	128	121	*	71	115	106
80 and over.....	*	*	98	91	*	*	75	70
All.....	101%	96%	128%	113%	96%	100%	120%	109%

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

## MATURED DEFERRED ANNUITIES

The exposures, actual deaths, and expected deaths are shown in Table E of the Appendix. Males accounted for 44 per cent of the exposure by amount of annual income on non-pension trust issues and 91 per cent on pension trust issues. Of non-pension trust issues to males, 88 per cent by amount were with a guaranteed period or refund provision; the corresponding figure for females was 75 per cent. Almost all the pension trust issues, which amounted to 11 per cent of the total exposure, were with a

TABLE 10  
MATURED DEFERRED ANNUITIES  
EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES  
MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE  
(All Ages and Durations Combined)

	BY NUMBER OF CONTRACTS		BY AMOUNT OF ANNUAL INCOME	
	Males	Females	Males	Females
<i>With a guaranteed period or refund provision:</i>				
Other than pension trust . . .	104% (8,151)	90% (11,695)	103%	91%
Pension trust . . . . .	132 (4,683)	118 (315)	121	122
<i>Without a guaranteed period or refund provision:</i>				
Other than pension trust . . .	90 (1,218)	93 (4,551)	89	91
Pension trust . . . . .	117 (129)	150 (62)	122	124

NOTE.—Number of contracts terminated by death shown in parentheses.

guaranteed period or refund provision. It is noteworthy that two companies again contributed 75 per cent of the exposure on pension trust issues. Table 10 provides a summary of the aggregate mortality ratios and number of contracts terminated by death in each category.

*Male Lives*

Table 11 shows that in the aggregate the mortality on non-pension trust contracts without a guaranteed period or refund provision—about 90 per cent of expected—was 14 percentage points lower than that on contracts with such a provision.

The mortality on pension trust issues with a guaranteed period or refund provision was rather high, averaging about 130 per cent of expected by number of contracts. The highest mortality on these contracts was at ages 50-59 and was probably due to ill-health retirements. It should also



TABLE 11  
MATURED DEFERRED ANNUITIES—MALE LIVES  
EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES  
MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE

ATTAINED AGES	BY NUMBER OF CONTRACTS				BY AMOUNT OF ANNUAL INCOME			
	Durations				Durations			
	1-2	3-5	6 and Over	All	1-2	3-5	6 and Over	All
OTHER THAN PENSION TRUST ISSUES								
With a Guaranteed Period or Refund Provision								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	<i>144%</i>	<i>145%</i>	<i>69%</i>	<i>120%</i>	<i>178%</i>	<i>110%</i>	<i>62%</i>	<i>112%</i>
60-69.....	112	101	118	110	95	94	115	101
70-79.....	92	99	103	103	141	95	105	106
80 and over.....	*	*	103	103	*	*	98	98
All.....	109%	102%	104%	104%	113%	94%	103%	103%
Without a Guaranteed Period or Refund Provision								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	*	*	*	*	*	*	*	*
60-69.....	<i>70%</i>	<i>68%</i>	<i>86%</i>	<i>73%</i>	<i>114%</i>	<i>73%</i>	<i>102%</i>	<i>91%</i>
70-79.....	*	<i>125</i>	87	88	*	<i>139</i>	75	79
80 and over.....	*	*	103	103	*	*	105	106
All.....	68%	79%	93%	90%	99%	93%	87%	89%
PENSION TRUST ISSUES								
With a Guaranteed Period or Refund Provision								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	<i>382%</i>	<i>265%</i>	*	<i>336%</i>	<i>254%</i>	<i>258%</i>	*	<i>244%</i>
60-69.....	145	141	161%	143	115	147	188%	136
70-79.....	<i>116</i>	97	127	125	<i>69</i>	113	117	116
80 and over.....	*	*	115	114	*	*	110	109
All.....	152%	135%	127%	132%	109%	139%	117%	121%

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

be noted that the pension trust experience at all ages is affected by lives who were issued deferred annuities because they did not qualify for standard insurance benefits.

The ratios show a pronounced tendency to decrease with age. There are insufficient data on pension trust issues without a guaranteed period or refund provision to permit an analysis by age and duration.

### *Female Lives*

On non-pension trust issues, all the ratios in Table 12 for all ages combined are below 100 per cent. However, in contrast to the experience of male lives, and to the last study, female lives did not show a higher aggregate mortality ratio for contracts with a guaranteed period or refund provision than for contracts without such provisions. The relatively high mortality for nonrefund issues is because of the experience at durations 6 and over.

The mortality ratios on pension trust issues were considerably higher than those on non-pension trust issues.

#### TREND OF MORTALITY UNDER MATURED DEFERRED ANNUITIES

Table 13 presents summaries of the mortality ratios in broad age and duration groups for each of the last five study periods. Pension trust issues are excluded after 1950. It was not possible to exclude the experience prior to 1950 under pension trust issues, but this experience was so small that its effect is negligible. The conversion of the data for 1940-45 from the 1937 Standard Annuity Table to the *a*-1949 Table was described in the last study.

The data for both sexes generally show continued modest decreases in the mortality ratios for refund issues but leveling or increasing ratios for nonrefund issues. The experience on male lives shows little change over all from the 1955-60 period. The ratios for female lives show somewhat lower mortality for refund issues than in the 1955-60 period but higher mortality on the nonrefund issues.

#### MORTALITY RATIOS FOR MATURED DEFERRED ANNUITIES ON *a*-1949 TABLE WITH PROJECTION B

Tables 14 and 15 show the mortality ratios, for males and females, respectively, based on the *a*-1949 Table with Projection B. The calculation of the expected deaths is described on page 224. For male lives, the level of mortality and the pattern on refund contracts of decreasing ratios with age remain essentially the same as those in the last study. For female lives under other than pension trust issues, the aggregate mortality ratios

TABLE 12  
MATURED DEFERRED ANNUITIES—FEMALE LIVES  
EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES  
MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE

ATTAINED AGES	BY NUMBER OF CONTRACTS				BY AMOUNT OF ANNUAL INCOME			
	Durations				Durations			
	1-2	3-5	6 and Over	All	1-2	3-5	6 and Over	All
OTHER THAN PENSION TRUST ISSUES								
With a Guaranteed Period or Refund Provision								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	<i>101%</i>	<i>152%</i>	<i>81%</i>	<i>119%</i>	<i>217%</i>	<i>154%</i>	<i>96%</i>	<i>152%</i>
60-69.....	93	79	89	87	89	86	86	86
70-79.....	<i>80</i>	70	89	88	<i>81</i>	68	89	88
80 and over.....	*	*	92	92	*	*	95	95
All.....	92%	80%	90%	90%	93%	82%	91%	91%
Without a Guaranteed Period or Refund Provision								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	*	*	*	<i>96%</i>	*	*	*	<i>134%</i>
60-69.....	<i>70%</i>	<i>70%</i>	<i>91%</i>	82	<i>62%</i>	<i>66%</i>	<i>97%</i>	82
70-79.....	*	<i>87</i>	97	97	*	<i>77</i>	92	90
80 and over.....	*	*	94	94	*	*	95	95
All.....	63%	75%	95%	93%	57%	71%	94%	91%
PENSION TRUST ISSUES								
With a Guaranteed Period or Refund Provision								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	<i>991%</i>	*	*	<i>515%</i>	<i>354%</i>	*	*	<i>193%</i>
60-69.....	<i>119</i>	<i>96%</i>	*	95	97	<i>72%</i>	*	73
70-79.....	*	77	<i>127%</i>	124	*	52	<i>122%</i>	117
80 and over.....	*	*	<i>128</i>	<i>129</i>	*	*	223	225
All.....	154%	92%	120%	118%	118%	68%	140%	122%

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

TABLE 13

TREND OF MORTALITY UNDER MATURED DEFERRED ANNUITIES  
OTHER THAN PENSION TRUST ISSUES  
EXPERIENCE BETWEEN ANNIVERSARIES IN INDICATED YEARS  
MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE

ATTAINED AGES	DURATIONS 1-5					DURATIONS 6 AND OVER					ALL DURATIONS				
	1940-45	1945-50	1950-55	1955-60	1960-65	1940-45	1945-50	1950-55	1955-60	1960-65	1940-45	1945-50	1950-55	1955-60	1960-65
MALE CONTRACTS <i>With</i> A GUARANTEED PERIOD OR REFUND PROVISION															
By Number of Contracts															
Under 60 . . . . .	178%	157%	147%	144%	144%	*	211%	70%	97%	71%	173%	166%	130%	131%	119%
60-69 . . . . .	134	132	115	117	105	77%	168	104	111	118	130	138	112	115	110
70 and over . . . . .	105	122	103	87	98	134	111	103	105	103	117	114	103	103	103
All . . . . .	127%	130%	113%	109%	105%	124%	121%	103%	105%	104%	127%	126%	107%	106%	104%
By Amount of Annual Income															
Under 60 . . . . .	183%	172%	123%	111%	135%	*	167%	128%	121%	62%	185%	171%	124%	113%	111%
60-69 . . . . .	141	133	122	111	94	73%	137	107	109	115	136	134	118	111	101
70 and over . . . . .	101	100	95	87	111	121	115	100	108	103	108	109	99	104	103
All . . . . .	130%	123%	112%	101%	101%	113%	119%	101%	108%	103%	127%	121%	106%	106%	103%

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

TABLE 13—Continued

ATTAINED AGES	DURATIONS 1-5					DURATIONS 6 AND OVER					ALL DURATIONS				
	1940-45	1945-50	1950-55	1955-60	1960-65	1940-45	1945-50	1950-55	1955-60	1960-65	1940-45	1945-50	1950-55	1955-60	1960-65
MALE CONTRACTS <i>Without a GUARANTEED PERIOD OR REFUND PROVISION</i>															
By Number of Contracts															
211 Under 60.....	*	*	*	*	*	*	*	*	*	*	*	*	*	83%	*
60-69.....	104%	89%	79%	77%	69%	204%	222%	75%	95%	86%	114%	115%	78%	82	73%
70 and over...	102	115	62	96	106	102	104	104	93	94	103	107	99	93	94
All.....	103%	96%	74%	82%	75%	123%	123%	100%	93%	93%	108%	109%	91%	90%	90%
By Amount of Annual Income															
Under 60.....	*	*	*	*	*	*	*	*	*	*	*	*	*	173%	*
60-69.....	82%	83%	57%	67%	88%	268%	213%	46%	94%	102%	98%	110%	55%	75	91%
70 and over...	63	84	48	90	118	108	103	99	92	86	85	98	91	92	88
All.....	79%	83%	54%	78%	95%	136%	120%	91%	92%	87%	93%	102%	78%	88%	89%

TABLE 13—Continued

ATTAINED AGES	DURATIONS 1-5					DURATIONS 6 AND OVER					ALL DURATIONS				
	1940-45	1945-50	1950-55	1955-60	1960-65	1940-45	1945-50	1950-55	1955-60	1960-65	1940-45	1945-50	1950-55	1955-60	1960-65
FEMALE CONTRACTS With A GUARANTEED PERIOD OR REFUND PROVISION															
By Number of Contracts															
212 Under 60 . . . . .	189%	194%	127%	123%	136%	*	201%	110%	110%	111%	189%	195%	124%	120%	128%
60-69 . . . . .	125	117	116	97	84	129%	115	108	100	89	124	116	112	99	87
70 and over . . . . .	110	107	93	73	73	123	113	102	98	90	118	112	101	96	90
All . . . . .	124%	118%	111%	93%	84%	126%	114%	103%	98%	90%	124%	116%	105%	97%	90%
By Amount of Annual Income															
Under 60 . . . . .	153%	149%	128%	131%	176%	*	172%	199%	100%	130%	161%	153%	143%	123%	162%
60-69 . . . . .	140	112	113	88	87	111%	119	98	108	86	133	114	107	97	86
70 and over . . . . .	105	113	125	80	72	116	109	97	94	92	109	110	101	93	91
All . . . . .	131%	114%	117%	87%	86%	116%	112%	98%	96%	91%	125%	113%	104%	94%	91%

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

TABLE 13—Continued

ATTAINED AGES	DURATIONS 1-5					DURATIONS 6 AND OVER					ALL DURATIONS				
	1940-45	1945-50	1950-55	1955-60	1960-65	1940-45	1945-50	1950-55	1955-60	1960-65	1940-45	1945-50	1950-55	1955-60	1960-65
FEMALE CONTRACTS <i>Without</i> A GUARANTEED PERIOD OR REFUND PROVISION															
By Number of Contracts															
213 Under 60.....	*	152%	216%	116%	113%	*	*	*	330%	*	*	150%	223%	168%	104%
60-69.....	98%	89	75	69	70	169%	98%	95%	79	91%	108%	92	84	74	82
70 and over...	139	91	98	66	71	108	105	100	90	95	124	103	100	90	95
All.....	108%	91%	85%	70%	71%	124%	103%	99%	89%	95%	113%	99%	96%	87%	93%
By Amount of Annual Income															
Under 60.....	*	116%	128%	98%	151%	*	*	*	243%	*	*	118%	135%	127%	134%
60-69.....	93%	80	70	59	65	183%	101%	90%	77	97%	105%	86	78	68	82
70 and over...	102	75	112	69	65	102	100	94	89	93	104	95	96	88	92
All.....	97%	80%	82%	62%	67%	123%	100%	94%	87%	94%	105%	92%	91%	83%	91%

TABLE 14  
 MATURED DEFERRED ANNUITIES—MALE LIVES  
 EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES  
 MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE  
 WITH PROJECTION B

ATTAINED AGES	BY NUMBER OF CONTRACTS				BY AMOUNT OF ANNUAL INCOME			
	Durations				Durations			
	1-2	3-5	6 and Over	All	1-2	3-5	6 and Over	All
OTHER THAN PENSION TRUST ISSUES								
With a Guaranteed Period or Refund Provision								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	<i>168%</i>	<i>169%</i>	<i>80%</i>	<i>139%</i>	<i>207%</i>	<i>128%</i>	<i>72%</i>	<i>130%</i>
60-69.....	128	115	134	125	109	107	131	116
70-79.....	103	110	113	113	158	106	116	117
80 and over.....	*	*	107	107	*	*	102	102
All.....	<i>124%</i>	<i>116%</i>	<i>112%</i>	<i>113%</i>	<i>128%</i>	<i>107%</i>	<i>112%</i>	<i>112%</i>
Without a Guaranteed Period or Refund Provision								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	*	*	*	*	*	*	*	*
60-69.....	<i>81%</i>	<i>77%</i>	<i>98%</i>	<i>83%</i>	<i>130%</i>	<i>83%</i>	<i>117%</i>	<i>104%</i>
70-79.....	*	<i>139</i>	96	97	*	<i>154</i>	83	86
80 and over.....	*	*	107	107	*	*	109	110
All.....	<i>77%</i>	<i>89%</i>	<i>100%</i>	<i>98%</i>	<i>113%</i>	<i>105%</i>	<i>94%</i>	<i>97%</i>
PENSION TRUST ISSUES								
With a Guaranteed Period or Refund Provision								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	<i>445%</i>	<i>308%</i>	*	<i>391%</i>	<i>295%</i>	<i>300%</i>	*	<i>284%</i>
60-69.....	167	160	<i>184%</i>	164	131	167	<i>214%</i>	155
70-79.....	<i>129</i>	107	141	138	76	125	129	127
80 and over.....	*	*	120	119	*	*	115	114
All.....	<i>174%</i>	<i>153%</i>	<i>139%</i>	<i>147%</i>	<i>125%</i>	<i>157%</i>	<i>127%</i>	<i>133%</i>

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.



