

**Reinsurance
Large Amount
Mortality Study**

**Society of Actuaries
Reinsurance Council**

**1997 and 1998
Intercompany
Experience**

BY:

**Manon Laverdière, FSA, FCIA
Valerio Valenti, ASA
Manulife Reinsurance**

**John A. Luff, FSA, FCIA
Society Of Actuaries**

February 2002

REINSURANCE
INTERCOMPANY MORTALITY STUDY
FOR
LARGE AMOUNTS
(1997 and 1998 EXPERIENCE)

BY:
MANON LAVERDIÈRE, FSA, FCIA
VALERIO VALENTI, ASA
JOHN A. LUFF, FSA, FCIA

TABLE OF CONTENTS
INTERCOMPANY LARGE AMOUNT MORTALITY REPORT

DESCRIPTION OF STUDY	1
<u>PART 1: MORTALITY EXPERIENCE</u>	
HIGHLIGHTS OF THE STUDY (1997 and 1998)	
- OVERALL EXPERIENCE	3
- EXPERIENCE BY SEX	3
- EXPERIENCE BY ISSUE AGES	3
- EXPERIENCE BY POLICY YEARS	3
- EXPERIENCE BY CLASSIFICATION AMOUNTS	4
- EXPERIENCE BY SMOKING STATUS	4
- EXPERIENCE BY UNDERWRITING STATUS	4
- EXPERIENCE BY REINSURANCE STATUS	5
- EXPERIENCE BY PLAN OF INSURANCE	5
- EXPERIENCE BY METHOD OF REINSURANCE	5
HIGHLIGHTS OF THE STUDY (1987 - 1998)	
- OVERALL EXPERIENCE	6
- EXPERIENCE BY SEX	6
- EXPERIENCE BY ISSUE AGE	6
- EXPERIENCE BY POLICY YEARS	7
- EXPERIENCE BY CLASSIFICATION AMOUNTS	7
- EXPERIENCE BY SMOKING STATUS	7
- EXPERIENCE BY UNDERWRITING STATUS	7
- EXPERIENCE BY REINSURANCE STATUS	7
<u>TABLES</u>	
1 - TRENDS IN MORTALITY RATIOS BY NUMBER	8
2 - TRENDS IN EXPOSURE (BY NUMBER)	9
3 - TRENDS IN MORTALITY RATIOS BY AMOUNT (000)	10
4 - TRENDS IN EXPOSURE AMOUNT	11
5 - 1991-1998 FIVE YEAR ROLLING AVERAGE EXPERIENCE	12
6 - 1987-1998 FOUR YEAR PERIOD AVERAGES	13
7 - 1997 EXPERIENCE BY NUMBER	14
8 - 1998 EXPERIENCE BY NUMBER	15
9 - 1997 EXPERIENCE BY AMOUNT (000)	16
10 - 1998 EXPERIENCE BY AMOUNT (000)	17
11 - 1987 - 1998 EXPERIENCE BY NUMBER	18
12 - 1987 - 1998 EXPERIENCE BY AMOUNT (000)	19
<u>PART 2: CLAIMS ANALYSIS</u>	
CLAIMS ANALYSIS BY NUMBER AND BY PERCENTAGE FOR EACH CAUSE OF DEATH; BY SEX, ISSUE AGES, POLICY YEARS, CLASSIFICATION AMOUNTS, SMOKING STATUS, UNDERWRITING AND REINSURANCE STATUS (1997 and 1998)	20
<u>TABLES</u>	
13A - 1997 CLAIMS ANALYSIS BY SEX & ISSUE AGE	21
13B - 1997 CLAIMS ANALYSIS BY POLICY YEARS & CLASSIFICATION AMOUNT	22
13C - 1997 CLAIMS ANALYSIS BY SMOKING, U.W, REINSURANCE STATUS	23
14A - 1998 CLAIMS ANALYSIS BY SEX & ISSUE AGE	24
14B - 1998 CLAIMS ANALYSIS BY POLICY YEARS & CLASSIFICATION AMOUNT	25
14C - 1998 CLAIMS ANALYSIS BY SMOKING, U.W, REINSURANCE STATUS	26
<u>APPENDIX</u>	
A - LIST OF CONTRIBUTORS	27
B - LIST OF LARGE CLAIMS (1997 and 1998)	28
C - LIST OF LARGE CLAIMS (1987 - 1996)	29
D - STANDARD DEVIATION	31
E - STANDARD DEVIATIONS (1997)	32
F - STANDARD DEVIATIONS (1998)	33
G - STANDARD DEVIATIONS (1987 - 1998)	34
H - 1997 EXPERIENCE BY NUMBER (Issue Ages by Duration)	35
I - 1997 EXPERIENCE BY AMOUNT (Issue Ages by Duration)	36
J - 1998 EXPERIENCE BY NUMBER (Issue Ages by Duration)	37
K - 1998 EXPERIENCE BY AMOUNT (Issue Ages by Duration)	38
L - 1997 EXPERIENCE BY NUMBER (Plan of Insurance by Duration)	39
M - 1997 EXPERIENCE BY AMOUNT (Plan of Insurance by Duration)	40
N - 1998 EXPERIENCE BY NUMBER (Plan of Insurance by Duration)	41
O - 1998 EXPERIENCE BY AMOUNT (Plan of Insurance by Duration)	42

DESCRIPTION of the STUDY

Observation Period and Policy Issue Years

This report covers the experience for calendar years 1997 and 1998. The earliest issue year for all policies reported by participants was 1960.

Policies Included in the Study

Policies for large amounts are those with a total (direct) face amount of one million dollars or more, where the residence of the insured at issue is the United States, and the currency of the policy is in U.S. dollars. This study includes only single life policies with exposure equal to the net amount at risk reinsured to the participants.

Exposure Calculation

The net amount at risk is assumed to be level throughout the exposure period and is either the most current information or the recorded face amount, depending on the company's reporting method as at the end of 1997 for the 1997 data or 1998 for the 1998 data.

For a policy in force through the study year, two exposure records are created. One reflects the fraction of the year between the prior December 31 and the policy anniversary. The other reflects the fraction of the year between the policy anniversary and December 31 of the study year. Obviously these two fractions sum to one. The difference between the two records is in the policy duration.

For policies withdrawing during the study year, one or two exposure records will be created, depending on whether the withdrawal is after the anniversary or not. The exposure fraction is calculated consistent with the in force situation. Fractions would not sum to one in this case except for withdrawals occurring on December 31 of the study year.

For death claims, one or two exposure records will be created, depending on whether the death occurs before the anniversary or not. Note the difference in treatment of exact anniversary deaths and withdrawals. The exposure will be one for the record reflecting the period in which the death occurs. Hence, the total exposure will be greater than one for policies with deaths that occur on or after the anniversary date.

For policies issued in the study year, one exposure record will be created consistent with the rest of the exposure calculations. Hence, a policy issued on January 1 of the study year will contribute one day less than a full year's exposure to the study, while one issued on December 31 of the study year will be included in the study, but with a zero exposure value.

Expected Deaths

Expected deaths in the study are based on 100% of the Society of Actuaries A75-80 Basic Select and Ultimate Tables (pages 205-227 of TSA 38, 1986). The tables vary by sex and age type (age nearest birthday and age last birthday).

The A75-80 Basic Tables were extended to issue age 90 and the resulting tables were used to calculate the expected mortality for issue ages over 70. In the 1990 study, the ultimate attained age was 100. Study years 1991 and later extended this ultimate age to 105 using the constant difference pattern implicit in the values at age 100 and immediately prior. These modifications to the A75-80 Basic Tables for issue ages over 70 are not material to the overall mortality ratios because of the low exposure at these ages.

For substandard risks, the appropriate base table was increased by the appropriate substandard rating.

DESCRIPTION of the STUDY

Actual Claims

Actual claims are the amounts actually paid by the reinsurer. In the case of contestable claims, the actual claim amount is that actually paid out, if any.

Other Comments

Underwriting status refers to the standard and substandard categories.

Preferred and Non-preferred risks are treated as Regular risks.

Reinsurance status refers to how the participating company receives the business based on automatic, facultative and shopped categories.

Participants to the Study

See Appendix A.

In this year's two year study of 1997 and 1998 data, 5 of the 9 participants from 1996 remained and one new participant entered.

Products Included in the Study

Permanent plans include Whole Life, Limited Pay Plans and other permanent plans. Universal Life plans are interest-sensitive plans with a cash value buildup. Term plans include Re-entry, Level and Decreasing type plans.

New Sections to the Study

The Large Amount Study has been conducted since 1987. There are 12 years of available data. This year's two year study includes all sections that were completed in the past, plus 4 new tables. The new tables are:

Table 2 - Trends in Exposure (By Number) (1987-1998)

Table 4 - Trends in Exposure Amount (000s) (1987-1998)

Table 5 - 5 Year Rolling Average Ratios (1991-1995, 1992-1996, 1993-1997, 1994-1998)

Table 6 - 4 Year Period Average Ratios (1997-1990, 1991-1994 and 1995-1998)

The additional tables allow the reader to more easily view the mortality trends and assign credibility to those trends.

HIGHLIGHTS of the STUDY (1997 and 1998)

Overall Experience

The experience underlying the 1997 and 1998 data is based on total exposures of \$64 billion and \$77 billion, respectively. Claims in 1997 were \$77 million and in 1998 they were \$101 million. The total 1997 exposure by number is 231,965, and 275,823 in 1998. In 1997, 168 claims were reported and in 1998, there were 353 claims. The 1998 exposures by number and claims count are the largest in this study's history.

This year's two year study includes six contributing companies.

The overall mortality ratios by amount for the 1997 and 1998 study are 34% and 37%, respectively (44% in 1996).

The overall mortality ratios by number for the 1997 and 1998 study are 27% and 48%, respectively (54% in 1996).

Experience by Sex

Males comprise 88% to 89% of the 1997 and 1998 exposure by number. Exposure by amount is very similar, it is 88% for males in 1997 and 87% in 1998. Close to one-fifth of all male claims are classified as misadventure.

The mortality ratio by amount for males in 1997 is 38% and for females it is 11%. In 1998, the mortality ratio by amount is 38% for males and 33% for females.

The mortality ratio by number in 1997 is 28% for males and for females it is 16%. In 1998, the mortality ratio by number is 47% males and 53% for females.

Experience by Issue Age

Issue ages 30-49 are close to three quarters of the 1997 and 1998 exposure by number and close to 70% by amount. Although, actual claims paid are highest in the age category 50-59 for both 1997 and 1998.

In 1997, the mortality ratio by amount is 40% for issue ages 50-59 and 38% in 1998. In 1997, 52% of deaths in the age band 50-59 were attributed to cancer and in 1998 that figure decreased to 39%

Experience by Policy Years

Exposure by number and by amount is the largest for the first two policy durations. In 1997 and 1998, durations 1-2 comprise 58% of the total exposure by number and 50% of the total exposure by amount. In 1997 and 1998, 7 out of the 19 claims with Direct Face Amounts over \$5 million were reported in the first three policy durations, the rest all occurred in duration six and over.

HIGHLIGHTS of the STUDY (1997 and 1998)

Experience by Classification Amount

The experience by classification amount in the study is calculated using one record per policy. If the experience was calculated using one record per life several claims would move to the \$3 to \$5 million and \$5 million and over classification.

Over 85% of all claims by number in both 1997 and 1998 had face amounts between \$1 million and \$3 million. The ratios by number and by amount are 26% and 32%, respectively in 1997. In 1998 the ratios are 49% and 43%, respectively.

Up until the mid 1990s, the \$3 to \$5 million band had the lowest amount ratios relative to the other bands. It is now the \$5 million and over band that generally has the lowest ratio.

When analyzing each claim individually it was possible to observe that a small number of deaths involved multiple policies.

Experience by Smoking Status

The mortality ratio by amount for non-smokers is 34% in 1997 and 1998 (46% in 1996). The ratio for smokers is 56% in 1997 (49% in 1998). We obtain such a difference between non-smoker to smoker mortality ratios because the A75-80 Basic Tables are not differentiated by smoking status. From 1996 to 1998, we see smoker to non-smoker ratios that are at their lowest points since this study's inception.

The exposures by amount in 1997 for non-smoker, smoker and aggregate are 71%, 6% and 23%, respectively (In 1998, 89%, 6% and 5%).

Experience by Underwriting Status

The 1997 mortality ratio by amount for standard policies is 32% (34% in 1998). This ratio is 47% in 1997 (59% in 1998) for substandard policies.

The exposure by amount accounts for 96% of standard policies and 4% for substandard in both 1997 and 1998.

HIGHLIGHTS of the STUDY (1997 and 1998)

Experience by Reinsurance Status

The 1997 and 1998 mortality experience for facultative business is higher than the mortality experience for automatic business. This is consistent with eight of the last ten years.

The 1997 mortality ratio by amount is 21% for automatic business, and 55% for facultative business (1998: 36% for automatic and 40% for facultative).

The exposure dollar amounts in percentages are close to 80% for automatic business in both 1997 and 1998. The exposure percentages continue to show a decrease in facultative business over the years. There was very little shopped business exposure in 1997 and 1998. Shopped policies are defined as those sent facultatively to one or more reinsurer(s) to obtain the most competitive underwriting assessment.

Experience by Plan of Insurance

The plan of insurance was provided for 118,063 policies (51%) in 1997 and 147,755 policies (54%) in 1998. Term business represented approximately 50% of the business by policy and by amount. UL and whole life represented the remaining fraction. In 1997, term business had a mortality ratio of 22% by number and 38% by amount (in 1998 the ratios are 47% and 43%, respectively).

Experience by Method of Reinsurance

The method of reinsurance was provided for nearly all policies in 1997 and 1998, consistent with all prior years. They were grouped as YRT (approximately 45% by amount in 1997 and 1998), and coinsurance (approximately 54% by amount in 1997 and 1998). The mortality ratio in 1997 by amount is 30% for YRT and 37% for coinsurance (in 1998 the ratios are 26% and 20%, respectively).

HIGHLIGHTS of the STUDY (1987 - 1998)

Overall Experience

The experience underlying the years 1987-1998 data is based on a total exposure of \$780 billion and claims of \$1.6 billion. The total 1987-1998 exposure by number is 1,597,918 with 2,395 claims.

The overall mortality ratio by amount for the 1987-1998 study is 56%.

The overall mortality ratio by number for the 1987-1998 study is 54%.

Both of the above ratios when analyzed with both four year period averages and five year moving averages have decreased consistently through time.

The mortality ratios reflect the data correction for durations 16+ in the 1994 study year, and the revised mortality ratios for the 1993 study year. However, no corrections were made for the durations 16+ for all study years prior to 1994. The duration 16+ impact on mortality ratio is approximately 0.5% per study year.

Experience by Sex

90% of the total exposure by amount was from policies issued on male lives. This is consistent with each year's data.

The mortality ratio by amount for males is 55%.

The mortality ratio by amount for females is 62%.

Both of the above ratios, although volatile, have decreased through the years on both a four year period average and on a five year moving average.

The mortality ratios by number are 53% and 59% for males and females, respectively.

Experience by Issue Age

The age groups 30 to 39, 40 to 49 and 50 to 59 years old have the highest exposure by number and by amount. By amount, the mortality ratios for age bands 30 to 39, 40 to 49 and 50 to 59 are 67%, 56%, and 62% respectively. Over the years, the results for the age bands have been variable, large claims in 1988, and aviation claims in 1991 skewed the results at various age bands. The majority (54%) of the largest claims (over \$5 million) were in the age band 50 to 59 and 60 to 69.

HIGHLIGHTS of the STUDY (1987 - 1998)

Experience by Policy Years

The mortality ratio by amount at duration 1 is 55% (partly due to large aviation claims in the study's early years). It then decreases at duration two (44%) and steadily increases the next two durations from 51% to 56%. However, the pattern then stops, at duration five the ratio drops to 40%. The ratio at duration 6 to 10 is 66%, at duration 11 to 15 it is 60%, and for duration above 16 it's 105%. The mortality ratios by number show a similar pattern.

Experience by Classification Amount

As stated previously, the experience by classification amount in the study is calculated using one record per policy. If the experience was calculated using one record per life several claims would move to the \$3 to \$5 million and \$5 million and over classification amount.

