

**MORTALITY UNDER STRUCTURED SETTLEMENT ANNUITIES
FOR 1990-93**

STRUCTURED SETTLEMENT VALUATION TASK FORCE*

BACKGROUND

This is the second study of intercompany mortality experience under structured settlement annuities. The first study, published in the *1991-92 TSA Reports*, included experience through calendar year 1989. This study examines experience through calendar year 1993 and includes a larger contribution of data than the first study. For experience years prior to 1990, there is some overlap with the previous study. Most of the companies contributing to this study had contributed to the prior one.

ANALYSIS

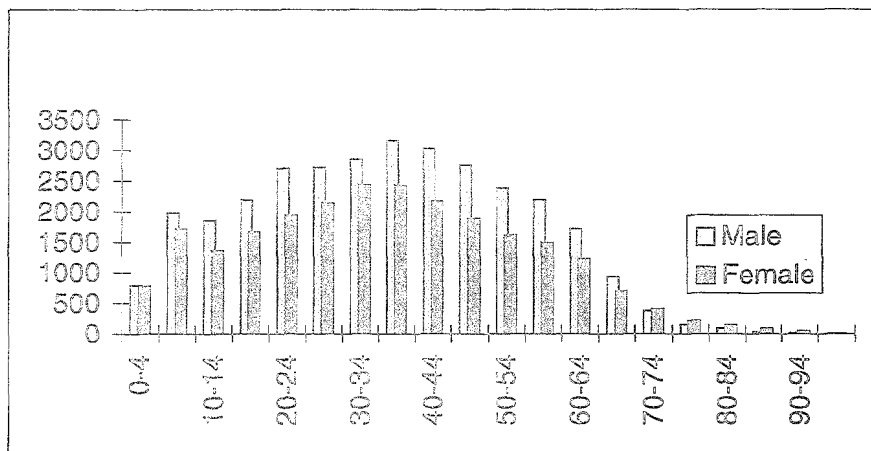
Only the data of companies contributing for all years through 1993 were used; that is, the experience from companies that had contributed to the first study but had not supplied data for 1990-1993 was not used. The contributing companies are listed at the end of this report. The study looked at standard and substandard experience separately and included 367,000 and 78,000 contract-years of experience, respectively.

Mortality ratios are on a per-life basis only. The benefit patterns of structured settlement annuities vary widely. Contracts do not always have payments every year, and the year-to-year size of payments often varies, so the use of monthly or annual income to weight by amount is not practical. We had intended to base tables by amount on the life-contingent reserve, but not all contributing companies were able to supply this number for their contracts. More than half the experience contributed had the amount field coded with either the total statutory reserve, including reserves to fund certain-period benefits and guaranteed lump-sum payments, or the gross premium at issue. Accordingly, although the ratios by amount were valid for individual companies and were reported to them, they were not valid for the total study and are not presented here.

The age distribution for this business differs greatly from retirement annuity business. As can be seen in Figure 1, the distribution is nearly normal with mean issue ages, for males and females, of 35-39. By contrast, ages under 50 are usually sparsely represented in retirement annuity mortality studies.

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FIGURE 1
STANDARD CONTRACTS BY ISSUE AGE GROUP



The study compares actual to expected deaths, with expected deaths taken against three mortality tables:

- The 1983 Individual Annuity Mortality (IAM) Table, which is the current valuation standard for structured settlement annuities
- The 1990 Population Table, derived from census data and published by the U.S. Department of Health and Human Services
- The 1996 IAM Table, which is the 1983 IAM Table projected to 1996 using Projection Scale G. (Both the 1983 IAM Table and this projection scale were published in the *1981 TSA Reports*.)