TABLE 15  
 MATURED DEFERRED ANNUITIES—FEMALE LIVES  
 EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES  
 MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE  
 WITH PROJECTION B

ATTAINED AGES	BY NUMBER OF CONTRACTS				BY AMOUNT OF ANNUAL INCOME			
	Durations				Durations			
	1-2	3-5	6 and Over	All	1-2	3-5	6 and Over	All
OTHER THAN PENSION TRUST ISSUES								
With a Guaranteed Period or Refund Provision								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	<i>118%</i>	<i>177%</i>	<i>95%</i>	<i>138%</i>	<i>252%</i>	<i>179%</i>	<i>112%</i>	<i>177%</i>
60-69.....	107	91	101	99	102	98	98	98
70-79.....	89	78	97	97	91	75	98	97
80 and over.....	*	*	95	95	*	*	98	98
All.....	106%	91%	97%	97%	106%	93%	98%	98%
Without a Guaranteed Period or Refund Provision								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	*	*	*	<i>112%</i>	*	*	*	<i>156%</i>
60-69.....	80%	80%	103%	94	72%	75%	110%	93%
70-79.....	*	97	107	106	*	85	101	99
80 and over.....	*	*	97	97	*	*	99	98
All.....	72%	85%	102%	100%	65%	81%	100%	98%
PENSION TRUST ISSUES								
With a Guaranteed Period or Refund Provision								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	<i>1,134%</i>	*	*	<i>591%</i>	<i>409%</i>	*	*	<i>225%</i>
60-69.....	136	<i>110%</i>	*	109	<i>112</i>	<i>82%</i>	*	83
70-79.....	*	85	<i>140%</i>	137	*	57	<i>135%</i>	128
80 and over.....	*	*	<i>134</i>	<i>135</i>	*	*	<i>233</i>	<i>235</i>
All.....	176%	104%	132%	131%	135%	76%	153%	135%

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

on nonrefund issues increased approximately 10 percentage points over the last study to become approximately equal to the ratios on refund issues.

COMPARISON OF LIFE INCOME SETTLEMENTS  
AND MATURED DEFERRED ANNUITIES

Table 16 presents a comparison of (A) life income settlements arising from death claims (payee elections only), (B) life income settlements arising from maturities and surrenders, (C) matured deferred annuities, and (D) individual immediate annuities, all with a guaranteed period or refund provision. Pension trust issues in the second and third categories have been excluded from Table 16 and are shown separately in Table 17. It should be noted that individual immediate annuity experience is taken from the study published in the *1964 Reports* and covers experience between 1958 and 1963 anniversaries.

Table 16 shows that for all ages combined the lowest mortality for both males and females was experienced on life income settlements arising from maturities and surrenders. The highest mortality for males was on matured deferred annuities at the early durations and on settlements arising from death at the later durations. For females the highest mortality was experienced on individual immediate annuities.

Table 17 shows that, on pension trust issues, mortality on matured deferred annuities again exceeded that on settlements arising from maturities and surrenders for both males and females. This may well arise from situations in which an annual premium deferred annuity was issued to lives who could not qualify for standard insurance benefits.

SELECT MORTALITY

In order to assemble a substantial volume of data with which to compare mortality ratios by duration as a means of studying the effects of "selection" (herein used to mean the trend in mortality by duration), Tables 18, 19, 20, and 21 were prepared by combining the experience, by amount of annual income, between 1950 and 1965 anniversaries.

On life income settlements with a guaranteed or refund provision arising from death claims (Table 18), there appears to be distinct selection under the payee elections, although the data are limited for males. Under nonpayee elections the effects of selection are negligible for both males and females.

On life income settlements with a guaranteed period or refund provision arising from maturities and surrenders (Table 19), the effects of selection

TABLE 16  
COMPARISON OF CONTRACTS WITH A  
GUARANTEED PERIOD OR REFUND PROVISION

EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES

(A) PAYEE ELECTION LIFE INCOME SETTLEMENTS ARISING FROM DEATH CLAIMS

(B) LIFE INCOME SETTLEMENTS ARISING FROM MATURITIES AND SURRENDERS—OTHER THAN PENSION TRUST ISSUES

(C) MATURED DEFERRED ANNUITIES—OTHER THAN PENSION TRUST ISSUES

EXPERIENCE BETWEEN 1958 AND 1963 ANNIVERSARIES†

(D) INDIVIDUAL IMMEDIATE REFUND ANNUITIES

MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE

ATTAINED AGES	BY NUMBER OF CONTRACTS								BY AMOUNT OF ANNUAL INCOME							
	Males				Females				Males				Females			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
	Durations 1-5															
Under 50.....	*	*	*	*	<i>288%</i>	*	*	*	*	*	*	*	<i>259%</i>	*	*	*
50-59.....	*	<i>125%</i>	<i>145%</i>	<i>170%</i>	120	<i>101%</i>	<i>135%</i>	<i>139%</i>	*	<i>118%</i>	<i>136%</i>	<i>118%</i>	137	<i>111%</i>	<i>176%</i>	<i>113%</i>
60-69.....	<i>99%</i>	86	105	102	75	70	84	82	<i>96%</i>	84	94	102	74	72	87	83
70-79.....	<i>75</i>	80	97	90	83	55	72	91	<i>84</i>	78	110	98	80	57	72	103
80 and over.....	*	85	*	83	85	<i>68</i>	*	98	*	87	*	86	70	<i>64</i>	*	92
All.....	<i>95%</i>	<i>88%</i>	<i>105%</i>	<i>93%</i>	<i>84%</i>	<i>71%</i>	<i>84%</i>	<i>93%</i>	<i>90%</i>	<i>85%</i>	<i>101%</i>	<i>96%</i>	<i>80%</i>	<i>73%</i>	<i>86%</i>	<i>96%</i>

\* Fewer than 10 contracts terminated by death.

† TSA 1964 Reports, pp. 98-99.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

TABLE 16- *Continued*

ATTAINED AGES	BY NUMBER OF CONTRACTS								BY AMOUNT OF ANNUAL INCOME							
	Males				Females				Males				Females			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
Durations 6 and Over																
Under 50.....	*	*	*	172%	186%	*	*	303%	*	*	*	150%	145%	*	*	387%
50-59.....	125%	94%	69%	93	155	111%	81%	149	154%	76%	62%	121	169	149%	96%	147
60-69.....	103	86	118	119	96	82	89	120	85	84	115	138	102	84	86	118
70-79.....	105	90	103	110	95	85	89	104	138	87	105	115	95	82	89	107
80 and over.....	107	97	103	100	99	97	92	102	96	95	98	103	101	95	95	105
All.....	107%	91%	104%	104%	98%	89%	90%	103%	117%	89%	103%	109%	100%	87%	91%	106%
All Durations																
Under 50.....	*	230%	*	173%	222%	*	*	296%	*	242%	*	169%	190%	*	*	324%
50-59.....	132%	119	120%	109	144	105%	119%	147	141%	113	112%	120	157	124%	152%	135
60-69.....	102	86	110	113	91	77	87	112	90	84	101	121	95	79	86	108
70-79.....	102	89	103	108	94	84	88	103	130	86	106	111	93	81	88	107
80 and over.....	106	96	103	99	99	97	92	102	95	95	98	101	100	94	95	104
All.....	105%	91%	104%	103%	97%	87%	90%	103%	116%	88%	103%	107%	97%	85%	91%	105%

\*Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

TABLE 17

COMPARISON OF CONTRACTS WITH A  
GUARANTEED PERIOD OR REFUND PROVISION(A) LIFE INCOME SETTLEMENTS ARISING FROM MATURITIES AND  
SURRENDERS—PENSION TRUST ISSUES(B) MATURED DEFERRED ANNUITIES—PENSION TRUST ISSUES  
EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES  
MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE

ATTAINED AGES	BY NUMBER OF CONTRACTS				BY AMOUNT OF ANNUAL INCOME			
	Males		Females		Males		Females	
	A	B	A	B	A	B	A	B
Durations 1-5								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	203%	343%	266%	576%	188%	255%	196%	183%
60-69.....	117	142	83	105	103	134	91	83
70-79.....	86	100	79	99	86	103	55	88
80 and over.....	*	*	*	*	*	*	*	*
All.....	113%	141%	86%	114%	99%	128%	87%	86%
Durations 6 and Over								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	503%	*	*	*	367%	*	*	*
60-69.....	171	161%	131%	*	163	188%	170%	*
70-79.....	104	127	116	127%	98	117	104	122%
80 and over.....	95	115	94	128	90	110	72	223
All.....	109%	127%	116%	120%	100%	117%	109%	140%
All Durations								
Under 50.....	*	*	*	*	*	*	*	*
50-59.....	249%	336%	233%	515%	206%	244%	166%	193%
60-69.....	122	143	90	95	106	136	101	73
70-79.....	101	125	109	124	95	116	95	117
80 and over.....	95	114	87	129	87	109	67	225
All.....	111%	132%	100%	118%	100%	121%	97%	122%

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

TABLE 18  
 LIFE INCOME SETTLEMENTS WITH A  
 GUARANTEED PERIOD OR A REFUND PROVISION  
 ARISING FROM DEATH CLAIMS  
 EXPERIENCE BETWEEN 1950 AND 1965 ANNIVERSARIES  
 MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE  
 (By Amount of Annual Income)

ATTAINED AGES	DURATIONS				
	1-2	3-5	1-5	6 and Over	All
Male Lives Payee Elections					
Under 60.....	*	146%	120%	136%	131%
60-69.....	106%	69	83	91	88
70 and over.....	*	114	100	120	117
All.....	88%	101%	96%	116%	112%
Female Lives Payee Elections					
Under 60.....	108%	116%	113%	151%	134%
60-69.....	69	94	85	103	97
70 and over.....	79	81	81	99	97
All.....	78%	88%	85%	101%	98%
Male Lives Nonpayee Elections					
Under 60.....	69%	348%	238%	211%	219%
60-69.....	264	128	186	117	131
70 and over.....	103	122	113	123	121
All.....	128%	205%	172%	143%	150%
Female Lives Nonpayee Elections					
Under 60.....	149%	140%	144%	149%	147%
60-69.....	97	106	102	116	111
70 and over.....	95	101	99	109	107
All.....	101%	106%	104%	112%	110%

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

TABLE 19  
 LIFE INCOME SETTLEMENTS WITH A  
 GUARANTEED PERIOD OR A REFUND PROVISION  
 ARISING FROM MATURITIES AND SURRENDERS  
 EXPERIENCE BETWEEN 1950 AND 1965 ANNIVERSARIES  
 MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE  
 (By Amount of Annual Income)

ATTAINED AGES	DURATIONS				
	1-2	3-5	1-5	6 and Over	All
Male Lives Other than Pension Trust Issues					
Under 60.....	83%	112%	100%	100%	100%
60-69.....	82	91	87	92	89
70 and over.....	91	90	90	94	94
All.....	84%	92%	89%	94%	92%
Female Lives Other than Pension Trust Issues					
Under 60.....	82%	98%	92%	122%	102%
60-69.....	73	81	78	84	81
70 and over.....	98	81	87	89	89
All.....	79%	83%	81%	88%	87%
Male Lives Pension Trust Issues					
Under 60.....	157%	231%	185%	285%	192%
60-69.....	102	101	102	157	104
70 and over.....	72	91	85	97	94
All.....	97%	99%	98%	100%	99%
Female Lives Pension Trust Issues					
Under 60.....	*	*	170%	*	151%
60-69.....	95%	105%	100	152%	105
70 and over.....	*	75	60	96	87
All.....	87%	98%	93%	103%	97%

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

TABLE 20  
 MATURED DEFERRED ANNUITIES WITH A  
 GUARANTEED PERIOD OR A REFUND PROVISION  
 EXPERIENCE BETWEEN 1950 AND 1965 ANNIVERSARIES  
 MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE  
 (By Amount of Annual Income)

ATTAINED AGES	DURATIONS				
	1-2	3-5	1-5	6 and Over	All
Male Lives Other than Pension Trust Issues					
Under 60.....	128%	117%	121%	105%	117%
60-69.....	109	109	109	111	109
70 and over.....	106	91	96	104	103
All.....	109%	102%	104%	105%	105%
Female Lives Other than Pension Trust Issues					
Under 60.....	153%	135%	142%	140%	141%
60-69.....	95	96	96	96	96
70 and over.....	89	93	91	93	93
All.....	97%	96%	97%	94%	94%
Male Lives Pension Trust Issues					
Under 60.....	385%	378%	383%	*	368%
60-69.....	118	140	130	203%	132
70 and over.....	93	103	100	117	113
All.....	114%	127%	122%	118%	120%
Female Lives Pension Trust Issues					
Under 60.....	252%	*	147%	*	151%
60-69.....	115	86%	99	53%	92
70 and over.....	125	140	135	141	139
All.....	120%	106%	111%	133%	123%

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.



TABLE 21  
 MATURED DEFERRED ANNUITIES WITHOUT A  
 GUARANTEED PERIOD OR A REFUND PROVISION  
 EXPERIENCE BETWEEN 1950 AND 1965 ANNIVERSARIES  
 MORTALITY RATIOS ON *a*-1949 ULTIMATE TABLE  
 (By Amount of Annual Income)

ATTAINED AGES	DURATIONS				
	1-2	3-5	1-5	6 and Over	All
Male Lives Other than Pension Trust Issues					
Under 60.....	*	186%	119%	*	96%
60-69.....	67%	75	72	83%	75
70 and over.....	39	109	88	90	90
All.....	60%	87%	77%	89%	86%
Female Lives Other than Pension Trust Issues					
Under 60.....	123%	126%	125%	163%	132%
60-69.....	58	68	65	88	76
70 and over.....	65	87	81	92	92
All.....	61%	75%	70%	92%	88%
Male Lives Pension Trust Issues					
Under 60.....	*	*	*	*	*
60-69.....	177%	130%	151%	*	153%
70 and over.....	*	168	146	109%	117
All.....	152%	144%	147%	112%	127%
Female Lives Pension Trust Issues					
Under 60.....	*	*	*	*	*
60-69.....	317%	*	189%	*	177%
70 and over.....	*	*	*	82%	71
All.....	250%	58%	133%	81%	101%

\* Fewer than 10 contracts terminated by death.

NOTE.—Italics indicate fewer than 50 but not fewer than 10 contracts terminated by death.

are not clearly evident but in most age groups appear to be more pronounced on pension trust issues than on other types of business.

On matured deferred annuities with a guaranteed period or refund provision (Table 20), selection appears to have an effect on male pension trust issues above age 60. For other than pension trust issues, there is no apparent effect of selection.

On matured deferred annuities without a guaranteed period or refund provision (Table 21), the effects of selection manifest themselves to some degree on other than pension trust issues but seem to be short-lived. On pension trust issues the effects of selection are not clearly evident.

The data on life income settlements without a guaranteed period or refund provisions are not sufficient to study the effects of selection.

The effects of selection, where present, within a given plan with a refund provision are not likely to extend beyond the guaranteed period, and thus, their financial impact is limited on such contracts. On contracts without a guaranteed period or refund provision the effects of selection could, of course, have a greater financial effect depending on the extent of the selection.

## APPENDIX

### MORTALITY IMPROVEMENT 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 factors reflecting the improvement in mortality, according to Projection B, through the period covered by the present study. The formula

$$\frac{1}{2} \left[ \left( 1 - \frac{S_x}{100} \right)^{1960-1950} + \left( 1 - \frac{S_x}{100} \right)^{1965-1950} \right]$$

was used to approximate the average improvement factor for the period from 1960 to 1965 anniversaries. This is similar to the formula used for the last study of Mortality under Individual Immediate Annuities (*TSA 1964 Reports*, p. 93).