A total of 2,395 claims were reported. When analyzing each claim individually it was possible to observe that a high number of deaths involved multiple policies.

Claims experience in all amount bands has been improving. The mortality ratio by number shows little variance for all three bands (53% to 57%). However, the ratio by amount varies with the bands. The \$1 million to \$3 million band has a ratio of 57%, the \$3 to \$5 million band ratio is 46%, and the greater than \$5 million band is 61%. The 61% in the last dollar band is heavily skewed by aviation and two large claim amounts in 1988 and 1989.

Experience by Smoking Status

The overall mortality ratio by number for non-smokers is 48%. The ratio for smokers is 102%. The ratios by amount for non-smokers and smokers are 48% and 104%, respectively. The ratio of smoker to non-smoker mortality has decreased considerably over the years. In fact in some years the smoker ratio is lower than the non-smoker ratio. However, the smoker exposure by amount is only 7% of the study, a small percent that does not emphasize good credibility. The exposures by amount for non-smoker and aggregate are 77% and 16%, respectively.

Experience by Underwriting Status

The mortality ratio by amount for standard policies is 56%. This ratio is 55% for substandard policies.

94% of exposures by amount are rated standard.

Experience by Reinsurance Status

The mortality ratio by amount for policies reinsured automatically is 47%. For policies reinsured facultatively the ratio is 64%. Only 4 claims were reported for shopped business.

The exposure amounts are \$441 billion (57%) for automatic business, \$330 billion (42%) for facultative business and \$9 billion (1%) for shopped business. Facultative business has been on a steady decrease since the study's inception, it now (1998) makes up 20% of new exposures. In the late 1980s facultative business comprised of more than 50% of the study's data.

TABLE 1

TRENDS IN MORTALITY RATIOS BY NUMBER

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

	1987	1988	1989	1990	1991	1992	1993 *	1994	1995	1996	1997	1998	1987-98
SEX													
MALE	65%	60%	51%	85%	72%	68%	60%	48%	49%	55%	28%	47%	53%
FEMALE	167%	70%	91%	78%	76%	74%	77%	63%	74%	52%	16%	53%	59%
ALL	73%	61%	54%	85%	73%	69%	61%	50%	51%	54%	27%	48%	54%
ISSUE AGES													
<20	0%	0%	0%	552%	0%	0%	0%	0%	0%	0%	361%	0%	78%
20-29	0%	0%	0%	301%	95%	42%	78%	116%	215%	95%	47%	0%	89%
30-39	101%	127%	75%	63%	65%	53%	66%	26%	30%	42%	26%	44%	44%
40-49	72%	53%	53%	61%	94%	64%	57%	40%	51%	40%	27%	40%	49%
50-59	96%	84%	82%	102%	70%	71%	59%	67%	54%	69%	34%	51%	62%
60-69	69%	38%	34%	103%	61%	92%	77%	64%	69%	77%	20%	62%	64%
70-79	9%	22%	17%	57%	47%	53%	37%	24%	35%	45%	14%	56%	37%
80+	0%	0%	0%	53%	55%	0%	0%	45%	21%	29%	36%	8%	22%
ALL	73%	61%	54%	85%	73%	69%	61%	50%	51%	54%	27%	48%	54%
POLICY YEARS													
1	65%	95%	47%	68%	94%	57%	76%	40%	51%	40%	19%	36%	49%
2	55%	46%	49%	60%	74%	64%	34%	35%	36%	41%	30%	29%	41%
3	83%	41%	62%	64%	81%	73%	63%	34%	46%	46%	26%	53%	54%
4	54%	77%	61%	59%	33%	42%	52%	52%	71%	53%	25%	40%	50%
5	65%	48%	36%	68%	67%	27%	49%	61%	18%	63%	26%	48%	44%
6-10	98%	75%	64%	112%	74%	95%	62%	58%	69%	56%	29%	58%	63%
11-15	166%	0%	36%	131%	68%	36%	142%	93%	60%	64%	34%	68%	70%
16+ **	55%	96%	81%	208%	0%	530%	120%	52%	67%	125%	31%	61%	95%
ALL	73%	61%	54%	85%	73%	69%	61%	50%	51%	54%	27%	48%	54%
CLASSIFICATION													
AMOUNTS													
\$1,000,000 - \$2,999,999	78%	60%	53%	84%	74%	69%	60%	51%	50%	54%	26%	49%	53%
\$3,000,000 - \$4,999,999	35%	47%	31%	92%	64%	73%	71%	33%	68%	57%	35%	43%	54%
> \$5,000,000	50%	103%	130%	88%	62%	58%	81%	46%	67%	57%	26%	35%	57%
ALL	73%	61%	54%	85%	73%	69%	61%	50%	51%	54%	27%	48%	54%
SMOKING STATUS													
NON-SMOKER	74%	48%	53%	60%	69%	58%	53%	47%	48%	53%	26%	45%	48%
SMOKER	102%	80%	152%	136%	142%	165%	109%	75%	121%	80%	46%	90%	102%
AGGREGATE	68%	71%	41%	123%	65%	81%	103%	59%	35%	48%	14%	49%	70%
ALL	73%	61%	54%	85%	73%	69%	61%	50%	51%	54%	27%	48%	54%
UNDERWRITING STATUS													
STANDARD	72%	63%	53%	82%	70%	70%	60%	49%	51%	54%	27%	46%	53%
SUBSTANDARD	76%	45%	60%	105%	90%	62%	77%	56%	60%	58%	28%	56%	61%
ALL	73%	61%	54%	85%	73%	69%	61%	50%	51%	54%	27%	48%	54%
REINSURANCE STATUS													
AUTOMATIC	53%	37%	30%	76%	71%	65%	56%	49%	49%	56%	24%	48%	49%
FACULTATIVE	86%	76%	70%	101%	77%	79%	79%	53%	63%	49%	47%	48%	69%
SHOPPED	0%	35%	55%	34%	0%	0%	0%	0%	0%	0%	0%	0%	30%
ALL	73%	61%	54%	85%	73%	69%	61%	50%	51%	54%	27%	48%	54%
PLAN OF INSURANCE													
WHOLE LIFE					56%	65%	147%	78%	51%	49%	40%	31%	67%
TERM					73%	54%	46%	43%	49%	55%	22%	47%	44%
UNIVERSAL LIFE					62%	96%	75%	57%	43%	50%	25%	78%	61%
UNKNOWN					80%	77%	54%	50%	61%	56%	32%	47%	54%
ALL					73%	69%	61%	50%	51%	54%	27%	48%	51%
REINSURANCE METHOD													
COINSURANCE					83%	45%	57%	36%	52%	48%	27%	28%	43%
MODIFIED COINSURANCE					65%	0%	0%	0%	0%	536%	0%	0%	43%
Y.R.T.					69%	67%	65%	51%	51%	60%	19%	26%	46%
UNKNOWN					62%	212%	0%	610%	0%	0%	197%	821%	361%
ALL					73%	69%	61%	50%	51%	54%	27%	48%	51%

* AN ERROR WAS FOUND IN THE 1993 DATA. THIS AFFECTED THE EXPECTED CLAIM BY NUMBER ONLY. THE PREVIOUS REPORTED MORTALITY RATIO FOR 1993 WAS 62.7%.

** THE ULTIMATE EXPECTED MORTALITY RATES FOR DURATION 16+ WAS FOUND TO BE DEFICIENT FOR ALL STUDY YEARS PRIOR TO 1994, HENCE OVERSTATING THE MORTALITY RATIOS FOR THOSE YEARS. THE OVERSTATEMENT WAS UNDER 0.5% PER YEAR.

TABLE 2

TRENDS IN EXPOSURE (BY NUMBER)

in 000s

	1987-1990	1991	1992	1993	1994	1995	1996	1997	1998	1987-98
SEX										
MALE	148,753	95,047	105,284	124,538	180,144	218,418	108,149	205,834	242,836	1,429,003
FEMALE	14,384	10,424	12,560	14,344	20,899	24,196	12,989	26,131	32,987	168,915
ALL	163,137	105,472	117,844	138,881	201,043	242,614	121,138	231,965	275,823	1,597,918
ISSUE AGES										
<20	699	401	357	345	425	428	274	432	835	4,196
20-29	4,307	2,914	3,267	3,495	4,678	5,829	2,897	5,942	8,200	41,528
30-39	41,245	30,121	35,443	44,844	65,371	86,882	43,194	83,366	103,361	533,826
40-49	65,938	42,738	46,905	56,194	82,198	97,147	48,060	90,682	105,313	635,175
50-59	37,420	21,189	22,826	25,012	36,280	39,842	19,903	39,073	44,480	286,024
60-69	11,864	7,110	7,796	7,915	10,529	10,616	5,685	10,070	10,782	82,368
70-79	1,608	976	1,226	1,058	1,527	1,797	1,069	2,265	2,656	14,183
80+	56	23	24	20	35	73	56	134	196	616
ALL	163,137	105,472	117,844	138,881	201,043	242,614	121,138	231,965	275,823	1,597,917
POLICY YEARS										
1	39,312	34,271	29,513	40,662	54,207	73,176	36,014	89,669	78,066	474,891
2	31,807	24,816	26,207	29,171	46,036	53,826	24,963	46,346	78,522	361,694
3	26,617	15,079	19,685	21,706	31,586	38,981	17,622	23,384	39,951	234,611
4	22,636	9,366	12,952	15,021	23,168	25,498	13,282	17,184	20,187	159,294
5	16,638	6,712	9,107	9,922	15,517	18,855	9,940	14,235	15,011	115,938
6-10	22,837	14,236	18,668	20,780	27,656	29,384	17,160	36,453	37,970	225,145
11-15	2,716	845	1,382	1,457	2,662	2,725	2,074	4,403	5,623	23,886
16+ **	574	148	330	162	211	168	84	290	494	2,460
ALL	163,137	105,472	117,844	138,881	201,043	242,614	121,138	231,965	275,823	1,597,917
CLASSIFICATION										
AMOUNTS										
\$1,000,000 - \$2,999,999	140,926	93,726	104,692	126,607	185,266	225,280	108,705	210,306	248,656	1,444,165
\$3,000,000 - \$4,999,999	13,984	6,902	7,897	7,403	9,773	11,130	7,823	14,149	17,662	96,722
> \$5,000,000	8,227	4,843	5,255	4,872	6,005	6,204	4,610	7,510	9,505	57,030
ALL	163,137	105,472	117,844	138,881	201,043	242,614	121,138	231,965	275,823	1,597,917
SMOKING STATUS										
NON-SMOKER	98,793	72,824	99,113	121,697	180,071	225,311	110,870	212,217	247,563	1,368,459
SMOKER	10,770	6,162	7,794	8,111	11,475	13,007	6,663	12,656	15,241	91,879
AGGREGATE	53,574	26,485	10,937	9,074	9,498	4,296	3,605	7,092	13,020	137,580
ALL	163,137	105,472	117,844	138,881	201,043	242,614	121,138	231,965	275,823	1,597,917
UNDERWRITING STATUS										
STANDARD	153,440	100,689	113,070	134,512	195,412	236,610	117,743	225,255	266,537	1,543,268
SUBSTANDARD	9,697	4,783	4,774	4,370	5,631	6,004	3,395	6,710	9,286	54,649
ALL	163,137	105,472	117,844	138,881	201,043	242,614	121,138	231,965	275,823	1,597,917
REINSURANCE STATUS										
AUTOMATIC	92,475	83,457	93,748	121,008	181,860	226,928	110,581	221,100	264,524	1,395,680
FACULTATIVE	67,743	21,783	23,802	17,874	19,183	15,686	10,557	10,864	11,299	198,790
SHOPPED	2,919	231	294	-	-	-	1	1	1	3,447
ALL	163,137	105,472	117,844	138,881	201,043	242,614	121,138	231,965	275,823	1,597,917
PLAN OF INSURANCE										
WHOLE LIFE		10,498	13,054	8,473	10,415	7,778	6,615	5,787	6,524	69,145
TERM		35,533	60,449	76,377	113,704	147,840	34,263	106,367	134,271	708,805
UNIVERSAL LIFE		6,244	14,298	11,441	14,443	24,800	5,257	5,909	6,960	89,352
UNKNOWN		53,196	30,042	42,590	62,481	62,195	75,004	113,902	128,068	567,478
ALL		105,472	117,844	138,881	201,043	242,614	121,138	231,965	275,823	1,434,780
REINSURANCE METHOD										
COINSURANCE		44,543	48,138	82,978	133,434	167,995	78,134	123,614	149,382	828,218
MODIFIED COINSURANCE		330	357	44	30	18	6	3	3	790
Y.R.T.		55,980	60,804	55,856	65,720	73,832	42,999	105,050	123,334	583,574
UNKNOWN		4,619	8,544	3	1,860	770	-	3,298	3,104	22,199
ALL		105,472	117,844	138,881	201,043	242,614	121,138	231,965	275,823	1,434,780
DEATHS										
	403	219	252	235	277	312	176	168	353	2,395

TABLE 3

TRENDS IN MORTALITY RATIOS BY AMOUNT (000'S)

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1987-98
SEX													
MALE	60%	55%	59%	74%	69%	67%	59%	48%	49%	43%	38%	38%	55%
FEMALE	88%	214%	49%	95%	71%	67%	68%	43%	61%	52%	11%	33%	62%
ALL	62%	70%	58%	76%	70%	67%	60%	47%	51%	44%	34%	37%	56%
ISSUE AGES													
<20	0%	0%	0%	436%	0%	0%	0%	0%	0%	0%	232%	0%	45%
20-29	0%	0%	0%	112%	16%	1%	34%	70%	299%	21%	544%	0%	96%
30-39	112%	329%	67%	57%	55%	66%	73%	30%	20%	37%	39%	47%	67%
40-49	65%	61%	46%	45%	105%	67%	55%	52%	77%	25%	31%	28%	56%
50-59	79%	77%	82%	97%	58%	64%	65%	47%	39%	65%	40%	38%	62%
60-69	53%	23%	66%	100%	40%	88%	63%	59%	63%	61%	27%	54%	59%
70-79	5%	14%	11%	29%	99%	40%	42%	18%	14%	19%	13%	30%	27%
80+	0%	0%	0%	163%	12%	0%	0%	116%	1%	0%	3%	2%	17%
ALL	62%	70%	58%	76%	70%	67%	60%	47%	51%	44%	34%	37%	56%
POLICY YEARS													
1	53%	108%	53%	86%	108%	69%	61%	26%	39%	37%	16%	26%	55%
2	64%	30%	67%	42%	73%	63%	43%	27%	36%	37%	16%	20%	44%
3	60%	25%	56%	31%	77%	103%	67%	39%	28%	61%	22%	35%	51%
4	64%	91%	63%	70%	18%	26%	58%	42%	103%	88%	23%	24%	56%
5	54%	37%	44%	77%	51%	13%	40%	42%	13%	51%	12%	55%	40%
6-10	60%	145%	67%	96%	80%	80%	64%	59%	63%	29%	50%	37%	66%
11-15	141%	0%	37%	108%	67%	51%	102%	72%	48%	34%	35%	70%	60%
16+ *	31%	58%	47%	253%	0%	768%	31%	64%	65%	157%	162%	21%	105%
ALL	62%	70%	58%	76%	70%	67%	60%	47%	51%	44%	34%	37%	56%
CLASSIFICATION AMOUNTS													
\$1,000,000 - \$2,999,999	76%	59%	48%	74%	67%	71%	63%	56%	48%	49%	32%	43%	57%
\$3,000,000 - \$4,999,999	38%	43%	29%	67%	52%	77%	49%	23%	45%	44%	46%	39%	46%
> \$5,000,000	37%	144%	126%	90%	93%	40%	61%	30%	65%	30%	31%	17%	61%
ALL	62%	70%	58%	76%	70%	67%	60%	47%	51%	44%	34%	37%	56%
SMOKING STATUS													
NON-SMOKER	69%	47%	52%	58%	61%	59%	51%	45%	45%	46%	34%	34%	48%
SMOKER	114%	44%	154%	137%	136%	116%	127%	76%	156%	44%	56%	49%	104%
AGGREGATE	48%	102%	50%	100%	75%	82%	90%	45%	35%	23%	13%	63%	69%
ALL	62%	70%	58%	76%	70%	67%	60%	47%	51%	44%	34%	37%	56%
UNDERWRITING STATUS													
STANDARD	63%	74%	56%	75%	67%	70%	63%	49%	51%	46%	32%	33%	56%
SUBSTANDARD	57%	47%	71%	78%	81%	50%	46%	38%	47%	36%	47%	59%	55%
ALL	62%	70%	58%	76%	70%	67%	60%	47%	51%	44%	34%	37%	56%
REINSURANCE STATUS													
AUTOMATIC	49%	39%	42%	67%	54%	57%	60%	55%	45%	56%	21%	36%	47%
FACULTATIVE	71%	88%	66%	83%	81%	74%	61%	40%	57%	36%	55%	40%	64%
SHOPPED	0%	24%	64%	30%	0%	0%	0%	0%	0%	0%	0%	0%	32%
ALL	62%	70%	58%	76%	70%	67%	60%	47%	51%	44%	34%	37%	56%
PLAN OF INSURANCE													
WHOLE LIFE					54%	56%	120%	64%	34%	25%	52%	20%	54%
TERM					91%	57%	46%	43%	58%	58%	38%	43%	51%
UNIVERSAL LIFE					47%	101%	63%	48%	33%	24%	37%	85%	57%
UNKNOWN					69%	67%	48%	42%	70%	54%	21%	22%	48%
ALL					70%	67%	60%	47%	51%	44%	34%	37%	52%
REINSURANCE METHOD													
COINSURANCE					114%	62%	47%	38%	58%	41%	37%	20%	50%
MODIFIED COINSURANCE					36%	0%	0%	0%	0%	541%	0%	0%	32%
Y.R.T.					58%	65%	67%	45%	47%	45%	30%	26%	48%
UNKNOWN					39%	106%	0%	695%	0%	0%	84%	299%	137%
ALL					70%	67%	60%	47%	51%	44%	34%	37%	52%

* THE ULTIMATE EXPECTED MORTALITY RATES FOR DURATION 16+ WAS FOUND TO BE DEFICIENT FOR ALL STUDY YEARS PRIOR TO 1994, HENCE OVERSTATING THE MORTALITY RATIOS FOR THOSE YEARS. THE OVERSTATEMENT WAS UNDER 0.5% PER YEAR.