The following tables for standard lives are included in this study:

1. Mortality Experience by Calendar Year of Experience Based on the 1983 IAM Table
2. Mortality Experience by Duration of Contract Based on the 1983 IAM Table
3. Mortality Experience by Attained Age Based on the 1983 IAM Table
4. Mortality Experience by Issue Age Based on the 1983 IAM Table
5. Mortality Experience by Issue Year Based on the 1983 IAM Table
6. Mortality Experience by Attained Age Based on the 1996 IAM Table
7. Mortality Experience by Duration of Contract Based on the 1996 IAM Table

8. Mortality Experience by Attained Age Based on the 1990 U.S. Population Table

9. Mortality Experience by Duration of Contract Based on the 1990 U.S. Population Table

The following tables for substandard lives are included in this study:

10. Rated-Age Experience by "True Age," "Rated Age," and "True Age + CED" Based on 1983 IAM Table

11. Rated-Age Experience by Rated Attained Age Based on 1983 IAM Table

12. Rated-Age Experience by Duration of Contract Based on 1983 IAM Table

13. Rated-Age Experience by Rated Attained Age Based on U.S. 1990 Population Table

14. Rated-Age Experience by Duration of Contract Based on U.S. 1990 Population Table

RESULTS

Standard Lives

Tables 1–5 use the 1983 IAM Table as the basis for expected deaths. Table 1 gives mortality ratios by calendar year of study. A plausible explanation for the apparent increase in mortality by study year, which is counter to the gradual improvement in mortality over time that analyses of retired lives generally show, is that the later study years include an increasingly higher proportion of longer duration contracts, because the structured settlement business is fairly new. The underlying phenomenon is probably the wearing off of select mortality rather than a deterioration of overall mortality. This explanation is supported by Table 2, which gives ratios by contract duration and shows an increase by duration more pronounced than the increase in Table 1.

Table 2 shows ratios well above 100% at every duration but the first. The low ratio in the first duration is caused to a large extent by the industry practice of backdating contract effective dates. Because these are single-sum contracts with a large investment component, contracts are dated with the deposit date of funds in order to give the owner timely credit for investment income earned. But the contract paperwork often delays policy issue several months. Deaths during this period result in not-taken contracts and cause an understatement of actual mortality rates. For policy years after the first, when this effect no longer applies, the nearly constant increase in ratios as duration increases suggests that antiselection wears off fairly quickly.

Tables 3 and 4 show ratios by attained age and issue age, respectively, and are closely correlated because the preponderance of low-duration contracts makes issue age nearly identical to attained age. The 1983 IAM table is clearly redundant for attained ages below 75 and is highly redundant at ages under 40.

Table 5 shows ratios by issue year. The increase in mortality ratios as contract duration increases, as noted above, here causes somewhat higher mortality ratios for the earlier issue years. The earlier issue years include a mix of low- and medium-duration contracts, while the later issue years reflect exclusively early duration experience.

The 1996 IAM Table was used to take ratios for Tables 6 and 7. The intention in using this table was to compare mortality under structured settlement annuities with more recent retired-lives mortality. In Table 6, the projection of 13 years of mortality improvement onto the 1983 IAM Table suggests that mortality under structured settlements is well above retired-lives mortality even at ages 76–85, although it remains below at ages above 85. (The amount of experience at ages above 85 is sparse.) The 1996 IAM Table would be redundant as a valuation standard below age 76 and extremely redundant below age 56.

The mortality ratios in Table 8, which compares structured settlement annuitant mortality with 1990 U.S. population rates, show a high degree of selection at the higher ages. The postulate that because plaintiffs in court cases have some choice in how awards are structured, annuitant mortality should be expected to exhibit some selection, is validated at the higher ages. However, the significantly higher ratios at the younger ages are counter-intuitive. Table 9 compares ratios with the population table by contract duration and again illustrates that the select mortality wears off fairly rapidly.

Substandard Lives

Substandard experience was studied on both a “rated-up age” basis and on a “true age plus constant extra deaths” (CED) basis. Most structured settlement writers price their substandard annuities using a rated-up age method, but they develop this age rate-up indirectly. A medical opinion about the prospective annuitant’s life expectancy is arrived at and then expressed as an increase in age. As an example, a contract issued on an annuitant with a true age of 35 may be priced as if for a 65 year-old.