The accompanying table shows the annual rates of improvement in mortality  $S_x$  according to Projection B and the resulting projection factors which were applied to expected deaths for the 1960-65 experience.

PROJECTION B  
1960-65 ANNIVERSARIES

Attained Age	Rate of Decrease per Year in Mortality Rate	Reduction in Mortality Rate from 1950 through 1960-65
10-50.....	1.250%	14.507%
51.....	1.245	14.454
52.....	1.240	14.400
53.....	1.235	14.346
54.....	1.230	14.292
55.....	1.225	14.238
56.....	1.220	14.185
57.....	1.215	14.130
58.....	1.210	14.076
59.....	1.205	14.022
60.....	1.200	13.968
61.....	1.18	13.752
62.....	1.16	13.534
63.....	1.14	13.316
64.....	1.12	13.098
65.....	1.10	12.880
66.....	1.07	12.551
67.....	1.04	12.220
68.....	1.01	11.889
69.....	0.98	11.556
70.....	0.95	11.222
71.....	0.91	10.775
72.....	0.87	10.325
73.....	0.83	9.875
74.....	0.79	9.421
75.....	0.75	8.965
76.....	0.70	8.392
77.....	0.65	7.816
78.....	0.60	7.236
79.....	0.55	6.653
80.....	0.50	6.066
81.....	0.45	5.475
82.....	0.40	4.882
83.....	0.35	4.284
84.....	0.30	3.683
85.....	0.25	3.078
86.....	0.20	2.470
87.....	0.15	1.858
88.....	0.10	1.242
89.....	0.05	0.623
90 and over...	0.00	0.000

TABLE A  
CONTRIBUTING COMPANIES  
PROPORTIONS OF TOTAL EXPOSURES\*

COMPANY	LIFE INCOME SETTLEMENTS WITH A GUARANTEED PERIOD OR A REFUND PROVISION ARISING FROM:			LIFE INCOME SETTLEMENTS WITHOUT A GUARANTEED PERIOD OR A REFUND PROVISION ARISING FROM:			MATURED DEFERRED ANNUITIES	
	Death Claims	Maturities and Surrenders		Death Claims	Maturities and Surrenders		Other than Pension Trust Issues	Pension Trust Issues
		Other than Pension Trust Issues	Pension Trust Issues		Other than Pension Trust Issues	Pension Trust Issues		
Northwestern Mutual.....	11.8%	7.7%	36.4%	0.1%	0.5%	0.2%		30.0%
Equitable (N. Y.)	10.6	4.7	4.2				38.6%	6.0
New York Life.....	10.0	11.2					12.0	
Prudential.....	9.2	3.5					3.2	
Mutual Life.....	7.5	3.7					4.1	0.1
Metropolitan.....	6.1	6.7						
Penn Mutual.....	5.4	6.1	3.5	8.2	14.5	3.5	5.0	0.4
Mutual Benefit.....	5.3	4.6	7.4		0.4		0.1	2.6
Travelers.....	5.2	15.6		4.5	9.7		3.4	
New England Life.....	5.2	8.2	21.2				2.9	3.0
Aetna.....	4.2	6.8	2.5	1.2	0.1		0.8	
Massachusetts Mutual.....	4.2	5.6	10.5	28.0	27.7	32.6	8.6	3.7
Union Central.....	2.9	2.0	0.4				2.0	1.2
John Hancock.....	2.6	2.5	6.0	7.3	10.0	43.5	5.3	45.9
Provident Mutu- al.....	2.5	3.1	0.3	6.3	5.9		2.2	0.1
Connecticut Mu- tual.....	2.3	3.4	3.4	5.0	11.6	9.8	2.9	1.7
Sun Life of Cana- da.....	2.0	1.2	0.3	1.5	1.5	0.9	6.1	0.9
National Life.....	1.7	1.3	3.5	18.1	7.8	9.4	1.5	3.9
Lincoln National	1.3	2.1	0.4	19.8	10.3	0.1	1.3	0.5
Total.....	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

\* By amounts of annual income.

**TABLE B**  
**DISTRIBUTION OF COMPANIES' AGGREGATE MORTALITY RATIOS**  
**BY NUMBER OF CONTRACTS**  
**LINE A: NUMBER OF COMPANIES**  
**LINE B: PROPORTION OF CONTRACTS TERMINATED BY DEATH**

	ALL COMPANIES MORTALITY RATIO*	PERCENTAGE POINTS BELOW ALL COMPANIES RATIO				PERCENTAGE POINTS ABOVE ALL COMPANIES RATIO			
		Over 20	11-20	6-10	0-5	0-5	6-10	11-20	Over 20
		<b>LIFE INCOME SETTLEMENTS WITH A GUARANTEED PERIOD OR REFUND PROVISION ARISING FROM DEATH CLAIMS</b>							
<b>Male Lives</b>									
Payee elections . . . . .	105% A (320) B	4 14.7%	3 12.2%	1 11.3%	3 29.6%	1 2.2%	0 0%	2 9.1%	5 20.9%
Nonpayee elections . . . . .	133% A (346) B	7 13.3%	1 7.5%	0 0%	2 12.7%	0 0%	1 3.2%	4 25.1%	4 38.2%
<b>Female Lives</b>									
Payee elections . . . . .	97% A (9,165) B	0 0%	1 1.9%	6 24.7%	4 34.4%	6 26.0%	1 7.3%	0 0%	1 5.7%
Nonpayee elections . . . . .	104% A (8,357) B	0 0%	3 17.2%	3 11.0%	5 19.7%	4 20.8%	2 25.1%	0 0%	2 6.2%
<b>LIFE INCOME SETTLEMENTS WITH A GUARANTEED PERIOD OR REFUND PROVISION ARISING FROM MATURITIES AND SURRENDERS</b>									
<b>Male Lives</b>									
Other than pension trust issues . . . . .	91% A (12,418) B	0 0%	1 1.0%	2 8.5%	8 50.4%	6 34.7%	1 3.9%	1 1.5%	0 0%
Pension trust issues . . . . .	111% A (4,162) B	3 8.6%	3 11.7%	0 0%	3 2.9%	3 46.3%	0 0%	3 27.2%	0 3.3%
<b>Female Lives</b>									
Other than pension trust issues . . . . .	87% A (6,723) B	0 0%	4 10.8%	5 17.2%	1 22.1%	4 28.2%	2 10.1%	2 7.2%	1 4.4%
Pension trust issues . . . . .	100% A (313) B	3 5.8%	4 21.1%	1 24.9%	1 0%	0 0%	0 0%	4 35.4%	2 12.8%
<b>MATURED DEFERRED ANNUITIES WITH A GUARANTEED PERIOD OR REFUND PROVISION</b>									
<b>Male Lives</b>									
Other than pension trust issues . . . . .	104% A (8,151) B	1 3.4%	3 13.5%	2 11.5%	0 0%	3 14.0%	4 49.0%	3 8.3%	1 0.3%
Pension trust issues . . . . .	132% A (4,683) B	3 3.5%	2 26.8%	1 1.0%	1 5.0%	0 0%	1 57.0%	2 3.2%	4 3.5%
<b>Female Lives</b>									
Other than pension trust issues . . . . .	90% A (11,695) B	1 8.7%	2 4.0%	0 0%	4 8.7%	6 70.9%	0 0%	2 5.4%	2 2.3%
Pension trust issues . . . . .	118% A (315) B	2 2.9%	1 6.0%	0 0%	1 44.5%	1 23.2%	2 2.2%	2 9.5%	3 11.7%
<b>MATURED DEFERRED ANNUITIES WITHOUT A GUARANTEED PERIOD OR REFUND PROVISION</b>									
<b>Male Lives</b>									
Other than pension trust issues . . . . .	90% A (1,218) B	1 3.6%	3 16.3%	2 2.6%	1 49.6%	2 5.0%	3 11.8%	0 0%	4 11.1%
Pension trust issues . . . . .	117% A (129) B	4 11.6%	1 1.6%	1 69.0%	0 0%	0 0%	0 0%	0 0%	3 17.8%
<b>Female Lives</b>									
Other than pension trust issues . . . . .	93% A (4,551) B	4 4.7%	2 2.3%	1 0.7%	3 17.5%	1 63.8%	0 0%	2 4.1%	3 6.9%
Pension trust issues . . . . .	150% A (62) B	1 11.3%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 88.7%

\* Mortality Ratios on  $\alpha$ -1949 Ultimate Table. Number of contracts terminated by death shown in parentheses.

TABLE C

LIFE INCOME SETTLEMENTS WITH A GUARANTEED  
PERIOD OR REFUND PROVISION ARISING  
FROM DEATH CLAIMS—MALE LIVES  
EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES—PAYEE ELECTIONS  
(Expected Deaths on a-1949 Ultimate Table)

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Duration 1:								
Under 50.....	63	\$ 34,587	0	\$ 0	0.17	\$ 103	0%	0%
50-59.....	117	63,987	2	457	1.19	640	168	71
60-69.....	245	138,547	6	2,802	5.36	3,063	112	91
70-79.....	41	20,257	2	2,178	2.03	990	99	220
80 and over.....	1	2,220	0	0	0.09	190	0	0
All ages.....	467	\$ 259,598	10	\$ 5,437	8.84	\$ 4,986	113%	109%
Duration 2:								
Under 50.....	71	\$ 39,434	0	\$ 0	0.21	\$ 115	0%	0%
50-59.....	116	62,186	2	750	1.23	642	163	117
60-69.....	230	125,833	6	3,557	5.26	2,929	114	121
70-79.....	41	28,618	0	0	1.98	1,353	0	0
80 and over.....	3	1,152	2	910	0.27	108	741	843
All ages.....	461	\$ 257,223	10	\$ 5,217	8.95	\$ 5,147	112%	101%
Duration 3:								
Under 50.....	66	\$ 40,300	0	\$ 0	0.19	\$ 123	0%	0%
50-59.....	116	56,926	0	0	1.25	605	0	0
60-69.....	235	137,252	5	1,624	5.68	3,401	88	48
70-79.....	54	36,157	1	274	2.61	1,726	38	16
80 and over.....	2	589	0	0	0.21	66	0	0
All ages.....	473	\$ 271,224	6	\$ 1,898	9.94	\$ 5,921	60%	32%
Duration 4:								
Under 50.....	62	\$ 42,048	0	\$ 0	0.19	\$ 127	0%	0%
50-59.....	109	55,096	2	758	1.21	601	165	126
60-69.....	247	137,936	5	3,128	6.17	3,558	81	88
70-79.....	65	42,671	4	2,774	3.11	2,007	129	138
80 and over.....	7	3,567	0	0	0.85	436	0	0
All ages.....	490	\$ 281,318	11	\$ 6,660	11.53	\$ 6,729	95%	99%
Duration 5:								
Under 50.....	70	\$ 46,955	0	\$ 0	0.22	\$ 145	0%	0%
50-59.....	100	55,144	3	1,185	1.08	603	278	197
60-69.....	229	125,173	6	4,633	5.87	3,376	102	137
70-79.....	75	51,988	3	1,902	3.60	2,451	83	78
80 and over.....	11	4,827	0	0	1.35	594	0	0
All ages.....	485	\$ 284,087	12	\$ 7,720	12.12	\$ 7,169	99%	108%
Durations 1-5:								
Under 50.....	332	\$ 203,324	0	\$ 0	0.98	\$ 613	0%	0%
50-59.....	558	293,339	9	3,150	5.96	3,091	151	102
60-69.....	1,186	664,741	28	15,744	28.34	16,327	99	96
70-79.....	276	179,691	10	7,128	13.33	8,527	75	84
80 and over.....	24	12,355	2	910	2.77	1,394	72	65
All ages.....	2,376	\$ 1,353,450	49	\$ 26,932	51.38	\$ 29,952	95%	90%
Durations 6 and over:								
Under 50.....	991	\$ 559,472	4	\$ 947	3.37	\$ 1,821	119%	52%
50-59.....	1,668	914,992	22	14,831	17.61	9,657	125	154
60-69.....	2,091	940,908	50	18,515	48.34	21,876	103	85
70-79.....	2,151	1,081,543	116	75,836	110.63	55,065	105	138
80 and over.....	562	257,434	79	30,728	73.73	32,057	107	96
All ages.....	7,463	\$ 3,754,349	271	\$ 140,857	253.68	\$ 120,476	107%	117%
All durations:								
Under 50.....	1,323	\$ 762,796	4	\$ 947	4.35	\$ 2,434	92%	39%
50-59.....	2,226	1,208,331	31	17,981	23.57	12,748	132	141
60-69.....	3,277	1,605,649	78	34,259	76.68	38,203	102	90
70-79.....	2,427	1,261,234	126	82,964	123.96	63,592	102	130
80 and over.....	586	269,789	81	31,638	76.50	33,451	106	95
All ages.....	9,839	\$ 5,107,799	320	\$ 167,789	305.06	\$ 150,428	105%	116%

TABLE C—Continued  
FEMALE LIVES—PAYEE ELECTIONS

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Duration 1:								
Under 50.....	725	\$ 401,328	3	\$ 667	1.46	\$ 796	205%	84%
50-59.....	2,639	1,592,562	8	5,515	13.23	8,073	60	68
60-69.....	4,444	3,077,119	37	24,500	53.44	37,819	69	65
70-79.....	2,045	1,649,706	45	36,788	64.11	52,059	70	71
80 and over.....	195	160,605	13	10,177	15.31	12,249	85	83
All ages.....	10,048	\$ 6,881,320	106	\$ 77,647	147.55	\$ 110,996	72%	70%
Duration 2:								
Under 50.....	683	\$ 384,514	4	\$ 4,403	1.36	\$ 770	294%	572%
50-59.....	2,532	1,452,080	14	12,265	12.73	7,377	110	166
60-69.....	4,831	3,238,493	44	30,901	59.14	40,650	74	76
70-79.....	2,244	1,808,334	69	53,265	71.40	58,110	97	92
80 and over.....	269	230,692	14	11,764	21.52	18,259	65	64
All ages.....	10,559	\$ 7,114,113	145	\$ 112,598	166.15	\$ 125,166	87%	90%
Duration 3:								
Under 50.....	623	\$ 363,282	7	\$ 2,908	1.25	\$ 719	560%	404%
50-59.....	2,437	1,362,472	13	6,365	12.38	6,999	105	91
60-69.....	4,994	3,206,502	57	36,607	62.11	40,561	92	90
70-79.....	2,471	1,979,187	50	41,700	77.26	62,472	65	67
80 and over.....	343	292,373	27	21,699	26.63	22,989	101	94
All ages.....	10,868	\$ 7,203,816	154	\$ 109,279	179.63	\$ 133,740	86%	82%
Duration 4:								
Under 50.....	572	\$ 323,675	3	\$ 458	1.12	\$ 645	268%	71%
50-59.....	2,296	1,252,604	24	16,525	11.84	6,521	203	253
60-69.....	5,134	3,267,737	40	25,878	65.14	41,561	61	62
70-79.....	2,818	2,212,798	83	67,737	88.60	70,390	94	96
80 and over.....	390	346,638	32	16,808	31.78	28,126	101	60
All ages.....	11,210	\$ 7,403,452	182	\$ 127,406	198.48	\$ 147,243	92%	87%
Duration 5:								
Under 50.....	551	\$ 288,867	1	\$ 646	1.07	\$ 577	93%	112%
50-59.....	2,258	1,194,315	15	7,543	11.66	6,203	129	122
60-69.....	5,280	3,271,142	51	32,302	67.30	42,117	76	77
70-79.....	3,177	2,332,274	85	55,258	99.88	74,722	85	74
80 and over.....	459	421,593	27	20,673	37.82	35,084	71	59
All ages.....	11,725	\$ 7,508,191	179	\$ 116,422	217.73	\$ 158,703	82%	73%
Durations 1-5:								
Under 50.....	3,154	\$ 1,761,666	18	\$ 9,082	6.26	\$ 3,507	288%	259%
50-59.....	12,162	6,854,033	74	48,213	61.84	35,173	120	137
60-69.....	24,683	16,060,993	229	150,188	307.13	202,708	75	74
70-79.....	12,755	9,982,299	332	254,748	401.25	317,753	83	80
80 and over.....	1,656	1,451,901	113	81,121	133.06	116,707	85	70
All ages.....	54,410	\$ 36,110,892	766	\$ 543,352	909.54	\$ 675,848	84%	80%
Durations 6 and over:								
Under 50.....	5,581	\$ 2,655,530	21	\$ 7,636	11.31	\$ 5,270	186%	145%
50-59.....	24,512	11,042,627	198	102,912	127.54	60,810	155	169
60-69.....	78,488	42,138,367	998	578,298	1,044.36	564,286	96	102
70-79.....	103,902	57,828,361	3,380	1,879,579	3,562.65	1,985,817	95	95
80 and over.....	39,436	22,016,618	3,802	2,166,940	3,823.21	2,142,159	99	101
All ages.....	251,919	\$136,281,503	8,399	\$4,735,365	8,569.07	\$4,758,342	98%	100%
All durations:								
Under 50.....	8,735	\$ 4,417,196	39	\$ 16,718	17.57	\$ 8,777	222%	190%
50-59.....	36,674	18,496,660	272	151,125	189.38	95,983	144	157
60-69.....	103,171	58,199,360	1,227	728,486	1,351.49	766,994	91	95
70-79.....	116,657	67,810,660	3,712	2,134,327	3,963.90	2,303,570	94	93
80 and over.....	41,092	23,468,519	3,915	2,248,061	3,956.27	2,258,866	99	100
All ages.....	306,329	\$172,392,395	9,165	\$5,278,717	9,478.61	\$5,434,190	97%	97%