TABLE 4

TRENDS IN EXPOSURE AMOUNT ('000'S)

in '000s

	1987-1990	1991	1992	1993 *	1994	1995	1996	1997	1998	1987-98
SEX										
MALE	200,184,789	62,511,705	70,285,795	58,787,897	70,300,038	69,155,213	36,771,071	56,315,460	66,575,152	690,887,120
FEMALE	21,347,233	8,321,123	9,561,644	7,617,675	9,579,307	9,292,007	5,541,867	8,016,760	10,175,196	89,452,813
ALL	221,532,022	70,832,827	79,847,440	66,405,572	79,879,345	78,447,221	42,312,938	64,332,221	76,750,348	780,339,933
ISSUE AGES										
<20	991,937	897,024	302,515	233,877	292,629	229,391	177,397	168,506	273,716	3,566,992
20-29	5,575,114	2,180,805	2,429,177	2,089,882	2,438,645	2,279,142	1,174,934	1,690,155	2,236,885	22,094,738
30-39	49,708,658	16,879,907	19,924,079	18,978,743	21,972,285	22,670,522	11,760,298	19,239,700	23,672,171	204,806,363
40-49	88,873,806	27,840,748	31,578,863	26,227,349	31,332,173	30,358,973	16,120,047	25,101,619	29,280,015	306,713,593
50-59	56,087,876	16,216,180	18,149,384	13,671,531	17,094,188	16,104,199	8,868,344	13,161,973	15,533,515	174,887,190
60-69	17,798,771	5,871,091	6,416,902	4,558,415	5,765,725	5,599,798	3,385,957	3,854,197	4,399,864	57,650,720
70-79	2,413,711	927,852	1,024,315	632,622	964,209	1,168,557	792,511	1,038,658	1,260,452	10,222,887
80+	82,151	19,220	22,205	13,153	19,491	36,639	33,451	77,412	93,729	397,451
ALL	221,532,022	70,832,827	79,847,440	66,405,572	79,879,345	78,447,221	42,312,938	64,332,221	76,750,348	780,339,934
POLICY YEARS										
1	48,892,450	16,096,899	13,951,841	13,092,808	15,375,701	19,633,375	10,041,295	20,206,125	20,353,017	177,643,510
2	43,983,268	15,266,878	15,148,622	12,576,501	13,719,655	14,559,133	7,157,547	12,814,593	17,882,119	153,108,316
3	38,770,520	11,050,659	13,283,850	10,120,510	12,395,760	11,509,788	5,155,862	6,960,135	11,320,192	120,567,276
4	32,040,752	8,449,609	9,930,010	8,461,895	9,957,600	8,786,422	4,188,588	4,490,951	6,018,181	92,324,008
5	23,721,271	6,500,810	8,061,556	6,080,710	8,392,997	6,893,247	3,957,729	3,947,464	3,987,004	71,542,789
6-10	30,412,208	12,891,929	18,160,452	14,920,882	17,896,424	15,020,652	9,917,915	13,157,263	13,668,311	146,046,035
11-15	3,111,540	516,956	1,119,502	1,089,780	2,043,583	1,963,914	1,827,166	2,584,173	3,209,659	17,466,273
16+ **	600,014	59,087	191,608	62,486	97,625	80,690	66,836	171,516	311,865	1,641,727
ALL	221,532,022	70,832,827	79,847,440	66,405,572	79,879,345	78,447,221	42,312,938	64,332,221	76,750,348	780,339,934
CLASSIFICATION AMOUNTS										
\$1,000,000 - \$2,999,999	140,149,823	45,074,018	54,409,839	48,898,101	58,025,499	57,205,231	28,055,504	43,379,927	50,745,083	525,943,025
\$3,000,000 - \$4,999,999	41,741,327	11,231,009	12,187,162	8,538,265	10,494,877	9,897,224	6,581,979	9,002,776	10,908,268	120,582,888
> \$5,000,000	39,640,873	14,557,800	13,250,438	8,969,206	11,358,968	11,344,766	7,675,454	11,949,517	15,096,997	133,844,020
ALL	221,532,022	70,862,827	79,847,440	66,405,572	79,879,345	78,447,221	42,312,938	64,332,221	76,750,348	780,369,934
SMOKING STATUS										
NON-SMOKER	132,498,802	52,436,003	65,364,330	57,323,815	70,188,382	71,171,479	37,626,181	45,976,638	68,320,768	600,906,398
SMOKER	15,778,025	5,221,031	6,294,749	4,552,689	5,284,441	4,693,890	2,523,584	3,656,483	4,394,281	52,399,172
AGGREGATE	73,255,195	13,205,793	8,188,361	4,529,067	4,406,523	2,581,852	2,163,173	14,699,100	4,035,300	127,064,364
ALL	221,532,022	70,862,827	79,847,440	66,405,572	79,879,345	78,447,221	42,312,938	64,332,221	76,750,348	780,369,934
UNDERWRITING STATUS										
STANDARD	207,846,112	65,968,261	75,149,270	63,038,031	75,727,889	74,738,444	39,704,629	61,637,521	73,482,826	737,292,983
SUBSTANDARD	13,685,910	4,864,567	4,698,170	3,367,541	4,151,456	3,708,777	2,608,309	2,694,700	3,267,522	43,046,951
ALL	221,532,022	70,832,827	79,847,440	66,405,572	79,879,345	78,447,221	42,312,938	64,332,221	76,750,348	780,339,934
REINSURANCE STATUS										
AUTOMATIC	83,857,039	34,729,478	40,769,276	40,380,297	49,624,903	53,976,737	26,466,924	49,754,097	61,060,825	440,619,576
FACULTATIVE	129,038,011	35,816,245	38,698,125	26,025,275	30,254,442	24,470,484	15,844,487	14,577,123	15,688,522	330,412,713
SHOPPED	8,636,972	287,105	380,039	-	-	-	1,527	1,001	1,001	9,307,645
ALL	221,532,022	70,832,827	79,847,440	66,405,572	79,879,345	78,447,221	42,312,938	64,332,221	76,750,348	780,339,934
PLAN OF INSURANCE										
WHOLE LIFE		10,850,020	13,521,374	7,465,461	8,910,191	7,725,891	6,152,331	4,125,055	5,063,992	63,814,316
TERM		20,541,392	37,679,267	37,629,548	43,882,852	42,361,873	13,222,005	30,822,024	38,345,257	264,484,218
UNIVERSAL LIFE		5,961,664	12,282,267	7,488,153	8,692,248	12,185,630	4,006,741	2,895,670	3,529,892	57,042,264
UNKNOWN		33,479,751	16,364,532	13,822,410	18,394,054	16,173,827	18,931,861	26,489,472	29,811,207	173,467,114
ALL		70,832,827	79,847,440	66,405,572	79,879,345	78,447,221	42,312,938	64,332,221	76,750,348	558,807,912
REINSURANCE METHOD										
COINSURANCE		20,778,640	23,449,852	31,201,297	38,183,936	40,478,542	18,162,142	28,336,363	34,305,272	234,896,044
MODIFIED COINSURANCE		379,330	380,981	51,881	37,604	19,554	6,053	4,427	4,445	884,274
Y.R.T.		42,768,713	47,345,926	35,145,517	41,240,816	37,578,011	24,144,744	34,523,003	40,852,333	303,599,063
UNKNOWN		6,906,145	8,670,681	6,877	416,988	371,114	-	1,468,427	1,588,298	19,428,531
ALL		70,832,827	79,847,440	66,405,572	79,879,345	78,447,221	42,312,938	64,332,221	76,750,348	558,807,912
DEATH CLAIMS BY \$000s										
	531,344	168,509	198,941	135,699	137,576	139,670	76,641	77,034	101,437	1,566,852

TABLE 5

1991-1998 FIVE YEAR ROLLING AVERAGE EXPERIENCE

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

	By Number			By Dollar Exposure			
	1992-1996	1993-1997	1994-1998	1991-1995	1992-1996	1993-1997	1994-1998
SEX							
MALE	55%	46%	44%	57%	54%	48%	43%
FEMALE	68%	52%	49%	61%	58%	46%	39%
ALL	56%	47%	45%	58%	54%	47%	43%
ISSUE AGES							
<20	0%	85%	66%	0%	0%	0%	0%
20-29	122%	115%	85%	83%	91%	192%	182%
30-39	40%	35%	34%	47%	45%	39%	34%
40-49	49%	42%	40%	69%	58%	51%	45%
50-59	63%	55%	53%	53%	55%	50%	45%
60-69	74%	58%	56%	62%	67%	55%	54%
70-79	38%	28%	36%	42%	25%	19%	19%
80+	22%	30%	22%	24%	17%	14%	10%
ALL	56%	47%	45%	58%	54%	47%	43%
POLICY YEARS							
1	52%	42%	36%	63%	46%	34%	28%
2	41%	35%	33%	51%	42%	32%	26%
3	53%	45%	44%	63%	61%	42%	36%
4	56%	52%	50%	48%	60%	64%	58%
5	42%	40%	41%	30%	30%	32%	34%
6-10	68%	52%	53%	67%	62%	55%	49%
11-15	78%	68%	61%	66%	59%	53%	53%
16+	125%	56%	57%	167%	181%	121%	77%
ALL	56%	47%	45%	58%	54%	47%	43%
CLASSIFICATION AMOUNTS							
\$1,000,000 - \$2,999,999	55%	46%	45%	60%	58%	50%	46%
\$3,000,000 - \$4,999,999	60%	51%	46%	50%	49%	41%	39%
> \$5,000,000	61%	53%	44%	57%	45%	43%	34%
ALL	56%	47%	45%	58%	54%	47%	43%
SMOKING STATUS							
NON-SMOKER	51%	44%	43%	51%	49%	44%	41%
SMOKER	110%	84%	82%	117%	108%	96%	80%
AGGREGATE	71%	57%	43%	67%	64%	47%	39%
ALL	56%	47%	45%	58%	54%	47%	43%
UNDERWRITING STATUS							
STANDARD	55%	46%	44%	59%	56%	48%	42%
SUBSTANDARD	62%	52%	50%	51%	44%	43%	45%
ALL	56%	47%	45%	58%	54%	47%	43%
REINSURANCE STATUS							
AUTOMATIC	53%	44%	44%	54%	54%	46%	41%
FACULTATIVE	65%	59%	52%	61%	55%	49%	45%
SHOPPED	0%	0%	0%	0%	0%	0%	0%
ALL	56%	47%	45%	58%	54%	47%	43%
PLAN OF INSURANCE							
WHOLE LIFE	77%	76%	54%	61%	58%	58%	40%
TERM	48%	40%	41%	54%	51%	47%	46%
UNIVERSAL LIFE	62%	51%	50%	65%	56%	42%	42%
UNKNOWN	58%	49%	48%	58%	56%	45%	39%
ALL	56%	47%	45%	58%	54%	47%	43%
REINSURANCE METHOD							
COINSURANCE	47%	43%	38%	61%	49%	45%	40%
MODIFIED COINSURANCE	34%	92%	106%	13%	30%	83%	117%
Y.R.T.	58%	46%	37%	55%	54%	47%	39%
UNKNOWN	263%	264%	507%	100%	143%	163%	231%
ALL	56%	47%	45%	58%	54%	47%	43%

TABLE 6

1987-1998 FOUR YEAR PERIOD AVERAGES

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

	By Number			By Dollar Exposure		
	1987-1990	1991-1994	1995-1998	1987-1990	1991-1994	1995-1998
SEX						
MALE	70%	60%	44%	62%	61%	42%
FEMALE	92%	71%	47%	108%	61%	38%
ALL	72%	61%	44%	66%	61%	42%
ISSUE AGES						
<20	245%	0%	80%	128%	0%	0%
20-29	154%	85%	79%	37%	31%	220%
30-39	81%	48%	35%	134%	55%	36%
40-49	60%	59%	40%	53%	68%	43%
50-59	94%	67%	50%	84%	58%	44%
60-69	70%	73%	54%	63%	63%	52%
70-79	30%	39%	38%	14%	49%	19%
80+	20%	27%	21%	41%	29%	2%
ALL	72%	61%	44%	66%	61%	42%
POLICY YEARS						
1	68%	65%	35%	74%	67%	29%
2	54%	49%	33%	51%	53%	26%
3	62%	58%	47%	43%	73%	34%
4	62%	47%	49%	72%	35%	64%
5	55%	52%	35%	52%	36%	31%
6-10	93%	71%	51%	92%	70%	46%
11-15	99%	88%	56%	73%	73%	49%
16+	149%	143%	57%	103%	233%	78%
ALL	72%	61%	44%	66%	61%	42%
CLASSIFICATION AMOUNTS						
\$1,000,000 - \$2,999,999	71%	61%	44%	63%	64%	43%
\$3,000,000 - \$4,999,999	59%	58%	49%	43%	52%	43%
> \$5,000,000	94%	60%	43%	103%	55%	35%
ALL	72%	61%	44%	66%	61%	42%
SMOKING STATUS						
NON-SMOKER	58%	54%	42%	56%	53%	39%
SMOKER	125%	118%	84%	116%	113%	81%
AGGREGATE	82%	74%	37%	73%	75%	36%
ALL	72%	61%	44%	66%	61%	42%
UNDERWRITING STATUS						
STANDARD	70%	60%	43%	67%	62%	40%
SUBSTANDARD	78%	70%	49%	65%	54%	48%
ALL	72%	61%	44%	66%	61%	42%
REINSURANCE STATUS						
AUTOMATIC	59%	58%	43%	50%	56%	37%
FACULTATIVE	85%	72%	52%	76%	64%	47%
SHOPPED	34%	0%	0%	34%	0%	0%
ALL	72%	61%	44%	66%	61%	42%
PLAN OF INSURANCE						
WHOLE LIFE		81%	44%		68%	32%
TERM		50%	41%		55%	47%
UNIVERSAL LIFE		74%	47%		69%	41%
UNKNOWN		63%	47%		58%	38%
ALL		61%	44%		61%	42%
REINSURANCE METHOD						
COINSURANCE		49%	39%		60%	40%
MODIFIED COINSURANCE		25%	149%		14%	191%
Y.R.T.		62%	34%		58%	36%
UNKNOWN		229%	491%		105%	193%
ALL		61%	44%		61%	42%

