TRANSACTIONS OF SOCIETY OF ACTUARIES 1979 REPORTS

II. MORTALITY UNDER STANDARD ORDINARY INSURANCE ISSUES BETWEEN 1977 AND 1978 ANNIVERSARIES

ABSTRACT

This is the latest in a series of annual reports on intercompany mortality experience under Standard Ordinary life insurance policies. Each of the tables included in this report (with some minor exceptions) shows amounts exposed to risk, actual amounts of death claims, expected amounts of death claims, and mortality ratios of actual to expected death claims. The expected death claims are based on the 1965–70 Basic Tables. All of the 1977–78 experience is derived from the contributions of twenty large life insurance companies. However, not all of the companies contributed to all aspects of the study. Each of the tables is based on either select (first fifteen policy years) or ultimate (policy years 16 and subsequent) experience.

There are certain differences between this current report and similar reports that have been published in prior years. The major such differences are listed below.

Because of the declining proportion of total deaths represented by war deaths and their minor effect on the mortality ratios, the handling of war deaths has been changed. The table showing "Amounts of War Deaths and the Ratio of War Deaths to Total Deaths" experienced in the recent five years has been discontinued. The columns of Appendix I have been changed to show actual deaths without a split of war deaths; there is now only one mortality ratio, which includes all deaths. Similarly, all of the numbered tables report actual deaths and mortality ratios including war deaths. In prior reports, these tables excluded war deaths.

The table comparing unadjusted and adjusted mortality ratios on nonmedical issues by issue-age groups during the recent year of experience is not shown. Also, Tables 5 and 11 are shown without the adjustment that had been made in the past. A short paragraph is included in the text on page 10, noting what the magnitude of such an adjustment might be.

The detailed Tables B and C of Appendix I in prior reports, which gave data only for males and females combined, have been discontinued, and the detailed tables that give data for males and females separately, previously labeled D and E, are now labeled B and C.

The following results, which include war deaths, summarize the important conclusions reached in this study.

General Mortality between 1977 and 1978 Anniversaries

The overall medical mortality ratio in the select period declined by 0.5 of a percentage point from last year's study.

The overall nonmedical mortality ratio in the select period declined by 2.0 percentage points from last year's study.

On the basis of limited data in the select period, the overall paramedical mortality ratio increased by 2.5 percentage points from last year's study.

The overall mortality ratio in the ultimate period declined by 1.5 percentage points from last year's study.

Medical versus Nonmedical Mortality between 1973 and 1978 Anniversaries

In the select period, for all policy years combined, nonmedical mortality was higher than medical mortality at issue ages 20–24 and 30–49, but was lower than medical mortality at issue ages 0–19, 25–29, and 50 and over (Table 5).

In the ultimate period, nonmedical mortality exceeded medical mortality for each of the attained-age groups except 15-19, 25-29, and 35-39 (Table 7).

For males in the select period for all policy years combined, nonmedical mortality exceeded medical mortality at issue ages 20-24 and 30-44 (Table 11).

For females in the select period for all policy years combined, nonmedical mortality exceeded medical mortality at issue ages 35 and over (Table 11).

Premium-paying versus Fully Paid-up Mortality in the Ultimate Period, between 1973 and 1978 Anniversaries

Overall, mortality on premium-paying insurance exceeded that on fully paid-up insurance by 1.1 percentage points. However, for attained ages 15-19, 30-64, and 90-95, the mortality ratios were higher for paid-up insurance (Table 8).

Male versus Female Mortality between 1973 and 1978 Anniversaries

There was little change from last year's report, with female mortality averaging about 60 percent of male mortality (Tables 9, 10, and 12).

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Table	Exposure Period	Policy Years	Medical or Nonmedical	Male and Female	Mortality Ratios by
1	1977-78	1-15	Medical	Combined	Ages at issue
2	1977-78	1-15	Medical	Combined	Year of issue
3	1977-78	1-15	Nonmedical	Combined	Ages at issue
4	1977-78	1-15	Nonmedical	Combined	Year of issue
5	1973–78	1–15	Medical and nonmedical	Combined	Age group at issue and policy year
6	1977-78	16 and later	Combined	Combined	Attained ages
7	1973–78	16 and later	Medical and nonmedical	Combined	Attained ages
	1973–78	16 and later	Combined	Combined	Attained ages; premi- um paying and paid- up
9	1973-78	1-15	Medical	Separate	Ages at issue
10	1973-78	1-15	Nonmedical	Separate	Ages at issue
11	1973-78	1–15	Medical and nonmedical	Separate	Age group at issue and policy year
12 Appendix I:	1973–78	16 and later	Combined	Separate	Attained ages
A	Names of		ting companies, oy each compan		tion of total 1977-78 ex-
В	1977-78	1–15	Medical	Separate	Year of issue and ages
C	1977–78	1–15	Nonmedical	Separate	Year of issue and ages at issue

INTRODUCTION

Standard Ordinary insurance issues between 1977 and 1978 policy anniversaries, and also for the period between 1973 and 1978 policy anniversaries where one year's exposure generally provided an insufficient volume of data. It reviews the mortality experience under the following:

- 1. Standard Ordinary insurance issued subject to a medical examination, observed during each of the first fifteen policy years;
- 2. Standard Ordinary insurance issued without a medical or paramedical examination, observed during each of the first fifteen policy years;
- 3. Standard Ordinary insurance issued subject to a paramedical examination, observed during each of the first eight policy years; and
- 4. Standard Ordinary insurance observed during the sixteenth and subsequent policy years. As in previous reports, this ultimate experience is shown for medical and nonmedical issues combined, with a portion of it also shown for medical and nonmedical issues separately. A table

comparing the ultimate experience under premium-paying and fully paid-up (excluding reduced paid-up) policies has also been included.

A summary of aggregate mortality ratios, including war deaths, based on the 1965-70 Basic Tables for each major category of experience is as follows:

EXPERIENCE BETWEEN POLICY ANNIVERSARIES

	1976-77	1977-78
Medical select	75.5%	75.0%
Nonmedical select	87.9	85.9
Paramedical select	78.0*	80.5*
Total select	77.9	77.4
Ultimate	82.0	80.5
Select and ultimate	80.7	79.4

^{*} Note that the paramedical experience is concentrated in the early policy years.

Because of the declining proportion of total deaths represented by war deaths and their minor effect on the mortality ratios, it is felt that the impact of war deaths can be ignored for all practical purposes. Thus, in this report war deaths have not been excluded from any of the tabular data nor from any of the comparisons with prior years' figures.

The names of the twenty companies that contributed their experience between 1977 and 1978 policy anniversaries, and their proportionate contributions to the 1977–78 exposure, are given in Table A of Appendix I. One of the regular contributors, unable to contribute its experience between 1976 and 1977 anniversaries, was able to do so this year. However, that company's contribution represents only a relatively small proportion of the total intercompany data, so this change should have relatively little effect on our comparisons of the 1977–78 findings with the findings for prior years.

EXPERIENCE UNDER STANDARD ISSUES DURING THE FIRST FIFTEEN POLICY YEARS

Medically Examined Issues

The 1977-78 experience during the first fifteen policy years is based on an exposure of \$155 billion and actual deaths of \$425 million. This represents an increase in the exposure from the preceding year of about 7.4 percent. About three-fifths of that increase is attributable to the data

submitted by one company, which was able to contribute to this current study but was unable to contribute its experience between 1976 and 1977 anniversaries.

The 1965-70 Male and the 1965-70 Female Select Basic Tables (TSA, 1973 Reports, p. 199, and TSA, 1974 Reports, p. 57) were used to calculate

TABLE 1

STANDARD MEDICALLY EXAMINED ISSUES OF 1963-77
MALE AND FEMALE LIVES COMBINED
EXPERIENCE BETWEEN 1977 AND 1978 ANNIVERSARIES
BY AGE AT ISSUE
POLICY YEARS 1-15 COMBINED

Expected Deaths on 1965-70 Select Basic Tables (Amounts Shown in \$1,000 Units)

Ages at	Exposed	Actual	Expected	Mortality
Issue	to Risk	Deaths	Deaths	Ratio
0	\$ 260,744	\$ 33	\$ 297	11.1%
1	184,331	2	102	2.0
2-4	318,101	142	147	96.6
5–9	612,576	308	318	96.9
10–14	785,219	804	606	132.7
15–19	1,718,795	2,701	1,690	159.8
20–24	7,826,774	5,504	7,062	77.9
25-29	19,599,876	17,742	19,735	89.9
30–34	29,125,957	33,318	44,468	74.9
35–39	29,376,727	52,409	73,398	71.4
40-44	25,401,076	75,915	103,294	73.5
45-49	19,075,776	84,805	110, 299	76.9
50-54	11,707,842	69,105	94,756	72.9
55-59	5,602,487	45,357	59,698	76.0
60-64	2,183,659	22,855	33,729	67.8
65–69	622,586	10,953	13,100	83.6
70 and over	133,415	3,290	4,570	72.0
All ages	\$154,535,941	\$425,243	\$567,269	75.0%

expected deaths separately for the male experience and the female experience. The expected deaths for these two classes of experience were combined in some of the tables, and the mortality ratios were calculated including war deaths.

The experience by age group at issue is shown in Table 1 for the first fifteen policy years combined. The experience by year of issue is presented in Table 2. The detailed experience by age group at issue for each year of issue, for male and female lives separately, is set forth in Table B of Appendix I.

The aggregate medical mortality ratio for the period from 1977 to 1978 anniversaries was 75.0 percent. The following tabulation compares

Exposure Year	Aggregate Mortality Ratio
1972–73	92.9%
1973–74	88 . 0
1974–75	85.1
1975–76	80 . 9
1976–77	75.5
1977–78	75.0

this result with the results of previous studies based on the 1965-70 Basic Tables.

As seen in Table 1, there were two issue-age groups that showed medical mortality ratios greater than 100.0 percent for the 1977–78 exposure period: issue ages 10–14 and 15–19.

TABLE 2

STANDARD MEDICALLY EXAMINED ISSUES OF 1963-77
MALE AND FEMALE LIVES COMBINED
EXPERIENCE BETWEEN 1977 AND 1978 ANNIVERSARIES
BY YEAR OF ISSUE
ALL AGES COMBINED

Expected Deaths on 1965-70 Select Basic Tables (Amounts Shown in \$1,000 Units)

Year of	Policy	Exposed	Actual	Expected	Mortality
Issue	Year	to Risk	Deaths	Deaths	Ratio
963	15	\$ 5,240,720	\$ 36,167	\$ 45,478	79.5%
964	14	5,738,434	32,757	44,220	74.1
965	13	6,248,421	32,005	42,973	74.5
966	12	6,489,137	29,459	40,329	73.0
967	11	6,439,711	30, 295	36,557	82.9
968	10	6,919,158	26,484	35,965	73.6
969	9	7,924,061	25,432	37,198	68.4
970	8 7	8,589,605	26,659	36,302	73.4
971	7	9,636,728	28,135	36,981	76.1
.972	6	10,697,210	26,982	36,409	74.1
973	6 5	12, 194, 708	28, 241	36,667	77.0
974	4 3	14,070,906	28,538	38,427	74.3
.975	3	14,893,140	26,341	35,931	73.3
976	2	17,433,761	23,756	33,449	71.0
977	1	22,020,241	23,992	30,383	79.0
All years of					
issue		\$154,535,941	\$425,243	\$567,269	75.09

As seen in Table 2, medical mortality ratios by year of issue ranged from 68.4 percent for 1969 (policy year 9) to 82.9 percent for 1967 (policy year 11).