TABLE C—Continued  
MALE LIVES—NONPAYEE ELECTIONS

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Duration 1:								
Under 50.....	467	\$ 213,402	0	\$ 0	1.12	\$ 553	0%	0%
50-59.....	206	116,061	4	1,145	1.88	1,040	213	110
60-69.....	104	55,628	8	5,165	2.23	1,212	359	426
70-79.....	24	24,102	0	0	1.15	1,536	0	0
80 and over.....	7	4,301	4	965	0.74	449	541	215
All ages.....	808	\$ 413,494	16	\$ 7,275	7.12	\$ 4,790	225%	152%
Duration 2:								
Under 50.....	485	\$ 225,369	3	\$ 1,555	1.26	\$ 647	238%	240%
50-59.....	211	112,216	0	0	1.98	1,051	0	0
60-69.....	94	50,967	8	4,883	2.03	1,136	394	430
70-79.....	25	15,986	3	1,925	1.21	795	248	242
80 and over.....	7	16,705	0	0	0.72	1,524	0	0
All ages.....	822	\$ 421,243	14	\$ 8,363	7.20	\$ 5,153	194%	162%
Duration 3:								
Under 50.....	467	\$ 223,088	4	\$ 1,511	1.20	\$ 611	333%	247%
50-59.....	240	133,970	4	4,537	2.29	1,280	175	354
60-69.....	87	47,719	2	805	1.94	1,056	103	76
70-79.....	30	18,244	1	478	1.64	1,019	61	47
80 and over.....	6	3,248	0	0	0.67	356	0	0
All ages.....	830	\$ 426,269	11	\$ 7,331	7.74	\$ 4,322	142%	170%
Duration 4:								
Under 50.....	412	\$ 190,706	1	\$ 58	1.07	\$ 542	93%	11%
50-59.....	222	128,464	3	3,151	2.17	1,313	138	240
60-69.....	94	44,767	4	1,782	2.13	1,019	188	175
70-79.....	34	15,750	2	1,073	1.77	833	113	129
80 and over.....	7	3,862	0	0	0.77	398	0	0
All ages.....	769	\$ 383,549	10	\$ 6,064	7.91	\$ 4,105	126%	148%
Duration 5:								
Under 50.....	418	\$ 195,574	2	\$ 344	1.14	\$ 562	175%	61%
50-59.....	221	111,497	3	539	2.20	1,161	136	46
60-69.....	100	51,135	2	287	2.30	1,182	87	24
70-79.....	27	14,014	1	596	1.39	736	72	81
80 and over.....	11	6,188	0	0	1.18	686	0	0
All ages.....	777	\$ 378,408	8	\$ 1,766	8.21	\$ 4,327	97%	41%
Durations 1-5:								
Under 50.....	2,249	\$ 1,048,139	10	\$ 3,468	5.79	\$ 2,915	173%	119%
50-59.....	1,100	602,208	14	9,372	10.52	5,845	133	160
60-69.....	479	250,216	24	12,922	10.63	5,605	226	231
70-79.....	140	88,096	7	4,072	7.16	4,919	98	83
80 and over.....	38	34,304	4	965	4.08	3,413	98	28
All ages.....	4,006	\$ 2,022,963	59	\$ 30,799	38.18	\$ 22,697	155%	136%
Durations 6 and over:								
Under 50.....	5,106	\$ 2,212,411	24	\$ 18,737	14.92	\$ 6,705	161%	279%
50-59.....	3,770	1,779,362	58	26,453	38.29	18,224	151	145
60-69.....	2,417	1,348,868	71	36,923	52.85	29,259	134	126
70-79.....	1,306	754,449	72	39,736	67.19	38,482	107	103
80 and over.....	356	186,668	62	25,014	48.23	23,678	129	106
All ages.....	12,955	\$ 6,281,758	287	\$ 146,863	221.48	\$ 116,348	130%	126%
All durations:								
Under 50.....	7,355	\$ 3,260,550	34	\$ 22,205	20.71	\$ 9,620	164%	231%
50-59.....	4,870	2,381,570	72	35,825	48.81	24,069	148	149
60-69.....	2,896	1,599,084	95	49,845	63.48	34,864	150	143
70-79.....	1,446	842,545	79	43,808	74.35	43,401	106	101
80 and over.....	394	220,972	66	25,979	52.31	27,091	126	96
All ages.....	16,961	\$ 8,304,721	346	\$ 177,662	259.66	\$ 139,045	133%	128%



TABLE C—Continued  
FEMALE LIVES—NONPAYEE ELECTIONS

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Duration 1:								
Under 50.....	2,281	\$ 1,209,617	7	\$ 3,357	4 14	\$ 2,267	169%	148%
50-59.....	5,282	3,004,592	35	27,837	25 61	14,735	137	189
60-69.....	6,097	4,330,288	71	48,730	73 73	53,373	96	91
70-79.....	3,221	2,682,983	89	63,969	104 19	87,354	85	73
80 and over.....	642	616,921	54	48,150	56 35	53,446	96	90
All ages.....	17,523	\$ 11,844,401	256	\$ 192,043	264.02	\$ 211,175	97%	91%
Duration 2:								
Under 50.....	2,192	\$ 1,116,133	1	\$ 267	4 09	\$ 2,126	24%	13%
50-59.....	5,108	2,833,445	37	19,189	24 97	14,020	148	137
60-69.....	6,484	4,507,721	92	74,177	78 92	56,190	117	132
70-79.....	3,428	2,852,979	114	96,306	111.04	93,120	103	103
80 and over.....	705	644,407	58	47,053	63.47	57,981	91	81
All ages.....	17,917	\$ 11,954,685	302	\$ 236,992	282.49	\$ 223,437	107%	106%
Duration 3:								
Under 50.....	1,971	\$ 960,015	15	\$ 12,177	3 72	\$ 1,836	403%	663%
50-59.....	4,949	2,681,102	32	15,856	24 40	13,327	131	119
60-69.....	6,537	4,496,535	73	59,436	80 43	56,324	91	106
70-79.....	3,566	2,976,603	118	91,173	114.67	96,079	103	95
80 and over.....	739	662,700	63	50,313	67.13	60,882	94	83
All ages.....	17,762	\$ 11,776,955	301	\$ 228,955	290.35	\$ 228,448	104%	100%
Duration 4:								
Under 50.....	1,845	\$ 874,083	2	\$ 1,041	3 47	\$ 1,685	58%	62%
50-59.....	4,558	2,442,563	21	10,292	22 68	12,192	93	84
60-69.....	6,735	4,562,527	61	37,452	83.74	57,772	73	65
70-79.....	3,806	3,123,146	116	92,825	122.73	101,356	95	92
80 and over.....	747	678,089	62	64,426	68.27	62,462	91	103
All ages.....	17,691	\$ 11,680,408	262	\$ 206,036	300.89	\$ 235,467	87%	88%
Duration 5:								
Under 50.....	1,709	\$ 795,217	6	\$ 3,127	3 19	\$ 1,523	188%	205%
50-59.....	4,295	2,273,482	28	16,157	21 54	11,481	130	141
60-69.....	6,745	4,599,194	99	58,745	84 12	58,358	118	101
70-79.....	3,950	3,238,319	153	97,187	127.04	104,641	120	93
80 and over.....	765	645,682	48	40,724	70 14	59,565	68	68
All ages.....	17,464	\$ 11,551,894	334	\$ 215,940	306.03	\$ 235,568	109%	92%
Durations 1-5:								
Under 50.....	9,998	\$ 4,955,065	31	\$ 19,969	18 61	\$ 9,437	167%	212%
50-59.....	24,192	13,235,184	153	89,331	119 20	65,755	128	136
60-69.....	32,598	22,496,265	396	278,540	400 94	282,017	99	99
70-79.....	17,971	14,874,030	590	441,460	579 67	482,550	102	91
80 and over.....	3,598	3,247,799	285	250,666	325.36	294,336	88	85
All ages.....	88,357	\$ 58,808,343	1,455	\$1,079,966	1,443.78	\$1,134,095	101%	95%
Durations 6 and over:								
Under 50.....	18,318	\$ 8,474,840	56	\$ 21,756	33 22	\$ 15,664	169%	139%
50-59.....	41,135	21,327,815	283	144,255	206 57	107,429	137	134
60-69.....	82,067	50,241,108	1,112	770,989	1,048.64	654,085	106	118
70-79.....	74,845	51,568,768	2,491	1,780,086	2,515.71	1,745,734	99	102
80 and over.....	27,390	19,341,351	2,960	2,117,865	2,784.17	1,923,032	106	110
All ages.....	243,755	\$150,953,882	6,902	\$4,834,951	6,588.31	\$4,445,944	105%	109%
All durations:								
Under 50.....	28,316	\$ 13,429,905	87	\$ 41,725	51 83	\$ 25,101	168%	166%
50-59.....	65,327	34,562,999	436	233,586	325.77	173,184	134	135
60-69.....	114,665	72,737,373	1,508	1,049,529	1,449.58	936,102	104	112
70-79.....	92,816	66,442,798	3,081	2,221,546	3,095.38	2,228,284	100	100
80 and over.....	30,988	22,589,150	3,245	2,368,531	3,109.53	2,217,368	104	107
All ages.....	332,112	\$209,762,225	8,357	\$5,914,917	8,032.09	\$5,580,039	104%	106%

TABLE D

LIFE INCOME SETTLEMENTS WITH A GUARANTEED  
PERIOD OR REFUND PROVISION ARISING  
FROM MATURITIES AND SURRENDERS—MALE LIVES  
EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES—  
OTHER THAN PENSION TRUST ISSUES  
(Expected Deaths on *a*-1949 Ultimate Table)

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Duration 1:								
Under 50.....	146	\$ 77,807	0	\$ 0	0.41	\$ 248	0%	0%
50-59.....	5,428	2,954,998	71	34,523	59.38	32,214	120	107
60-69.....	21,133	12,254,323	313	153,620	450.58	263,097	69	58
70-79.....	2,076	1,549,532	72	48,001	94.28	71,567	76	67
80 and over.....	205	189,663	14	18,560	23.10	20,577	61	89
All ages.....	28,988	\$ 17,026,323	470	\$ 254,704	627.75	\$ 387,903	75%	66%
Duration 2:								
Under 50.....	149	\$ 72,591	3	\$ 1,734	0.42	\$ 215	714%	807%
50-59.....	4,734	2,688,865	66	34,668	54.96	31,279	120	111
60-69.....	20,873	12,287,039	410	253,571	477.28	282,314	86	90
70-79.....	2,228	1,632,272	84	63,085	104.52	77,522	80	81
80 and over.....	238	197,595	16	7,158	26.42	22,079	61	32
All ages.....	28,222	\$ 16,878,362	579	\$ 360,216	663.60	\$ 413,409	87%	87%
Duration 3:								
Under 50.....	155	\$ 74,441	1	\$ 213	0.43	\$ 203	233%	105%
50-59.....	4,480	2,567,655	61	42,159	55.01	31,629	111	133
60-69.....	19,575	11,618,094	413	252,201	479.90	285,591	86	88
70-79.....	2,468	1,686,655	81	48,409	116.26	80,695	70	60
80 and over.....	265	196,387	22	14,382	29.36	22,170	75	65
All ages.....	26,943	\$ 16,143,232	578	\$ 357,364	680.96	\$ 420,288	85%	85%
Duration 4:								
Under 50.....	159	\$ 75,609	1	\$ 52	0.44	\$ 214	227%	24%
50-59.....	3,912	2,276,388	67	38,750	51.25	29,899	131	130
60-69.....	19,039	11,464,036	418	237,341	500.95	302,257	83	79
70-79.....	2,973	1,944,705	113	79,364	140.64	94,384	80	84
80 and over.....	307	254,745	34	29,899	34.34	29,424	99	102
All ages.....	26,390	\$ 16,015,483	633	\$ 385,406	727.62	\$ 456,178	87%	84%
Duration 5:								
Under 50.....	156	\$ 70,628	0	\$ 0	0.45	\$ 200	0%	0%
50-59.....	3,166	1,926,463	65	29,356	43.26	26,537	150	111
60-69.....	17,231	10,422,651	495	292,649	477.31	289,383	104	101
70-79.....	4,498	2,811,564	178	113,258	200.35	126,798	89	89
80 and over.....	336	298,702	43	41,375	38.15	34,013	113	122
All ages.....	25,387	\$ 15,530,008	781	\$ 476,638	759.52	\$ 476,931	103%	100%
Durations 1-5:								
Under 50.....	765	\$ 371,076	5	\$ 1,999	2.15	\$ 1,080	233%	185%
50-59.....	21,720	12,414,369	330	179,456	263.86	151,558	125	118
60-69.....	97,851	58,046,143	2,049	1,189,382	2,386.02	1,422,642	86	84
70-79.....	14,243	9,624,728	528	352,117	656.05	450,966	80	78
80 and over.....	1,351	1,137,092	129	111,374	151.37	128,463	85	87
All ages.....	135,930	\$ 81,593,408	3,041	\$ 1,834,328	3,459.45	\$ 2,154,709	88%	85%
Durations 6 and over:								
Under 50.....	1,215	\$ 599,161	9	\$ 5,296	3.94	\$ 1,934	228%	274%
50-59.....	4,725	2,016,796	53	18,873	56.68	24,684	94	76
60-69.....	57,591	35,804,608	1,215	744,237	1,412.91	881,845	86	84
70-79.....	119,424	73,149,504	5,355	3,166,707	5,940.18	3,629,020	90	87
80 and over.....	24,356	13,399,825	2,745	1,475,179	2,836.05	1,546,673	97	95
All ages.....	207,311	\$ 124,969,894	9,377	\$ 5,410,292	10,249.76	\$ 6,084,156	91%	89%
All durations:								
Under 50.....	1,980	\$ 970,237	14	\$ 7,295	6.09	\$ 3,014	230%	242%
50-59.....	26,445	14,431,165	383	198,329	320.54	176,242	119	113
60-69.....	155,442	93,850,751	3,264	1,933,619	3,798.93	2,304,487	86	84
70-79.....	133,667	82,774,232	5,883	3,518,824	6,596.23	4,079,986	89	86
80 and over.....	25,707	14,536,917	2,874	1,586,553	2,987.42	1,675,136	96	95
All ages.....	343,241	\$ 206,563,302	12,418	\$ 7,244,620	13,709.21	\$ 8,238,865	91%	88%