The CED basis is specified as the statutory method for minimum substandard reserves in “Actuarial Guideline IX-A” of the NAIC’s *Financial Examiners Handbook*. Substandard payout annuity reserves are allowed only for structured settlement contracts and for contracts used to fund disabled

lives and workers' compensation liabilities. Under the CED method, a constant increment to the valuation mortality rates at the true issue age, and every year thereafter, is calculated to reproduce the life expectancy (at the valuation mortality rates) of the rated-up age.

For example, adding 43 extra deaths per thousand to every attained-age rate for an annuitant with a true age of 35 decreases life expectancy to that of a 65-year-old. The mortality is "front-loaded" because the 43 extra deaths have a proportionally greater effect at younger ages than at advanced ages. Over time the substandard mortality rates effectively approach standard rates, as the underlying mortality rate increases and the increment becomes relatively less significant. Because of this grading towards standard mortality rates, reserves using the CED method approach standard reserves over time. By contrast, rated-age reserves go to zero. For example, the rated-age reserves for a 35-year-old rated age 65 would be zero when the annuitant reached true age 85.

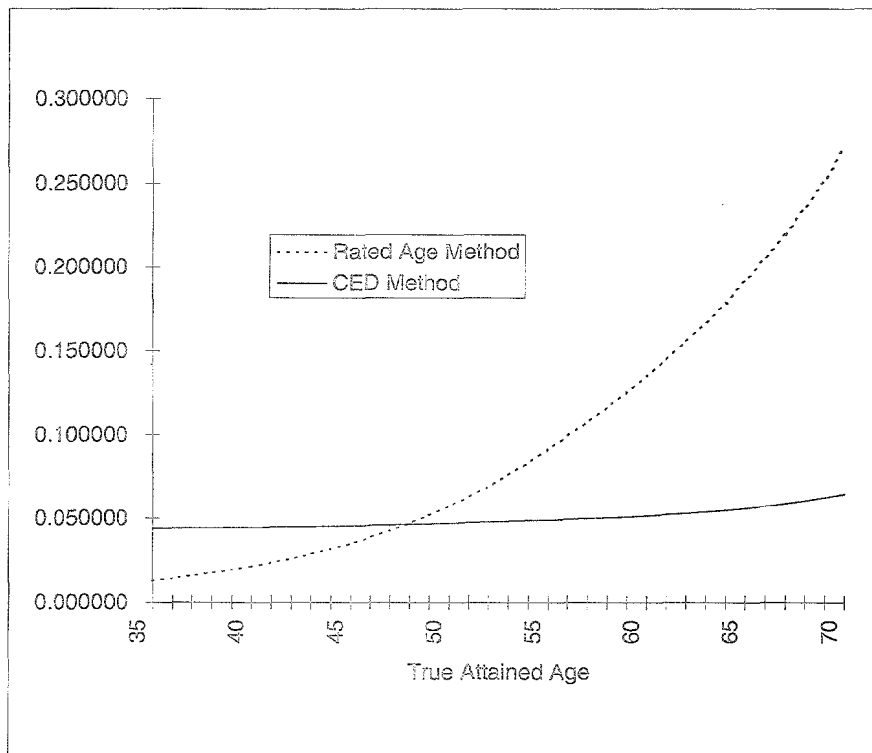
Figure 2 compares the mortality assumptions under the CED and rated age methods, by duration, for a typical substandard rating (male, true age 35, rated age 65). The incidence of extra mortality assumed under the two methods is not at all consistent. Again, when the substandard cases are medically underwritten, the determination that is made is of average life expectancy. The rated age is used to price the contract because it reflects the appropriate total excess mortality (that is, it reproduces the appropriate life expectancy), but no explicit assumption is made that the pattern of extra mortality year-by-year will follow that of a standard life at a higher age. Neither the rated-age method nor the constant extra death method exhibits the underwriter's best estimate of the pattern of mortality.

Table 10 shows mortality ratios taken against the 1983 IAM table for substandard lives on three bases. Ratios are greatly in excess of 100% for the true-age basis, which is to be expected. But they are also in excess of 100% for the rated-age basis, except at the highest rated ages. By contrast, the ratios are well below 100% at every age when taken on the CED basis.