The following tabulation indicates the variation in the 1977-78 aggre-

	Number of Companies	Proportion of Actual Deaths
Percentage points below average:		
More than 15	1	1.4%
10–15	2	8.1
5-10	3	22.4
0-5	6	19.4
Percentage points above average:	j	
0-5	3	16.8
5-10	2	2.4
10–15	3	29.5

gate medical mortality ratios for the contributing companies from the 1977-78 all-company average of 75.0 percent.

Nonmedical Issues

The 1977-78 experience during the first fifteen policy years is based on an exposure of \$136 billion and actual deaths of \$119 million. This represents an increase in the exposure from the preceding year of about 8.3 percent. About one-sixth of that increase is attributable to the data submitted by one company, which was able to contribute to this current study but was unable to contribute its experience between 1976 and 1977 anniversaries.

Expected deaths were calculated on the 1965-70 Select Basic Tables in the same manner as for medically examined issues. Those basic tables were derived from experience under medical issues.

For all age groups combined, nonmedical business now comprises 40.6 percent of the total experience (medical, nonmedical, and paramedical combined) on recent Ordinary issues, measured by the exposures during the first fifteen policy years, as compared with 42.0 percent last year. For all age groups combined, the proportion of nonmedical issues in the first policy year for 1977–78 was 36.4 percent, compared with 39.9 percent in last year's report. The following tabulation shows nonmedical exposures as a percentage of total medical, nonmedical, and paramedical exposures, by age group at issue, for the experience between 1977 and 1978 anniversaries.

NONMEDICAL EXPOSURES AS PERCENTAGE OF TOTAL EXPOSURES

Ages at Issue	Policy Year 1	Policy Years 1-15
0–9	92.4%	90.7%
10-19	88.7	88.8
20-29	59.9	64.9
30-39	17.4	21.0
40-49	2.9	3.6
50 and over	0.8	0.7
All Ages	36.4%	40.6%

TABLE 3

STANDARD NONMEDICAL ISSUES OF 1963-77 MALE AND FEMALE LIVES COMBINED EXPERIENCE BETWEEN 1977 AND 1978 ANNIVERSARIES BY AGE AT ISSUE

POLICY YEARS 1-15 COMBINED

Expected Deaths on 1965-70 Select Basic Tables (Amounts Shown in \$1,000 Units)

Age at	Exposed	Actual	Expected	Mortality
Issue	to Risk	Deaths	Deaths*	Ratio*
)	\$ 5,009,356	\$ 2,200	\$ 6,750	32.6%
	1,877,973	679	1,118	60.7
!-4	3,121,501	873	1,393	62.7
-9	4,427,703	1,559	1,985	78.5
0-14	5,539,476	3,673	3,834	95.8
5–19	18,206,947	16,754	16,536	101.3
0-24	40,790,325	29,404	33,008	89.1
5-29	34, 150, 252	26,067	30,939	84.3
0-34	15,240,660	17,957	21,699	82.8
5-39	5,640,716	12,374	13, 161	94.0
0-44	1,697,001	5,293	5.375	98.5
5-49	306,644	1,168	1,215	96.1
0 and over	150,393	606	1,035	58.6
All ages	\$136,158,947	\$118,607	\$138,048	85.9%

^{*} Exposures not adjusted for distribution by age within each five-year age group at issue.

The mortality ratios for nonmedical issues are presented in Table 3 by age group at issue for the first fifteen policy years combined. The aggregate mortality ratio for the period from 1977 to 1978 anniversaries was 85.9 percent. The following tabulation compares this result with the results of the previous studies based on the 1965–70 Basic Tables.

Exposure Year	Aggregate Mortality Ratio
1972-73	102.6%
1973-74	99 . 1
1974-75	94.9
1975-76	88.5
1976-77	87 . 9
1977-78	85.9

The mortality ratios in Table 3 (and in Table 4) generally understate somewhat the death rates for nonmedical business because, in calculating the expected deaths, no adjustment was made for the fact that the average ages of the exposures under nonmedical issues for each of the issue-age groups 40–44, 45–49, and 50 and over are lower than the average corresponding ages of the exposures for each of those age groups in the medical experience entering into the 1965–70 Basic Tables. This situation arises because the maximum age at which nonmedical business is issued by the various contributing companies is generally 40 or 45. Thus, the nonmedical exposures beyond each of those issue ages tend to

TABLE 4

STANDARD NONMEDICAL ISSUES OF 1963-77 MALE AND FEMALE LIVES COMBINED EXPERIENCE BETWEEN 1977 AND 1978 ANNIVERSARIES BY YEAR OF ISSUE ALL AGES COMBINED

Expected Deaths on 1965-70 Select Basic Tables (Amounts Shown in \$1,000 Units)

Year of Issue	Policy Year	Exposed to Risk	Actual Deaths	Expected Deaths*	Mortality Ratio*
1963	15	\$ 3,521,952	\$ 6,404	\$ 7,554	84.8%
964	14	3,945,990	6,305	7,468	84.4
965	13	4,327,588	5,978	7,171	83.4
1966	12	4,343,377	5,004	6,495	77.0
1967	11	4,976,452	5,959	6,881	86.6
1968	10	5,815,169	6,657	7,599	87.6
1969	9	6,209,665	6,723	7,419	90.6
1970		7,152,358	7,386	7,777	95.0
1971	8 7	8,149,538	7,304	8,177	89.3
972		9,691,290	8,141	8,953	90.9
973	6 5	11,326,576	9,197	9,907	92.8
974		12,494,197	9,643	10,414	92.6
975	4 3	13,804,120	10,313	10,962	94.1
1976	2	17,304,123	9,960	12,600	79.0
1977	ī	23,096,552	13,633	18,671	73.0
All years of					
issue		\$136,158,947	\$118,607	\$138,048	85.9%

^{*} Exposures not adjusted for distribution by age within each five-year age group at issue.

fall off sharply. It is likely that a further understatement of expected deaths arises from the general practice of reducing nonmedical amount limits by multiples of \$5,000 beyond issue ages such as 35 and 40.

An attempt was made to estimate the extent to which Table 3 understates the true mortality on nonmedical business. This was done by calculating mortality ratios based on an adjusted distribution of exposures by age within each five-year age group at issue. The adjusted distribution of exposures takes into consideration the nonmedical age limits of the contributing companies; the reductions in amount limits mentioned above were not considered.

Although the adjustment is not precise, it is estimated that the unadjusted mortality ratios understate the true mortality experience on nonmedical business to a significant degree (about 14 percent) at issue ages 40–44 and to a lesser degree (about $5\frac{1}{2}$ percent) at issue ages 45–49. Nonmedical issues at ages 50 and over arise largely from business issued under special circumstances (such as pension trust and salary allotment plans) and do not affect appreciably the distribution of exposures by age within each five-year age group at issue. So-called policyholder's nonmedical, issued on the basis of a previous medical examination within six or twelve months, is also included for some companies; others include it in their medical issues.

The nonmedical mortality ratios by calendar year of issue for all ages at issue combined during the period from 1977 to 1978 anniversaries are presented in Table 4 on an unadjusted basis. The mortality ratios ranged from 73.0 percent for issue year 1977 (policy year 1) to 95.0 percent for issue year 1970 (policy year 8).

The details of the unadjusted nonmedical experience by age groups at issue for each year of issue, for male and female lives separately, are set forth in Table C of Appendix I.

The following tabulation indicates the variation in the 1977-78 aggre-

	Number of Companies	Proportion of Actual Deaths
Percentage points below average:		
More than 15	5	8.6%
10–15	2	3.0
5–10	2	4.5
0–5	6	26.6
Percentage points above average:		
0–5	2	47.9
5-10	0	0.0
10–15	1	6.2
More than 15	2	3.2

gate nonmedical mortality ratios of the contributing companies from the 1977–78 all-company average of 85.9 percent.

Comparison of Medical and Nonmedical Experience

It would be desirable to compare the nonmedical experience with the experience on strictly comparable policies issued with a medical examination, but data for such a comparison are not available. Table 5 presents side by side the experience on medical and nonmedical select issues as reported to the Committee for the five-year period from 1973 to 1978 anniversaries. The 1965–70 Male, Female, and Male and Female Combined Select Basic Tables, respectively, were used to calculate expected deaths for the male experience, the female experience, and the experience reported without subdivision by sex.

The nonmedical mortality ratios shown in Table 5 have *not* been adjusted to reflect the approximate distribution of nonmedical exposures by age for issue-age groups 40–44 and higher. The lower half of Table 5 indicates that, for policy years 1–15 combined, nonmedical mortality exceeded medical mortality appreciably at issue ages 20–24 and 30–49; the excess ranged from about 7 percent at issue ages 20–24 to about 30 percent at issue ages 40–44. It is to be noted that this 30 percent excess at issue ages 40–44 is based on unadjusted exposures. If the actual distribution of nonmedical exposures had been available and had been used, the excess would have been much greater.

Paramedically Examined Issues

Companies were asked to submit their data on paramedically examined business separately. Eighteen companies were able to comply. Of the approximately \$45 billion of paramedical exposure submitted for 1977–78, about 67 percent was concentrated in the first two policy years, and almost all of the paramedical exposure was concentrated in the first eight policy years. The approximately \$18 billion of paramedical exposure in the first policy year (year of issue 1977) was about 83 percent of the medically examined exposure in the first policy year and was about 80

¹ Five factors, among others, that should be considered in the comparisons presented in this study are the following: (a) the relative proportions of medical and nonmedical business differ among companies (see Appendix I, Table A); (b) the underwriting standards of the contributing companies differ; (c) the age distributions of the various types of business differ; (d) the proportions of business applied for nonmedically but issued subject to medical examination and then classified as medical business differ among companies; and (e) medical business generally is for larger amounts and is sold at a higher average socioeconomic level.

TABLE 5 COMPARISON OF MEDICAL AND NONMEDICAL EXPERIENCE* MALE AND FEMALE LIVES COMBINED BETWEEN 1973 AND 1978 ANNIVERSARIES

BY AGE GROUP AT ISSUE AND POLICY-YEAR GROUP (FIRST FIFTEEN POLICY YEARS)

					Ромсу	YEARS				
	1 -	-2	3-	.5	6-	10	11-	-15	1 –	15
AGE GROUP AT ISSUE			Mortali	ty Ratio	os on 196	5-70 Se	lect Basi	c Table		
	$\begin{array}{c} \textbf{Medi-}\\ \textbf{cal}\\ c_{7_0} \end{array}$	Non- medi- cal	Medi- cal	Non- medi- cal	Medi- cal	Non- medi- cal	Medi- cal	Non- medi- cal	Medi- cal	Non- medi- cal
0 1-9 10-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	54 38 123 100 134 79 75 85 86 75	27 53 100 95 94 81 108 117 68 76	88 133 109 91 98 83 90 81 83 73	60 69 107 95 95 96 104 109 103 82	41 75 111 81 91 80 86 76 81 78	78 89 103 94 92 91 97 104 73 72	106 101 120 85 77 81 80 79 82 82	89 101 94 86 80 89 98 90 82 67	62 88 115 87 94 81 83 79 82 78	38 75 102 93 90 90 100 103 83 76
0	5	60%	6	Nonme 58%	dical to		8	ty Ratio	6	10° ₆
10-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	9 7 10 14 13	14 18 79	10	07 6 6 6 35 24	11 11 11 11 11 11 11 11 11 11 11 11 11	14	10 10 11 12 11 10)4 10	10 9 11 12 13 10	26 1 20 80

^{*} Exposures not adjusted for distribution by age within each five-year age group at issue.

percent of the nonmedical exposure in the first policy year. The 1977-78 paramedical data for each year of issue since 1970, along with the corresponding mortality ratios for medical and nonmedical business, were as follows for males and females combined:

Year of Issue	Policy Year	Paramedical Exposed to Risk in \$1,000's	Actual Paramedical Deaths in \$1,000's	Para- medical Mortality Ratio	Medical Mortality Ratio	Nonmedical Mortality Ratio
1970	8	\$ 41,676	\$ 71	69.6%	73.4%	95.0%
1971	7	255,783	254	37.1	76.1	89.3
1972	6	843,370	1,799	88.1	74.1	90.9
1973	5	2,272,206	3,502	71.2	77.0	92.8
1974	4	4,347,245	6,613	81.2	74.3	92.6
1975	3	7,265,743	9,265	77.1	73.3	94.1
1976	2	11,520,076	12,344	84.0	71.0	79.0
1977	1	18,378,403	14,734	83.0	79.0	73.0
Total		\$44,924,502	\$48,582	80.5%*	74.7%*	86.4%*

^{*} These figures are for policy years 1-8 only. Note that the distribution of exposures by policy year for the medical and nonmedical data (Tables 2 and 4) is quite different from the distribution shown in the above table for the paramedical data.