TABLE D—Continued  
FEMALE LIVES—OTHER THAN PENSION TRUST ISSUES

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Duration 1:								
Under 50.....	282	\$ 136,476	2	\$ 305	0.47	\$ 229	426%	133%
50-59.....	3,892	1,543,662	19	8,266	18.86	7,476	101	111
60-69.....	11,431	4,329,280	73	29,854	118.36	45,469	62	66
70-79.....	658	341,417	9	5,609	18.48	9,690	49	58
80 and over.....	60	41,220	1	295	4.69	3,109	21	9
All ages.....	16,323	\$ 6,392,055	104	\$ 44,329	160.86	\$ 65,973	65%	67%
Duration 2:								
Under 50.....	290	\$ 145,087	0	\$ 0	0.47	\$ 222	0%	0%
50-59.....	3,711	1,471,096	19	8,778	18.98	7,521	100	117
60-69.....	11,886	4,490,446	101	34,143	133.87	51,041	75	67
70-79.....	700	392,174	15	8,415	21.72	11,310	69	74
80 and over.....	64	37,825	5	2,225	5.09	2,967	98	75
All ages.....	16,711	\$ 6,536,628	140	\$ 53,561	180.13	\$ 73,061	78%	73%
Duration 3:								
Under 50.....	278	\$ 146,438	0	\$ 0	0.44	\$ 217	0%	0%
50-59.....	3,665	1,454,829	22	6,128	19.89	7,877	111	78
60-69.....	11,995	4,539,476	90	35,832	147.11	55,779	61	64
70-79.....	918	455,650	8	2,938	26.52	13,309	30	22
80 and over.....	63	34,420	7	4,486	5.05	2,688	139	167
All ages.....	16,919	\$ 6,630,813	127	\$ 49,384	199.01	\$ 79,870	64%	62%
Duration 4:								
Under 50.....	281	\$ 149,441	1	\$ 171	0.45	\$ 234	222%	73%
50-59.....	3,634	1,411,453	19	6,080	21.14	8,174	90	74
60-69.....	12,068	4,649,815	119	54,087	160.91	61,992	74	87
70-79.....	1,116	542,577	18	12,777	32.80	16,468	55	78
80 and over.....	65	33,086	3	1,252	5.49	2,752	55	45
All ages.....	17,164	\$ 6,786,372	160	\$ 74,367	220.79	\$ 89,620	72%	83%
Duration 5:								
Under 50.....	338	\$ 178,648	0	\$ 0	0.60	\$ 303	0%	0%
50-59.....	3,376	1,304,603	22	14,124	20.85	8,034	106	176
60-69.....	12,019	4,666,436	129	47,983	170.15	66,059	76	73
70-79.....	1,684	765,811	30	11,769	46.82	22,173	64	53
80 and over.....	89	59,905	3	2,521	7.60	5,288	39	48
All ages.....	17,506	\$ 6,975,403	184	\$ 76,397	246.02	\$ 101,857	75%	75%
Durations 1-5:								
Under 50.....	1,469	\$ 756,090	3	\$ 476	2.43	\$ 1,205	123%	40%
50-59.....	18,278	7,185,643	101	43,376	99.72	39,082	101	111
60-69.....	59,399	22,675,453	512	201,899	730.40	280,340	70	72
70-79.....	5,136	2,497,629	80	41,508	146.34	72,950	55	57
80 and over.....	341	206,456	19	10,779	27.92	16,804	68	64
All ages.....	84,623	\$ 33,321,271	715	\$ 298,038	1,006.81	\$ 410,381	71%	73%
Durations 6 and over:								
Under 50.....	2,828	\$ 1,480,642	3	\$ 1,018	4.80	\$ 2,528	63%	40%
50-59.....	10,116	3,960,304	60	31,223	54.05	20,921	111	149
60-69.....	76,467	28,644,400	842	326,498	1,032.86	387,564	82	84
70-79.....	104,443	39,058,399	2,919	1,051,993	3,425.12	1,277,693	85	82
80 and over.....	24,640	9,546,509	2,184	840,200	2,241.26	888,384	97	95
All ages.....	218,494	\$ 82,690,254	6,008	\$ 2,250,932	6,758.09	\$ 2,577,090	89%	87%
All durations:								
Under 50.....	4,297	\$ 2,236,732	6	\$ 1,494	7.23	\$ 3,733	83%	40%
50-59.....	28,394	11,145,947	161	74,599	153.77	60,003	105	124
60-69.....	135,866	51,319,853	1,354	528,397	1,763.26	667,904	77	79
70-79.....	109,579	41,556,028	2,999	1,093,501	3,571.46	1,350,643	84	81
80 and over.....	24,981	9,752,965	2,203	850,979	2,269.18	905,188	97	94
All ages.....	303,117	\$116,011,525	6,723	\$2,548,970	7,764.90	\$2,987,471	87%	85%

TABLE D—Continued  
MALE LIVES—PENSION TRUST ISSUES

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Duration 1:								
Under 50.....	44	\$ 3,829	0	\$ 0	0.18	\$ 14	0%	0%
50-59.....	396	160,797	7	2,719	4.78	1,979	146	137
60-69.....	12,281	7,245,876	331	156,975	280.56	168,812	118	93
70-79.....	639	727,309	19	15,453	25.60	30,150	74	51
80 and over.....	1	425	0	0	0.09	40	0	0
All ages.....	13,361	\$ 8,138,236	357	\$ 175,147	311.21	\$ 200,995	115%	87%
Duration 2:								
Under 50.....	49	\$ 4,378	0	\$ 0	0.21	\$ 20	0%	0%
50-59.....	346	105,886	4	527	4.11	1,271	97	41
60-69.....	12,310	7,032,628	363	199,238	300.59	175,276	121	114
70-79.....	914	862,307	27	29,224	38.40	36,406	70	80
80 and over.....	5	18,123	0	0	0.44	1,556	0	0
All ages.....	13,654	\$ 8,023,322	394	\$ 228,989	343.75	\$ 214,529	115%	107%
Duration 3:								
Under 50.....	50	\$ 4,223	0	\$ 0	0.21	\$ 20	0%	0%
50-59.....	340	104,909	10	3,072	4.04	1,295	248	237
60-69.....	12,639	6,796,434	399	173,756	329.30	180,711	121	96
70-79.....	1,425	1,094,878	41	40,302	58.80	46,408	70	87
80 and over.....	4	8,841	0	0	0.39	834	0	0
All ages.....	14,458	\$ 8,009,335	450	\$ 217,130	392.74	\$ 229,268	115%	95%
Duration 4:								
Under 50.....	41	\$ 3,253	0	\$ 0	0.18	\$ 15	0%	0%
50-59.....	238	62,218	5	1,289	2.77	778	181	166
60-69.....	11,371	5,806,535	357	182,928	318.42	166,017	112	110
70-79.....	1,919	1,312,410	70	48,364	81.05	57,261	86	84
80 and over.....	5	8,015	2	673	0.50	823	400	82
All ages.....	13,574	\$ 7,192,431	434	\$ 233,254	402.92	\$ 224,894	108%	104%
Duration 5:								
Under 50.....	14	\$ 1,499	0	\$ 0	0.07	\$ 8	0%	0%
50-59.....	174	36,916	10	3,250	2.02	447	495	727
60-69.....	9,064	4,610,127	311	140,502	272.58	141,454	114	99
70-79.....	2,836	1,711,594	121	77,841	118.85	73,949	102	105
80 and over.....	11	11,529	1	301	1.01	1,182	99	25
All ages.....	12,099	\$ 6,371,665	443	\$ 221,894	394.53	\$ 217,040	112%	102%
Durations 1-5:								
Under 50.....	198	\$ 17,182	0	\$ 0	0.85	\$ 77	0%	0%
50-59.....	1,494	470,726	36	10,857	17.72	5,770	203	188
60-69.....	57,665	31,491,650	1,761	853,399	1,501.45	832,270	117	103
70-79.....	7,763	5,708,498	278	211,184	322.70	244,174	86	86
80 and over.....	26	46,933	3	974	2.43	4,435	123	22
All ages.....	67,146	\$ 37,734,989	2,078	\$ 1,076,414	1,845.15	\$ 1,086,726	113%	99%
Durations 6 and over:								
Under 50.....	15	\$ 929	0	\$ 0	0.06	\$ 3	0%	0%
50-59.....	274	52,652	16	2,340	3.18	637	503	367
60-69.....	4,786	1,935,337	221	86,222	129.11	52,939	171	163
70-79.....	34,695	19,881,221	1,695	917,631	1,624.48	940,222	104	98
80 and over.....	1,658	1,137,394	152	99,871	160.47	111,206	95	90
All ages.....	41,428	\$ 23,007,533	2,084	\$ 1,106,064	1,917.30	\$ 1,105,007	109%	100%
All durations:								
Under 50.....	213	\$ 18,111	0	\$ 0	0.91	\$ 80	0%	0%
50-59.....	1,768	523,378	52	13,197	20.90	6,407	249	206
60-69.....	62,451	33,426,987	1,982	939,621	1,630.56	885,209	122	106
70-79.....	42,458	25,589,719	1,973	1,128,815	1,947.18	1,184,396	101	95
80 and over.....	1,684	1,184,327	155	100,845	162.90	115,641	95	87
All ages.....	108,574	\$ 60,742,522	4,162	\$ 2,182,478	3,762.45	\$ 2,191,733	111%	100%

TABLE D—Continued  
FEMALE LIVES—PENSION TRUST ISSUES

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Duration 1:								
Under 50 . . . . .	5	\$ 939	0	\$ 0	0.01	\$ 2	0%	0%
50-59 . . . . .	207	59,166	2	206	1.10	326	182	63
60-69 . . . . .	2,340	846,557	25	8,199	27.24	9,904	92	83
70-79 . . . . .	107	47,823	2	660	2.64	1,203	76	55
80 and over . . . . .	0	0	0	0	0	0		
All ages . . . . .	2,659	\$ 954,485	29	\$ 9,065	30.99	\$ 11,435	94%	79%
Duration 2:								
Under 50 . . . . .	5	\$ 411	0	\$ 0	0.01	\$ 0	0%	
50-59 . . . . .	159	35,870	3	1,041	0.87	202	345	515%
60-69 . . . . .	2,221	777,608	23	8,971	28.14	9,849	82	91
70-79 . . . . .	134	56,219	1	232	3.27	1,372	31	17
80 and over . . . . .	2	538	0	0	0.15	41	0	0
All ages . . . . .	2,521	\$ 870,646	27	\$ 10,244	32.44	\$ 11,464	83%	89%
Duration 3:								
Under 50 . . . . .	4	\$ 312	0	\$ 0	0.01	\$ 0	0%	
50-59 . . . . .	131	33,199	5	785	0.75	197	667	398%
60-69 . . . . .	2,090	687,699	26	7,424	28.70	9,515	91	78
70-79 . . . . .	181	59,747	5	1,071	4.60	1,539	109	70
80 and over . . . . .	2	538	0	0	0.17	46	0	0
All ages . . . . .	2,408	\$ 781,495	36	\$ 9,280	34.23	\$ 11,297	105%	82%
Duration 4:								
Under 50 . . . . .	4	\$ 312	0	\$ 0	0.01	\$ 0	0%	
50-59 . . . . .	105	31,834	0	0	0.61	196	0	0%
60-69 . . . . .	1,816	587,289	21	6,697	27.27	8,877	77	75
70-79 . . . . .	228	78,576	5	1,364	5.92	2,011	84	68
80 and over . . . . .	3	2,182	0	0	0.25	152	0	0
All ages . . . . .	2,156	\$ 700,193	26	\$ 8,061	34.06	\$ 11,236	76%	72%
Duration 5:								
Under 50 . . . . .	4	\$ 343	0	\$ 0	0.01	\$ 0	0%	
50-59 . . . . .	74	19,129	0	0	0.43	115	0	0%
60-69 . . . . .	1,355	434,721	16	9,791	22.02	7,059	73	139
70-79 . . . . .	308	105,914	6	1,489	7.77	2,652	77	56
80 and over . . . . .	4	1,150	0	0	0.33	94	0	0
All ages . . . . .	1,745	\$ 561,257	22	\$ 11,280	30.56	\$ 9,920	72%	114%
Durations 1-5:								
Under 50 . . . . .	22	\$ 2,317	0	\$ 0	0.05	\$ 2	0%	0%
50-59 . . . . .	676	179,198	10	2,032	3.76	1,036	266	196
60-69 . . . . .	9,822	3,333,874	111	41,082	133.37	45,204	83	91
70-79 . . . . .	958	348,279	19	4,816	24.20	8,777	79	55
80 and over . . . . .	11	4,408	0	0	0.90	333	0	0
All ages . . . . .	11,489	\$ 3,868,076	140	\$ 47,930	162.28	\$ 55,352	86%	87%
Durations 6 and over:								
Under 50 . . . . .	7	\$ 995	0	\$ 0	0	\$ 0		
50-59 . . . . .	98	33,117	0	0	0.54	188	0%	0%
60-69 . . . . .	1,415	449,863	27	11,119	20.59	6,526	131	170
70-79 . . . . .	4,033	1,425,516	135	43,239	116.60	41,664	116	104
80 and over . . . . .	150	57,313	11	3,303	11.76	4,604	94	72
All ages . . . . .	5,703	\$ 1,966,804	173	\$ 57,661	149.49	\$ 52,982	116%	109%
All durations:								
Under 50 . . . . .	29	\$ 3,312	0	\$ 0	0.05	\$ 2	0%	0%
50-59 . . . . .	774	212,315	10	2,032	4.30	1,224	233	166
60-69 . . . . .	11,237	3,783,737	138	52,201	153.96	51,730	90	101
70-79 . . . . .	4,991	1,773,795	154	48,055	140.80	50,441	109	95
80 and over . . . . .	161	61,721	11	3,303	12.66	4,937	87	67
All ages . . . . .	17,192	\$ 5,834,880	313	\$ 105,591	311.77	\$ 108,334	100%	97%

TABLE E

MATURED DEFERRED ANNUITIES WITH A GUARANTEED PERIOD  
OR REFUND PROVISION—MALE LIVES  
EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES—  
OTHER THAN PENSION TRUST ISSUES  
(Expected Deaths on *a*-1949 Ultimate Table)