This difference is caused by the "front-loading" of extra mortality under the CED basis and the preponderance of early-duration contracts in the current study. Caution must be exercised when inferring the underwriting soundness of a block of substandard annuities using data from only early-duration contracts.

Table 11 shows mortality ratios for substandard experience compared to the 1983 IAM table, on a rated-up attained-age basis. Although the pattern of ratios declining with increasing attained age is clear, interpretation of this pattern is problematic for a number of reasons:

FIGURE 2
ALTERNATE VALUATION MORTALITY FOR MALE, 35, RATED AGE 65
1983 IAM TABLE



- The data at the younger ages are sparse.
- The rated-age categories are not homogeneous (that is, a given rated-age grouping comprises young true-age policies with large rate-ups and older true-age policies with small rate-ups), but slicing the results up into more homogeneous categories will give too few deaths per cell.
- As noted above, a distortion may be introduced because the business is mostly from early contract durations.

This durational distortion makes Table 12, which shows rated-age mortality by contract duration, difficult to interpret. Here two opposite effects may be interacting. If the wearing off of selection as the contracts age that

was apparent for standard experience is also at play for the substandard experience, the ratios would tend to increase with advancing duration. But the rated-age method of allocating excess mortality entails a steeper increase in the mortality rate as duration increases, because it “back-loads” the extra mortality. This may mask any actual worsening of mortality as duration increases. Overall Table 12 shows a decrease in mortality ratios with advance in contract duration.

Tables 13 and 14 are similar to Tables 11 and 12 but use the 1990 U.S. Population Table. Interpretation of these tables is subject to the same caveats as Tables 11 and 12. Table 13 shows that the general population mortality is not necessarily a good basis for either the pricing or valuation of structured settlement annuities. Overall no clear pattern is evident in Table 14.

CONCLUSIONS

Mortality experience under structured settlement annuities does not fit well with assumed mortality under annuity valuation tables. This result is to be expected because these tables were developed from retired lives experience, which has age distributions much different from those of the structured settlement business.

For most of the ages critical to the structured settlement business—ages below 55—retired lives studies have little exposure. In general, this business exhibits mortality levels well in excess of those in annuity valuation tables.

Structured settlement annuity experience also exhibits patterns by attained age greatly different from tables developed from general population data. A significant amount of selection at ages above 50 is evident when this experience is compared to population data. It is not reasonable to use mortality rates derived from census data for either the pricing or the valuation of structured settlement annuities.

Analysis of substandard experience is hampered by a scarcity of data to cover the large number of true age and substandard rating combinations in force. In addition, the multitude of specific impairments that result in substandard ratings cannot be expected to exhibit the same year-by-year excess mortality, even at the same true age and substandard rating.

CONTRIBUTING COMPANIES

AIG Life Insurance Company
Allstate Life Insurance Company
American Life Insurance Company of NY
American Mayflower Life Insurance Company of NY
Connecticut General Life Insurance Company
Equitable Life Assurance Company
Executive Life Insurance Company of New York
First Colony Life Insurance Company
GE Capital Assurance Co.
Hartford Life Insurance Companies
Liberty Life Assurance Co. of Boston
New York Life Insurance Company
Providian Capital Management Insurance Company
SAFECO Life Insurance Company
The Travelers Life Insurance Company
Transamerica Occidental Life Insurance Company
USAA Life Insurance Company
Western National Life Insurance Company

TABLE 1
MORTALITY EXPERIENCE FOR STANDARD LIVES BY CALENDAR YEAR OF STUDY
BASED ON 1983 IAM TABLE

Calendar Year of Study	Male			Female			Total		
	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio
1966-1984	40	39.5	101%	21	22.4	94%	61	61.8	99%
1985	31	33.2	93	27	18.6	145	58	51.8	112
1986	65	47.9	136	31	25.0	124	96	72.9	132
1987	82	61.3	134	33	32.6	101	115	94.0	122
1988	99	75.4	131	44	40.9	108	143	116.3	123
1989	134	91.1	147	71	49.7	143	205	140.9	146
1990	155	106.4	146	76	58.8	129	231	165.2	140
1991	200	122.3	164	90	67.2	134	290	189.5	153
1992	215	136.2	158	110	75.3	146	325	211.5	154
1993	266	151.0	176	104	83.8	124	370	234.8	158
All Study Years	1,287	864.3	149%	607	474.3	128%	1,894	1,338.6	141%