EXPERIENCE UNDER STANDARD ISSUES DURING THE SIXTEENTH AND SUBSEQUENT POLICY YEARS

The current experience during the sixteenth and subsequent policy years is based on an exposure of \$88 billion and actual deaths of \$1,134 million. This represents an increase in the exposures from the preceding year of about 4.6 percent. About one-fourth of that increase is attributable to the data submitted by one company, which was able to contribute to this current study but was unable to contribute its experience between 1976 and 1977 anniversaries.

Mortality ratios are presented in Table 6 by attained-age groups based on (1) the 1965–70 Ultimate Basic Tables (Male, Female, and Male and Female Combined, respectively, for the male experience, the female experience, and the experience reported without subdivision by sex); (2) the Commissioners 1941 Standard Ordinary Mortality Table; and (3) the Commissioners 1958 Standard Ordinary Mortality Table. The aggregate mortality ratio on the 1965–70 Ultimate Basic Tables for the period from 1977 to 1978 anniversaries was 80.5 percent.

TABLE 6

STANDARD ISSUES OF 1962 AND PRIOR*

MALE AND FEMALE LIVES COMBINED
(INCLUDING DATA NOT SUBDIVIDED BY SEX)
EXPERIENCE BETWEEN 1977 AND 1978 ANNIVERSARIES
BY ATTAINED AGE
POLICY YEARS 16 AND OVER COMBINED

(Amounts Shown in \$1,000 Units)

			1965-70 UL Basic Ta		Mort Ra	
ATTAINED Ages	Exposed to Risk	ACTUAL DEATHS	Expected Deaths	Mor- tality Ratio	1941 CSO Table	1958 CSO Table
15-19	\$ 1.151,680	\$ 1,043	S 937	111.3%		55 3%
20-24	1,778,244	1,913	1,740	109.9	41.4	57 9
25-29	1.662,294	1,601	1,610	99.4	30.8	48 2
30–34	2,794,144	2,882	3,301	87.3	25.8	45.2
35–39	5,782,482	7,832	9,457	82.8	25.8	47.0
40-44	8,961,179	18,488	23,901	77.4	29.0	48.8
45-49	11,636,138	41,836	51,491	81.2	35.8	55.5
50-54	13,794,991	78,122	100,764	77.5	39.3	56.4
5559	13,144,356	113,403	155,761	72.8	41.0	55.4
60-64	10,484,168	155,139	197,238	78.7	47.5	61.0
65-69	6,780,942	159,006	200.311	79.4	50.7	61.8
70-74	4,728,968	172,279	211,537	81.4	52.7	62.8
75-79	2,772,416	157,309	193,060	81.5	55.3	66.9
80-84	1,449,347	132,920	153,061	86.8	60.7	72.6
85-89	490,273	64,737	76,729	84.4	60.3	73.4
90–95	126,304	25,202	27,058	93.1	63.1	76.2
All ages	\$87,537,926	\$1,133,712	\$1,407,956	80.5%	48.7%	62.5%

^{*} Based on data from twenty companies.

The following tabulation compares this result, with the results of previous studies based on the 1965-70 Basic Tables:

Exposure Year	Aggregate Mortality Ratio
1972-73	93.8%
1973-74	93.4
1974-75	87.1
1975–76	85.0
1976-77	82.0
1977–78	80.5

The following tabulation indicates the variation in the 1977-78 aggregate mortality ratios of the contributing companies from the 1977-78 all-company average of 80.5 percent.

	Number of Companies	Proportion of Actual Deaths
Percentage points below average:		
More than 15	1	1.9%
10–15	1	1.5
5–10	4	14.0
0–5	6	23.2
Percentage points above average:		
0–5	7	41.7
5-10	1	17.7

Comparison of Medical and Nonmedical Experience

Companies were asked to subdivide their ultimate data into medical and nonmedical if they could do so conveniently. Fourteen companies were able to subdivide their data (in whole or in part) in this manner. The results of this experience between 1973 and 1978 anniversaries are shown in Table 7. These data involve exposures that comprise 51.4

TABLE 7

Comparison of Medical and Nonmedical Mortality Experience*

Male and Female Lives Combined

(Including Data not Subdivided by Sex)

Standard Issues of 1962 and Prior

Experience between 1973 and 1978 Anniversaries

BY ATTAINED AGE
POLICY YEARS 16 AND OVER COMBINED

Expected Deaths on 1965-70 Ultimate Basic Tables (Amounts Shown in \$1,000 Units)

Attained	Exposed	то Risk	ACTUAL I	DEATHS	Mort Ra	RATIO OF NONMEDI- CAL TO	
Ages	Medical	Nonmedical	Medical	Non- medical	Medical	Non- medical	MEDICAL MORTALITY RATIOS
15-19	\$ 1,067,453	\$ 2,863,814	\$ 1,113	\$ 2,666	124 4%	117.0%	94.1%
20-24	935,816	2,440,945	1,042	2,756	111.9	114.4	102.2
25-29		2,052,685	1,223	2,168	108.3	108.0	99.7
30-34	2,403,189	4,703,130	2,546	5,086	88.5	89.5	101.1
35-39	6,166,283	10,002,655	8,453	12,983	82.6	78.9	95.5
40-44	10,977,884	12,145,593	22,732	25,352	75.6	78.7	104.1
45-49	19,974,657	11,018,633	69,895	41,912	77.5	88.4	114.1
50-54	26,315,765	7,936,754	150,258	51,903	77.0	92.6	120.3
55-59	25,769,639	4,180,698	240,090	44,207	77.3	94.5	122.3
60-64	20,954,223	1,372,877	318,791	22,612	80.3	92.4	115.1
65-69	12,576,017	593,415	305,879	16,732	81.6	96.9	118.8
70-74	8,380,794	377,060	326,961	15,336	86.7	90.3	104.2
75-79		207,819	305,472	13,431	88.5	91.1	102.9
80-84	2,446,720	101,817	233,309	10,347	90.0	95.0	105.6
85-89	796,920	32,369	115,710	5,047	92.1	98.4	106.8
90-95	193,971	5,218	39,675	1,206	95.8	108.6	113.4
All ages.	\$145,024,102	\$60,035,482	\$2,143,149	\$273,744	83.6%	90.7%	108.5%

^{*} Based on data from fourteen companies.

percent of the entire ultimate experience reported for the period as compared with 49.9 percent for the previous study.

For all attained-age groups except 15–19, 25–29, and 35–39, the non-medical mortality is higher than the medical mortality.

Comparison of Premium-paying and Fully Paid-up Experience

A comparison of the mortality on premium-paying and fully paid-up (excluding reduced paid-up) policies for the period from 1973 to 1978 anniversaries is shown in Table 8 for standard medical and nonmedical issues combined. Seventeen companies submitted their experience separately on premium-paying policies, and fifteen companies did so on fully paid-up policies. On the basis of the experience between 1973 and 1978 anniversaries, data identified as premium-paying constituted 79.9 percent, and data identified as fully paid-up constituted 13.2 percent of the total ultimate experience of all companies.

TABLE 8

Comparison of Mortality Experience
under Premium-Paying and Fully Paid-up Policies
Male and Female Lives Combined
(Including Data not Subdivided by Sex)
Standard Issues of 1962 and Prior
Experience between 1973 and 1978 Anniversaries
by Attained Age
Policy Years 16 and Over Combined

Expected Deaths on 1965-70 Ultimate Basic Tables (Amounts Shown in \$1,000 Units)

	Premium-	PAYING POLICE	ES*	FULLY P	AID-UP POLICII	est	RATIO OF PREMIUM-
ATTAINED AGES Exposed to Risk		Actual Mor- Deaths Lality Ratio		Exposed to Risk	Actual Deaths	Mor- tality Ratio	PAYING TO PAID-UP MORTALITY RATIOS
15-19	\$ 5,449,886	\$ 5,046	114.9%	\$ 146,361	\$ 297	253.8%	45.3%
20-24	4,753,909	5,438	114.9	2,072,294	1,971	101.7	113.0
25-29	4,558,748	4,910	108.8	2,025,912	1,838	99.6	109.2
30-34	9,084,757	9,738	89.1	1,659,441	1,842	104.1	85.6
35-39	21,485,514	28,281	80.0	1,433,371	2,447	113.5	70.5
40-44	36,176,544	76,848	79.4	2,433,033	5,778	94.3	84.2
45-49	48,036,975	177,203	83.3	6,503,702	14,128	89.2	93.4
50-54	53,589,026	316,493	80.6	5,093,812	28,877	83.9	96.1
55-59	48,090,713	465,114	81.2	6,107,192	57,958	84.9	95.6
60-64	36,894,527	578,547	83.5	6,709,286	101,266	83.8	99.6
65-69	21,867,911	556,514	85.6	7,180,819	169,588	82.8	103.4
70-74	14,609,429	578,021	87.9	5,304,657	189,810	81.6	107.7
75-79	8,566,583	536,480	89.2	3,303,514	187,549	82.4	108.3
80-84	4,208,707	401,098	90.0	1,822,876	165,667	86.5	104.0
8589	1,186,954	170,752	91.4	801,827	110,269	88.3	103.5
90-95	264,975	53,614	94.7	250,885	51,052	95.2	99.5
All ages	\$318,825,158	\$3,964,097	85.7%	\$52,848,982	\$1,090,337	84.6%	101.3%

^{*} Based on data from seventeen companies.

[†] Based on data from fifteen companies.

At the higher attained ages, mortality ratios were consistently higher on premium-paying than on fully paid-up policies. For all attained ages combined, the mortality ratio on premium-paying policies exceeded the mortality ratio on fully paid-up policies by 1.1 percentage points.

EXPERIENCE BY SEX

For the select period, each of the twenty contributing companies submitted all of its medical and all of its nonmedical data separately for males and females.

The detailed select experience by sex for the period from 1977 to 1978 policy anniversaries by age group at issue for each year of issue is presented in Table B of Appendix I for medical issues and in Table C of Appendix I for nonmedical issues. Expected deaths were calculated on the 1965–70 Male Select Basic Table for male lives and on the 1965–70 Female Select Basic Table for female lives.

Tables 9-11 examine the experience by sex between 1973 and 1978 policy anniversaries for the select data, and Table 12 does the same for the ultimate data.