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Duration 1:								
Under 50	19	\$ 13,347	0	\$ 0	0.03	\$ 28	0%	0%
50-59	711	473,971	10	9,112	7.72	5,131	130	178
60-69	7,026	5,134,279	160	99,881	153.89	113,849	104	88
70-79	1,193	1,377,988	32	71,767	44.65	52,066	72	138
80 and over	5	8,609	2	3,265	0.51	874	392	374
All ages	8,954	\$ 7,008,194	204	\$ 184,025	206.80	\$ 171,948	99%	107%
Duration 2:								
Under 50	17	\$ 13,126	0	\$ 0	0.02	\$ 23	0%	0%
50-59	732	445,851	13	9,050	8.24	5,080	158	178
60-69	7,461	5,535,129	208	134,379	176.09	132,080	118	102
70-79	1,305	1,468,332	57	85,047	52.06	59,028	109	144
80 and over	6	10,063	1	3,728	0.56	999	179	373
All ages	9,521	\$ 7,472,501	279	\$ 232,204	236.97	\$ 197,210	118%	118%
Duration 3:								
Under 50	16	\$ 13,183	0	\$ 0	0.03	\$ 26	0%	0%
50-59	758	431,683	10	4,124	9.08	5,193	110	79
60-69	7,387	5,396,764	161	130,659	187.34	137,983	86	95
70-79	1,396	1,532,058	63	73,304	58.90	64,720	107	113
80 and over	8	15,636	0	0	0.83	1,687	0	0
All ages	9,565	\$ 7,389,324	234	\$ 208,087	256.18	\$ 209,609	91%	99%
Duration 4:								
Under 50	18	\$ 11,102	0	\$ 0	0.03	\$ 19	0%	0%
50-59	838	431,330	7	3,864	10.64	5,466	66	71
60-69	7,398	5,380,341	200	121,539	201.80	147,650	99	82
70-79	1,474	1,668,384	70	79,638	66.07	74,818	106	106
80 and over	8	13,922	3	3,595	0.88	1,665	341	216
All ages	9,736	\$ 7,505,079	280	\$ 208,636	279.42	\$ 229,618	100%	91%
Duration 5:								
Under 50	15	\$ 8,425	0	\$ 0	0.03	\$ 24	0%	0%
50-59	850	454,718	28	10,301	11.33	6,005	247	172
60-69	6,985	5,047,233	238	153,631	202.33	147,243	118	104
70-79	1,951	2,070,743	80	71,840	89.19	96,708	90	74
80 and over	10	13,909	0	0	0.99	1,547	0	0
All ages	9,811	\$ 7,595,028	346	\$ 235,772	303.87	\$ 251,527	114%	94%
Durations 1-5:								
Under 50	85	\$ 59,183	0	\$ 0	0.14	\$ 120	0%	0%
50-59	3,889	2,237,553	68	36,451	47.01	26,875	145	136
60-69	36,257	26,493,746	967	640,089	921.45	678,805	105	94
70-79	7,319	8,117,505	302	381,596	310.87	347,340	97	110
80 and over	37	62,139	6	10,588	3.77	6,772	159	156
All ages	47,587	\$ 36,970,126	1,343	\$ 1,068,724	1,283.24	\$ 1,059,912	105%	101%
Durations 6 and over:								
Under 50	321	\$ 152,452	1	\$ 317	0.88	\$ 438	114%	72%
50-59	1,875	1,046,863	16	8,031	23.15	13,002	69	62
60-69	23,188	13,925,440	682	403,673	579.06	351,316	118	115
70-79	66,006	48,157,430	3,552	2,659,985	3,436.60	2,522,155	103	105
80 and over	21,058	13,593,088	2,557	1,550,023	2,488.89	1,583,032	103	98
All ages	112,448	\$ 76,875,273	6,808	\$ 4,622,029	6,528.58	\$ 4,469,943	104%	103%
All durations:								
Under 50	406	\$ 211,635	1	\$ 317	1.02	\$ 558	98%	57%
50-59	5,764	3,284,416	84	44,482	70.16	39,877	120	112
60-69	59,445	50,419,186	1,649	1,043,762	1,500.51	1,030,121	110	101
70-79	73,325	56,274,935	3,854	3,041,581	3,747.47	2,869,495	103	106
80 and over	21,095	13,655,227	2,563	1,560,611	2,492.66	1,589,804	103	98
All ages	160,035	\$113,845,399	8,151	\$5,690,753	7,811.82	\$5,529,855	104%	103%

TABLE E—Continued  
WITH A GUARANTEED PERIOD  
OR REFUND PROVISION—FEMALE LIVES  
OTHER THAN PENSION TRUST ISSUES

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Duration 1:								
Under 50 . . . . .	34	\$ 20,048	0	\$ 0	0.03	\$ 32	0%	0%
50-59 . . . . .	1,512	631,373	8	3,811	7.41	3,047	108	125
60-69 . . . . .	10,424	4,358,357	111	42,193	107.23	45,614	104	93
70-79 . . . . .	1,217	717,619	25	14,135	27.13	16,054	92	88
80 and over . . . . .	8	9,854	3	1,334	0.60	1,061	500	126
All ages . . . . .	13,195	\$ 5,737,251	147	\$ 61,473	142.40	\$ 65,808	103%	93%
Duration 2:								
Under 50 . . . . .	42	\$ 22,277	0	\$ 0	0.05	\$ 29	0%	0%
50-59 . . . . .	1,474	594,664	7	9,176	7.42	2,949	94	311
60-69 . . . . .	11,492	4,764,871	109	46,408	128.25	54,176	85	86
70-79 . . . . .	1,436	804,768	24	14,634	34.43	19,354	70	76
80 and over . . . . .	6	2,117	2	591	0.48	162	417	365
All ages . . . . .	14,450	\$ 6,188,697	142	\$ 70,809	170.63	\$ 76,670	83%	92%
Duration 3:								
Under 50 . . . . .	63	\$ 44,609	1	\$ 446	0.07	\$ 55	429%	811%
50-59 . . . . .	1,627	643,596	9	2,269	8.79	3,412	102	67
60-69 . . . . .	11,904	4,770,148	105	38,340	143.90	58,454	73	66
70-79 . . . . .	1,668	908,290	30	16,959	43.17	23,471	69	72
80 and over . . . . .	5	1,976	0	0	0.43	173	0	0
All ages . . . . .	15,267	\$ 6,368,619	145	\$ 58,014	196.36	\$ 85,565	74%	68%
Duration 4:								
Under 50 . . . . .	66	\$ 44,601	0	\$ 0	0.07	\$ 61	0%	0%
50-59 . . . . .	1,757	654,451	24	8,846	10.22	3,793	235	233
60-69 . . . . .	12,328	4,837,659	126	50,317	162.60	64,401	77	78
70-79 . . . . .	1,943	1,030,087	40	20,689	53.93	28,856	74	72
80 and over . . . . .	9	2,308	0	0	0.69	189	0	0
All ages . . . . .	16,103	\$ 6,569,106	190	\$ 79,852	227.51	\$ 97,300	84%	82%
Duration 5:								
Under 50 . . . . .	68	\$ 42,002	0	\$ 0	0.11	\$ 61	0%	0%
50-59 . . . . .	1,699	606,790	12	5,781	10.55	3,774	114	153
60-69 . . . . .	12,447	4,803,563	150	74,462	174.44	67,674	86	110
70-79 . . . . .	2,846	1,401,565	53	24,458	79.10	39,214	67	62
80 and over . . . . .	15	6,409	0	0	1.10	458	0	0
All ages . . . . .	17,075	\$ 6,860,329	215	\$ 104,701	265.30	\$ 111,181	81%	94%
Durations 1-5:								
Under 50 . . . . .	273	\$ 173,537	1	\$ 446	0.33	\$ 238	303%	187%
50-59 . . . . .	8,069	3,130,874	60	29,883	44.39	16,975	135	176
60-69 . . . . .	58,595	23,534,598	601	251,720	716.42	290,319	84	87
70-79 . . . . .	9,110	4,862,329	172	90,875	237.76	126,949	72	72
80 and over . . . . .	43	22,664	5	1,925	3.30	2,043	152	94
All ages . . . . .	76,090	\$ 31,724,002	839	\$ 374,849	1,002.20	\$ 436,524	84%	86%
Durations 6 and over:								
Under 50 . . . . .	689	\$ 316,615	7	\$ 3,125	1.05	\$ 492	667%	635%
50-59 . . . . .	3,508	1,347,109	16	7,141	19.70	7,423	81	96
60-69 . . . . .	69,916	25,127,395	892	308,070	1,004.63	360,192	89	86
70-79 . . . . .	153,074	50,890,104	4,707	1,546,153	5,299.92	1,734,548	89	89
80 and over . . . . .	60,215	16,749,865	5,234	1,491,949	5,691.99	1,575,339	92	95
All ages . . . . .	287,402	\$ 94,431,088	10,856	\$ 3,356,438	12,017.29	\$ 3,677,994	90%	91%
All durations:								
Under 50 . . . . .	962	\$ 490,152	8	\$ 3,571	1.38	\$ 730	580%	489%
50-59 . . . . .	11,577	4,477,983	76	37,024	64.09	24,398	119	152
60-69 . . . . .	128,511	48,661,993	1,493	559,790	1,721.05	650,511	87	86
70-79 . . . . .	162,184	55,752,433	4,879	1,637,028	5,537.68	1,861,497	88	88
80 and over . . . . .	60,258	16,772,529	5,239	1,493,874	5,695.29	1,577,382	92	95
All ages . . . . .	363,492	\$ 126,155,090	11,695	\$ 3,731,287	13,019.49	\$ 4,114,518	90%	91%

TABLE E—Continued  
 WITHOUT A GUARANTEED PERIOD  
 OR REFUND PROVISION—MALE LIVES  
 OTHER THAN PENSION TRUST ISSUES

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Duration 1:								
Under 50	4	\$ 944	0	\$ 0	0.01	\$ 4	0%	0%
50-59	92	34,914	2	461	0.99	401	202	115
60-69	1,319	841,497	17	13,786	29.64	19,093	57	72
70-79	97	116,370	0	0	3.51	4,283	0	0
80 and over	0	0	0	0	0.00	0		
All ages	1,512	\$ 993,725	19	\$ 14,247	34.15	\$ 23,781	56%	60%
Duration 2:								
Under 50	3	\$ 1,014	0	\$ 0	0.02	\$ 5	0%	0%
50-59	98	32,410	0	0	1.08	372	0	0
60-69	1,370	923,266	27	33,385	32.96	22,348	82	149
70-79	144	135,759	4	4,171	5.49	5,246	73	80
80 and over	1	3,120	0	0	0.10	320	0	0
All ages	1,616	\$ 1,095,569	31	\$ 37,556	39.65	\$ 28,291	78%	133%
Duration 3:								
Under 50	2	\$ 1,230	0	\$ 0	0.00	\$ 3		0%
50-59	110	38,764	0	0	1.27	460	0	0
60-69	1,347	868,375	24	19,139	34.76	22,411	69	85
70-79	183	186,221	4	28,991	7.39	7,565	54	383
80 and over	2	4,480	0	0	0.20	466	0	0
All ages	1,644	\$ 1,099,070	28	\$ 48,130	43.62	\$ 30,905	64%	156%
Duration 4:								
Under 50	1	\$ 1,128	0	\$ 0	0.00	\$ 3		0%
50-59	92	39,376	1	372	1.08	476	93%	78
60-69	1,310	804,325	22	11,956	36.49	22,386	60	53
70-79	201	180,501	16	3,136	8.70	7,841	184	40
80 and over	1	3,120	1	3,120	0.12	383	833	815
All ages	1,605	\$ 1,028,450	40	\$ 18,584	46.39	\$ 31,089	86%	60%
Duration 5:								
Under 50	1	\$ 1,128	0	\$ 0	0.00	\$ 3		0%
50-59	91	33,080	1	651	1.14	420	88%	155
60-69	1,286	790,544	28	18,651	38.31	23,566	73	79
70-79	257	246,643	14	4,406	11.13	10,967	126	40
80 and over	0	0	0	0	0.00	0		
All ages	1,635	\$ 1,071,395	43	\$ 23,708	50.58	\$ 34,956	85%	68%
Durations 1-5:								
Under 50	11	\$ 5,444	0	\$ 0	0.03	\$ 18	0%	0%
50-59	483	178,544	4	1,484	5.56	2,129	72	70
60-69	6,632	4,228,007	118	96,917	172.16	109,804	69	88
70-79	882	865,494	38	40,704	36.22	35,902	105	113
80 and over	4	10,720	1	3,120	0.42	1,169	238	267
All ages	8,012	\$ 5,288,209	161	\$ 142,225	214.39	\$ 149,022	75%	95%
Durations 6 and over:								
Under 50	24	\$ 9,973	2	\$ 399	0.04	\$ 26	5000%	1535%
50-59	261	80,981	3	497	3.29	1,039	91	48
60-69	2,505	1,292,082	53	33,210	61.90	32,488	86	102
70-79	11,829	7,184,407	544	282,826	623.25	376,196	87	75
80 and over	3,824	1,929,458	455	234,697	443.65	223,116	103	105
All ages	18,443	\$ 10,496,901	1,057	\$ 551,629	1,132.13	\$ 632,865	93%	87%
All durations:								
Under 50	35	\$ 15,417	2	\$ 399	0.07	\$ 44	2857%	907%
50-59	744	259,525	7	1,981	8.85	3,168	79	63
60-69	9,137	5,520,089	171	130,127	234.06	142,292	73	91
70-79	12,711	8,049,901	582	323,530	659.47	412,098	88	79
80 and over	3,828	1,940,178	456	237,817	444.07	224,285	103	106
All ages	26,455	\$ 15,785,110	1,218	\$ 693,854	1,346.52	\$ 781,887	90%	89%