TABLE 2
MORTALITY EXPERIENCE FOR STANDARD LIVES BY DURATION OF CONTRACT
BASED ON 1983 IAM TABLE

Duration of Contract	Male			Female			Total		
	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio
0-1	57	53.5	106%	23	30.2	76%	80	83.7	96%
1-2	134	103.4	130	57	59.5	96	191	162.9	117
2-3	135	104.2	130	70	59.0	119	205	163.1	126
3-4	129	103.4	125	71	58.1	122	200	161.5	124
4-5	141	98.8	143	69	55.3	125	210	154.1	136
5-6	173	92.0	188	87	50.8	171	260	142.8	182
6-7	122	82.0	149	74	43.9	169	196	125.9	156
7-8	132	74.9	176	58	38.3	152	190	113.2	168
8-9	112	60.2	186	42	31.2	135	154	91.4	168
9-10	72	42.2	171	28	21.8	129	100	63.9	156
10 +	80	49.7	161	28	26.3	107	108	76.0	142
All Years	1,287	864.3	149%	607	474.3	128%	1,894	1,338.6	141%

TABLE 3
MORTALITY EXPERIENCE FOR STANDARD LIVES BY ATTAINED AGE
BASED ON 1983 IAM TABLE

Attained Age	Male			Female			Total		
	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio
0-20	35	13.4	262%	25	4.6	538%	60	18.0	3330%
21-25	33	8.6	385	14	3.3	423	47	11.9	395
26-30	47	12.2	385	9	5.1	175	56	17.4	322
31-35	49	15.2	321	18	7.3	247	67	22.5	297
36-40	56	20.4	275	27	9.5	284	83	29.9	278
41-45	61	33.5	182	24	12.9	186	85	46.4	183
46-50	99	53.4	185	25	17.2	145	124	70.7	175
51-55	114	72.0	158	39	23.7	165	153	95.7	160
56-60	146	93.3	156	52	33.2	157	198	126.6	156
61-65	188	122.5	154	59	47.2	125	247	169.7	146
66-75	298	254.9	117	135	109.2	124	433	364.1	119
76-85	135	124.5	108	95	102.6	93	230	227.0	101
86+	26	40.4	64	85	98.4	86	111	138.9	80
All Ages	1,287	864.3	149%	607	474.3	128%	1,894	1,338.6	141%

TABLE 4
MORTALITY EXPERIENCE FOR STANDARD LIVES BY ISSUE AGE
BASED ON 1983 IAM TABLE

Issue Age	Male			Female			Total		
	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio
0-20	67	20.0	335%	34	7.1	476%	101	27.2	372%
21-25	42	12.3	340	14	4.9	285	56	17.3	324
26-30	51	14.4	355	12	7.0	171	63	21.4	295
31-35	51	19.0	269	29	9.2	317	80	28.1	284
36-40	69	30.7	225	25	12.5	199	94	43.3	217
41-45	93	49.4	188	27	16.2	166	120	65.6	183
46-50	114	66.6	171	37	22.6	164	151	89.2	169
51-55	151	92.1	164	53	31.4	169	204	123.5	165
56-60	190	122.7	155	65	47.3	138	255	169.9	150
61-65	170	153.0	111	82	62.1	132	252	215.1	117
66-75	217	198.6	109	103	102.5	100	320	301.2	106
76-85	61	70.2	87	78	94.6	82	139	164.8	84
86+	11	15.4	72	48	56.8	85	59	72.1	82
All Ages	1,287	864.3	149%	607	474.3	128%	1,894	1,338.6	141%