TABLE 9

COMPARISON OF MALE AND FEMALE MORTALITY EXPERIENCE
STANDARD MEDICALLY EXAMINED ISSUES
OBSERVED BETWEEN 1973 AND 1978 ANNIVERSARIES
BY AGE AT ISSUE—POLICY YEARS 1-15 COMBINED
Expected Deaths on 1965-70 Male Select Basic Table
and 1965-70 Female Select Basic Table
(Amounts Shown in \$1,000 Units)

Ages at Issue	Exposed	ACTUAL DEATHS				Mort Ra	RATIO OF FEMALE			
15.50E	Male	Female	Male		Female		Male	Female	TO MALE MORTALITY	
0	\$ 800,365	\$ 371,760	\$	578	\$	172	68.8%	46.6%	56.5%	
1	665,048	317,147	'	105		113	28.5	76.4	214.4	
2-4	1,051,571	468,208	l	825		41	156.0	23.0	11.1	
5-9	1,977,118	928,624		1,025		337	84.4	100.3	73.6	
10-14	2,913,191	958,946		2,961	ĺ	588	113.0	138.0	65.0	
15-19	7,642,814	1,408,316		9,563		724	116.5	95.1	41.5	
20-24	37,446,639	2,936,388	2	9,969		1,495	87.6	83.0	66.1	
25-29	89,692,431	5,401,967		3,662		5,327	92.6	127.9	118.4	
30-34	127,760,805	8,930,059		0,581		0,364	79.7	99.1	103.8	
35-39	130,294,334	11,148,371		9,295		6,861	82.9	82.8	76.5	
40-44	110,706,523	12,313,748	36	4,586		6,047	78.5	82.5	64.5	
45-49	77,532,868	10,961,671	38	5,135		12,932	81.7	89.2	60.7	
50-54	44,172,070	7,138,815		1,274] 3	30,544	75.8	86.5	64.9	
55-59	19,938,830	3,732,315	18	6,983		0,060	79.1	95.2	56.1	
60–64	7,078,885	1,709,402	9	3,059	1	1,888	74.8	74.3	50.9	
65-69	1,839,164	563,203] 3	6,694		6,531	80.3	82.9	55.3	
70 and over	369,692	150,415	1	1,450	-	2,526	81.7	54.5	54.1	
All ages.	\$661,882,348	\$69,439,355	\$1,93	7,745	\$16	6,550	80.2%	86.6%	63.5%	

^{*} Female mortality ratios calculated on 1965-70 Male Select Basic Table.

The mortality ratios by age group at issue and sex for the first fifteen policy years combined, covering the experience from 1973 to 1978 anniversaries, are presented in Table 9 for standard medically examined issues and in Table 10 for standard nonmedical issues. For the purpose of comparing male and female mortality, the right-hand column of each

TABLE 10

COMPARISON OF MALE AND FEMALE MORTALITY EXPERIENCE
STANDARD NONMEDICAL ISSUES
OBSERVED BETWEEN 1973 AND 1978 ANNIVERSARIES
BY AGE AT ISSUE—POLICY YEARS 1-15 COMBINED
Expected Deaths on 1965-70 Male Select Basic Table
and 1965-70 Female Select Basic Table
(Amounts Shown in \$1,000 Units)

Ages at Issue	Ехро	SED	to Risk	Actual	DEATHS	Mort. Rat		RATIO* OF FEMALE TO MALE
1851.}.	Male		Female	Male	Female	Male	Female	Mor-
0	\$ 12,352,2	86	\$ 8,239,364	\$ 6.582	\$ 3.522	39.5%	34.5%	68.9%
1	4,841,7		3,060,543				48.3	61.2
2. 4	7,946,7	59	5,044,996	2,813	1,210	72.5	60.4	66.5
5-9	11,552,1	56	6,620,196	5,930	1,491	95.7	69.1	49.7
10-14	16,687,7	27	7,390,449	14,480	2,361	105.1	79.0	43.0
15-19	64,648,3	03	20,806,592	71,092	8,856	104.9	81.8	39.2
20-24	149, 299, 6	61	35,819,349	124,966	14,319	96.5	69.6	50.6
25-29	117,888,0	77	29,501,209	106,824	14,530	93.5	69.6	65.1
30-34	49,752,5	81	17,178,337	73,234	14,640	92.8	76.4	70.2
35–39.,.,.	17,631,5		8,704,320	48,190	13,811	103.2	89.1	67.1
40-44	3,869,4	121	3,581,943	15,763	7,947	102.7	102.8	64.6
45-49	682,7	94	390,284	2,337	1,039	76.4	102.6	78.1
50 and over	363,9	61	67,125	1,930	248	73.5	97.3	73.9
All ages	\$457,517,0)31	\$146,404,707	\$476,085	\$84 ,788	94.9%	73.7%	56.8%

^{*} Exposures not adjusted for distribution by age within each five-year age group.

of these tables was based on mortality ratios for females with expected deaths calculated on the male table. The highest ratios of female to male mortality were found at issue ages 1 and 25–34 for medical issues and at issue ages 30–34 and 45 and over for nonmedical issues. For all issue ages combined, the ratio of female to male mortality was 63.5 percent for medical issues and 56.8 percent for nonmedical issues.

Table 11 presents side by side the experience for the five-year period from 1973 to 1978 anniversaries on medical and nonmedical issues, separately for each sex, for policy years 1-2, 3-5, 6-10, 11-15, and 1-15.

[†] Female mortality ratios calculated on 1965-70 Male Select Basic Table.

TABLE 11

Comparison by Sex of Medical and Nonmedical Experience*

Between 1973 and 1978 Anniversaries

BY AGE GROUP AT ISSUE AND POLICY YEAR GROUP (FIRST FIFTEEN POLICY YEARS)

					Policy	YEARS				
Age Group	1-	-2	3	-5	6-	-10	11	-15	1-	-15
AT ISSUE	Medi- cal %	Non- medi- cal %	Medi- cal %	Non- medi- cal	Medi- cal	Non- medi- cal	Medi- cal	Non- medi- cal	Medi- cal	Non- medi- cal %
		lale Exp	erience	Mortalit	y Ratios	on 1965-	-70 Ma le	Select E	Basic Tab	le le
0	78 11 126 102 137 81	27 57 105 104 107 94	17 184 111 94 92 81	65 75 113 99 100 101	46 63 113 79 89 80	84 94 106 96 94 93	122 108 117 85 76 78 79	91 106 95 86 81 88	69 93 116 88 93 80	39 82 105 96 93 93 103
40-44 45-49 50 and over	78 86 88 76	128 121 59 72	80 82 73	110 111 103 85	86 76 80 77	100 106 57 66	78 81 80	98 90 84 66	83 79 82 77	103 103 76 74
All ages	84	93	80	102	79	97	80	88	80	95
	Fen	nale Exp	erience-	Mortali	ty Ratios	on 1965	-70 Fem:	ale Select	t Basic T	able
0	5 94 107 79 94 54 51 72 67 65	27 47 79 59 55 51 73 111 98 111	255 8 96 35 203 123 84 88 90 72	51 59 77 72 72 80 91 107 105 99	30 114 93 119 122 70 88 79 93 87	66 75 82 76 85 83 89 101 110 72	54 71 145 90 96 144 89 86 91	85 83 92 84 75 94 95 92 72 57	47 74 111 83 128 99 83 83 83 89 84	35 60 81 70 69 76 89 103 103 88
All ages	65	55	85	78	87	84	95	88	87	74
		Male E	eperience	—Ratio	of Nonm	edical to	Medical	Mortali	ty Ratios	
0. 1-9 10-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	11 10 11 10	33 02 78 16 54	10 10 10 11 11 11 11	82% 41 002 005 009 225 22 339 226	110111111111111111111111111111111111111	83% 49 94 22 06 16 16 39 71	10 10 11 11 11 11	75% 98 81 01 07 13 24 15 04 83	10	57% 88 91 99 90 16 24 30 93
		Female I	Experienc	e-Rati	o of Non	medical t	o Medica	al Morta	lity Ratio	os
0 1-9. 10-19. 20-24. 25-29. 30-34. 35-39. 40-44. 45-49. 50 and over.	1-	10% 50 74 75 59 94 43 54 46	2 1 1 1 1 1 1	20% 38 80 06 35 65 08 22 17	1 1 1	20% 66 88 64 70 19 01 28 18	10	57% 17 53 93 78 65 07 07	10	74% 81 73 84 54 77 27 24 16

^{*} Exposures not adjusted for distribution by age within each five-year age group.

The nonmedical mortality ratios shown in Table 11 have *not* been adjusted to reflect the distribution of nonmedical exposures by age for issue-age groups 40–44 and over. For males, the ratios of the nonmedical to the medical mortality ratios exceeded 100 percent at issue ages 20–24 and 30–44 in policy years 1–15 combined. For females, the ratios exceeded 100 percent for issue ages 35 and over in policy years 1–15 combined.

TABLE 12

COMPARISON OF MALE AND FEMALE MORTALITY EXPERIENCE*
STANDARD ISSUES OF 1962 AND PRIOR
EXPERIENCE BETWEEN 1973 AND 1978 ANNIVERSARIES
BY ATTAINED AGE—POLICY YEARS 16 AND OVER COMBINED
Expected Deaths on 1965-70 Male Ultimate Basic Table
and 1965-70 Female Ultimate Basic Table
(Amounts Shown in \$1,000 Units)

ATTAINED AGES	Expo to R	ACTUAL DEATHS				Mort Ra	RATIO OF FE- MALE TO MALE		
	Male	Female		Male	Fe	male	Male	Female	MOR-
15-19	\$ 3,092,838	\$ 1,750,784	S	3,861	S	884	128 8%	104.5%	40.80
2024	3,826,948	1,881,286		5,387		951	123.6	89 4	36.1
25-29	3,944,615	1,545,158	ļ.	4,960	1	819	116.1	92.4	42.6
30-34	7,474,245	1,571,709		8.342	:	1,178	87.8	102 4	68.6
35-39	16,646,178	2,095,412		23,130		1,960	81.6	79.1	69.5
40-44	26,973,543	2,481,180	,	57,551	,	4.128	77.6	85.9	79.4
45-49	37,290,289	3,376,321	ì	136.584	,	9.457	80.6	94.1	77.3
50-54	42,535,315	4,156,689		254,362	1	6.054	79.0	87.2	65.1
55-59	38,632,243	4,093,126	Į	375,911	1 2	5,110	78.5	94.1	63.4
60-64	30,194,302	3,404,865	İ	478.672	3	1.585	80.5	92.6	58.9
65-69	19,581,532	2,454,146	ļ	501,812	3	3,396	82.3	91.6	53.6
70-74	12,982,791	1,735,282	1	521,740		6,600	85.5	81.0	52.9
75-79	7,454,066	1,101,833	i	475,201		2.385	87.6	79.6	60.7
8084	3,685,473	577,987		363,100	3	6,943	90.2	81.9	65.3
85-89	1,227,495	190,640	ļ	179.647		0.139	90.8	86.4	72.6
90–95	313,373	51,107		64,100		9,639	93.7	95.3	92.4
All ages	\$255,855,246	\$32,467,525	\$3	.454.360	\$27	1.228	83.9%	86.4%	62.09

^{*} Based on data from seventeen companies.

The mortality ratios by attained age groups and sex for policy years sixteen and over combined, covering the experience from 1973 to 1978 anniversaries, are presented in Table 12 for standard medical and standard nonmedical issues combined. Again, for the purpose of comparing male and female mortality, the right-hand column of this table is based on mortality ratios for females with expected deaths calculated on the male table. Seventeen of the contributing companies submitted data (in whole or in part) separately for males and females for policy years 16 and over. The highest ratios of female to male mortality were found at attained ages 40–49 and 85–95.

[†] Female mortality ratios calculated on 1965-70 Male Ultimate Basic Table.