TABLE 7
1997 EXPERIENCE BY NUMBER

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

	EXPOSURE	ACTUAL CLAIMS	EXPECTED CLAIMS	MORTALITY RATIO
<u>SEX</u>				
MALE	205,834	155	544	28%
FEMALE	26,131	13	82	16%
ALL	231,965	168	626	27%
<u>ISSUE AGES</u>				
<20	432	1	0	361%
20-29	5,942	2	4	47%
30-39	83,366	22	84	26%
40-49	90,682	52	192	27%
50-59	39,073	58	169	34%
60-69	10,070	21	106	20%
70-79	2,265	9	62	14%
80+	134	3	8	36%
ALL	231,965	168	626	27%
<u>POLICY YEARS</u>				
1	89,669	22	116	19%
2	46,346	25	85	30%
3	23,384	16	62	26%
4	17,184	14	55	25%
5	14,235	14	54	26%
6-10	36,453	57	195	29%
11-15	4,403	17	50	34%
16+	290	3	10	31%
ALL	231,965	168	626	27%
<u>CLASSIFICATION AMOUNTS</u>				
\$1,000,000 - \$2,999,999	210,306	144	551	26%
\$3,000,000 - \$4,999,999	14,149	17	48	35%
> \$5,000,000	7,510	7	27	26%
ALL	231,965	168	626	27%
<u>SMOKING STATUS</u>				
NON-SMOKER	212,217	147	560	26%
SMOKER	12,656	17	37	46%
AGGREGATE	7,092	4	29	14%
ALL	231,965	168	626	27%
<u>UNDERWRITING STATUS</u>				
STANDARD	225,255	148	554	27%
SUBSTANDARD	6,710	20	72	28%
ALL	231,965	168	626	27%
<u>REINSURANCE STATUS</u>				
AUTOMATIC	221,100	134	553	24%
FACULTATIVE	10,864	34	73	47%
SHOPPED	1	0	0	0%
ALL	231,965	168	626	27%
<u>PLAN OF INSURANCE</u>				
WHOLE LIFE	5,787	10	25	40%
TERM	106,367	73	332	22%
UNIVERSAL LIFE	5,909	7	28	25%
UNKNOWN	113,902	78	241	32%
ALL	231,965	168	626	27%
<u>REINSURANCE METHOD</u>				
COINSURANCE	123,614	66	243	27%
MODIFIED COINSURANCE	3	0	0	0%
Y.R.T.	105,050	71	368	19%
UNKNOWN	3,298	31	16	197%
ALL	231,965	168	626	27%

TABLE 8
1998 EXPERIENCE BY NUMBER

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

	EXPOSURE	ACTUAL CLAIMS	EXPECTED CLAIMS	MORTALITY RATIO
<u>SEX</u>				
MALE	242,836	300	642	47%
FEMALE	32,987	53	99	53%
ALL	275,823	353	741	48%
<u>ISSUE AGES</u>				
<20	835	0	1	0%
20-29	8,200	0	6	0%
30-39	103,361	47	106	44%
40-49	105,313	92	228	40%
50-59	44,480	99	196	51%
60-69	10,782	72	117	62%
70-79	2,656	42	75	56%
80+	196	1	13	8%
ALL	275,823	353	741	48%
<u>POLICY YEARS</u>				
1	78,066	39	109	36%
2	78,522	40	136	29%
3	39,951	50	94	53%
4	20,187	25	62	40%
5	15,011	27	56	48%
6-10	37,970	120	206	58%
11-15	5,623	43	63	68%
16+	494	9	15	61%
ALL	275,823	353	741	48%
<u>CLASSIFICATION AMOUNTS</u>				
\$1,000,000 - \$2,999,999	248,656	315	646	49%
\$3,000,000 - \$4,999,999	17,662	26	60	43%
> \$5,000,000	9,505	12	35	35%
ALL	275,823	353	741	48%
<u>SMOKING STATUS</u>				
NON-SMOKER	247,563	294	657	45%
SMOKER	15,241	39	43	90%
AGGREGATE	13,020	20	41	49%
ALL	275,823	353	741	48%
<u>UNDERWRITING STATUS</u>				
STANDARD	266,537	304	654	46%
SUBSTANDARD	9,286	49	87	56%
ALL	275,823	353	741	48%
<u>REINSURANCE STATUS</u>				
AUTOMATIC	264,524	316	665	48%
FACULTATIVE	11,299	37	76	48%
SHOPPED	1	0	0	0%
ALL	275,823	353	741	48%
<u>PLAN OF INSURANCE</u>				
WHOLE LIFE	6,524	8	26	31%
TERM	134,271	189	405	47%
UNIVERSAL LIFE	6,960	27	35	78%
UNKNOWN	128,068	129	276	47%
ALL	275,823	353	741	48%
<u>REINSURANCE METHOD</u>				
COINSURANCE	149,382	79	285	28%
MODIFIED COINSURANCE	3	0	0	0%
Y.R.T.	123,334	113	437	26%
UNKNOWN	3,104	161	20	821%
ALL	275,823	353	741	48%

TABLE 9

1997 EXPERIENCE BY AMOUNT (000'S)

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

	EXPOSURE	ACTUAL CLAIMS	EXPECTED CLAIMS	MORTALITY RATIO
SEX				
MALE	56,315,460	73,223	192,837	38%
FEMALE	8,016,760	3,811	34,158	11%
ALL	64,332,221	77,034	226,995	34%
ISSUE AGES				
<20	168,506	0	108	232%
20-29	1,690,155	6,982	1,283	544%
30-39	19,239,700	8,823	22,420	39%
40-49	25,101,619	19,102	60,896	31%
50-59	13,161,973	26,615	65,823	40%
60-69	3,854,197	11,431	42,884	27%
70-79	1,038,658	3,714	29,067	13%
80+	77,412	117	4,514	3%
ALL	64,332,221	77,034	226,995	34%
POLICY YEARS				
1	20,206,125	5,064	31,256	16%
2	12,814,593	4,798	29,130	16%
3	6,960,135	4,769	21,650	22%
4	4,490,951	4,086	17,832	23%
5	3,947,464	2,101	16,840	12%
6-10	13,157,263	37,498	75,472	50%
11-15	2,584,173	10,395	29,685	35%
16+	171,516	8,323	5,129	162%
ALL	64,332,221	77,034	226,995	34%
CLASSIFICATION AMOUNTS				
\$1,000,000 - \$2,999,999	43,379,927	46,093	145,279	32%
\$3,000,000 - \$4,999,999	9,002,776	16,628	36,269	46%
> \$5,000,000	11,949,517	14,313	45,447	31%
ALL	64,332,221	77,034	226,995	34%
SMOKING STATUS				
NON-SMOKER	45,976,638	67,322	199,243	34%
SMOKER	3,656,483	7,966	14,123	56%
AGGREGATE	14,699,100	1,746	13,628	13%
ALL	64,332,221	77,034	226,995	34%
UNDERWRITING STATUS				
STANDARD	61,637,521	62,438	195,624	32%
SUBSTANDARD	2,694,700	14,596	31,371	47%
ALL	64,332,221	77,034	226,995	34%
REINSURANCE STATUS				
AUTOMATIC	49,754,097	29,818	140,656	21%
FACULTATIVE	14,577,123	47,216	86,337	55%
SHOPPED	1,001	0	1	0%
ALL	64,332,221	77,034	226,995	34%
PLAN OF INSURANCE				
WHOLE LIFE	4,125,055	12,622	24,186	52%
TERM	30,822,024	42,501	110,692	38%
UNIVERSAL LIFE	2,895,670	6,656	17,892	37%
UNKNOWN	26,489,472	15,256	74,224	21%
ALL	64,332,221	77,034	226,995	34%
REINSURANCE METHOD				
COINSURANCE	28,336,363	24,543	67,075	37%
MODIFIED COINSURANCE	4,427	0	20	0%
Y.R.T.	34,523,003	45,025	150,985	30%
UNKNOWN	1,468,427	7,466	8,914	84%
ALL	64,332,221	77,034	226,995	34%

TABLE 10

1998 EXPERIENCE BY AMOUNT (000'S)

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

	EXPOSURE	ACTUAL CLAIMS	EXPECTED CLAIMS	MORTALITY RATIO
SEX				
MALE	66,575,152	87,467	231,390	38%
FEMALE	10,175,196	13,970	42,942	33%
ALL	76,750,348	101,437	274,332	37%
ISSUE AGES				
<20	273,716	0	171	0%
20-29	2,236,885	0	1,666	0%
30-39	23,672,171	12,849	27,473	47%
40-49	29,280,015	20,054	72,060	28%
50-59	15,533,515	29,677	77,987	38%
60-69	4,399,864	27,474	51,217	54%
70-79	1,260,452	11,277	37,626	30%
80+	93,729	104	6,132	2%
ALL	76,750,348	101,437	274,332	37%
POLICY YEARS				
1	20,353,017	8,394	32,708	26%
2	17,882,119	7,499	38,057	20%
3	11,320,192	11,829	34,271	35%
4	6,018,181	5,503	22,922	24%
5	3,987,004	10,401	18,800	55%
6-10	13,668,311	30,416	81,788	37%
11-15	3,209,659	25,369	36,008	70%
16+	311,865	2,025	9,778	21%
ALL	76,750,348	101,437	274,332	37%
CLASSIFICATION AMOUNTS				
\$1,000,000 - \$2,999,999	50,745,083	73,913	170,616	43%
\$3,000,000 - \$4,999,999	10,908,268	17,672	44,923	39%
> \$5,000,000	15,096,997	9,851	58,793	17%
ALL	76,750,348	101,437	274,332	37%
SMOKING STATUS				
NON-SMOKER	68,320,768	81,994	239,751	34%
SMOKER	4,394,281	8,195	16,640	49%
AGGREGATE	4,035,300	11,248	17,941	63%
ALL	76,750,348	101,437	274,332	37%
UNDERWRITING STATUS				
STANDARD	73,482,826	79,040	236,120	33%
SUBSTANDARD	3,267,522	22,396	38,212	59%
ALL	76,750,348	101,437	274,332	37%
REINSURANCE STATUS				
AUTOMATIC	61,060,825	63,291	178,157	36%
FACULTATIVE	15,688,522	38,146	96,173	40%
SHOPPED	1,001	0	2	0%
ALL	76,750,348	101,437	274,332	37%
PLAN OF INSURANCE				
WHOLE LIFE	5,063,992	5,727	28,196	20%
TERM	38,345,257	56,817	133,375	43%
UNIVERSAL LIFE	3,529,892	18,686	22,070	85%
UNKNOWN	29,811,207	20,207	90,691	22%
ALL	76,750,348	101,437	274,332	37%
REINSURANCE METHOD				
COINSURANCE	34,305,272	16,161	80,192	20%
MODIFIED COINSURANCE	4,445	0	23	0%
Y.R.T.	40,852,333	47,932	181,607	26%
UNKNOWN	1,588,298	37,344	12,510	299%
ALL	76,750,348	101,437	274,332	37%

TABLE 11

1987-1998 EXPERIENCE BY NUMBER

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

	EXPOSURE	ACTUAL CLAIMS	EXPECTED CLAIMS	MORTALITY RATIO
<u>SEX</u>				
MALE	1,429,003	2,105	3,978	53%
FEMALE	168,915	290	490	59%
ALL	1,597,918	2,395	4,467	54%
<u>ISSUE AGES</u>				
<20	4,196	2	3	78%
20-29	41,528	27	30	89%
30-39	533,826	242	556	44%
40-49	635,175	664	1,362	49%
50-59	286,024	783	1,260	62%
60-69	82,368	519	813	64%
70-79	14,183	149	401	37%
80+	616	9	42	22%
ALL	1,597,917	2,395	4,467	54%
<u>POLICY YEARS</u>				
1	474,891	324	668	49%
2	361,694	286	694	41%
3	234,611	329	613	54%
4	159,294	261	519	50%
5	115,938	200	450	44%
6-10	225,145	758	1,203	63%
11-15	23,886	185	266	70%
16+	2,460	52	54	95%
ALL	1,597,917	2,395	4,467	54%
<u>CLASSIFICATION AMOUNTS</u>				
\$1,000,000 - \$2,999,999	1,444,165	2,089	3,911	53%
\$3,000,000 - \$4,999,999	96,722	185	345	54%
> \$5,000,000	57,030	121	212	57%
ALL	1,597,917	2,395	4,467	54%
<u>SMOKING STATUS</u>				
NON-SMOKER	1,368,459	1,739	3,651	48%
SMOKER	91,879	271	266	102%
AGGREGATE	137,580	385	551	70%
ALL	1,597,917	2,395	4,467	54%
<u>UNDERWRITING STATUS</u>				
STANDARD	1,543,268	2,094	3,973	53%
SUBSTANDARD	54,649	301	494	61%
ALL	1,597,917	2,395	4,467	54%
<u>REINSURANCE STATUS</u>				
AUTOMATIC	1,395,680	1,692	3,445	49%
FACULTATIVE	198,790	699	1,009	69%
SHOPPED	3,447	4	13	30%
ALL	1,597,917	2,395	4,467	54%
<u>PLAN OF INSURANCE*</u>				
WHOLE LIFE	69,145	210	313	67%
TERM	708,805	793	1,798	44%
UNIVERSAL LIFE	89,352	239	393	61%
UNKNOWN	567,478	750	1,400	54%
ALL	1,434,780	1,992	3,904	51%
<u>REINSURANCE METHOD*</u>				
COINSURANCE	828,218	699	1,636	43%
MODIFIED COINSURANCE	790	2	5	43%
Y.R.T.	583,574	1,011	2,186	46%
UNKNOWN	22,199	280	77	361%
ALL	1,434,780	1,992	3,904	51%

* Data is not available for years 1987-1990

TABLE 12

1987-1998 EXPERIENCE BY AMOUNT (000'S)

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

	EXPOSURE	ACTUAL CLAIMS	EXPECTED CLAIMS	MORTALITY RATIO
SEX				
MALE	690,887,120	1,358,330	2,473,391	55%
FEMALE	89,452,813	208,522	335,396	62%
ALL	780,339,933	1,566,852	2,808,787	56%
ISSUE AGES				
<20	3,566,992	983	2,178	45%
20-29	22,094,738	15,967	16,643	96%
30-39	204,806,363	161,989	242,678	67%
40-49	306,713,593	411,525	740,336	56%
50-59	174,887,190	530,910	859,566	62%
60-69	57,650,720	353,915	595,335	59%
70-79	10,222,887	86,689	323,970	27%
80+	397,451	4,875	28,081	17%
ALL	780,339,934	1,566,852	2,808,787	56%
POLICY YEARS				
1	177,643,510	170,315	309,481	55%
2	153,108,316	159,747	365,494	44%
3	120,567,276	196,564	381,979	51%
4	92,324,008	197,593	350,910	56%
5	71,542,789	126,771	318,424	40%
6-10	146,046,035	558,875	849,530	66%
11-15	17,466,273	116,541	194,464	60%
16+ **	1,641,727	40,447	38,505	105%
ALL	780,339,934	1,566,852	2,808,787	56%
CLASSIFICATION AMOUNTS				
\$1,000,000 - \$2,999,999	525,943,025	1,045,945	1,840,618	57%
\$3,000,000 - \$4,999,999	120,582,888	217,129	470,213	46%
> \$5,000,000	133,844,020	303,778	497,956	61%
ALL	780,369,934	1,566,852	2,808,787	56%
SMOKING STATUS				
NON-SMOKER	600,906,398	1,018,242	2,110,637	48%
SMOKER	52,399,172	191,831	184,467	104%
AGGREGATE	127,064,364	356,779	513,683	69%
ALL	780,369,934	1,566,852	2,808,787	56%
UNDERWRITING STATUS				
STANDARD	737,292,983	1,340,683	2,398,055	56%
SUBSTANDARD	43,046,951	226,170	410,732	55%
ALL	780,339,934	1,566,852	2,808,787	56%
REINSURANCE STATUS				
AUTOMATIC	440,619,576	591,216	1,258,682	47%
FACULTATIVE	330,412,713	965,700	1,519,389	64%
SHOPPED	9,307,645	9,936	30,716	32%
ALL	780,339,934	1,566,852	2,808,787	56%
PLAN OF INSURANCE*				
WHOLE LIFE	63,814,316	183,775	342,626	54%
TERM	264,484,218	418,228	815,013	51%
UNIVERSAL LIFE	57,042,264	164,414	290,741	57%
UNKNOWN	173,467,114	269,091	559,698	48%
ALL	558,807,912	1,035,508	2,008,078	52%
REINSURANCE METHOD*				
COINSURANCE	234,896,044	297,479	592,462	50%
MODIFIED COINSURANCE	884,274	1,493	4,686	32%
Y.R.T.	303,599,063	649,250	1,347,154	48%
UNKNOWN	19,428,531	87,285	63,775	137%
ALL	558,807,912	1,035,508	2,008,078	52%

* Data is not available for years 1987-1990

** The Ultimate expected mortality rates for duration 16+ was found to be deficient for all study years prior to 1994, hence overstating the mortality ratios for those years. The overstatement was under .5% per year.