TABLE 5
MORTALITY EXPERIENCE FOR STANDARD LIVES BY ISSUE YEAR
BASED ON 1983 IAM TABLE

Issue Year	Male			Female			Total		
	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio
1966-1982	182	129.5	141%	104	76.3	136%	286	205.8	139%
1983	157	103.9	151	54	44.8	121	211	148.6	142
1984	179	124.0	144	93	73.5	127	272	197.5	138
1985	215	139.7	154	114	71.0	161	329	210.7	156
1986	195	114.2	171	62	53.1	117	257	167.3	154
1987	91	64.8	140	44	43.5	101	135	108.3	125
1988	113	70.7	160	49	40.8	120	162	111.5	145
1989	68	52.4	130	45	31.3	144	113	83.8	135
1990	45	34.4	131	24	20.5	117	69	54.9	126
1991	23	18.2	126	9	11.5	78	32	29.7	108
1992	14	9.1	154	7	6.0	117	21	15.1	139
1993	5	3.4	148	2	2.1	96	7	5.5	128
All Study Years	1,287	864.3	149%	607	474.3	128%	1,894	1,338.6	141%

TABLE 6
MORTALITY EXPERIENCE FOR STANDARD LIVES BY ATTAINED AGE
BASED ON 1996 IAM TABLE

Attained Age	Male			Female			Total		
	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio
0-20	35	12.7	277%	25	4.1	610%	60	16.8	358%
21-25	33	8.5	387	14	3.1	456	47	11.6	406
26-30	47	11.8	397	9	4.6	195	56	16.4	340
31-35	49	13.3	368	18	6.0	301	67	19.3	347
36-40	56	15.9	352	27	7.1	378	83	23.0	360
41-45	61	26.1	234	24	9.6	250	85	35.7	238
46-50	99	42.2	234	25	13.2	189	124	55.4	224
51-55	114	57.5	198	39	18.3	213	153	75.8	202
56-60	146	76.0	192	52	26.3	198	198	102.3	193
61-65	188	100.6	187	59	37.5	158	247	138.0	179
66-75	298	213.3	140	135	86.7	156	433	300.0	144
76-85	135	105.8	128	95	83.9	113	230	189.8	121
86+	26	35.0	74	85	83.1	102	111	118.1	94
All Ages	1,287	718.8	179%	607	383.5	158%	1,894	1,102.3	172%

TABLE 7
MORTALITY EXPERIENCE FOR STANDARD LIVES BY DURATION OF CONTRACT
BASED ON 1996 IAM TABLE

Duration of Contract	Male			Female			Total		
	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio
0-1	57	44.4	129%	23	24.4	94%	80	68.7	116%
1-2	134	85.6	156	57	48.1	119	191	133.7	143
2-3	135	86.4	155	70	47.7	147	205	134.0	153
3-4	129	85.8	150	71	47.0	151	200	132.8	151
4-5	141	82.1	172	69	44.7	154	210	126.8	166
5-6	173	76.5	226	87	41.1	212	260	117.6	221
6-7	122	68.4	178	74	35.5	209	196	103.8	189
7-8	132	62.5	211	58	31.0	187	190	93.5	203
8-9	112	50.3	223	42	25.3	166	154	75.5	204
9-10	72	35.3	204	28	17.7	159	100	52.9	189
10 +	80	41.7	192	28	21.3	132	108	62.9	172
All Years	1,287	718.8	179%	607	383.5	158%	1,894	1,102.3	172%

TABLE 8
MORTALITY EXPERIENCE FOR STANDARD LIVES BY ATTAINED AGE
BASED ON 1990 U.S. POPULATION TABLE

Attained Age	Male			Female			Total		
	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio
0-20	35	22.4	156%	25	7.8	323%	60	30.2	199%
21-25	33	25.7	128	14	5.7	246	47	31.4	150
26-30	47	33.2	142	9	8.5	106	56	41.7	134
31-35	49	42.0	117	18	13.0	139	67	54.9	122
36-40	56	53.6	104	27	17.9	151	83	71.5	116
41-45	61	65.6	93	24	24.4	99	85	89.9	95
46-50	99	85.4	116	25	33.5	75	124	119.0	104
51-55	114	113.4	101	39	45.9	85	153	159.3	96
56-60	146	166.1	88	52	65.5	79	198	231.6	85
61-65	188	234.1	80	59	91.2	65	247	325.3	76
66-75	298	432.4	69	135	188.6	72	433	621.0	70
76-85	135	182.1	74	95	143.8	66	230	325.9	71
86+	26	54.6	48	85	119.1	71	111	173.7	64
All Ages	1,287	1,510.7	85%	607	764.7	79%	1,894	2,275.4	83%