APPENDIX I

TABLE A

CONTRIBUTING COMPANIES

PROPORTION OF TOTAL EXPOSURES BETWEEN 1977 AND 1978 ANNIVERSARIES CONTRIBUTED BY EACH COMPANY

		IFTEEN YEARS	Six- TEENTH	Fii		EEN POLI BY SEX	ICY		ENTH
Company	Medi- cal Issues	Non- medi- cal Issues	AND SUBSE- QUENT POLICY YEARS	Medical Issues		Nonmedical Issues		SUBSEQUENT POLICY YEARS BY SEX	
	Male and Female Lives Combined (Including Data Not Subdivided by Sex)			Male	Fe- male	Male	Fe- Male	Male	Fe- male
Prudential New York Life Northwestern Mutual Equitable, N.Y. Massachusetts Mutual Metropolitan John Hancock New England Life Connecticut Mutual Occidental Mutual Benefit Mutual Life, New York Phoenix Mutual Aetna Travelers Penn Mutual Lincoln National Continental Assurance Provident Mutual Sun Life	12.9% 12.6 10.4 8.0 7.6 7.5 4.6 4.4 3.9 3.8 3.4 2.3 0.2 2.4 2.3 2.0 1.6 0.7	32.4% 15.0 15.0 3.6 7.0 3.1 14.2 5.2 1.7 2.6 3.1 2.3 6.7 1.4 1.1 1.5 0.6 0.9 0.8	22.1% 11.9 6.2 8.2 4.3 17.1 5.3 2.3 2.7 1.0 2.8 3.5 1.2 1.6 4.2 5.1 1.2 1.3 1.0	11.3% 11.0 9.5 7.0 6.8 4.1 4.0 3.5 3.5 3.5 3.1 2.7 2.2 1.8 1.6	1.6% 1.7 0.9 0.6 0.7 0.5 0.4 0.4 0.4 0.3 0.3 0.2 0.2 0.2 0.2	22.8% 10.5 10.5 2.4 5.2 2.4 10.5 3.9 0.9 0.9 2.8 0.5 1.1 0.9 0.5 1.1 0.5 0.5	9.6% 4.55 1.2 1.8 0.7 3.6 1.3 0.6 0.3 0.6 0.3 0.8 0.2 0.4 0.5 0.4 0.1 0.2	24.8% 12.8 7.2 9.4 5.0 3.4* 5.7 2.8 0.7 3.1 3.8 2.8	3.4% 1.8 0.8 1.1 0.5 0.2* 1.1 0.2 0.1 0.2 0.1 0.2 0.3 0.1
Total	100.0%	100.0%	100.0%	90.0%	10.0%	72.7%	27.3%	88.8%	11.2%

NOTE.—A Comparative Mortality Study of the select experience between 1973 and 1978 anniversaries for most of the above companies is available upon request to the Office of the Society of Actuaries. The companies are not identified by name but are differentiated simply by a system of code letters. Experience is shown by issue age groups and by issue year separately for medical and nonmedical business.

^{*} Represents the experience of fifteenth, sixteenth, and seventeenth policy years only.

TABLE B
STANDARD MEDICALLY EXAMINED ISSUES OF 1963-77
MALE LIVES

EXPERIENCE BETWEEN 1977 AND 1978 ANNIVERSARIES BY YEAR OF ISSUE AND AGE AT ISSUE

Expected Deaths on 1965-70 Male Select Basic Table (Amounts Shown in \$1,000 Units)

Issue Year (Policy Year)	Ages at Issue		Exposed to Risk	1	Actual Deaths	1	pected leaths	Mortality Ratio
1963	0	\$	7,562	S	2	s	4	50%
15)	1	-	9,272	"	$\bar{2}$	-	6	33
,	2-4		11,624		13		11	118
	5-9		20,061		36		23	157
	10-14		31,595	1	5		34	15
	15-19		85,182	}	89		105	85
	20-24	ĺ	293,469		261	l	449	58
	25-29	1			1,275			90
	30-34		586,256	ļ			1,416	
,		ļ	900,552		2,522	}	3,626	70
	35-39		1,058,258		5,325		7,024	76
	40-44		867,083		6,381	1	9,145	70
	45-49	1	519,429	1	7,134	1	8,623	83
	50-54		233,681		3,303		5,692	58
	55-59	1	102,725	1	4,471	1	3,718	120
l	60-64	1	36,766	-	1,619	1	1,872	86
	65-69	İ	6,308	İ	190	1	464	41
	70 and over		1,462		576		198	291
	All ages	\$	4,771,294	\$	33,202	\$ 4	2,411	78%
964	0	\$	10,296	s	13	\$	4	325%
14)	1	İ	6,196	1	0	1	3	0
· ·	2-4	1	10,632	j	15	1	9	167
	5-9		18,780		8	İ	22	36
	10-14		34,435		50	1	37	135
	15-19	1	89,468	}	127	1	107	119
	20-24		351,562		365		489	7.5
	25-29	1	690,677		1,208	ì	1,464	83
	30-34	l	960,192	ł	2,185	1	3,379	65
	35–39		1,121,718		4,232		6,426	66
	40-44	1	938,172	i	7,135		8,775	81
	45-49	1	554, 255		5,322	1	8,159	65
	50-54	1	285,514	[4,160	1	6,353	65
	55-59		106,997	i	2,758			79
					4,130	i	3,475	
	60-64		35,956	1	941		1,727	54
	65-69 70 and over		$\frac{8,242}{1,096}$		437 108		556 138	79 78
	All ages	\$	5,224,197	\$	29,063	\$ 4	1,123	71%

TABLE B-MALE LIVES-Continued

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	F	Expected Deaths	Mortality Ratio
1965(13)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 10,081 5,908 12,011 22,179 33,050 109,338 417,139 758,281 1,035,078 1,176,767 993,235 622,824 317,575 120,134 42,622 10,203 1,695	\$ 1 0 5 15 39 323 356 796 2,144 4,693 6,164 4,989 4,358 3,319 1,187 538 108	\$	3 3 8 26 36 125 520 1,422 3,220 5,968 8,040 6,256 3,417 1,901 636 208	33% 0 63 58 108 258 68 56 67 79 75 62 70 97 62 85 52
	All ages	\$ 5,688,129	\$ 29,035	\$	39,993	73%
1966(12)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 10,283 6,323 11,613 20,896 35,650 109,555 428,621 787,555 1,041,374 1,202,407 1,038,952 671,494 344,932 131,796 46,292 12,400 2,021	\$ 4 0 45 10 130 70 343 788 1,836 3,400 5,837 5,085 4,997 2,680 1,270 539 42	\$	3 2 6 22 40 120 485 1,309 2,912 5,522 7,577 7,505 5,928 3,308 1,854 710 214	133% 0 750 45 325 58 71 60 63 62 77 68 84 81 69 76 20
	All ages	\$ 5,902,172	\$ 27,075	\$	37,517	72%
1967(11)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 9,469 7,450 11,651 22,087 32,955 92,455 388,356 786,685 1,033,987 1,196,634 1,000,682 683,396 372,026 141,123 52,585 11,252 2,597	\$ 0 0 50 50 594 298 1,007 1,828 3,404 4,861 5,204 4,933 2,783 1,837 333 69	\$	3 2 5 21 37 97 398 1,132 2,593 46,584 6,752 5,691 3,090 1,761 567 241	0% 0 0 238 135 612 75 89 70 69 74 77 87 90 104 59 29
Ì	All ages	\$ 5,845,395	\$ 27,252	\$	33,888	80%

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
1968(10)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 9,228 6,048 10,993 21,465 38,795 81,399 370,029 840,430 1,109,108 1,244,611 1,158,469 762,918 392,819 184,628 54,323 14,900 3,098	\$ 0 0 7 65 42 226 1,450 1,512 3,763 4,069 4,745 3,704 2,638 1,355 484 139	\$ 3 2 4 17 45 86 355 1,060 2,442 4,521 6,780 6,692 5,441 3,563 1,537 634 261 \$ 33,442	0% 0 0 41 144 49 64 137 62 83 60 71 68 74 88 76 53
1969 (9)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 9,142 7,872 10,867 27,996 38,358 420,391 996,603 1,305,972 1,391,484 1,248,528 897,204 481,103 213,467 72,633 16,063 4,243	\$ 0 0 0 0 55 180 238 961 1,200 3,897 3,938 4,266 4,435 2,846 965 430 76	\$ 3 3 19 46 92 381 1,134 2,541 4,436 6,565 7,087 5,957 3,616 1,779 574 291	0% 0 0 120 196 62 85 47 88 60 74 79 54 75 26
1970(8)	All ages 0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 7,228,294 \$ 11,972 7,574 13,259 27,565 35,947 87,616 516,890 1,132,726 1,422,097 1,416,429 1,329,674 956,203 507,794 242,571 85,440 20,674 3,858	\$ 23,487 \$ 5 0 50 3 10 17 450 748 2,109 2,332 4,124 6,192 3,194 2,928 1,347 826 190	\$ 34,528 \$ 5 3 4 14 42 94 446 1,154 2,428 3,992 6,254 6,917 5,766 3,741 1,840 645 232	68% 100% 0 1250 21 24 18 101 65 87 58 66 90 555 78 73 128 82
	All ages	\$ 7,818,297	\$ 24,523	\$ 33,576	73%

TABLE B-MALE LIVES-Continued

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
1971(7)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 11,501 7,718 13,707 30,005 38,997 90,484 538,333 1,238,626 1,615,202 1,470,076 1,048,556 597,431 280,298 100,826 24,606 4,384 \$ 8,723,720	\$ 0 0 10 100 54 262 970 2,001 2,765 4,299 4,694 4,903 3,642 1,610 385 98	\$ 5 3 4 13 42 98 449 1,147 2,396 4,046 6,158 6,814 6,116 3,919 1,938 707 226 \$ 34,078	0% 0 0 77 238 55 58 85 84 68 70 69 80 93 83 54 43
1972	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 10,532 9,364 15,468 28,876 40,705 92,102 511,442 1,343,510 1,849,208 1,811,159 1,603,794 1,196,565 677,376 319,482 111,833 28,367 5,584	\$ 0 0 0 0 65 20 270 980 1,684 3,492 4,930 5,043 3,057 2,672 1,058 1,348 64	\$ 5 4 5 10 39 101 419 1,144 2,495 3,978 5,961 6,750 5,860 3,805 1,959 741 223	0% 0 0 0 167 20 64 86 67 88 83 75 52 70 54 182 29
1973(5)	All ages 0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 9,655,375 \$ 12,520 8,815 15,639 27,094 38,698 86,890 542,218 1,489,513 2,187,046 2,058,338 1,766,713 1,344,342 813,855 385,436 135,962 35,536 6,638	\$ 24,684 \$ 3 0 0 5 105 106 469 732 1,824 2,720 3,359 4,842 5,621 3,060 1,532 1,016 155	\$ 33,498 \$ 7 4 6 8 32 96 450 1,206 2,637 3,967 5,548 6,584 5,757 3,986 2,240 852 212	74% 43% 0 0 63 328 110 104 61 69 69 61 74 98 77 68 119 73
	All ages	\$ 10,955,261	\$ 25,549	\$ 33,591	76%