TABLE E—Continued  
 WITHOUT A GUARANTEED PERIOD  
 OR REFUND PROVISION—FEMALE LIVES  
 OTHER THAN PENSION TRUST ISSUES

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Duration 1:								
Under 50...	6	\$ 1,992	0	\$ 0	0.00	\$ 3	0%	0%
50-59.....	330	139,847	0	0	1.71	730	0%	0
60-69.....	3,871	1,582,429	24	9,083	37.59	16,068	64	57
70-79.....	315	182,648	2	1,644	6.93	4,081	29	40
80 and over.	0	0	0	0	0.00	0		
All ages...	4,522	\$ 1,906,916	26	\$ 10,727	46.23	\$ 20,882	56%	51%
Duration 2:								
Under 50...	5	\$ 1,453	0	\$ 0	0.00	\$ 4	0%	0%
50-59.....	308	128,770	3	1,398	1.62	685	185%	204
60-69.....	4,320	1,740,830	34	12,794	45.49	18,990	75	67
70-79.....	426	234,914	2	1,404	10.07	5,639	20	25
80 and over.	1	249	0	0	0.13	32	0	0
All ages...	5,060	\$ 2,106,216	39	\$ 15,596	57.31	\$ 25,350	68%	62%
Duration 3:								
Under 50...	8	\$ 3,076	0	\$ 0	0.01	\$ 6	0%	0%
50-59.....	296	130,028	3	2,123	1.64	732	183	290
60-69.....	4,519	1,780,956	42	15,206	51.69	21,067	81	72
70-79.....	495	270,482	15	5,794	12.55	6,942	120	83
80 and over.	1	249	0	0	0.14	36	0	0
All ages...	5,319	\$ 2,184,791	60	\$ 23,123	66.03	\$ 28,783	91%	80%
Duration 4:								
Under 50...	10	\$ 3,528	0	\$ 0	0.02	\$ 8	0%	0%
50-59.....	327	126,746	2	1,050	1.94	755	103	139
60-69.....	4,618	1,796,708	43	16,307	57.57	22,970	75	71
70-79.....	623	344,810	7	5,829	16.90	9,432	41	62
80 and over.	1	249	0	0	0.16	40	0	0
All ages...	5,579	\$ 2,272,041	52	\$ 23,186	76.59	\$ 33,205	68%	70%
Duration 5:								
Under 50...	9	\$ 2,598	0	\$ 0	0.02	\$ 6	0%	0%
50-59.....	303	118,146	2	968	1.88	747	106	130
60-69.....	4,728	1,769,201	35	13,247	63.01	24,125	56	55
70-79.....	891	444,467	25	10,295	24.50	12,237	102	84
80 and over.	2	495	0	0	0.24	59	0	0
All ages...	5,933	\$ 2,334,907	62	\$ 24,510	89.65	\$ 37,174	69%	66%
Durations 1-5:								
Under 50...	38	\$ 12,647	0	\$ 0	0.05	\$ 27	0%	0%
50-59.....	1,564	643,537	10	5,539	8.79	3,649	114	152
60-69.....	22,056	8,670,124	178	66,637	255.35	103,220	70	65
70-79.....	2,750	1,477,321	51	24,966	70.95	38,331	72	65
80 and over.	5	1,242	0	0	0.67	167	0	0
All ages...	26,413	\$ 10,804,871	239	\$ 97,142	335.81	\$ 145,394	71%	67%
Durations 6 and over:								
Under 50...	76	\$ 27,623	1	\$ 59	0.06	\$ 31	667%	190%
50-59.....	462	142,702	1	444	2.67	815	37	54
60-69.....	22,999	7,606,442	315	110,805	346.68	114,407	91	97
70-79.....	56,470	17,319,944	1,910	541,215	1,960.35	590,116	97	92
80 and over.	23,406	5,923,569	2,085	529,346	2,226.63	556,230	94	95
All ages...	103,413	\$ 31,020,280	4,312	\$ 1,181,869	4,536.39	\$ 1,261,599	95%	94%
All durations:								
Under 50...	114	\$ 40,270	1	\$ 59	0.11	\$ 58	909%	102%
50-59.....	2,026	786,239	11	5,983	11.46	4,464	96	134
60-69.....	45,055	16,276,566	493	177,442	602.03	217,627	82	82
70-79.....	59,220	18,797,265	1,961	566,181	2,031.30	628,447	97	90
80 and over.	23,411	5,924,811	2,085	529,346	2,227.30	556,397	94	95
All ages...	129,826	\$ 41,825,151	4,551	\$ 1,279,011	4,872.20	\$ 1,406,993	93%	91%

TABLE E—Continued  
WITH A GUARANTEED PERIOD  
OR REFUND PROVISION—MALE LIVES  
PENSION TRUST ISSUES

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Duration 1:								
Under 50	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59	785	109,525	28	2,460	9.67	1,380	290%	178%
60-69	8,403	2,892,956	200	54,824	187.02	65,292	107	84
70-79	316	229,877	5	1,246	12.78	9,385	39	13
80 and over	9	7,634	0	0	0.91	871	0	0
All ages	9,513	\$ 3,239,992	233	\$ 58,530	210.38	\$ 76,928	111%	76%
Duration 2:								
Under 50	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59	659	73,693	41	3,465	8.41	956	488%	362%
60-69	9,691	3,150,331	410	107,992	232.56	76,847	176	141
70-79	435	265,335	31	13,077	18.38	11,519	169	114
80 and over	13	12,102	1	267	1.36	1,362	74	20
All ages	10,798	\$ 3,501,461	483	\$ 124,801	260.71	\$ 90,681	185%	138%
Duration 3:								
Under 50	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59	436	45,756	14	1,586	5.81	619	241%	256%
60-69	9,885	2,962,683	433	126,300	256.80	78,652	169	161
70-79	611	357,940	27	14,244	26.59	16,200	102	88
80 and over	18	12,017	2	229	2.22	1,277	90	18
All ages	10,950	\$ 3,378,396	476	\$ 142,359	291.42	\$ 96,748	163%	147%
Duration 4:								
Under 50	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59	179	16,175	0	0	2.39	215	0%	0%
60-69	8,752	2,694,945	340	129,774	247.13	77,627	138	167
70-79	849	454,188	38	27,468	37.90	21,310	100	129
80 and over	16	11,210	0	0	2.13	1,289	0	0
All ages	9,796	\$ 3,176,518	378	\$ 157,242	289.55	\$ 100,441	131%	157%
Duration 5:								
Under 50	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59	64	6,143	10	775	0.86	80	163%	969%
60-69	7,393	2,245,541	254	75,923	226.74	70,216	112	108
70-79	1,213	591,330	50	33,262	54.68	28,577	91	116
80 and over	27	13,706	5	4,840	3.22	1,523	155	318
All ages	8,697	\$ 2,856,720	319	\$ 114,800	285.50	\$ 100,396	112%	114%
Durations 1-5:								
Under 50	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59	2,123	251,292	93	8,286	27.14	3,250	343%	255%
60-69	44,124	13,946,456	1,637	494,813	1,150.25	368,634	142	134
70-79	3,424	1,898,670	151	89,297	150.33	86,991	100	103
80 and over	83	56,669	8	5,336	9.84	6,322	81	84
All ages	49,754	\$ 16,153,087	1,889	\$ 597,732	1,337.56	\$ 465,197	141%	128%
Durations 6 and over:								
Under 50	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59	46	13,901	0	0	0.56	151	0%	0%
60-69	2,923	546,416	123	27,929	76.24	14,886	161	188
70-79	36,748	14,091,273	2,275	832,545	1,784.81	709,286	127	117
80 and over	3,347	2,047,516	396	238,295	345.77	217,503	115	110
All ages	43,064	\$ 16,699,106	2,794	\$ 1,098,769	2,207.38	\$ 941,826	127%	117%
All durations:								
Under 50	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59	2,169	265,193	93	8,286	27.70	3,401	336%	244%
60-69	47,047	14,492,872	1,760	522,742	1,226.49	383,520	143	136
70-79	40,172	15,989,943	2,426	921,842	1,935.14	796,277	125	116
80 and over	3,430	2,104,185	404	243,631	355.61	232,825	114	109
All ages	92,818	\$ 32,852,193	4,683	\$ 1,696,501	3,544.94	\$ 1,407,023	132%	121%

TABLE E—Continued  
WITH A GUARANTEED PERIOD  
OR REFUND PROVISION—FEMALE LIVES  
PENSION TRUST ISSUES

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Duration 1:								
Under 50...	4	\$ 46	0	\$ 0	0.01	\$ 0	0%	.....
50-59.....	106	14,754	0	0	0.62	86	0	0%
60-69.....	1,163	289,223	22	4,819	13.49	3,433	163	140
70-79.....	44	19,742	2	1,522	1.04	474	192	321
80 and over.....	0	0	0	0	0.00	0	.....	.....
All ages...	1,317	\$ 323,765	24	\$ 6,341	15.16	\$ 3,993	158%	159%
Duration 2:								
Under 50...	0	\$ 0	0	\$ 0	0.00	\$ 0	.....	.....
50-59.....	83	8,267	11	474	0.49	48	2245%	988%
60-69.....	1,260	300,235	13	2,321	15.99	3,904	81	59
70-79.....	81	44,336	4	1,800	2.09	1,312	191	137
80 and over.....	0	0	0	0	0.00	0	.....	.....
All ages...	1,424	\$ 352,838	28	\$ 4,595	18.57	\$ 5,264	151%	87%
Duration 3:								
Under 50...	0	\$ 0	0	\$ 0	0.00	\$ 0	.....	.....
50-59.....	67	8,842	0	0	0.39	47	0%	0%
60-69.....	1,232	273,164	10	1,942	17.20	3,920	58	50
70-79.....	110	39,415	3	551	2.91	1,087	103	51
80 and over.....	0	0	0	0	0.00	0	.....	.....
All ages...	1,409	\$ 321,421	13	\$ 2,493	20.50	\$ 5,054	63%	49%
Duration 4:								
Under 50...	0	\$ 0	0	\$ 0	0.00	\$ 0	.....	.....
50-59.....	38	7,405	0	0	0.23	40	0%	0%
60-69.....	1,044	237,206	17	2,782	16.04	3,715	106	75
70-79.....	155	58,849	5	1,159	4.23	1,931	118	60
80 and over.....	3	792	0	.....	0.25	65	0	0
All ages...	1,240	\$ 304,252	22	\$ 3,941	20.75	\$ 5,751	106%	69%
Duration 5:								
Under 50...	2	\$ 88	0	\$ 0	0.00	\$ 0	.....	.....
50-59.....	29	6,938	0	0	0.18	38	0%	0%
60-69.....	815	179,549	18	3,016	13.52	3,063	133	98
70-79.....	219	65,018	2	812	5.90	1,867	34	43
80 and over.....	3	851	1	446	0.19	55	526	811
All ages...	1,068	\$ 252,444	21	\$ 4,274	19.79	\$ 5,023	106%	85%
Durations 1-5:								
Under 50...	6	\$ 134	0	\$ 0	0.01	\$ 0	0%	.....
50-59.....	323	46,206	11	474	1.91	259	576	183%
60-69.....	5,514	1,279,377	80	14,880	76.24	18,035	105	83
70-79.....	609	227,360	16	5,844	16.17	6,671	99	88
80 and over.....	6	1,643	1	446	0.44	120	227	372
All ages...	6,458	\$ 1,554,720	108	\$ 21,644	94.77	\$ 25,085	114%	86%
Durations 6 and over:								
Under 50...	11	\$ 724	0	\$ 0	0.00	\$ 0	.....	.....
50-59.....	75	20,925	1	238	0.42	109	238%	218%
60-69.....	1,131	287,753	8	1,343	16.14	4,328	50	31
70-79.....	4,046	1,051,989	159	40,882	124.84	33,430	127	122
80 and over.....	386	158,579	39	28,450	30.53	12,734	128	223
All ages...	5,649	\$ 1,519,970	207	\$ 70,913	171.93	\$ 50,601	120%	140%
All durations:								
Under 50...	17	\$ 858	0	\$ 0	0.01	\$ 0	0%	.....
50-59.....	398	67,131	12	712	2.33	368	515	193%
60-69.....	6,645	1,567,130	88	16,223	92.38	22,363	95	73
70-79.....	4,655	1,279,349	175	46,726	141.01	40,101	124	117
80 and over.....	392	160,222	40	28,896	30.97	12,854	129	225
All ages...	12,107	\$ 3,074,690	315	\$ 92,557	266.70	\$ 75,686	118%	122%

TABLE E—Continued  
 WITHOUT A GUARANTEED PERIOD  
 OR REFUND PROVISION—MALE LIVES  
 PENSION TRUST ISSUES

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Duration 1:								
Under 50...	0	\$ 0	0	\$ 0	0 00	\$ 0	0%	0%
50-59.....	20	5,628	0	0	0 24	64	0	0
60-69.....	216	52,116	0	0	4 67	1,166	0	0
70-79.....	8	5,558	0	0	0 32	242	0	0
80 and over	0	0	0	0	0.00	0		
All ages...	244	\$ 63,302	0	\$ 0	5 23	\$ 1,472	0%	0%
Duration 2:								
Under 50...	0	\$ 0	0	\$ 0	0 00	\$ 0	0%	0%
50-59.....	35	7,038	0	0	0 43	86	0	0
60-69.....	253	62,424	3	1,918	5 87	1,492	51	129
70-79.....	13	9,437	0	0	0 58	421	0	0
80 and over	1	374	0	0	0 10	38	0	0
All ages...	302	\$ 79,273	3	\$ 1,918	6 98	\$ 2,037	43%	94%
Duration 3:								
Under 50...	0	\$ 0	0	\$ 0	0 00	\$ 0	0%	0%
50-59.....	30	5,965	0	0	0 39	76	0	0
60-69.....	278	61,634	10	2,077	7 04	1,589	142	131
70-79.....	16	11,616	1	277	0 77	436	130	52
80 and over	1	374	0	0	0 11	42	0	0
All ages...	325	\$ 79,589	11	\$ 2,354	8 31	\$ 2,243	132%	105%
Duration 4:								
Under 50...	3	\$ 153	0	\$ 0	0 01	\$ 0	0%	0%
50-59.....	13	1,673	0	0	0 17	22	0	0
60-69.....	259	56,764	12	2,154	6 96	1,581	172	136
70-79.....	20	9,985	3	1,280	0 86	429	349	298
80 and over	2	719	1	374	0 21	75	476	499
All ages...	297	\$ 69,294	16	\$ 3,808	8 21	\$ 2,107	195%	181%
Duration 5:								
Under 50...	3	\$ 153	0	\$ 0	0 01	\$ 0	0%	0%
50-59.....	12	1,544	0	0	0 16	22	0	0
60-69.....	203	46,583	15	2,776	5 94	1,435	253	193
70-79.....	27	10,580	1	308	1 19	450	84	68
80 and over	1	2,593	0	0	0 09	243	0	0
All ages...	246	\$ 61,453	16	\$ 3,084	7 39	\$ 2,150	217%	143%
Durations 1-5:								
Under 50...	6	\$ 306	0	\$ 0	0 02	\$ 0	0%	0%
50-59.....	110	21,848	0	0	1 39	270	0	0
60-69.....	1,209	279,521	40	8,925	30 48	7,263	131	123
70-79.....	84	47,176	5	1,865	3 72	2,078	134	90
80 and over	5	4,060	1	374	0 51	398	196	94
All ages...	1,414	\$ 352,911	46	\$ 11,164	36 12	\$ 10,009	127%	112%
Durations 6 and over:								
Under 50...	9	\$ 459	0	\$ 0	0 03	\$ 2	0%	0%
50-59.....	15	1,625	2	257	0 20	21	1000	224
60-69.....	145	18,206	5	1,967	3 69	482	136	408
70-79.....	1,140	373,171	60	20,518	56 08	19,381	107	106
80 and over	141	60,711	16	10,147	14 29	6,118	112	166
All ages...	1,450	\$ 454,172	83	\$ 32,889	74 29	\$ 26,004	112%	126%
All durations:								
Under 50...	15	\$ 765	0	\$ 0	0 05	\$ 2	0%	0%
50-59.....	125	23,473	2	257	1 59	291	126	88
60-69.....	1,354	297,727	45	10,892	34 17	7,745	132	141
70-79.....	1,224	420,347	65	22,383	59 80	21,459	109	104
80 and over	146	64,771	17	10,521	14 80	6,516	115	161
All ages...	2,864	\$ 807,083	129	\$ 44,053	110 41	\$ 36,013	117%	122%