TABLE 9

MORTALITY EXPERIENCE FOR STANDARD LIVES BY DURATION OF CONTRACT
BASED ON 1990 U.S. POPULATION TABLE

Duration of Contract	Male			Female			Total		
	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio
0-1	57	95.9	59%	23	49.4	47%	80	145.3	55%
1-2	134	184.9	72	57	97.0	59	191	281.9	68
2-3	135	185.4	73	70	95.8	73	205	281.2	73
3-4	129	182.9	71	71	94.0	76	200	276.9	72
4-5	141	173.7	81	69	89.1	77	210	262.8	80
5-6	173	160.5	108	87	81.5	107	260	242.0	107
6-7	122	141.9	86	74	70.5	105	196	212.4	92
7-8	132	128.4	103	58	61.4	94	190	189.9	100
8-9	112	102.8	109	42	49.9	84	154	152.7	101
9-10	72	71.1	101	28	34.3	82	100	105.4	95
10 +	80	83.2	96	28	41.6	67	108	124.9	87
All Years	1,287	1,510.7	85%	607	764.7	79%	1,894	2,275.4	83%

TABLE 10
 RATED-AGE EXPERIENCE FOR STANDARD LIVES BY TRUE AGE,
 RATED AGE, AND TRUE AGE + CED
 BASED ON 1983 IAM TABLE

Rated Issue Age	True Age			Rated Age			True Age + CED		
	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio
Male									
0-30	20	3.7	543%	20	5.1	389%	20	51.8	39%
31-40	47	6.7	704	47	13.0	362	47	101.4	46
41-50	111	12.5	886	111	37.7	294	111	177.5	63
51-60	128	23.4	547	128	70.0	183	128	245.7	52
61-70	161	32.7	492	161	116.4	138	161	304.4	53
71-80	185	27.1	682	185	155.8	119	185	305.0	61
81+	86	21.4	401	86	113.1	76	86	165.5	52
All Ages	738	127.6	578%	738	511.1	144%	738	1,351.2	55%
Female									
0-30	8	0.9	898%	8	1.5	537%	8	26.3	30%
31-40	7	1.4	506	7	2.9	245	7	35.2	20
41-50	31	2.6	1,172	31	7.8	399	31	66.7	46
51-60	50	5.0	1,009	50	17.0	295	50	106.2	47
61-70	91	8.5	1,077	91	36.3	251	91	142.4	64
71-80	119	12.0	991	119	78.8	151	119	197.5	60
81+	95	20.9	454	95	91.5	104	95	143.6	66
All Ages	401	51.3	782%	401	235.7	170%	401	717.8	56%
Total									
0-30	28	4.6	612%	28	6.6	422%	28	78.1	36%
31-40	54	8.1	670	54	15.8	341	54	136.6	40
41-50	142	15.2	935	142	45.5	312	142	244.2	58
51-60	178	28.4	627	178	86.9	205	178	351.9	51
61-70	252	41.2	612	252	152.7	165	252	446.8	56
71-80	304	39.1	777	304	234.6	130	304	502.4	61
81+	181	42.4	427	181	204.7	88	181	309.1	59
All Ages	1,139	178.9	637%	1,139	746.9	153%	1,139	2,069.0	55%