TABLE B-MALE LIVES-Continued

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
1974(4)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 12,383 9,395 16,592 31,323 39,764 574,877 1,690,391 2,570,519 2,374,490 1,985,971 1,530,779 973,956 453,197 172,134 45,378 10,485	\$ 0 0 0 0 198 569 958 1,685 2,687 7,096 4,158 3,564 2,067 1,310 820 226	\$ 8 7 10 27 106 481 1,314 2,861 3,997 5,620 6,541 6,182 4,254 2,606 940 261	0% 0 0 0 0 187 118 73 59 67 126 64 58 49 50 87
	All ages	\$ 12,591,087	\$ 25,337	\$ 35,219	72%
1975(3)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 14,420 8,614 16,969 32,879 44,260 100,444 527,292 1,702,163 2,651,680 2,503,791 2,009,958 1,643,135 1,132,095 534,166 212,971 64,262 10,358	\$ 0 0 0 0 93 382 1,333 2,809 2,380 3,442 5,207 3,557 2,147 1,284 670 385	\$ 12 6 8 11 23 103 425 1,284 2,620 3,573 4,772 5,873 6,061 4,134 2,556 1,126 201	0% 0 0 0 90 90 104 107 67 72 89 59 52 50 60
	All ages	\$ 13,209,468	\$ 23,691	\$ 32,786	72%
1976(2)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 14,763 11,496 20,769 33,527 43,606 98,589 575,621 1,928,348 3,140,240 2,914,242 2,372,607 1,935,390 1,349,810 678,829 279,380 83,653 16,510	\$ 0 0 0 0 15 579 166 1,184 2,057 1,605 2,447 7,091 3,311 1,576 1,489 500 240	\$ 19 10 11 12 19 97 424 1,224 2,744 3,276 4,519 5,269 5,472 3,750 2,402 1,145 250	0% 0 0 0 79 597 39 97 75 49 54 135 61 42 62 44 96
	All ages	\$ 15,497,387	\$ 22,259	\$ 30,641	73%

TABLE B-MALE LIVES-Continued

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
 1977	0	\$ 19,921	\$ 0	\$ 114	0%
1)	1	12,907	0	17	0
` ′	2-4	23,124	0	15	0
	5-9	43,060	0	17	0
ĺ	10-14	47,311	0	16	0
	15-19	113,561	141	104	136
	20-24	719,449	500	494	101
	25-29	2,330,163	1,748	1,339	131
ŀ	30-34	4,144,290	2,628	3,115	84
	35-39	3,804,365	2,745	3,305	83
	40-44	3,031,205	2,750	4,155	66
	45-49	2,365,089	3,421	4,617	74
	50-54	1,627,668	3,854	4,276	90
	5559	836,689	1,808	3,082	59
	60-64	324,916	1,305	1,931	68
	65-69	94,290	818	919	89
İ	70 and over	18,061	89	196	45
	All ages	\$ 19,556,078	\$ 21,806	\$ 27,712	79%
All years	0	\$ 174,081	\$ 27	\$ 199	14%
1-15)	1	124,960	2	72	3
	2-4	214,925	127	107	119
	5-9	407,801	143	245	58
	10-14	574,134	689	514	134
	15-19	1,422,891	2,632	1,530	172
	20-24	7,175,696	5,154	6,664	77
	25-29	18,301,935	16,138	18,748	86
	30-34	26,964,312	30,023	42,008	71
	35-39	26,889,903	49,441	68,944	72
	40-44	22,815,124	70,833	96,619	73
j	45-49	16,731,586	77,393	102,222	76
ļ	50-54	10,107,642	60,952	86,808	70
	55-59	4,731,547	41,395	54,856	75
j	60-64	1,764,645	20,109	29,902	67
	65–69 70 and over	476,140 92,098	9,334 2,563	11,214 3,350	83 77
	All ages	\$138,969,428	\$386,953	\$524,001	74%

TABLE B-Continued

STANDARD MEDICALLY EXAMINED ISSUES OF 1963-77 FEMALE LIVES

EXPERIENCE BETWEEN 1977 AND 1978 ANNIVERSARIES BY YEAR OF ISSUE AND AGE AT ISSUE

Expected Deaths on 1965-70 Female Select Basic Table (Amounts Shown in \$1,000 Units)

Issue Year (Policy Year)	Ages at Issue		Exposed to Risk		tual aths		pected eaths	Mortality Ratio
1963	0		3,170	\$	0	\$	1	0%
15)	i	*	5,120		ŏ	"		0 70
-0,	$\hat{2}$ -4		4,274		ő		2 2 5	ŏ
	5-9		8,399		ő		ź	ŏ
	10-14		8,021		ö		4	0
	15-19		11,906	!	12		8	150
	20-24				1 2	İ	22	32
			20,709					
	25-29		24,776		4		44	9
	30-34		48,463	:	70		132	53
	35-39	i	78,658	ł.	262	:	318	82
	40-44		104,412		444	i	597	74
	45-49		78,337	ļ ì	,095		668	164
	50-54		38,018		520		480	108
	55-59		20,828		206		361	57
	60-64		11,263	ĺ	177		287	62
	65-69		2,666		146		89	164
_	70 and over		398		22		45	49
	All ages	\$	469,426	\$ 2	,965	\$.	3,067	97%
964	0	\$	3,891	\$	2	\$	1	200%
14)	1		1,954		0	İ	1	0
	2-4		3,720		10		2	500
	5-9	ĺ	7,942		0	ł	5	0
	10-14		8,106	1	0	l	4	0
	15-19		13,519		10		9	111
	20-24		21,297		12		20	60
j	25-29		31,074	J	44	ļ	51	86
	30-34		53,345	ļ	188		134	140
ı	35-39		88,402	İ	327		328	100
	40-44		112,213		372		584	64
1	45-49		81,506		570	l	589	97
	50-54		46,885	1	,619		521	311
	55-59		22,663	1	290		358	81
J	55-59 60-64			Į	175)	320	
			14,036			1		55
	65–69 70 and over		2,970 706		35 41		94 78	37 53
į	All ages	\$	514,237	\$ 3	,694	\$	3,097	119%

TABLE B-FEMALE LIVES-Continued

Issue Year (Policy Year)	Ages at Issue		Exposed to Risk	Actual Deaths	Expected Deaths	Mortalit Ratio
1965	0	\$	4,008	\$ 0	\$ 1	0%
(13)	1		2,299	0] 1	0
	2–4	1	3,908	0	1	0
	5-9		8,508	0	5	0
	10-14]	7,656	ĺ	4	0
	15-19	l	15,364	3	10	30
	20-24	İ	25,427	26	22	118
	25-29		34,675	$\frac{1}{27}$	51	53
	30-34	l	58,851	156	135	116
	35-39	l	97,694	352	332	106
	40-44	ŀ	121,943	381	566	67
	45-49	\	91,002	397	596	67
	50-54		49,904	590	495	119
	55-59	ļ	23,515	247	336	74
	60-64	i	10,529	427	217	197
	65-69	1	4,068	304	119	255
	70 and over		934	61	90	68
	70 and over		904	01	90	
	All ages	\$	560,291	\$ 2,970	\$ 2,980	100%
966	0	\$	4,759	\$ 0	\$ 1	0%
12)	1	l	2,313	0	1	[0
	2-4		3,270	[0	1	0
	5-9	l	10,324	0	5	0
	10-14		9,460	0	5	0
	15-19	İ	17,923	14	11	127
	20-24		28,038	16	22	73
	25-29	1	35,974	19	48	40
	30-34	l	60,216	109	127	86
	35–39	l	93,705	173	291	59
	40-44		124,522	226	498	45
	45-49	İ	100,411	605	573	106
	50-54	Į.	52,443	501	455	110
	55-59		26,731	365	320	114
	60-64	l	10.599	190	193	98
1	65-69	ŀ	4,579	130	123	106
	70 and over		1,687	35	138	25
	All ages	\$	586,964	\$ 2,384	\$ 2,812	85%
967	0	\$	4,122	\$ 0	\$ 1	0%
11)	1		2,371	0	1	0
	2-4	İ	4,956	0	1	0
	5-9		10,779	0	5	0
	10-14		9,525	0	5	0
	15-19		15,792	10	9	111
i	20-24		28,422	0	20	0
ļ	25-29		35,440	15	42	36
	30-34		58,085	1,076	112	961
)	35-39		92,410	289	264	109
İ	40-44		119,527	307	448	69
ļ	45-49		119,527 103,738	420	546	77
	50-54		60,198	309	471	66
	55-59		29,593	268	300	89
ļ	60-64		13,157	250	211	118
	65-69		4,623	79	114	69
	70 and over		1,569	21	117	18
-	All ages	\$	594,314	\$ 3,043	\$ 2,669	114%

TABLE B-FEMALE LIVES-Continued

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
1968(10)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 3,486 2,466 3,393 10,409 10,525 15,496 24,073 37,550 59,659 92,708 121,499 108,952 70,691 34,515 15,485 4,045 929	\$ 0 0 0 50 0 5 1 7 20 184 333 550 601 175 202 120 38	\$ 1 1 1 4 6 8 16 39 106 245 426 525 478 286 225 94 60	0% 0 0 1250 0 63 6 18 19 75 78 105 126 61 90 128 63
;	All ages	\$ 615,889	\$ 2,286	\$ 2,523	91%
1969 (9)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 4,521 2,928 5,719 9,788 12,440 15,471 28,427 42,845 77,314 102,354 124,998 124,642 77,833 43,374 15,932 5,465 1,658	\$ 0 0 0 100 100 8 7 0 191 147 589 268 451 155 22 8	\$ 1 1 1 4 7 8 19 40 125 249 406 551 508 306 216 115	0% 0 0 1429 0 42 18 0 77 36 107 53 147 72 19
	All ages	\$ 695,767	\$ 1,945	\$ 2,671	73%
1970(8)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 5,610 3,161 6,480 12,466 12,149 16,256 31,857 50,937 79,657 117,049 139,436 137,117 86,167 43,059 20,346 7,469 2,083	S 0 0 0 50 0 57 26 64 89 337 391 440 244 288 83 69	\$ 2 1 2 4 7 7 9 20 43 117 259 418 553 522 275 256 142 98	0% 0 1250 0 0 285 60 55 34 81 71 84 89 113 58 70
	All ages	\$ 771,306	\$ 2,136	\$ 2,727	78%

TABLE B -FEMALE LIVES-Continued

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
1971	0	\$ 4,902	\$ 0	\$ 2	0%
(7)	1	3,721	0	1	0
` '	2-4	6,974 14,982	0	2	0
	5-9	14,982	0	4	0
	10-14	15,011	5	8	63
Ì	15-19	17.373	4	10	40
	20-24	36,729	3	22	14
ì	25-29	36,729 70,827	95	55	173
	30-34	108,988	77	145	53
	35-39	136,581 154,125	171	275	62
	40-44	154,125	306	424	72
	45-49	152,558	441	561	79
	50-54	102.512	532	573	93
1	55-59	53,102 25,574	384	307	125
	60-64	25,574	95	299	32
	65-69	7,070	191	145	132
	70 and over	1,972	39	71	55
:	All ages	\$ 913,008	\$ 2,343	\$ 2,903	81%
1972	0	\$ 5,213	\$ 2	\$ 2	100%
(6)	ĭ	4,854	$\bar{0}$	2	0
(0)	2-4	6,521	0	$\bar{2}$	Ö
	5-9	11,520	Ō	$\begin{bmatrix} \frac{1}{2} \\ 3 \end{bmatrix}$	Ŏ
	10-14	16,622	0	8	0
	15-19	22,229	0	12	0
	20-24	41,008	5	24	21
	25-29	81,362	300	58	517
ł	30-34	81,362 130,987	61	154	40
	35-39	158.295	163	285	57
	40-44	170,321 176,813	313	419	75
	4549	176,813	612	573	107
	50~54	118,147	411	594	69
İ	55-59	61,280	166	317	52
	60-64	25,847	63	262	24
	65-69	8,627	124	131	95
	70 and over	2,181	78	65	120
	All ages	\$ 1,041,834	\$ 2,298	\$ 2,911	79%
1973	0	\$ 6,084	\$ 0	\$ 3	0%
(5)	1	3,660	0	2 2 4	0
	2-4	6,749	0	2	0
	5-9	14,725	0		0
	10-14	16.076	0	7	0
	15-19	21,591	5	11	45
	20-24	51,464	5	28	18
	25-29	97,435 175,142	53	66	80
	30-34	175,142	248	181	137
	35-39	196,523	450	312	144
	40-44	195,251	315	417	76
	45-49	200,513	602	572	105
	50-54	136,087	475	626	76
	55-59	71,093	245	341	72
	60-64	31,213 12,486	193	258	75
	65-69	12,486	78	165	47
	70 and over	3,348	25	81	31
	All ages	\$ 1,239,446	\$ 2,693	\$ 3,076	88%