CLAIMS ANALYSIS 1997 and 1998

Experience by Cause of Death

A total of 168 and 353 claims are included in the 1997 and 1998 claims analysis, respectively. In 1997, 66 (40%) are Cancer claims and in 1998 those claims increase to 102 (29%). In 1997, 32 (19%) are Circulatory claims (117 i.e. 33% in 1998). A total of 30 claims (18%) in 1997 are reported in the "Misadventure" category, almost identical to the 16% reported in 1998. One AIDS claim was reported in 1997, and none for 1998.

Experience by Sex

Males represent most of the claims. In 1997, 93% (85% in 1998) were claims made on male lives. The exposure by number on male lives is 89.6% of the total exposure. A combined 25 suicide claims in both years were reported on male lives.

Experience by Issue Age

For ages 30-39, the leading claims cause is Misadventure (1997 - 50%, 1998 - 38%). For the issue ages 40-49, Circulatory (1997 - 15%, 1998 - 49%), Misadventure (1997 - 27%, 1998 - 22%), and Cancer (1997 - 38%, 1998 - 15%) are the leading causes of death. As expected the percentage of Misadventure claims decrease as age increases. Circulatory and Cancer claims occur mostly in the age bands 40+.

Experience by Policy Years

In 1997, 38% of Circulatory claims occurred in the first three durations. In 1998, that percentage increases to 42%. The majority of Cancer claims (1997 - 68%, 1998 - 57%) occur in durations five and over. The one 1997 AIDS claim occurred at policy duration 6 - 10.

Experience by Classification Amount

Most of the claims (1997 - 86%, 1998 - 89%) occur in the \$1-3 M band. Of the combined 1997 and 1998 results, 19 of the 521 claims had Direct Face Amounts greater than \$5 million. Seven of those claims were classified as Misadventure. Of those, two were Aviation claims and one Suicide claim.

Experience by Smoking Status

In 1997, 42% of non-smoker claims were cancer related, whereas only 12% of smoker claims were cancer related. This figure is somewhat misleading since smoker exposure during most study years is low. In 1998, 31% of non-smoker claims were cancer related, and 21% of smoker claims were from cancer.

Experience by Underwriting Status

By number, Substandard Underwriting comprises approximately 3% of the study in both 1997 and 1998. However, its portion of claims in 1997 is 12% (14% in 1998). In the combined 1997 and 1998 claims, only 4 of the 87 Misadventure claims were classified as substandard.

Experience by Reinsurance Status

In 1997, 34 of the 168 (20%) claims were reinsured facultatively. In 1998, 37 of the 353 (10%) claims were reinsured facultatively. The causes of death by percent varied very little by the reinsurance status.

TABLE 13 A

1997 - CLAIMS ANALYSIS BY SEX & ISSUE AGES

NUMBER OF CLAIMS FOR EACH CAUSE OF DEATH.

	ALL	MALE	FEMALE	ISSUE AGES							
				<20	20-29	30-39	40-49	50-59	60-69	70-79	80+
OTHER ACCIDENT	18	18	0	0	0	6	9	3	0	0	0
HOMICIDE	3	3	0	0	0	3	0	0	0	0	0
SUICIDE	3	3	0	0	0	2	1	0	0	0	0
AVIATION	2	2	0	0	0	0	2	0	0	0	0
MOTOR VEHICLE	4	4	0	0	0	0	2	2	0	0	0
"MISADVENTURE"	30	30	0	0	0	11	14	5	0	0	0
CARDIOVASCULAR	31	27	4	0	2	3	8	11	2	3	2
CEREBROVASCULAR	1	1	0	0	0	0	0	0	1	0	0
CIRCULATORY	32	28	4	0	2	3	8	11	3	3	2
RESPIRATORY	2	1	1	0	0	0	0	1	0	1	0
PNEUMONIA	1	0	1	0	0	0	0	0	1	0	0
ALL RESPIRATORY	3	1	2	0	0	0	0	1	1	1	0
CANCER	66	61	5	0	0	2	20	30	9	4	1
AIDS	1	1	0	0	0	0	0	0	1	0	0
OTHER DISEASE	6	6	0	0	0	2	0	2	2	0	0
DIGESTIVE	2	2	0	0	0	0	1	0	1	0	0
ENDOCRINE	0	0	0	0	0	0	0	0	0	0	0
GENITOURINARY	0	0	0	0	0	0	0	0	0	0	0
NERVOUS SYSTEM	1	1	0	0	0	0	0	1	0	0	0
OTHER	9	9	0	0	0	2	1	3	3	0	0
UNKNOWN	27	25	2	1	0	4	9	8	4	1	0
ALL	168	155	13	1	2	22	52	58	21	9	3

PERCENTAGE OF CLAIMS FOR EACH CAUSE OF DEATH.

	ALL	MALE	FEMALE	ISSUE AGES							
				<20	20-29	30-39	40-49	50-59	60-69	70-79	80+
OTHER ACCIDENT	11	12	0	0	0	27	17	5	0	0	0
HOMICIDE	2	2	0	0	0	14	0	0	0	0	0
SUICIDE	2	2	0	0	0	9	2	0	0	0	0
AVIATION	1	1	0	0	0	0	4	0	0	0	0
MOTOR VEHICLE	2	3	0	0	0	0	4	3	0	0	0
"MISADVENTURE"	18	19	0	0	0	50	27	9	0	0	0
CARDIOVASCULAR	18	17	31	0	100	14	15	19	10	33	67
CEREBROVASCULAR	1	1	0	0	0	0	0	0	5	0	0
CIRCULATORY	19	18	31	0	100	14	15	19	14	33	67
RESPIRATORY	1	1	8	0	0	0	0	2	0	11	0
PNEUMONIA	1	0	8	0	0	0	0	0	5	0	0
ALL RESPIRATORY	2	1	15	0	0	0	0	2	5	11	0
CANCER	39	39	38	0	0	9	38	52	43	44	33
AIDS	1	1	0	0	0	0	0	0	5	0	0
OTHER DISEASE	4	4	0	0	0	9	0	3	10	0	0
DIGESTIVE	1	1	0	0	0	0	2	0	5	0	0
ENDOCRINE	0	0	0	0	0	0	0	0	0	0	0
GENITOURINARY	0	0	0	0	0	0	0	0	0	0	0
NERVOUS SYSTEM	1	1	0	0	0	0	0	2	0	0	0
OTHER	5	6	0	0	0	9	2	5	14	0	0
UNKNOWN	16	16	15	100	0	18	17	14	19	11	0
ALL	100										

TABLE 13 B

1997 - CLAIMS ANALYSIS BY POLICY YEARS & CLASSIFICATION AMOUNT

NUMBER OF CLAIMS FOR EACH CAUSE OF DEATH.

	POLICY YEARS									AMOUNTS		
	ALL	1	2	3	4	5	6 - 10	11 - 15	16+	\$1-3 M	\$3-5 M	> \$5 M
OTHER ACCIDENT	18	6	3	2	2	0	3	2	0	11	4	3
HOMICIDE	3	0	2	1	0	0	0	0	0	3	0	0
SUICIDE	3	0	0	0	2	0	1	0	0	2	1	0
AVIATION	2	0	0	0	0	0	2	0	0	1	0	1
MOTOR VEHICLE	4	0	0	0	1	0	3	0	0	3	0	1
"MISADVENTURE"	30	6	5	3	5	0	9	2	0	20	5	5
CARDIOVASCULAR	31	6	6	0	0	4	11	3	1	24	5	2
CEREBROVASCULAR	1	0	0	0	0	1	0	0	0	1	0	0
CIRCULATORY	32	6	6	0	0	5	11	3	1	25	5	2
RESPIRATORY	2	0	0	1	0	0	0	0	1	1	1	0
PNEUMONIA	1	0	0	0	0	0	1	0	0	1	0	0
ALL RESPIRATORY	3	0	0	1	0	0	1	0	1	2	1	0
CANCER	66	1	11	6	3	7	29	8	1	62	4	0
AIDS	1	0	0	0	0	0	1	0	0	1	0	0
OTHER DISEASE	6	2	0	2	0	0	0	2	0	5	1	0
DIGESTIVE	2	0	1	0	1	0	0	0	0	1	1	0
ENDOCRINE	0	0	0	0	0	0	0	0	0	0	0	0
GENITOURINARY	0	0	0	0	0	0	0	0	0	0	0	0
NERVOUS SYSTEM	1	0	0	0	0	0	1	0	0	1	0	0
OTHER	9	2	1	2	1	0	1	2	0	7	2	0
UNKNOWN	27	7	2	4	5	2	5	2	0	27	0	0
ALL	168	22	25	16	14	14	57	17	3	144	17	7

PERCENTAGE OF CLAIMS FOR EACH CAUSE OF DEATH.

	POLICY YEARS									AMOUNTS		
	ALL	1	2	3	4	5	6 - 10	11 - 15	16+	\$1-3 M	\$3-5 M	> \$5 M
OTHER ACCIDENT	11	27	12	13	14	0	5	12	0	8	24	43
HOMICIDE	2	0	8	6	0	0	0	0	0	2	0	0
SUICIDE	2	0	0	0	14	0	2	0	0	1	6	0
AVIATION	1	0	0	0	0	0	4	0	0	1	0	14
MOTOR VEHICLE	2	0	0	0	7	0	5	0	0	2	0	14
"MISADVENTURE"	18	27	20	19	36	0	16	12	0	14	29	71
CARDIOVASCULAR	18	27	24	0	0	29	19	18	33	17	29	29
CEREBROVASCULAR	1	0	0	0	0	7	0	0	0	1	0	0
CIRCULATORY	19	27	24	0	0	36	19	18	33	17	29	29
RESPIRATORY	1	0	0	6	0	0	0	0	33	1	6	0
PNEUMONIA	1	0	0	0	0	0	2	0	0	1	0	0
ALL RESPIRATORY	2	0	0	6	0	0	2	0	33	1	6	0
CANCER	39	5	44	38	21	50	51	47	33	43	24	0
AIDS	1	0	0	0	0	0	2	0	0	1	0	0
OTHER DISEASE	4	9	0	13	0	0	0	12	0	3	6	0
DIGESTIVE	1	0	4	0	7	0	0	0	0	1	6	0
ENDOCRINE	0	0	0	0	0	0	0	0	0	0	0	0
GENITOURINARY	0	0	0	0	0	0	0	0	0	0	0	0
NERVOUS SYSTEM	1	0	0	0	0	0	2	0	0	1	0	0
OTHER	5	9	4	13	7	0	2	12	0	5	12	0
UNKNOWN	16	32	8	25	36	14	9	12	0	19	0	0
ALL	100	100	100	100	100	100	100	100	100	100	100	100

TABLE 13 C

1997 - CLAIMS ANALYSIS BY SMOKING, U/W, REINSURANCE STATUS

NUMBER OF CLAIMS FOR EACH CAUSE OF DEATH.

	SMOKING STATUS			U/W STATUS		REINSURANCE STATUS			
	ALL	N-SMK.	SMK.	AGG.	STD	SUBSTD	AUTO	FAC	SHOPPED
OTHER ACCIDENT	18	13	4	1	18	0	15	3	0
HOMICIDE	3	3	0	0	3	0	3	0	0
SUICIDE	3	2	1	0	3	0	2	1	0
AVIATION	2	2	0	0	2	0	0	2	0
MOTOR VEHICLE	4	4	0	0	4	0	4	0	0
"MISADVENTURE"	30	24	5	1	30	0	24	6	0
CARDIOVASCULAR	31	27	4	0	26	5	23	8	0
CEREBROVASCULAR	1	0	1	0	1	0	0	1	0
CIRCULATORY	32	27	5	0	27	5	23	9	0
RESPIRATORY	2	2	0	0	0	2	1	1	0
PNEUMONIA	1	0	1	0	0	1	0	1	0
ALL RESPIRATORY	3	2	1	0	0	3	1	2	0
CANCER	66	62	2	2	61	5	52	14	0
AIDS	1	0	1	0	1	0	1	0	0
OTHER DISEASE	6	6	0	0	4	2	4	2	0
DIGESTIVE	2	2	0	0	2	0	2	0	0
ENDOCRINE	0	0	0	0	0	0	0	0	0
GENITOURINARY	0	0	0	0	0	0	0	0	0
NERVOUS SYSTEM	1	1	0	0	1	0	1	0	0
OTHER	9	9	0	0	7	2	7	2	0
UNKNOWN	27	23	3	1	22	5	26	1	0
ALL	168	147	17	4	148	20	134	34	0

PERCENTAGE OF CLAIMS FOR EACH CAUSE OF DEATH.

	SMOKING STATUS			U/W STATUS		REINSURANCE STATUS			
	ALL	N-SMK.	SMK.	AGG.	STD	SUBSTD	AUTO	FAC	SHOPPED
OTHER ACCIDENT	11	9	24	25	12	0	11	9	0
HOMICIDE	2	2	0	0	2	0	2	0	0
SUICIDE	2	1	6	0	2	0	1	3	0
AVIATION	1	1	0	0	1	0	0	6	0
MOTOR VEHICLE	2	3	0	0	3	0	3	0	0
"MISADVENTURE"	18	16	29	25	20	0	18	18	0
CARDIOVASCULAR	18	18	24	0	18	25	17	24	0
CEREBROVASCULAR	1	0	6	0	1	0	0	3	0
CIRCULATORY	19	18	29	0	18	25	17	26	0
RESPIRATORY	1	1	0	0	0	10	1	3	0
PNEUMONIA	1	0	6	0	0	5	0	3	0
ALL RESPIRATORY	2	1	6	0	0	15	1	6	0
CANCER	39	42	12	50	41	25	39	41	0
AIDS	1	0	6	0	1	0	1	0	0
OTHER DISEASE	4	4	0	0	3	10	3	6	0
DIGESTIVE	1	1	0	0	1	0	1	0	0
ENDOCRINE	0	0	0	0	0	0	0	0	0
GENITOURINARY	0	0	0	0	0	0	0	0	0
NERVOUS SYSTEM	1	1	0	0	1	0	1	0	0
OTHER	5	6	0	0	5	10	5	6	0
UNKNOWN	16	16	18	25	15	25	19	3	0
ALL	100	100	100	100	100	100	100	100	0

TABLE 14 A

1998 - CLAIMS ANALYSIS BY SEX & ISSUE AGES

NUMBER OF CLAIMS FOR EACH CAUSE OF DEATH.