TABLE 11
 RATED-AGE EXPERIENCE FOR SUBSTANDARD LIVES BY RATED ATTAINED AGE
 BASED ON 1983 IAM TABLE

Rated Attained Age	Male			Female			Total		
	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio
0-30	12	3.3	369%	3	0.9	320%	15	4.2	358%
31-35	14	2.8	498	6	0.8	767	20	3.6	557
36-40	19	4.8	392	3	1.1	264	22	6.0	368
41-45	33	9.3	355	4	1.9	207	37	11.2	329
46-50	54	17.4	310	17	3.2	529	71	20.6	344
51-55	51	25.3	202	16	5.4	298	67	30.7	218
56-60	57	31.1	184	27	7.5	358	84	38.6	218
61-65	80	41.7	192	24	10.9	219	104	52.6	198
66-75	178	129.3	138	101	40.6	249	279	169.9	164
76-85	168	155.6	108	123	84.2	146	291	239.8	121
86+	72	90.5	80	77	79.1	97	149	169.7	88
All Ages	738	511.1	144%	401	235.7	170%	1,139	746.9	153%

TABLE 12
 RATED-AGE EXPERIENCE FOR SUBSTANDARD LIVES BY DURATION OF CONTRACT
 BASED ON 1983 IAM TABLE

Duration of Contract	Male			Female			Total		
	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio
0-1	75	44.3	169%	39	20.7	188%	114	65.0	175%
1-2	114	84.4	135	90	38.3	235	204	122.6	166
2-3	143	82.0	174	65	36.1	180	208	118.1	176
3-4	99	75.2	132	43	34.2	126	142	109.4	130
4-5	98	67.1	146	48	30.8	156	146	97.8	149
5-6	72	50.1	144	35	23.6	148	107	73.7	145
6-7	50	34.8	144	30	17.5	171	80	52.4	153
7-8	22	21.9	101	12	11.5	105	34	33.3	102
8-9	22	15.8	140	16	8.4	191	38	24.1	158
9-10	14	11.8	118	7	5.6	124	21	17.5	120
10+	29	23.8	122	16	9.0	177	45	32.9	137
All Years	738	511.1	144%	401	235.7	170%	1,139	746.9	153%

TABLE 13
 RATED-AGE EXPERIENCE FOR SUBSTANDARD LIVES BY RATED ATTAINED AGE
 BASED ON 1990 U.S. POPULATION TABLE

Rated Attained Age	Male			Female			Total		
	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio
0-30	12	8.8	136%	3	1.6	185%	15	10.5	144%
31-35	14	7.8	181	6	1.4	430	20	9.1	219
36-40	19	12.7	149	3	2.1	140	22	14.9	148
41-45	33	18.1	182	4	3.6	110	37	21.8	170
46-50	54	27.8	194	17	6.3	272	71	34.1	208
51-55	51	39.8	128	16	10.4	154	67	50.3	133
56-60	57	55.3	103	27	14.9	181	84	70.1	120
61-65	80	79.7	100	24	21.1	114	104	100.8	103
66-75	178	216.7	82	101	69.5	145	279	286.2	97
76-85	168	225.7	74	123	116.7	105	291	342.3	85
86+	72	122.4	59	77	96.6	80	149	219.0	68
All Ages	738	814.8	91%	401	344.2	117%	1,139	1,159.0	98%

TABLE 14
 RATED-AGE EXPERIENCE FOR SUBSTANDARD LIVES BY DURATION OF CONTRACT
 BASED ON 1990 U.S. POPULATION TABLE

Duration of Contract	Male			Female			Total		
	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio	Actual	Expected	A/E Ratio
0-1	75	72.2	104%	39	31.1	125%	114	103.3	110%
1-2	114	136.5	84	90	57.1	158	204	193.5	105
2-3	143	131.6	109	65	53.4	122	208	184.9	112
3-4	99	119.7	83	43	49.9	86	142	169.6	84
4-5	98	105.8	93	48	44.4	108	146	150.2	97
5-6	72	78.6	92	35	33.8	103	107	112.4	95
6-7	50	54.7	91	30	24.9	120	80	79.6	100
7-8	22	34.8	63	12	16.4	73	34	51.3	66
8-9	22	25.1	87	16	11.9	134	38	37.1	102
9-10	14	18.7	75	7	8.0	87	21	26.7	79
10 +	29	37.2	78	16	13.1	122	45	50.3	89
All Years	738	814.8	91%	401	344.2	117%	1,139	1,159.0	98%