TABLE B-FEMALE LIVES-Continued

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
(4)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 8,274 4,650 9,525 17,106 17,855 24,994 60,073 131,501 229,583 232,130 234,530 214,427 160,169 77,730 38,938 12,985 5,341	\$ 3 0 0 0 10 0 0 64 1,121 66 438 487 394 226 213 37 145	\$ 5 2 4 4 6 13 32 87 214 337 447 544 665 337 272 143 97	60% 0 0 0 167 0 0 74 524 20 98 90 59 67 78 26 149
	All ages	\$ 1,479,818	\$ 3,201	\$ 3,208	100%
1975	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 6,559 5,886 11,844 20,905 19,439 23,418 64,658 166,293 262,256 268,745 256,045 229,909 173,052 100,799 51,220 18,956 3,679	\$ 0 0 5 0 0 0 42 571 100 97 626 278 566 164 151 39 13	\$ 5 3 5 6 6 12 34 106 221 327 400 507 608 376 320 157 53	000 1000 0 0 0 124 539 445 30 157 555 93 44 47 25 25
1976(2)	All ages 0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70 and over	\$ 1,683,671 \$ 9,150 6,767 11,679 21,605 21,848 28,817 74,866 195,019 320,124 316,825 274,254 248,293 196,373 118,755 64,710 21,472 5,809	\$ 2,651 \$ 0 0 0 50 0 0 29 59 5 148 255 181 257 184 80 148 101	\$ 3,145 \$ 11 5 6 6 6 14 41 116 246 312 331 382 515 334 289 138 57	84% 0% 0 0 833 0 0 71 51 2 47 77 47 50 55 28 107 177
	All ages	\$ 1,936,373	\$ 1,497	\$ 2,809	53%

TABLE B-FEMALE LIVES-Continued

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
1977	0	\$ 12,905	\$ 0	\$ 61	0%
(1)	ĺ	7,214	o o	9	0,0
	2-4	14,157	0	8	1 0
	5-9	25,310	15	8	188
	10-14	26,343	0	7	0
	15-19	35,747	5	16	31
	20-24	114,024	140	57	246
	25-29	262,227	313	143	219
	30-34	438,968	2	310	1
	35-39	414,738	7	320	2
	40-44	332,866	283	292	97
	45-49	295,963	193	337	57
	50-54	231,665	671	436	154
	55-59	143,896	348	288	121
Ì	60-64	70,159	89	202	44
	65-69	28,956	87	119	73
•	70 and over	9,016	33	58	57
	All ages	\$ 2,464,162	\$ 2,186	\$ 2,671	82%
All years	0	\$ 86,862	\$ 7	\$ 98	7%
1–15)	1	59,370	0	30	0
	2-4	103,175	15	39	38
	5–9	204,774	165	73	226
	10-14	211,084	115	93	124
	15-19	295,903	68	160	43
	20-24	651,078	350	399	88
	25-29	1,297,940	1,604	988	162
	30-34	2,161,643	3,295	2,460	134
	35-39	2,486,823	2,968	4,454	67
	40-44	2,585,951	5,082	6,674	76
	45-49	2,344,190	7,412	8,076	92
	50-54	1,600,199	8.153	7,947	103
55-59	870,939	3,963	4,842	82	
	60-64	419,013	2,746	3,828	72
	65–69	146,444	1,619	1,886	86
	70 and over	41,317	727	1,221	60
	All ages	\$15,566,513	\$38,290	\$43,268	88%

TABLE C

STANDARD NONMEDICAL ISSUES OF 1963-77 MALE LIVES

EXPERIENCE BETWEEN 1977 AND 1978 ANNIVERSARIES BY YEAR OF ISSUE AND AGE AT ISSUE

Expected Deaths on 1965-70 Male Select Basic Table (Amounts Shown in \$1,000 Units)

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
1963	0	\$ 92,959	\$ 50	\$ 52	96%
15)	1	34,635	11	24	46
	2-4	52,079	54	51	106
	5-9	85,471	98	99	99
	10-14	136,975	149	146	102
-	15-19	485,608	595	600	99
	20-24	838,935	1.167	1,288	91
	2 5-29	690,985	1,255	1,688	74
	30-34	346,094	1,186	1,405	84
	35-39	147,236	839	986	85
	40-44	23,723	216	252	86
Ì	45-49	2.103	22	35	63
	50 and over	679	1	33	3
	All ages	\$ 2,937,488	\$ 5,643	\$ 6,657	85%
964	0	\$ 97,987	\$ 26	\$ 44	59%
(14)	1	36,459	1 i	20	55
	2-4	57,634	49	48	102
	5-9	93,804	109	111	98
	10-14	148,533	136	160	85
	15-19	540,634	710	648	110
	20-24	968, 249	1,084	1,350	80
	25-29	765,060	1,350	1,639	82
į	30-34	369,045	1,057	1,309	81
1	35-39	154,009	816	891	92
	40-44	25,305	187	238	79
	45-49	2,223	13	32	41
	50 and over	564	24	23	104
	All ages	\$ 3,259,512	\$ 5,572	\$ 6,513	86%
965	0	\$ 100,454	\$ 30	\$ 36	83%
13)	1	38,578	11	17	65
	2-4	60,419	48	42	114
	5-9	98,783	97	115	84
	10-14	161,403	239	177	135
	15-19	683,453	741	785	94
	20-24	1,069,325	905	1,335	68
	25-29	803,029	1,045	1,519	69
	30-34	374,910	1,107	1,176	94
	35-39	145,498	845	744	114
	40-44	24,941	175	207	85
	45-49	2,483	26	32	81
	50 and over	1,431	10	38	26
	All ages	\$ 3,564,713	\$ 5,277	\$ 6,222	85%

TABLE C-MALE LIVES-Continued

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
1966(12)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	\$ 103,953 39,955 62,499 102,653 164,881 607,008 1,042,071 838,759 373,532 138,941 25,205 2,670 1,019	\$ 37 35 36 132 141 587 1,034 922 695 417 182 21 32	\$ 33 14 34 111 183 668 1,179 1,402 1,050 642 184 30 21	112% 250 106 119 77 88 88 66 66 65 99 70
	All ages	\$ 3,503,153	\$ 4,271	\$ 5,552	77%
1967(11)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	\$ 109,128 41,773 65,847 105,006 166,036 621,061 1,257,888 980,656 446,934 162,403 33,619 3,843 765	\$ 39 35 16 49 222 619 1,337 1,036 933 617 192 27 2	\$ 34 13 29 102 187 656 1,293 1,424 1,129 672 223 38 13	115% 269 55 48 119 94 103 73 83 92 86 71
	All ages	\$ 3,994,965	\$ 5,122	\$ 5,811	88%
1968(10)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	\$ 116,936 44,115 67,288 106,644 169,781 644,442 1,534,629 1,171,027 533,035 207,583 50,499 5,717 2,913	\$ 23 5 42 103 189 510 1,339 1,265 981 773 340 9	\$ 37 14 23 89 196 680 1,479 1,496 1,187 761 300 50 45	62% 36 183 116 96 75 91 85 83 102 113 18
	All ages	\$ 4,654,616	\$ 5,583	\$ 6,357	88%
1969 (9)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	\$ 129,540 48,470 70,893 109,294 174,326 654,200 1,668,769 1,226,158 545,977 215,547 52,001 6,366 2,763	\$ 45 4 18 54 245 743 1,439 1,213 869 758 254 37	\$ 45 16 22 76 207 693 1,517 1,414 1,074 695 277 50 40	100% 25 82 71 118 107 95 86 81 109 92 74 103
	All ages	\$ 4,904,311	\$ 5,719	\$ 6,124	93%

TABLE C-MALE LIVES-Continued

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
1970(8)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	\$ 150,046 58,856 82,454 121,274 182,943 735,926 2,009,278 1,339,479 579,491 233,088 57,170 6,745 3,124	\$ 27 20 0 65 179 915 1,672 1,278 924 606 280 10 0	\$ 57 20 26 66 214 786 1,737 1,378 999 664 272 48 42	47% 100 0 98 84 116 96 93 92 91 103 21
	All ages	\$ 5,559,881	\$ 5,977	\$ 6,310	95%
1971	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	\$ 172,194 70,390 103,879 147,985 218,631 799,813 2,225,243 1,537,219 643,700 245,184 60,012 10,646 4,587	\$\begin{array}{c} 71 \\ 21 \\ 5 \\ 69 \\ 246 \\ 941 \\ 1.798 \\ 1.255 \\ 626 \\ 650 \\ 291 \\ 23 \\ 85 \end{array}	\$ 71 27 33 65 239 857 1.858 1,439 968 621 255 68 55	100% 78 15 106 103 110 97 87 65 105 114 34 155
	All ages	\$ 6,239,489	\$ 6,079	\$ 6,557	93%
1972(6)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	\$ 196,615 87,438 149,492 208,009 306,906 988,964 2,442,667 1,805,613 714,747 262,187 66,326 11,934 4,889	\$ 80 23 28 82 375 1,149 1,857 1,265 1,102 600 256 53 28	\$ 91 36 52 74 302 1,069 2,003 1,556 975 583 249 67 52	88% 64 54 111 124 107 93 81 113 103 79 54
	All ages	\$ 7,245,795	\$ 6,896	\$ 7,109	97%
1973(5)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	\$ 238,532 95,634 184,076 248,746 361,657 1,186,928 2,652,848 2,056,496 817,433 279,509 80,474 17,958 8,152	\$ 80 39 48 84 356 1,482 2,063 1,523 970 640 248 41 2	\$ 124 45 70 79 309 1,294 2,202 1,682 997 545 254 87	65% 87 69 106 115 115 94 91 97 117 98 47 3
	All ages	\$ 8,228,449	\$ 7,577	\$ 7,759	98%

TABLE C-MALE LIVES - Continued

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
1974(4)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	\$ 266,843 103,498 193,283 256,090 344,591 1,216,389 2,821,607 2,308,283 884,071 283,660 74,229 25,365 15,391	\$ 143 43 32 61 213 1,325 2,317 1,856 984 473 137 234	\$ 165 54 80 79 245 1,286 2,356 1,807 993 483 211 108 116	87% 80 40 77 87 103 98 103 99 98 65 217 85
	All ages	\$ 8,793,306	\$ 7,917	\$ 7,983	99%
1975(3)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	\$ 307,339 112,125 189,222 262,781 319,823 1,130,539 2,888,656 2,697,439 1,053,120 327,076 85,893 29,592 22,818	\$ 184 138 65 45 212 1,458 2,077 2,382 1,095 426 143 253 47	\$ 243 71 88 84 179 1,151 2,326 2,045 1,048 471 205 105 155	76% 194 74 54 118 127 89 116 104 90 70 241
1976(2)	All ages 0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49	\$ 9,426,430 \$ 374,687 140,952 232,853 338,786 380,186 1,320,735 3,521,285 3,396,250 1,296,711 356,149 92,937 45,511	\$ 8,525 \$ 174 59 66 79 92 1,315 2,385 2,165 1,025 405 234 12	\$ 8,171 \$ 449 114 121 117 170 1,291 2,588 2,168 1,137 405 178 123	39% 52 55 68 54 102 92 100 90 100 131 10
	50 and over All ages	29,937 \$11,526,984	\$ 8,062	\$ 9,007	35