	ISSUE AGES										
	ALL	MALE	FEMALE	< 20	20-29	30-39	40-49	50-59	60-69	70-79	80+
OTHER ACCIDENT	21	18	3	0	0	7	9	3	1	1	0
HOMICIDE	0	0	0	0	0	0	0	0	0	0	0
SUICIDE	22	22	0	0	0	8	5	6	2	1	0
AVIATION	7	7	0	0	0	0	5	2	0	0	0
MOTOR VEHICLE	7	6	1	0	0	3	1	1	0	2	0
"MISADVENTURE"	57	53	4	0	0	18	20	12	3	4	0
CARDIOVASCULAR	103	87	16	0	0	6	42	23	15	17	0
CEREBROVASCULAR	14	12	2	0	0	1	3	3	4	3	0
CIRCULATORY	117	99	18	0	0	7	45	26	19	20	0
RESPIRATORY	9	8	1	0	0	2	3	0	3	1	0
PNEUMONIA	3	3	0	0	0	0	0	0	1	2	0
ALL RESPIRATORY	12	11	1	0	0	2	3	0	4	3	0
CANCER	102	80	22	0	0	7	14	39	32	9	1
AIDS	0	0	0	0	0	0	0	0	0	0	0
OTHER DISEASE	9	9	0	0	0	5	0	3	1	0	0
DIGESTIVE	3	3	0	0	0	1	1	1	0	0	0
ENDOCRINE	1	1	0	0	0	0	1	0	0	0	0
GENITOURINARY	0	0	0	0	0	0	0	0	0	0	0
NERVOUS SYSTEM	3	3	0	0	0	0	0	1	1	1	0
OTHER	16	16	0	0	0	6	2	5	2	1	0
UNKNOWN	49	41	8	0	0	7	8	17	12	5	0
ALL	353	300	53	0	0	47	92	99	72	42	1

PERCENTAGE OF CLAIMS FOR EACH CAUSE OF DEATH.

	ISSUE AGES										
	ALL	MALE	FEMALE	< 20	20-29	30-39	40-49	50-59	60-69	70-79	80+
OTHER ACCIDENT	6	6	6	0	0	15	10	3	1	2	0
HOMICIDE	0	0	0	0	0	0	0	0	0	0	0
SUICIDE	6	7	0	0	0	17	5	6	3	2	0
AVIATION	2	2	0	0	0	0	5	2	0	0	0
MOTOR VEHICLE	2	2	2	0	0	6	1	1	0	5	0
"MISADVENTURE"	16	18	8	0	0	38	22	12	4	10	0
CARDIOVASCULAR	29	29	30	0	0	13	46	23	21	40	0
CEREBROVASCULAR	4	4	4	0	0	2	3	3	6	7	0
CIRCULATORY	33	33	34	0	0	15	49	26	26	48	0
RESPIRATORY	3	3	2	0	0	4	3	0	4	2	0
PNEUMONIA	1	1	0	0	0	0	0	0	1	5	0
ALL RESPIRATORY	3	4	2	0	0	4	3	0	6	7	0
CANCER	29	27	42	0	0	15	15	39	44	21	100
AIDS	0	0	0	0	0	0	0	0	0	0	0
OTHER DISEASE	3	3	0	0	0	11	0	3	1	0	0
DIGESTIVE	1	1	0	0	0	2	1	1	0	0	0
ENDOCRINE	0	0	0	0	0	0	1	0	0	0	0
GENITOURINARY	0	0	0	0	0	0	0	0	0	0	0
NERVOUS SYSTEM	1	1	0	0	0	0	0	1	1	2	0
OTHER	5	5	0	0	0	13	2	5	3	2	0
UNKNOWN	14	14	15	0	0	15	9	17	17	12	0
ALL	100	100	100	0	0	100	100	100	100	100	100

TABLE 14 B

1998 - CLAIMS ANALYSIS BY POLICY YEARS & CLASSIFICATION AMOUNT

NUMBER OF CLAIMS FOR EACH CAUSE OF DEATH.

	POLICY YEARS									AMOUNTS		
	ALL	1	2	3	4	5	6 - 10	11 - 15	16+	\$1-3 M	\$3-5 M	> \$5 M
OTHER ACCIDENT	21	5	8	2	2	1	2	1	0	20	1	0
HOMICIDE	0	0	0	0	0	0	0	0	0	0	0	0
SUICIDE	22	3	2	4	1	2	9	1	0	17	4	1
AVIATION	7	1	0	1	1	0	4	0	0	4	2	1
MOTOR VEHICLE	7	2	1	0	1	0	0	3	0	6	1	0
"MISADVENTURE"	57	11	11	7	5	3	15	5	0	47	8	2
CARDIOVASCULAR	103	14	15	20	0	8	26	15	5	94	6	3
CEREBROVASCULAR	14	0	0	0	2	0	7	5	0	13	0	1
CIRCULATORY	117	14	15	20	2	8	33	20	5	107	6	4
RESPIRATORY	9	0	1	0	3	0	3	2	0	9	0	0
PNEUMONIA	3	0	1	0	0	0	2	0	0	3	0	0
ALL RESPIRATORY	12	0	2	0	3	0	5	2	0	12	0	0
CANCER	102	8	6	19	11	11	40	6	1	93	4	5
AIDS	0	0	0	0	0	0	0	0	0	0	0	0
OTHER DISEASE	9	0	0	0	0	0	5	4	0	5	3	1
DIGESTIVE	3	0	0	0	0	0	2	0	1	2	1	0
ENDOCRINE	1	0	0	0	0	1	0	0	0	1	0	0
GENITOURINARY	0	0	0	0	0	0	0	0	0	0	0	0
NERVOUS SYSTEM	3	0	0	0	0	1	2	0	0	3	0	0
OTHER	16	0	0	0	0	2	9	4	1	11	4	1
UNKNOWN	49	6	6	4	4	3	18	6	2	45	4	0
ALL	353	39	40	50	25	27	120	43	9	315	26	12

PERCENTAGE OF CLAIMS FOR EACH CAUSE OF DEATH.

	POLICY YEARS									AMOUNTS		
	ALL	1	2	3	4	5	6 - 10	11 - 15	16+	\$1-3 M	\$3-5 M	> \$5 M
OTHER ACCIDENT	6	13	20	4	8	4	2	2	0	6	4	0
HOMICIDE	0	0	0	0	0	0	0	0	0	0	0	0
SUICIDE	6	8	5	8	4	7	8	2	0	5	15	8
AVIATION	2	3	0	2	4	0	3	0	0	1	8	8
MOTOR VEHICLE	2	5	3	0	4	0	0	7	0	2	4	0
"MISADVENTURE"	16	28	28	14	20	11	13	12	0	15	31	17
CARDIOVASCULAR	29	36	38	40	0	30	22	35	56	30	23	25
CEREBROVASCULAR	4	0	0	0	8	0	6	12	0	4	0	8
CIRCULATORY	33	36	38	40	8	30	28	47	56	34	23	33
RESPIRATORY	3	0	3	0	12	0	3	5	0	3	0	0
PNEUMONIA	1	0	3	0	0	0	2	0	0	1	0	0
ALL RESPIRATORY	3	0	5	0	12	0	4	5	0	4	0	0
CANCER	29	21	15	38	44	41	33	14	11	30	15	42
AIDS	0	0	0	0	0	0	0	0	0	0	0	0
OTHER DISEASE	3	0	0	0	0	0	4	9	0	2	12	8
DIGESTIVE	1	0	0	0	0	0	2	0	11	1	4	0
ENDOCRINE	0	0	0	0	0	4	0	0	0	0	0	0
GENITOURINARY	0	0	0	0	0	0	0	0	0	0	0	0
NERVOUS SYSTEM	1	0	0	0	0	4	2	0	0	1	0	0
OTHER	5	0	0	0	0	7	8	9	11	3	15	8
UNKNOWN	14	15	15	8	16	11	15	14	22	14	15	0
ALL	100	100	100	100	100	100	100	100	100	100	100	100

TABLE 14 C

1998 - CLAIMS ANALYSIS BY SMOKING, U/W, REINSURANCE STATUS

NUMBER OF CLAIMS FOR EACH CAUSE OF DEATH.

	SMOKING STATUS			U/W STATUS		REINSURANCE STATUS			
	ALL	N-SMK.	SMK.	AGG.	STD	SUBSTD	AUTO	FAC	SHOPPED
OTHER ACCIDENT	21	18	3	0	20	1	21	0	0
HOMICIDE	0	0	0	0	0	0	0	0	0
SUICIDE	22	17	4	1	21	1	19	3	0
AVIATION	7	7	0	0	7	0	7	0	0
MOTOR VEHICLE	7	5	1	1	5	2	7	0	0
"MISADVENTURE"	57	47	8	2	53	4	54	3	0
CARDIOVASCULAR	103	80	17	6	85	18	97	6	0
CEREBROVASCULAR	14	14	0	0	9	5	11	3	0
CIRCULATORY	117	94	17	6	94	23	108	9	0
RESPIRATORY	9	8	1	0	8	1	8	1	0
PNEUMONIA	3	3	0	0	1	2	0	3	0
ALL RESPIRATORY	12	11	1	0	9	3	8	4	0
CANCER	102	90	8	4	90	12	95	7	0
AIDS	0	0	0	0	0	0	0	0	0
OTHER DISEASE	9	3	0	6	6	3	3	6	0
DIGESTIVE	3	2	0	1	3	0	1	2	0
ENDOCRINE	1	1	0	0	1	0	1	0	0
GENITOURINARY	0	0	0	0	0	0	0	0	0
NERVOUS SYSTEM	3	3	0	0	3	0	3	0	0
OTHER	16	9	0	7	13	3	8	8	0
UNKNOWN	49	43	5	1	45	4	43	6	0
ALL	353	294	39	20	304	49	316	37	0

PERCENTAGE OF CLAIMS FOR EACH CAUSE OF DEATH.

	SMOKING STATUS			U/W STATUS		REINSURANCE STATUS			
	ALL	N-SMK.	SMK.	AGG.	STD	SUBSTD	AUTO	FAC	SHOPPED
OTHER ACCIDENT	6	6	8	0	7	2	7	0	0
HOMICIDE	0	0	0	0	0	0	0	0	0
SUICIDE	6	6	10	5	7	2	6	8	0
AVIATION	2	2	0	0	2	0	2	0	0
MOTOR VEHICLE	2	2	3	5	2	4	2	0	0
"MISADVENTURE"	16	16	21	10	17	8	17	8	0
CARDIOVASCULAR	29	27	44	30	28	37	31	16	0
CEREBROVASCULAR	4	5	0	0	3	10	3	8	0
CIRCULATORY	33	32	44	30	31	47	34	24	0
RESPIRATORY	3	3	3	0	3	2	3	3	0
PNEUMONIA	1	1	0	0	0	4	0	8	0
ALL RESPIRATORY	3	4	3	0	3	6	3	11	0
CANCER	29	31	21	20	30	24	30	19	0
AIDS	0	0	0	0	0	0	0	0	0
OTHER DISEASE	3	1	0	30	2	6	1	16	0
DIGESTIVE	1	1	0	5	1	0	0	5	0
ENDOCRINE	0	0	0	0	0	0	0	0	0
GENITOURINARY	0	0	0	0	0	0	0	0	0
NERVOUS SYSTEM	1	1	0	0	1	0	1	0	0
OTHER	5	3	0	35	4	6	3	22	0
UNKNOWN	14	15	13	5	15	8	14	16	0
ALL	100	100	100	100	100	100	100	100	0

APPENDIX A

LIST OF CONTRIBUTORS - 1997 and 1998 INTERCOMPANY MORTALITY STUDY

ALLIANZ LIFE INSURANCE COMPANY OF NORTH AMERICA

CONTINENTAL ASSURANCE COMPANY (RE)

MUNICH AMERICAN RE

REINSURANCE GROUP OF AMERICA INCORPORATED (US)

REINSURANCE GROUP OF AMERICA INCORPORATED (CANADA)

SWISS RE LIFE AND HEALTH

APPENDIX B

LIST OF LARGE CLAIMS (1997 and 1998)

LARGE CLAIMS OVER \$5 MILLION ON ONE LIFE.

1997							
	<u>DIRECT</u>	<u>AGE</u>	<u>SEX</u>	<u>POLICY</u>	<u>SMOKING</u>	<u>RATING</u>	<u>CAUSE OF DEATH</u>
	<u>FACE</u>	<u>GROUP</u>		<u>YEAR</u>	<u>CLASS</u>		
	<u>AMOUNT</u>						
1	6.58 M	20 - 29	MALE	16 +	NON-SMOKER	100%	CARDIOVASCULAR
2	5 M	40 - 49	MALE	2	NON-SMOKER	100%	OTHER ACCIDENT
3	5 M	40 - 49	MALE	6 - 10	NON-SMOKER	100%	OTHER ACCIDENT
4	5 M	40 - 49	MALE	11 - 15	NON-SMOKER	100%	CARDIOVASCULAR
5	5 M	40 - 49	MALE	6 - 10	NON-SMOKER	100%	MOTOR VEHICLE
6	5 M	40 - 49	MALE	6 - 10	NON-SMOKER	100%	AVIATION
7	10 M	50 - 59	MALE	1	NON-SMOKER	100%	OTHER ACCIDENT

1998							
1	11 M	30 - 39	MALE	6 - 10	NON-SMOKER	100%	SUICIDE
2	5 M	40 - 49	MALE	3	NON-SMOKER	100%	CANCER
3	5 M	50 - 59	MALE	11 - 15	AGGREGATE	185%	OTHER ACCIDENT
4	10 M	50 - 59	MALE	3	NON-SMOKER	100%	AVIATION
5	5.51 M	50 - 59	MALE	6 - 10	NON-SMOKER	100%	CANCER
6	10 M	60 - 69	FEMALE	2	NON-SMOKER	150%	CANCER
7	9 M	60 - 69	MALE	16 +	AGGREGATE	100%	CANCER
8	5 M	60 - 69	MALE	3	NON-SMOKER	400%	CARDIOVASCULAR
9	5.70 M	60 - 69	MALE	6 - 10	NON-SMOKER	100%	CANCER
10	5.25 M	60 - 69	MALE	11 - 15	NON-SMOKER	150%	CEREBROVASCULAR
11	5 M	60 - 69	MALE	3	NON-SMOKER	400%	CARDIOVASCULAR
12	5 M	70 - 79	FEMALE	6 - 10	NON-SMOKER	100%	CARDIOVASCULAR

APPENDIX C

LIST OF LARGE CLAIMS (1987 - 1996)

LARGE CLAIMS OVER \$5 MILLION ON ONE LIFE.