TABLE E—Continued  
WITHOUT A GUARANTEED PERIOD  
OR REFUND PROVISION—FEMALE LIVES  
PENSION TRUST ISSUES

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Duration 1:								
Under 50...	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59.....	6	462	0	0	0.04	3	0%	0%
60-69.....	124	31,683	5	786	1.50	395	333	199
70-79.....	2	840	0	0	0.06	26	0	0
80 and over..	0	0	0	0	0.00	0		
All ages...	132	\$ 32,985	5	\$ 786	1.60	\$ 424	313%	185%
Duration 2:								
Under 50...	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59.....	6	462	4	196	0.04	3	1000%	6533%
60-69.....	131	31,734	15	2,650	1.70	429	882	618
70-79.....	7	2,058	0	0	0.17	56	0	0
80 and over..	0	0	0	0	0.00	0		
All ages...	144	\$ 34,254	19	\$ 2,846	1.91	\$ 488	995%	583%
Duration 3:								
Under 50...	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59.....	2	266	0	0	0.02	2	0%	0%
60-69.....	117	27,931	2	521	1.66	421	120	124
70-79.....	11	3,227	1	257	0.31	92	323	279
80 and over..	0	0	0	0	0.00	0		
All ages...	130	\$ 31,424	3	\$ 778	1.99	\$ 515	151%	151%
Duration 4:								
Under 50...	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59.....	9	810	4	220	0.86	5	667%	400%
60-69.....	118	23,327	1	170	1.81	370	55	46
70-79.....	34	9,192	0	0	0.97	258	0	0
80 and over..	0	0	0	0	0.00	0		
All ages...	161	\$ 33,329	5	\$ 390	2.84	\$ 633	176%	62%
Duration 5:								
Under 50...	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59.....	3	324	0	0	0.02	2	0%	0%
60-69.....	98	12,227	0	0	1.52	197	0	0
70-79.....	64	15,695	1	144	1.77	416	56	35
80 and over..	0	0	0	0	0.00	0		
All ages...	165	\$ 28,246	1	\$ 144	3.31	\$ 615	30%	23%
Durations 1-5:								
Under 50...	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59.....	26	2,324	8	416	0.18	15	444%	773%
60-69.....	588	126,902	23	4,127	8.19	1,812	281	228
70-79.....	118	31,012	2	401	3.28	848	61	47
80 and over..	0	0	0	0	0.00	0		
All ages...	732	\$ 160,238	33	\$ 4,944	11.65	\$ 2,675	283%	185%
Durations 6 and over:								
Under 50...	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59.....	0	0	0	0	0.00	0		
60-69.....	173	9,886	1	56	2.45	144	41%	39%
70-79.....	681	132,401	19	4,304	22.06	4,626	86	93
80 and over..	59	22,448	9	2,495	5.25	2,072	171	120
All ages...	913	\$ 164,735	29	\$ 6,855	29.76	\$ 6,842	97%	100%
All durations:								
Under 50...	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59.....	26	2,324	8	416	0.18	15	444%	773%
60-69.....	761	136,788	24	4,183	10.64	1,956	226	214
70-79.....	799	163,413	21	4,705	24.34	5,474	83	86
80 and over..	59	22,448	9	2,495	5.25	2,072	171	120
All ages...	1,645	\$ 324,973	62	\$ 11,799	41.41	\$ 9,517	150%	124%

**TABLE F**  
**LIFE INCOME SETTLEMENTS WITHOUT A GUARANTEED**  
**PERIOD OR REFUND PROVISION ARISING**  
**FROM DEATH CLAIMS**  
**EXPERIENCE BETWEEN 1960 AND 1965 ANNIVERSARIES—PAYEE ELECTIONS**  
**(Expected Deaths on *a*-1949 Ultimate Table)**

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
<b>Male Lives</b>								
Durations 1-5:								
Under 50 .....	0	\$ 0	0	\$ 0	0.00	\$ 0	0%	0%
50-59 .....	10	4,542	0	0	.10	43	0	0
60-69 .....	10	7,039	0	0	.27	183	0	0
70-79 .....	3	2,248	1	80	.16	132	625	61
80 and over .....	0	0	0	0	0.00	0		
All ages .....	23	\$ 13,829	1	\$ 80	0.53	\$ 358	189%	22%
Durations 6 and over:								
Under 50 .....	5	\$ 475	0	\$ 0	0.00	\$ 0	0%	0%
50-59 .....	40	13,899	0	0	0.44	169	0	0
60-69 .....	17	9,698	2	741	0.40	215	500	345
70-79 .....	45	51,610	5	4,158	2.55	2,939	196	141
80 and over .....	59	22,738	7	2,756	6.82	2,615	103	105
All ages .....	166	\$ 98,420	14	\$ 7,655	10.21	\$ 5,938	137%	129%
All durations:								
Under 50 .....	5	\$ 475	0	\$ 0	0.00	\$ 0	0%	0%
50-59 .....	50	18,441	0	0	0.54	212	0	0
60-69 .....	27	16,737	2	741	0.67	398	299	186
70-79 .....	48	53,858	6	4,238	2.71	3,071	211	138
80 and over .....	59	22,738	7	2,756	6.82	2,615	103	105
All ages .....	189	\$ 112,249	15	\$ 7,735	10.74	\$ 6,296	140%	123%
<b>Female Lives</b>								
Durations 1-5:								
Under 50 .....	3	\$ 1,881	0	\$ 0	0.01	\$ 5	0%	0%
50-59 .....	151	96,973	0	0	0.78	506	0	0
60-69 .....	371	291,510	3	1,986	4.77	3,788	63	52
70-79 .....	243	178,388	9	5,213	7.92	5,730	114	91
80 and over .....	52	48,784	2	1,730	4.14	4,024	48	43
All ages .....	820	\$ 617,536	14	\$ 8,929	17.62	\$ 14,053	79%	64%
Durations 6 and over:								
Under 50 .....	33	\$ 5,759	0	\$ 0	0.05	\$ 12	0%	0%
50-59 .....	295	136,478	3	463	1.56	713	192	65
60-69 .....	1,011	548,126	15	8,348	13.78	7,475	109	112
70-79 .....	2,337	1,304,381	72	34,070	83.58	46,341	86	74
80 and over .....	1,488	763,319	141	79,870	156.63	80,402	90	99
All ages .....	5,164	\$2,758,063	231	\$122,751	255.60	\$134,943	90%	91%
All durations:								
Under 50 .....	36	\$ 7,640	0	\$ 0	0.06	\$ 17	0%	0%
50-59 .....	446	233,451	3	463	2.34	1,219	128	38
60-69 .....	1,382	839,636	18	10,334	18.55	11,263	97	92
70-79 .....	2,580	1,482,769	81	39,283	91.50	52,071	89	75
80 and over .....	1,540	812,103	143	81,600	160.77	84,426	89	97
All ages .....	5,984	\$3,375,599	245	\$131,680	273.22	\$148,996	90%	88%

TABLE F—Continued  
WITHOUT A GUARANTEED  
PERIOD OR REFUND PROVISION  
ARISING FROM DEATH CLAIMS  
NONPAYEE ELECTIONS

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Male Lives								
Durations 1-5:								
Under 50.....	6	\$ 2,630	0	\$ 0	0.00	\$ 10	.....	0%
50-59.....	0	0	0	0	.00	0	.....	0%
60-69.....	4	1,179	0	0	.11	30	.....	0%
70-79.....	5	5,750	0	0	.23	264	0	0
80 and over.....	5	1,200	0	0	0.67	161	0	0
All ages.....	20	\$ 10,759	0	\$ 0	1.01	\$ 465	0%	0%
Durations 6 and over:								
Under 50.....	33	\$ 32,845	0	\$ 0	0.12	\$ 112	0%	0%
50-59.....	26	14,819	0	0	0.32	191	0	0
60-69.....	39	18,571	2	938	0.76	335	263	280
70-79.....	31	16,344	0	0	1.72	807	0	0
80 and over.....	19	9,194	3	2,561	2.89	1,858	104	138
All ages.....	148	\$ 91,773	5	\$ 3,499	5.81	\$ 3,303	86%	106%
All durations:								
Under 50.....	39	\$ 35,475	0	\$ 0	0.12	\$ 122	0%	0%
50-59.....	26	14,819	0	0	0.32	191	0	0
60-69.....	43	19,750	2	938	0.87	365	230	257
70-79.....	36	22,094	0	0	1.95	1,071	0	0
80 and over.....	24	10,394	3	2,561	3.56	2,019	84	127
All ages.....	168	\$ 102,532	5	\$ 3,499	6.82	\$ 3,768	73%	93%
Female Lives								
Durations 1-5:								
Under 50.....	19	\$ 5,390	2	\$ 54	0.01	\$ 7	20000%	771%
50-59.....	102	85,544	1	1,064	0.48	414	208	257
60-69.....	199	135,623	1	297	2.50	1,693	40	18
70-79.....	173	165,765	8	5,302	5.72	5,534	140	96
80 and over.....	34	25,616	2	2,488	2.73	2,132	73	117
All ages.....	527	\$ 417,938	14	\$ 9,205	11.44	\$ 9,780	122%	94%
Durations 6 and over:								
Under 50.....	89	\$ 41,642	0	\$ 0	0.16	\$ 86	0%	0%
50-59.....	406	180,099	4	824	2.01	904	199	91
60-69.....	878	504,432	15	6,733	11.78	6,797	127	99
70-79.....	1,162	765,443	43	28,311	41.47	27,186	104	104
80 and over.....	665	445,333	93	59,285	73.96	50,321	126	118
All ages.....	3,200	\$1,936,949	155	\$ 95,153	129.38	\$ 85,294	120%	112%
All durations:								
Under 50.....	108	\$ 47,032	2	\$ 54	0.17	\$ 93	1176%	58%
50-59.....	508	265,643	5	1,888	2.49	1,318	201	143
60-69.....	1,077	640,055	16	7,030	14.28	8,490	112	83
70-79.....	1,335	931,208	51	33,613	47.19	32,720	108	103
80 and over.....	699	470,949	95	61,773	76.69	52,453	124	118
All ages.....	3,727	\$2,354,887	169	\$104,358	140.82	\$ 95,074	120%	110%

TABLE F—Continued  
 WITHOUT A GUARANTEED  
 PERIOD OR REFUND PROVISION  
 ARISING FROM MATURITIES AND SURRENDERS  
 OTHER THAN PENSION TRUST ISSUES

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
Male Lives								
Durations 1-5:								
Under 50.....	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59.....	169	67,078	3	2,438	2.07	858	145%	284%
60-69.....	1,226	630,506	27	9,749	30.12	15,478	90	63
70-79.....	298	240,032	6	5,721	13.79	11,171	44	51
80 and over.....	26	19,164	0	0	2.76	2,099	0	0
All ages.....	1,719	\$ 956,780	36	\$ 17,908	48.74	\$ 29,606	74%	60%
Durations 6 and over:								
Under 50.....	15	\$ 3,160	0	\$ 0	0.04	\$ 14	0%	0%
50-59.....	227	39,298	2	1,147	2.58	459	78	250
60-69.....	854	310,118	19	5,052	21.07	7,742	90	65
70-79.....	2,501	1,268,065	125	54,407	133.00	67,633	94	80
80 and over.....	1,157	545,883	117	51,784	143.66	65,393	81	79
All ages.....	4,754	\$ 2,166,524	263	\$ 112,390	300.35	\$ 141,441	88%	79%
All durations:								
Under 50.....	15	\$ 3,160	0	\$ 0	.04	\$ 14	0%	0%
50-59.....	396	106,376	5	3,585	4.65	1,317	108	272
60-69.....	2,080	940,624	46	14,801	51.19	23,220	90	64
70-79.....	2,799	1,508,097	131	60,128	146.79	78,804	89	76
80 and over.....	1,183	565,047	117	51,784	146.42	67,692	80	76
All ages.....	6,473	\$ 3,123,304	299	\$ 130,298	349.09	\$ 171,047	86%	76%
Female Lives								
Durations 1-5:								
Under 50.....	6	\$ 1,587	0	\$ 0	0.00	\$ 3		0%
50-59.....	278	90,589	2	744	1.48	493	135%	151
60-69.....	1,416	588,720	13	3,824	18.30	7,670	71	50
70-79.....	358	158,980	9	2,096	9.93	4,748	91	44
80 and over.....	26	35,231	4	5,826	2.36	2,902	169	201
All ages.....	2,084	\$ 875,107	28	\$ 12,490	32.07	\$ 15,816	87%	79%
Durations 6 and over:								
Under 50.....	56	\$ 19,077	0	\$ 0	0.04	\$ 26	0%	0%
50-59.....	177	43,396	1	69	0.97	234	103	29
60-69.....	1,693	416,938	23	3,247	23.76	5,902	97	55
70-79.....	3,369	1,137,699	101	31,820	117.94	40,559	86	78
80 and over.....	1,267	471,500	105	39,557	121.38	45,389	87	87
All ages.....	6,562	\$ 2,088,610	230	\$ 74,693	264.09	\$ 92,110	87%	81%
All durations:								
Under 50.....	62	\$ 20,664	0	\$ 0	0.04	\$ 29	0%	0%
50-59.....	455	133,985	3	813	2.45	727	122	112
60-69.....	3,109	1,005,658	36	7,071	42.06	13,572	86	52
70-79.....	3,727	1,296,679	110	33,916	127.87	45,307	86	75
80 and over.....	1,293	506,731	109	45,383	123.74	48,291	88	94
All ages.....	8,646	\$ 2,963,717	258	\$ 87,183	296.16	\$ 107,926	87%	81%



**TABLE F—Continued**  
**WITHOUT A GUARANTEED**  
**PERIOD OR REFUND PROVISION**  
**ARISING FROM MATURITIES AND SURRENDERS**  
**PENSION TRUST ISSUES**

ATTAINED AGES	EXPOSURES		ACTUAL DEATHS		EXPECTED DEATHS		MORTALITY RATIO	
	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income	Number of Contracts	Amount of Annual Income
<b>Male Lives</b>								
Durations 1-5:								
Under 50.....	2	\$ 662	0	\$ 0	0.00	\$ 0		
50-59.....	13	13,896	0	0	0.17	190	0%	0%
60-69.....	354	168,809	5	1,280	9.20	4,475	54	29
70-79.....	131	85,579	0	0	5.78	3,731	0	0
80 and over.....	0	0	0	0	0.00	0		
All ages.....	500	\$ 268,946	5	\$ 1,280	15.15	\$ 8,396	33%	15%
Durations 6 and over:								
Under 50.....	3	\$ 993	0	\$ 0	0.00	\$ 0		
50-59.....	6	483	0	0	0.08	6	0%	0%
60-69.....	66	24,612	1	77	1.68	599	60	13
70-79.....	457	217,613	12	4,446	22.67	10,833	53	41
80 and over.....	32	8,785	4	1,551	3.45	910	116	170
All ages.....	564	\$ 252,486	17	\$ 6,074	27.88	\$ 12,348	61%	49%
All durations:								
Under 50.....	5	\$ 1,655	0	\$ 0	0.00	\$ 0		
50-59.....	19	14,379	0	0	0.25	196	0%	0%
60-69.....	420	193,421	6	1,357	10.88	5,074	55	27
70-79.....	588	303,192	12	4,446	28.45	14,564	42	31
80 and over.....	32	8,785	4	1,551	3.45	910	116	170
All ages.....	1,064	\$ 521,432	22	\$ 7,354	43.03	\$ 20,744	51%	35%
<b>Female Lives</b>								
Durations 1-5:								
Under 50.....	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59.....	7	1,658	0	0	0.05	9	0%	0%
60-69.....	218	66,767	0	0	3.18	950	0	0
70-79.....	56	22,856	1	167	1.57	673	64	25
80 and over.....	1	418	0	0	0.06	26	0	0
All ages.....	282	\$ 91,699	1	\$ 167	4.86	\$ 1,658	21%	10%
Durations 6 and over:								
Under 50.....	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59.....	2	67	0	0	0.01	0	0%	
60-69.....	53	3,632	2	104	0.77	58	260	179%
70-79.....	151	54,629	3	774	4.85	2,109	62	37
80 and over.....	5	171	0	0	0.33	11	0	0
All ages.....	211	\$ 58,499	5	\$ 878	5.96	\$ 2,178	84%	40%
All durations:								
Under 50.....	0	\$ 0	0	\$ 0	0.00	\$ 0		
50-59.....	9	1,725	0	0	0.06	9	0%	0%
60-69.....	271	70,399	2	104	3.95	1,008	51	10
70-79.....	207	77,485	4	941	6.42	2,782	62	34
80 and over.....	6	589	0	0	0.39	37	0	0
All ages.....	493	\$ 150,198	6	\$ 1,045	10.82	\$ 3,836	55%	27%