TABLE C -MALE LIVES -Continued

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
1977	0	\$ 479,919	\$ 433	\$ 2,604	17%
(1)	1	174,360	65	216	30
` '	2-4	290,381	113	181	62
	5-9	431 839	105	165	64
J	10-14	448,710	142	160	89
	15-19	1,612,773	1,742	1,463	119
	20-24	4,718,000	3,590	3,231	111
	25-29	4,493,271	2.744	2,600	106
	30-34	1,806.374	1,086	1,361	80
	35-39	470,900	593	414	143
	40-44	113,142	208	156	133
	45-49	35,994	76	70	109
	50 and over	28,277	65	96	68
	All ages	815,103,947	\$10,962	\$ 12,716	86%
All years	0	\$ 2,937,139	\$ 1,438	\$ 4.085	35%
1-15)	1	1,127,243	516	700	74
1	2-4	1,862,307	618	900	69
1	5-9	2,717,172	1,232	1,432	86
	10-14	3,685,390	3,136	3,074	102
	15-19	13,228,481	14,830	13,926	106
	20-24	31,659,457	26,064	27,742	94
	25-29	26,109,731	22,554	25,258	89
	30-34	10,785,181	14,640	16,809	87
	35-39	3,628,977	9,458	9,578	99
	40-44	865,483	3,345	3,459	97
	45-49	209,157	858	941	91
	50 and over	127,314	492	946	52
	All ages	\$98,943,038	\$99,182	\$108,848	91%

TABLE C-Continued

STANDARD NONMEDICAL ISSUES OF 1963-77 FEMALE LIVES

EXPERIENCE BETWEEN 1977 AND 1978 ANNIVERSARIES BY YEAR OF ISSUE AND AGE AT ISSUE

Expected Deaths on 1965-70 Female Select Basic Table (Amounts Shown in \$1,000 Units)

Issue Year (Policy Year)	Ages at Issue		Exposed to Risk		ctual eaths		pected eaths	Mortali Ratio
1963	0	\$	51,954 18,830	\$	15	\$	18	83% 114
	2-4	ļ	25,615		5		12	42
	5-9	}	31,566		6	ĺ	18	33
	10–14 15–19		33,591 87,326	ĺ	19 41		18 60	106 68
	20-24		114,915		82		121	68
	25-29	}	79,553]	103	1	143	72
	30-34		72,419		192		199	96
	35-39		56,949	1	230		232	99
	40-44		11,194		56		64	88
Ì	45-49	1	428		5		4	125
	50 and over		117		0		1	0
i	All ages	\$	584,464	\$	761	\$	896	85%
964	0	\$	56,962	\$	3	\$	17	18%
14)	1		20,231		2 10		7	29
	2-4 5-9	İ	29,205 35,676		18	j	12 21	83 86
į	10-14		39,752		4	}	21	19
	15-19		106,587		76		71	107
	20-24	1	142,175		9 <u>1</u>		134	68
	25-29		98,244		113		160	71
{	30–34	}	82,130		186		207	90
	35–39		61,300		170	ľ	228	75
ĺ	40-44 45-49		13,336		54		69	78
	45–49 50 and over		755 119		8 0	\	5 2	160
						ļ		
	All ages	\$	686,478	\$	733	\$	956	77%
965	0	\$	58,726	\$	12	\$	16	75%
13)	1		22,087		7	1	. 7	100
	2-4		30,662		8		11	73
	5–9 10–14		41,126		40		24	167 8
	15-14		43,645 130,125		2 31		24 83	37
	20-24		162,016		119		138	86
-	25-29		110,202		97		163	60
j	30-34		87,318		159		201	79
	35-39		62,163		183	ĺ	212	86
	40-44		13,924		39	!	65	60
	45–49		791		4	l	5	80
	50 and over		84		0		1	0
	All ages	\$	762,875	\$	701	\$	950	74%

TABLE C-FEMALE LIVES -Continued

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
1966(12)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	\$ 61,426 21,877 33,590 42,641 47,952 147,950 186,412 127,601 92,258 63,824 13,559 973 153	\$ 5 3 1 18 34 87 107 136 114 174 51	\$ 16 6 11 23 26 90 145 171 194 199 54 6	31% 50 9 78 131 97 74 80 59 87 94 50 0
	All ages	\$ 840,224	\$ 733	\$ 943	78%
1967 (11)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	\$ 66,410 23,664 34,762 46,359 51,768 159,048 232,221 154,632 107,977 74,607 27,683 2,155 193	\$ 24 0 3 19 10 82 118 139 173 175 88 4 3	\$ 17 6 10 22 29 93 166 184 210 214 105 12	141% 0 30 86 34 88 71 76 82 82 84 33 150
	All ages	\$ 981,487	\$ 837	\$ 1,069	78%
1968(10)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	\$ 71,103 25,324 37,228 50,526 58,608 174,346 276,229 192,637 134,642 90,135 45,127 4,178 464	\$ 8 11 5 8 28 45 216 116 257 200 157 25 0	\$ 19 6 10 21 34 96 188 202 241 240 161 20 3	42% 183 50 38 82 47 115 57 107 83 98 125 0
]	All ages	\$ 1,160,553	\$ 1,074	\$ 1,241	87%
1969	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	\$ 80,083 28,799 39,480 53,328 61,958 197,468 322,480 222,126 147,141 96,060 50,854 5,196 376	\$ 13 20 1 14 33 87 134 137 126 242 155 25 16	\$ 23 8 10 20 37 106 214 209 240 235 167 23	57% 250 10 70 89 82 63 66 53 103 93 109 533
	All ages	\$ 1,305,354	\$ 1,004	\$ 1,295	78%

TABLE C-FEMALE LIVES -Continued

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
1970	0	\$ 97,266	\$ 15	\$ 31	48%
(8)	1	34,708	18	10	180
	2-4	47,268	19	12	158
	5-9	62,220	22	21	105
į	10-14	71,796	58	41	141
	15-19	232,082	87	125	70
	20-24 25-29	402,142	198	257 243	77 90
	30-34	286,495 181,896	218 228	270	84
	35-39	110,229	265	245	108
ŀ	40-44	59.722	230	181	127
	45-49	59,722 5,948	53	24	221
	50 and over	697	0	5	0
	All ages	\$ 1,592,477	\$ 1,409	\$ 1,467	96%
1971	0	\$ 113,248	\$ 15	\$ 41	37%
(7)	1	43,653	5	14	36
	2-4 5-9	63,152	5 8	17	29
	10-14	79,981 95,976	44	24 52	33 85
	15-19	271,757	153	149	103
1	20-24	472,780	165	288	57
1	25-29	352,365	221	273	81
	30-34	218,462	214	293	73
	35-39	123,945	191	251	76
ì	40-44	66,907	181	187	97
	45- 4 9 50 and over	7,233 583	23	27 4	85 25
	All ages	\$ 1,910,050	\$ 1,225	\$ 1,619	76%
1972	0	\$ 133,542	\$ 5	\$ 55	9%
(6)	1	56,166	11	20	55
	2-4	96,501	0	28	0
ł	5-9	130,979	10	36	28
]	10-14	159,439	35	78	45
1	15-19	370,469	175	207	85
	20-24	570,331	210	331	63
	25-29 30-34	450, 257	154 226	321 311	48 73
	35-39	260,094 136,727	220	248	89
1	40-44	71,742	164	178	92
	45-49	8,376	5	27	19
	50 and over	867	32	5	640
	All ages	\$ 2,445,495	\$ 1,246	\$ 1,845	68%
.973	0	\$ 170,651	S 7	\$ 79	9%
5)	1	63,671	13	26	50
ļ	2-4	123,330	38	39	97
İ	5-9 10-14	162,903	10 57	43	23
ļ	10~1 4 15–19	202,027 $469,125$	259	87 249	66 104
	20-24	719 869	305	396	77
	25-29	719,869 595,203	241	404	60
	30-34	338,034	231	355	65
	35-39	160,913	246	257	96
1	40-44	160,913 81,280	176	176	100
	45-49	9,910	37	29	128
	50 and over	1,204	0	6	0
ŀ	All ages	\$ 3,098,127	\$ 1,620	\$ 2,148	75%

TABLE C-FEMALE LIVES-Continued

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
1974(4)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 30-34 40-44 45-49 50 and over	\$ 196,558 70,981 141,397 183,797 210,286 511,920 882,728 806,249 435,483 174,701 74,917 9,189 2,677	\$ 36 13 23 43 55 155 303 388 314 175 197 19	\$ 105 33 51 47 80 261 472 536 410 256 144 23	34% 39 45 91 69 59 64 72 77 68 137 83
	All ages	\$ 3,700,891	\$ 1,726	\$ 2,431	71%
1975 (3)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	\$ 231,780 79,755 142,758 189,815 202,270 530,152 1,073,275 1,064,904 551,006 205,796 89,274 13,438 3,462	\$ 53 15 48 30 50 139 306 536 293 144 144 26 5	\$ 157 43 59 50 69 265 563 680 469 252 142 30 13	34% 35 81 60 72 52 54 79 62 57 101 87 38
	All ages	\$ 4,377,690	\$ 1,788	\$ 2,791	64%
1976(2)	0 1 2-4 5-9 10-14 15-19 20-24 25-29 30-34 35-39 40-44 45-49 50 and over	\$ 291,579 104,138 178,387 258,501 254,275 683,116 1,457,640 1,459,396 719,190 254,654 96,266 13,973 6,017	\$ 126 17 57 55 55 208 451 369 239 111 128 65	\$ 315 72 83 74 77 339 795 873 558 252 117 22 17	40% 24 69 74 71 61 57 42 43 44 109 295
	All ages	\$ 5,777,139	\$ 1,897	\$ 3,594	53%

TABLE C-FEMALE LIVES-Continued

Issue Year (Policy Year)	Ages at Issue	Exposed to Risk	Actual Deaths	Expected Deaths	Mortality Ratio
1977	0	\$ 390,920	\$ 426	\$ 1,758	24%
(1)	ĭ	136,838	23	153	15
- '	2-4	235,849	33	127	26
	5-9	341,105	28	109	26
	10-14	320,737	55	88	63
	15-19	906,988	299	414	72
	20-24	2,115,646	535	1,058	51
	25-29	2,040,645	545	1,119	49
	30-34	1,027,421	367	732	50
	35-39	339,727	189	263	72
1	40-44	115,726	128	103	124
	45-49	14,937	10	17	59
	50 and over	6,059	35	13	269
	All ages	\$ 7,992,605	\$ 2,671	\$ 5,955	45%
All years	0	\$ 2,072,215	\$ 761	\$ 2,665	29%
1-15)	1	750,728	163	418	39
	2-4	1,259,193	255	493	52
	5-9	1,710,530	327	553	59
ļ	10-14	1,854,085	537	760	71
	15-19	4,978,465	1,923	2,609	74
	20-24	9,130,867	3,340	5,267	63
	25-29	8,040,520	3,513	5,681	62
	30-34	4,455,478	3,318	4,891	68
	35-39	2,011,738	2,916	3,584	81
	40-44	831,517	1,948	1,916	102
	45-49	97,487	310	274	113
	50 and over	23,078	114	89	128
	All ages	\$37,215,909	\$19,425	\$29,200	67%