	<u>DIRECT FACE</u>	<u>AGE</u>	<u>SEX</u>	<u>POLICY</u>	<u>SMOKING</u>	<u>RATING</u>	<u>CAUSE OF DEATH</u>
	<u>AMOUNT</u>	<u>GROUP</u>		<u>YEAR</u>	<u>CLASS</u>		
1	6.50 M	20 - 29	MALE	11 - 15, 16+	AGGREGATE	100%	SUICIDE
2	5.00 M	30 - 39	FEMALE	6 - 10	NON-SMOKER	100%	SUICIDE
3	13.30 M	30 - 39	FEMALE	6 - 10	AGGREGATE	100%	
4	21.00 M	30 - 39	FEMALE	6 - 10	AGGREGATE	100%	
5	8.00 M	30 - 39	MALE	2 - 4	NON-SMOKER	100%	
6	11.00 M	30 - 39	MALE	6 - 10	AGGREGATE	100%	CARDIOVASCULAR
7	5.00 M	30 - 39	MALE	11 - 15	AGGREGATE	100%	CARDIOVASCULAR
8	5.00 M	40 - 49	FEMALE	6 - 10	NON-SMOKER	100%	CANCER
9	5.00 M	40 - 49	MALE	1	SMOKER	100%	CARDIOVASCULAR
10	5.00 M	40 - 49	MALE	1	AGGREGATE	100%	CARDIOVASCULAR
11	5.00 M	40 - 49	MALE	1	AGGREGATE	100%	CARDIOVASCULAR
12	5.00 M	40 - 49	MALE	1	SMOKER	100%	CARDIOVASCULAR
13	5.00 M	40 - 49	MALE	1	SMOKER	250%	
14	5.50 M	40 - 49	MALE	1	NON-SMOKER	100%	
15	8.70 M	40 - 49	MALE	1	NON-SMOKER	100%	
16	5.00 M	40 - 49	MALE	1	NON-SMOKER	100%	HOMICIDE
17	12.50 M	40 - 49	MALE	1	AGGREGATE	100%	AVIATION
18	15.00 M	40 - 49	MALE	1	NON-SMOKER	100%	AVIATION
19	15.00 M	40 - 49	MALE	1	NON-SMOKER	100%	AVIATION
20	7.50 M	40 - 49	MALE	3	NON-SMOKER	100%	AVIATION
21	5.00 M	40 - 49	MALE	4	NON-SMOKER	100%	UNKNOWN
22	8.00 M	40 - 49	MALE	4	AGGREGATE	100%	CEREBROVASCULAR
23	5.00 M	40 - 49	MALE	4	NON-SMOKER	100%	CARDIOVASCULAR
24	10.00 M	40 - 49	MALE	4	NON-SMOKER	100%	MOTOR VEHICLE
25	10.00 M	40 - 49	MALE	4	NON-SMOKER	100%	MOTOR VEHICLE
26	5.00 M	40 - 49	MALE	5	NON-SMOKER	100%	CANCER
27	14.36 M	40 - 49	MALE	6 - 10	SMOKER	175%	CARDIOVASCULAR
28	5.00 M	40 - 49	MALE	6 - 10	NON-SMOKER	100%	OTHER ACCIDENT
29	7.50 M	40 - 49	MALE	6 - 10	NON-SMOKER	100%	CANCER
30	5.00 M	40 - 49	MALE	6 - 10	NON-SMOKER	100%	UNKNOWN
31	6.00 M	40 - 49	MALE	6 - 10	NON-SMOKER	100%	CANCER
32	10.00 M	40 - 49	MALE	6 - 10	NON-SMOKER	100%	CANCER
33	11.25 M	40 - 49	MALE	16+	AGGREGATE	100%	NERVOUS SYSTEM
34	9.00 M	50 - 59	FEMALE	4	NON-SMOKER	100%	CANCER
35	6.42 M	50 - 59	FEMALE	16+	AGGREGATE	100%	UNKNOWN
36	5.00 M	50 - 59	MALE	1	NON-SMOKER	100%	OTHER ACCIDENT
37	5.00 M	50 - 59	MALE	1	SMOKER	100%	
38	9.00 M	50 - 59	MALE	1	NON-SMOKER	200%	CANCER
39	9.75 M	50 - 59	MALE	3	NON-SMOKER	100%	
40	10.84 M	50 - 59	MALE	3	AGGREGATE	150%	AIDS
41	6.00 M	50 - 59	MALE	4	NON-SMOKER	100%	RESPIRATORY
42	5.00 M	50 - 59	MALE	4	NON-SMOKER	200%	CARDIOVASCULAR
43	5.00 M	50 - 59	MALE	4	NON-SMOKER	100%	PNEUMONIA
44	5.00 M	50 - 59	MALE	4	NON-SMOKER	100%	CANCER
45	10.00 M	50 - 59	MALE	4	SMOKER	100%	CANCER
46	15.80 M	50 - 59	MALE	4 - 5	NON-SMOKER	100%, 175%	
47	9.00 M	50 - 59	MALE	5	AGGREGATE	100%	
48	6.12 M	50 - 59	MALE	6 - 10	NON-SMOKER	100%	CANCER
49	38.39 M	50 - 59	MALE	6 - 10	NON-SMOKER	100%	CARDIOVASCULAR
50	5.00 M	50 - 59	MALE	6 - 10	NON-SMOKER	200%	CARDIOVASCULAR

APPENDIX C

LIST OF LARGE CLAIMS (1987 - 1996)

LARGE CLAIMS OVER \$5 MILLION ON ONE LIFE.

	<u>DIRECT FACE</u> <u>AMOUNT</u>	<u>AGE</u> <u>GROUP</u>	<u>SEX</u>	<u>POLICY</u> <u>YEAR</u>	<u>SMOKING</u> <u>CLASS</u>	<u>RATING</u>	<u>CAUSE OF DEATH</u>
51	5.00 M	50 - 59	MALE	6 - 10	NON-SMOKER	175%	ENDOCRINE
52	5.00 M	50 - 59	MALE	6 - 10	NON-SMOKER	175%	CARDIOVASCULAR
53	5.00 M	50 - 59	MALE	6 - 10	AGGREGATE	100%	CARDIOVASCULAR
54	6.00 M	50 - 59	MALE	6 - 10	NON-SMOKER	100%	CANCER
55	7.65 M	50 - 59	MALE	6 - 10	NON-SMOKER	250%	CARDIOVASCULAR
56	9.12 M	50 - 59	MALE	6 - 10	SMOKER	100%	CANCER
57	9.12 M	50 - 59	MALE	6 - 10	SMOKER	100%	CANCER
58	5.00 M	50 - 59	MALE	6 - 10	NON-SMOKER	100%	OTHER DISEASE
59	10.00 M	50 - 59	MALE	6 - 10	NON-SMOKER	100%	
60	10.81 M	50 - 59	MALE	6 - 10	AGGREGATE	100%	CARDIOVASCULAR
61	29.50 M	50 - 59	MALE	6 - 10	AGGREGATE	100%	SUICIDE
62	7.12 M	50 - 59	MALE	11 - 15	AGGREGATE	100%	CARDIOVASCULAR
63	9.31 M	50 - 59	MALE	16+	AGGREGATE	100%	UNKNOWN
64	6.28 M	60 - 69	FEMALE	2	NON-SMOKER	100%	CARDIOVASCULAR
65	10.00 M	60 - 69	FEMALE	6 - 10	NON-SMOKER	100%	CANCER
66	6.00 M	60 - 69	FEMALE	6 - 10	NON-SMOKER	100%	NERVOUS SYSTEM
67	9.00 M	60 - 69	FEMALE	11 - 15	AGGREGATE	100%	CANCER
68	5.00 M	60 - 69	MALE	1	NON-SMOKER	300%	CARDIOVASCULAR
69	6.00 M	60 - 69	MALE	1	NON-SMOKER	150%	UNKNOWN
70	5.00 M	60 - 69	MALE	2	NON-SMOKER	100%	CARDIOVASCULAR
71	5.00 M	60 - 69	MALE	2	NON-SMOKER	300%	CARDIOVASCULAR
72	7.50 M	60 - 69	MALE	2	NON-SMOKER	175%	
73	5.00 M	60 - 69	MALE	2	NON-SMOKER	100%	CANCER
74	5.00 M	60 - 69	MALE	2	NON-SMOKER	100%	CANCER
75	5.00 M	60 - 69	MALE	2	NON-SMOKER	100%	CANCER
76	6.18 M	60 - 69	MALE	3	NON-SMOKER	100%	SUICIDE
77	6.18 M	60 - 69	MALE	3	NON-SMOKER	100%	SUICIDE
78	5.00 M	60 - 69	MALE	4	NON-SMOKER	100%	CANCER
79	5.00 M	60 - 69	MALE	4	AGGREGATE	100%	CANCER
80	6.20 M	60 - 69	MALE	4	NON-SMOKER	100%	
81	5.00 M	60 - 69	MALE	4	NON-SMOKER	100%	OTHER DISEASE
82	5.00 M	60 - 69	MALE	6 - 10	AGGREGATE	100%	
83	5.00 M	60 - 69	MALE	6 - 10	NON-SMOKER	100%	CANCER
84	9.25 M	60 - 69	MALE	6 - 10	AGGREGATE	100%	
85	10.00 M	60 - 69	MALE	6 - 10	NON-SMOKER	100%	CANCER
86	10.00 M	60 - 69	MALE	6 - 10	NON-SMOKER	100%	CANCER
87	10.00 M	60 - 69	MALE	6 - 10	NON-SMOKER	100%	CANCER
88	10.43 M	60 - 69	MALE	6 - 10	NON-SMOKER	100%	UNKNOWN
89	18.00 M	60 - 69	MALE	6 - 10	NON-SMOKER	100%	CANCER
90	18.00 M	60 - 69	MALE	6 - 10	NON-SMOKER	100%	CANCER
91	9.00 M	60 - 69	MALE	11 - 15	AGGREGATE	100%	CANCER
92	15.26 M	70 - 79	FEMALE	5	NON-SMOKER	100%	CANCER
93	7.50 M	70 - 79	FEMALE	6 - 10	AGGREGATE	100%	CANCER
94	7.50 M	70 - 79	MALE	2	NON-SMOKER	100%	OTHER DISEASE
95	5.00 M	70 - 79	MALE	6 - 10	AGGREGATE	100%	CARDIOVASCULAR
96	10 M	50 - 59	FEMALE	3	NON-SMOKER	100%	CANCER
97	19 M	50 - 59	FEMALE	16 +	AGGREGATE	110%	CARDIOVASCULAR
98	5 M	50 - 59	FEMALE	16 +	NON-SMOKER	100%	CARDIOVASCULAR
99	5 M	50 - 59	MALE	2	NON-SMOKER	250%	CANCER
100	6.75 M	60 - 69	FEMALE	1	NON-SMOKER	100%	UNKNOWN
101	13.03M	60 - 69	MALE	11 - 15	AGGREGATE	200%	SUICIDE
102	5 M	60 - 69	MALE	11 - 15	NON-SMOKER	100%	CANCER
103	5.5 M	70 - 79	MALE	1	NON-SMOKER	100%	CARDIOVASCULAR
104	5 M	70 - 79	MALE	11 - 15	AGGREGATE	100%	CARDIOVASCULAR
105	250 M	80 +	MALE	2	NON-SMOKER	200%	CEREBROVASCULAR

APPENDIX D STANDARD DEVIATION

In the interest of readability, this report does not contain the standard deviations of the numerous mortality ratios that are quoted.

The standard deviation can be obtained by the use of the following formula:

$$\text{STANDARD DEVIATION OF MORTALITY RATIO} = \frac{\text{MORTALITY RATIO}}{\sqrt{\text{ACTUAL NUMBER OF CLAIMS}}}$$

It is necessary to use the number of claims in this formula even when the mortality ratio involved is based on an amount of insurance. The range of virtual certainty is plus or minus three times the standard deviation. Plus or minus the standard deviation itself indicates 68% likelihood. This assumes a normal distribution whereas the formula is binomial.

The mortality ratios for the 1997, 1998, and 1987-98 experience by amount of insurance and their standard deviations are shown on the following pages.

APPENDIX E
STANDARD DEVIATIONS (1997)

MORTALITY RATIOS BY AMOUNT BASED ON THE 1975-80 BASIC TABLES

	ACTUAL NO. OF CLAIMS	MORTALITY RATIO	STANDARD DEVIATION
ALL COMBINED	168	33.9%	2.6%
<u>SEX</u>			
MALE	155	38.0%	3.0%
FEMALE	13	11.2%	3.1%
<u>ISSUE AGES</u>			
40-49	52	31.4%	4.4%
50-59	58	40.4%	5.3%
60-69	21	26.7%	5.8%
<u>POLICY YEARS</u>			
1	22	16.2%	3.5%
2	25	16.5%	3.3%
3	16	22.0%	5.5%
4	14	22.9%	6.1%
5	14	12.5%	3.3%
6-10	57	49.7%	6.6%
<u>CLASSIFICATION AMOUNTS</u>			
\$1,000,000 - \$2,999,999	144	31.7%	2.6%
<u>SMOKING STATUS</u>			
NON-SMOKER	147	33.8%	2.8%
SMOKER	17	56.4%	13.7%
<u>UNDERWRITING STATUS</u>			
STANDARD	148	31.9%	2.6%
<u>REINSURANCE STATUS</u>			
AUTOMATIC	134	21.2%	1.8%
FACULTATIVE	34	54.7%	9.4%
<u>PLAN OF INSURANCE</u>			
WHOLE LIFE	10	52.2%	16.5%
TERM	73	38.4%	4.5%
UNIVERSAL LIFE	7	37.2%	14.1%
UNKNOWN	78	20.6%	2.3%
<u>REINSURANCE METHOD</u>			
COINSURANCE	66	36.6%	4.5%
Y.R.T.	71	29.8%	3.5%
UNKNOWN	31	83.8%	15.0%

STANDARD DEVIATION CALCULATIONS ARE DONE FOR CASES IN WHICH AT LEAST 35 DEATHS ARE OBSERVED. SOME CATEGORIES ABOVE DO NOT HAVE 35 DEATHS OBSERVED BUT WE ARE STILL REPORTING THE STANDARD DEVIATIONS FOR COMPARISON TO PAST STUDIES.

APPENDIX F
STANDARD DEVIATIONS (1998)

MORTALITY RATIOS BY AMOUNT BASED ON THE 1975-80 BASIC TABLES

	ACTUAL NO. OF CLAIMS	MORTALITY RATIO	STANDARD DEVIATION
ALL COMBINED	353	37.0%	2.0%
<u>SEX</u>			
MALE	300	37.8%	2.2%
FEMALE	53	32.5%	4.5%
<u>ISSUE AGES</u>			
40-49	92	27.8%	2.9%
50-59	99	38.1%	3.8%
60-69	72	53.6%	6.3%
<u>POLICY YEARS</u>			
1	39	25.7%	4.1%
2	40	19.7%	3.1%
3	50	34.5%	4.9%
4	25	24.0%	4.8%
5	27	55.3%	10.6%
6-10	120	37.2%	3.4%
<u>CLASSIFICATION AMOUNTS</u>			
\$1,000,000 - \$2,999,999	315	43.3%	2.4%
<u>SMOKING STATUS</u>			
NON-SMOKER	294	34.2%	2.0%
SMOKER	39	49.2%	7.9%
<u>UNDERWRITING STATUS</u>			
STANDARD	304	33.5%	1.9%
<u>REINSURANCE STATUS</u>			
AUTOMATIC	316	35.5%	2.0%
FACULTATIVE	37	39.7%	6.5%
<u>PLAN OF INSURANCE</u>			
WHOLE LIFE	8	20.3%	7.2%
TERM	189	42.6%	3.1%
UNIVERSAL LIFE	27	84.7%	16.3%
UNKNOWN	129	22.3%	2.0%
<u>REINSURANCE METHOD</u>			
COINSURANCE	79	20.2%	2.3%
Y.R.T.	113	26.4%	2.5%
UNKNOWN	161	298.5%	23.5%

STANDARD DEVIATION CALCULATIONS ARE DONE FOR CASES IN WHICH AT LEAST 35 DEATHS ARE OBSERVED. SOME CATEGORIES ABOVE DO NOT HAVE 35 DEATHS OBSERVED BUT WE ARE STILL REPORTING THE STANDARD DEVIATIONS FOR COMPARISON TO PAST STUDIES.

APPENDIX G

STANDARD DEVIATIONS (1987 - 1998)

MORTALITY RATIOS BY AMOUNT BASED ON THE 1975-80 BASIC TABLES

	ACTUAL NO. OF CLAIMS	MORTALITY RATIO	STANDARD DEVIATION
ALL COMBINED	2,395	55.8%	1.1%
<u>SEX</u>			
MALE	2,105	54.9%	1.2%
FEMALE	290	62.2%	3.7%
<u>ISSUE AGES</u>			
30-39	242	66.8%	4.3%
40-49	664	55.6%	2.2%
50-59	783	61.8%	2.2%
60-69	519	59.4%	2.6%
70-79	149	26.8%	2.2%
<u>POLICY YEARS</u>			
1	324	55.0%	3.1%
2	286	43.7%	2.6%
3	329	51.5%	2.8%
4	261	56.3%	3.5%
5	200	39.8%	2.8%
6-10	758	65.8%	2.4%
11-15	185	59.9%	4.4%
16+	52	105.0%	14.6%
<u>CLASSIFICATION AMOUNTS</u>			
\$1,000,000 - \$2,999,999	2,089	56.8%	1.2%
\$3,000,000 - \$4,999,999	185	46.2%	3.4%
> \$5,000,000	121	61.0%	5.5%
<u>SMOKING STATUS</u>			
NON-SMOKER	1,739	48.2%	1.2%
SMOKER	271	104.0%	6.3%
AGGREGATE	385	69.5%	3.5%
<u>UNDERWRITING STATUS</u>			
STANDARD	2,094	55.9%	1.2%
SUBSTANDARD	301	55.1%	3.2%
<u>REINSURANCE STATUS</u>			
AUTOMATIC	1,692	47.0%	1.1%
FACULTATIVE	699	63.6%	2.4%

APPENDIX H

1997 EXPERIENCE BY NUMBER

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

	EXPOSURE	ACTUAL CLAIMS	EXPECTED CLAIMS	MORTALITY RATIO
<u>ISSUE AGES 30-39</u>				
<u>POLICY YEARS</u>				
1	35,387	4	23	17%
2	17,127	4	13	30%
3	7,852	4	8	49%
4	5,772	4	7	56%
5	4,474	1	6	16%
6-10	11,338	3	21	14%
11-15	1,348	2	5	43%
16+	68	0	0	0%
ALL	83,366	22	84	26%

<u>ISSUE AGES 40-49</u>				
<u>POLICY YEARS</u>				
1	33,612	9	37	24%
2	18,189	8	29	27%
3	9,451	4	20	20%
4	6,934	6	18	34%
5	5,931	5	18	29%
6-10	14,953	15	57	26%
11-15	1,527	4	11	35%
16+	85	1	1	69%
ALL	90,682	52	192	27%

<u>ISSUE AGES 50-59</u>				
<u>POLICY YEARS</u>				
1	14,405	6	31	19%
2	7,668	10	23	44%
3	4,122	4	16	25%
4	3,028	4	14	28%
5	2,565	2	14	14%
6-10	6,355	30	52	57%
11-15	860	1	15	6%
16+	70	1	3	30%
ALL	39,073	58	169	34%

<u>ISSUE AGES 60-69</u>				
<u>POLICY YEARS</u>				
1	2,805	1	11	9%
2	1,740	2	10	20%
3	1,144	2	10	20%
4	828	0	9	0%
5	799	3	10	31%
6-10	2,391	5	40	12%
11-15	329	8	12	66%
16+	33	0	3	0%
ALL	10,070	21	106	20%

APPENDIX I

1997 EXPERIENCE BY AMOUNT (000'S)

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

	EXPOSURE	ACTUAL CLAIMS	EXPECTED CLAIMS	MORTALITY RATIO
<u>ISSUE AGES 30-39</u>				
<u>POLICY YEARS</u>				
1	6,617,182	760	4,317	18%
2	3,721,156	805	2,968	27%
3	1,902,960	994	2,055	48%
4	1,277,231	1,240	1,617	77%
5	1,124,667	71	1,599	4%
6-10	3,829,195	1,610	7,238	22%
11-15	729,232	3,343	2,376	141%
16+	38,078	0	250	0%
ALL	19,239,700	8,823	22,420	39%
<u>ISSUE AGES 40-49</u>				
<u>POLICY YEARS</u>				
1	7,640,515	1,739	8,702	20%
2	5,064,029	2,013	8,367	24%
3	2,790,942	1,109	6,265	18%
4	1,781,597	1,652	4,696	35%
5	1,603,487	797	4,822	17%
6-10	5,296,815	11,240	20,953	54%
11-15	876,435	320	6,384	5%
16+	47,799	232	707	33%
ALL	25,101,619	19,102	60,896	31%
<u>ISSUE AGES 50-59</u>				
<u>POLICY YEARS</u>				
1	4,089,278	2,011	8,842	23%
2	2,692,518	1,525	8,143	19%
3	1,492,391	1,558	5,921	26%
4	922,711	1,193	4,418	27%
5	791,971	324	4,456	7%
6-10	2,560,362	18,426	21,816	84%
11-15	575,090	67	10,739	1%
16+	37,653	1,510	1,488	101%
ALL	13,161,973	26,615	65,823	40%
<u>ISSUE AGES 60-69</u>				
<u>POLICY YEARS</u>				
1	930,299	240	3,787	6%
2	769,292	419	4,444	9%
3	469,160	1,022	4,017	25%
4	304,972	0	3,335	0%
5	254,013	764	3,101	25%
6-10	898,336	3,364	14,888	23%
11-15	200,699	5,621	7,358	76%
16+	27,425	0	1,954	0%
ALL	3,854,197	11,431	42,884	27%

APPENDIX J

1998 EXPERIENCE BY NUMBER

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

	EXPOSURE	ACTUAL CLAIMS	EXPECTED CLAIMS	MORTALITY RATIO
<u>ISSUE AGES 30-39</u>				
<u>POLICY YEARS</u>				
1	30,728	6	20.8	29%
2	31,587	6	24.7	24%
3	15,142	5	15.6	32%
4	6,933	5	8.5	59%
5	5,118	0	7.2	0%
6-10	11,990	19	22.5	84%
11-15	1,728	6	6.1	99%
16+	134	0	0.9	0%
ALL	103,361	47	106.1	44%
<u>ISSUE AGES 40-49</u>				
<u>POLICY YEARS</u>				
1	28,364	8	33.0	24%
2	29,473	12	46.3	26%
3	15,600	21	33.0	64%
4	8,174	4	21.0	19%
5	6,045	9	17.7	51%
6-10	15,532	26	59.8	43%
11-15	1,975	10	15.1	66%
16+	150	2	2.3	87%
ALL	105,313	92	228.2	40%
<u>ISSUE AGES 50-59</u>				
<u>POLICY YEARS</u>				
1	12,219	12	27.3	44%
2	12,122	14	35.6	39%
3	6,381	15	24.0	63%
4	3,455	4	16.2	25%
5	2,550	5	14.2	35%
6-10	6,578	31	53.9	58%
11-15	1,068	13	19.6	66%
16+	105	5	4.8	104%
ALL	44,480	99	195.5	51%
<u>ISSUE AGES 60-69</u>				
<u>POLICY YEARS</u>				
1	2,503	8	10.7	75%
2	2,318	5	13.9	36%
3	1,418	6	11.8	51%
4	920	6	9.7	62%
5	721	9	8.9	101%
6-10	2,415	26	41.4	63%
11-15	429	10	15.4	65%
16+	59	2	5.3	38%
ALL	10,782	72	117.1	62%

APPENDIX K

1998 EXPERIENCE BY AMOUNT (000'S)

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

	EXPOSURE	ACTUAL CLAIMS	EXPECTED CLAIMS	MORTALITY RATIO
<u>ISSUE AGES 30-39</u>				
<u>POLICY YEARS</u>				
1	6,696,927	1,593	4,420	36%
2	5,926,996	634	4,683	14%
3	3,320,585	565	3,476	16%
4	1,641,806	794	2,095	38%
5	1,134,399	0	1,627	0%
6-10	3,961,960	7,125	7,636	93%
11-15	910,193	2,138	3,068	70%
16+	79,305	0	468	0%
ALL	23,672,171	12,849	27,473	47%

<u>ISSUE AGES 40-49</u>				
<u>POLICY YEARS</u>				
1	7,337,161	1,957	8,448	23%
2	6,776,817	1,629	10,968	15%
3	4,443,045	4,311	9,670	45%
4	2,421,749	358	6,480	6%
5	1,586,641	3,028	4,751	64%
6-10	5,501,861	5,687	22,049	26%
11-15	1,123,645	2,784	8,411	33%
16+	89,096	299	1,282	23%
ALL	29,280,015	20,054	72,060	28%

<u>ISSUE AGES 50-59</u>				
<u>POLICY YEARS</u>				
1	4,181,946	1,648	9,212	18%
2	3,527,015	1,931	10,455	18%
3	2,344,906	3,322	9,044	37%
4	1,272,407	859	6,169	14%
5	790,054	346	4,520	8%
6-10	2,664,152	7,786	23,001	34%
11-15	684,761	12,189	12,728	96%
16+	68,276	1,596	2,858	56%
ALL	15,533,515	29,677	77,987	38%

<u>ISSUE AGES 60-69</u>				
<u>POLICY YEARS</u>				
1	967,224	1,936	4,033	48%
2	827,091	2,834	5,037	56%
3	696,952	3,384	5,725	59%
4	407,039	959	4,389	22%
5	278,072	6,328	3,697	171%
6-10	932,763	6,063	16,089	38%
11-15	233,420	5,840	8,019	73%
16+	57,305	130	4,227	3%
ALL	4,399,864	27,474	51,217	54%

APPENDIX L

1997 EXPERIENCE BY NUMBER

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

<u>PLAN OF INSURANCE</u>	<u>EXPOSURE</u>	<u>ACTUAL CLAIMS</u>	<u>EXPECTED CLAIMS</u>	<u>MORTALITY RATIO</u>
<u>WHOLE LIFE</u>				
<u>POLICY YEARS</u>				
1	528	0	0.8	0%
2	747	0	1.6	0%
3	665	1	1.8	55%
4	483	1	1.8	56%
5	325	0	1.5	0%
6-10	2,695	3	12.3	24%
11-15	319	4	4.4	91%
16+	26	1	0.8	126%
ALL	5,787	10	25.0	40%

<u>TERM</u>				
<u>POLICY YEARS</u>				
1	31,936	6	45.2	13%
2	18,057	6	33.7	18%
3	12,495	6	32.3	19%
4	10,432	7	32.6	21%
5	9,110	5	33.4	15%
6-10	21,474	35	116.3	30%
11-15	2,675	8	31.9	25%
16+	188	0	6.5	0%
ALL	106,367	73	331.8	22%

<u>UL</u>				
<u>POLICY YEARS</u>				
1	1,156	0	2.8	0%
2	962	1	2.6	39%
3	511	0	1.7	0%
4	459	0	2.0	0%
5	458	1	2.2	45%
6-10	1,893	2	12.9	15%
11-15	471	3	4.2	71%
16+	1	0	0.0	N/A
ALL	5,909	7	28.4	25%

<u>UNKNOWN</u>				
<u>POLICY YEARS</u>				
1	56,050	16	67.2	24%
2	26,580	18	46.7	39%
3	9,713	9	25.7	35%
4	5,810	6	18.8	32%
5	4,343	8	17.2	46%
6-10	10,392	17	53.6	32%
11-15	938	2	9.1	22%
16+	75	2	2.5	79%
ALL	113,902	78	240.9	32%

APPENDIX M

1997 EXPERIENCE BY AMOUNT (000'S)

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

<u>PLAN OF INSURANCE</u>	EXPOSURE	ACTUAL CLAIMS	EXPECTED CLAIMS	MORTALITY RATIO
<u>WHOLE LIFE</u>				
<u>POLICY YEARS</u>				
1	399,767	0	662.98	0%
2	570,342	0	1355.33	0%
3	506,551	406	1624.99	25%
4	394,697	291	2342.76	12%
5	240,475	0	1391.05	0%
6-10	1,602,544	3,086	10534.48	29%
11-15	381,036	2,258	5556.59	41%
16+	29,643	6,582	718.31	916%
ALL	4,125,055	12,622	24,186	52%

<u>TERM</u>				
<u>POLICY YEARS</u>				
1	8,123,526	1,637	12,214	13%
2	4,902,777	1,833	10,063	18%
3	3,224,784	2,008	9,648	21%
4	2,572,045	2,338	8,777	27%
5	2,541,717	964	9,572	10%
6-10	8,079,776	29,085	42,629	68%
11-15	1,300,231	4,635	15,606	30%
16+	77,167	0	2,183	0%
ALL	30,822,024	42,501	110,692	38%

<u>UL</u>				
<u>POLICY YEARS</u>				
1	683,674	0	1,862	0%
2	515,769	375	1,691	22%
3	183,595	0	1,010	0%
4	147,341	0	1,306	0%
5	179,750	569	1,237	46%
6-10	889,398	2,302	7,799	30%
11-15	295,746	3,410	2,985	114%
16+	396	0	2	0%
ALL	2,895,670	6,656	17,892	37%

<u>UNKNOWN</u>				
<u>POLICY YEARS</u>				
1	10,999,157	3,427	16,516	21%
2	6,825,705	2,590	16,021	16%
3	3,045,204	2,355	9,367	25%
4	1,376,868	1,457	5,406	27%
5	985,522	568	4,640	12%
6-10	2,585,545	3,026	14,510	21%
11-15	607,160	92	5,537	2%
16+	64,311	1,741	2,226	78%
ALL	26,489,472	15,256	74,224	21%

APPENDIX N

1998 EXPERIENCE BY NUMBER

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

<u>PLAN OF INSURANCE</u>	<u>EXPOSURE</u>	<u>ACTUAL CLAIMS</u>	<u>EXPECTED CLAIMS</u>	<u>MORTALITY RATIO</u>
<u>WHOLE LIFE</u>				
<u>POLICY YEARS</u>				
1	1,892	0	2	0%
2	545	0	1	0%
3	723	2	2	99%
4	652	0	2	0%
5	472	1	2	49%
6-10	1,849	2	10	20%
11-15	355	3	5	60%
16+	37	0	1	0%
ALL	6,524	8	26	31%

<u>TERM</u>				
<u>POLICY YEARS</u>				
1	41,306	19	63	30%
2	29,486	13	57	23%
3	16,054	24	39	61%
4	11,262	14	34	41%
5	9,182	15	33	45%
6-10	23,258	74	127	58%
11-15	3,389	25	41	61%
16+	334	5	10	51%
ALL	134,271	189	405	47%

<u>UL</u>				
<u>POLICY YEARS</u>				
1	1,197	1	3	30%
2	1,277	1	4	24%
3	1,002	2	3	58%
4	593	1	2	43%
5	484	0	2	0%
6-10	1,772	11	13	85%
11-15	630	11	6	186%
16+	5	0	0	0%
ALL	6,960	27	35	78%

<u>UNKNOWN</u>				
<u>POLICY YEARS</u>				
1	33,671	19	40	47%
2	47,213	26	74	35%
3	22,173	22	50	44%
4	7,680	10	24	42%
5	4,874	11	18	61%
6-10	11,090	33	56	59%
11-15	1,248	4	11	37%
16+	118	4	4	108%
ALL	128,068	129	276	47%

APPENDIX O

1998 EXPERIENCE BY AMOUNT ('000'S)

MORTALITY RATIOS BASED ON THE 1975-80 BASIC TABLES

<u>PLAN OF INSURANCE</u>	<u>EXPOSURE</u>	<u>ACTUAL CLAIMS</u>	<u>EXPECTED CLAIMS</u>	<u>MORTALITY RATIO</u>
<u>WHOLE LIFE</u>				
<u>POLICY YEARS</u>				
1	1,281,583	0	1836.58	0%
2	397,097	0	895.88	0%
3	564,453	656	1760.75	37%
4	497,185	0	1946.40	0%
5	380,823	141	2734.08	5%
6-10	1,457,287	787	11117.77	7%
11-15	449,196	4,143	6660.91	62%
16+	36,369	0	1243.14	0%
ALL	5,063,992	5,727	28,196	20%
<u>TERM</u>				
<u>POLICY YEARS</u>				
1	11,010,100	5,001	17,528	29%
2	7,555,939	2,478	15,559	16%
3	4,328,951	6,783	11,683	58%
4	2,836,908	3,913	10,213	38%
5	2,274,382	8,538	8,935	96%
6-10	8,608,102	20,777	46,408	45%
11-15	1,577,317	8,108	19,020	43%
16+	153,559	1,217	4,029	30%
ALL	38,345,257	56,816	133,375	43%
<u>UL</u>				
<u>POLICY YEARS</u>				
1	706,837	246	2,143	11%
2	699,241	524	2,584	20%
3	501,431	1,195	2,237	53%
4	213,369	113	1,379	8%
5	159,978	0	1,617	0%
6-10	869,951	3,849	7,822	49%
11-15	376,001	12,759	4,266	299%
16+	3,083	0	22	N/A
ALL	3,529,892	18,686	22,070	85%
<u>UNKNOWN</u>				
<u>POLICY YEARS</u>				
1	7,354,498	3,147	11,199	28%
2	9,229,842	4,496	19,018	24%
3	5,925,358	3,196	18,589	17%
4	2,470,718	1,477	9,384	16%
5	1,171,822	1,722	5,514	31%
6-10	2,732,971	5,002	16,441	30%
11-15	807,145	359	6,062	6%
16+	118,854	808	4,484	18%
ALL	29,811,207	20,207	90,691	22%