GROUP LONG-TERM DISABILITY (GLTD) VALUATION TABLES

SOCIETY OF ACTUARIES COMMITTEE TO RECOMMEND NEW DISABILITY TABLES FOR VALUATION*

INTRODUCTION

This is the final report of the Committee to Recommend New Disability Tables for Valuation. The report proposes valuation standards to the National Association of Insurance Commissioners (NAIC) for group long-term disability income insurance products (GLTD). The Board of Governors of the Society of Actuaries authorized exposure of the initial draft of the report on January 28, 1987. The exposure period ended on May 8, 1987.

Comments received from the exposure resulted in the extension of the margin for valuation to all durations, a firm stand by the committee on the valuation interest rate, and the inclusion of comments on certain key points to consider in group disability income valuation. The Basic Table remains unchanged from the exposure draft, but the Valuation Table has been modified to adjust for the recommended additional margin for durations greater than five years.

Details on table construction, the final tables, special adjustment factors, and a computer program are purposely put in the appendices of this report. The GLTD Valuation Table is found in Appendix E. The body of the text summarizes the efforts leading to the development of the tables and discusses the recommendations of the committee. As such, the narrative identifies in which appendices the details can be found while concentrating on the recommendations of the committee. The GLTD Valuation Table was adopted by the NAIC in December 1987 as the 1987 Commissioner's Group Disability Table (1987 CGDT).

BACKGROUND

The initial charge of the committee was to develop new disability tables for valuation of individual disability income reserves (both policy reserves

and claim reserves) and GLTD claim reserves. The original 1985 exposure draft of the results of the committee's work recommended a table that was considered appropriate at all durations for individual policies and claims and appropriate after two years duration for GLTD claims. The committee recommended that each company value group claims during the first two years according to its own experience. Actual experience differs widely by company during the first few months of claim due to the various types of policies offered, the markets in which they operate, and by claims handling practices (file maintenance).

The committee's recommendation for individual disability income policies was accepted by the Society of Actuaries and the results were adopted by the NAIC as the 1985 Commissioners' Individual Disability Tables A (1985 CIDA) as published in Volume XXXVII of the *Transactions*.

The original exposure draft recommendation for GLTD was withdrawn from the 1985 Report because Society of Actuaries members desired a more complete table to represent the early durations and a greater assurance of adequacy for the later durations at older ages. Accordingly, the need for a separate GLTD table was addressed as a new charge under a reconstituted committee, originally chaired by Ted Dunn, with three members of the original committee, Duane Kidwell and Frank Knorr continuing along with John Haynes Miller as special consultant.

The committee's approach was to

1. develop an industry-wide average experience table for GLTD, recognizing as many parameters for as long a period of time as the Society data would support,
2. develop an ultimate table,
3. develop a set of incidence rates,
4. add margins to the Basic Table to form a Valuation Table, and
5. address appropriate adjustment techniques that could be used by a company to tailor the valuation table to its own mix of business (for instance, percentage of gross salary covered, industry or worker class).

GLTD BASIC TABLE CONSTRUCTION

The Basic Table was constructed in three sections: the first 24 months of claim duration, years 3 through 10, and years 11 and over (ultimate).

The incidence rates for the first 24 months of claim duration recognize age, sex, and elimination periods of 3 months, 6 months and 12 months. These rates were determined from the 1975–80 Society data summarized in the *TSA 1981* and *1982 Reports*.

The second section, years 3 through 10, was built from Society data on the exposure years 1962–1980. These data were standardized for the effects of sex and chronological trends to project a data set to represent male experience during the period 1976–80. Since the effects of elimination period seemed to converge during the first 24 months, elimination period as a parameter was dropped for year 3 and later. An adequate volume of data was available for the first 8 years of claims, and the results derived from this information were extrapolated at durations 9 and 10 to grade into the ultimate section at duration 11 years.

The third section, years 11 and over, was based upon the ultimate termination rates of the 1985 CIDA table. A review of the approach to the construction can be found in the *Transactions*, Volume XXXVII. Essentially, the termination rates were developed by an empirical formula based upon the review of the Society Group Waiver data, the Intercompany Disability Waiver of Premium Study, the Social Security Experience Study, and a study by Mutual of Omaha. Ultimate GLTD termination from disablement rates are the 1985 CIDA rates through age 50, grading to 65 percent of the 1985 CIDA rates at ages 65 and higher. The ultimate rates were reviewed separately by three major GLTD writers who suggested the modifications to more realistically fit actual experience for these ages and what the committee believes to be the general experience with this product. The basic logic proposed for the lower rates for GLTD than for individual disability income claims is that GLTD is more subject to use in early retirement by persons less seriously disabled.

Termination-from-disablement rates for females are in the same ratio to male rates as they are in the 1985 CIDA table. More details on the review of GLTD experience, tables of termination rates and tables of rates of disablement can be found in Appendices A, B and C, respectively. Appendix D contains the actual GLTD Basic Table.

GLTD VALUATION TABLE CONSTRUCTION

A margin was added to the Basic Table to obtain the proposed GLTD Valuation Table. The margin was added to reduce termination rates (death and recovery combined) to 90 percent of the Basic Table for all durations. The GLTD tables are by quinquennial age. Many companies value claims in this age grouping. Where appropriate, individual age rates are easily obtained by interpolation. Appendix E contains the GLTD Valuation Table as well as the ratios of claim reserves of the Valuation to Basic GLTD Tables and a comparison of GLTD claim reserves to the 1964 CDT values. Appendix F provides a GLTD Valuation Continuance Table.

COMMITTEE RECOMMENDATIONS AND DISCUSSION

The committee recommends the valuation table (Table E-1) included in Appendix E as the valuation standard table for group disability income claims. The table would be appropriate for inclusion in the MINIMUM RESERVE STANDARDS FOR INDIVIDUAL AND GROUP HEALTH INSURANCE CONTRACTS proposed to the NAIC by the Subcommittee on liaison with the NAIC (B) Committee of the American Academy of Actuaries (E. Paul Barnhart, Chairperson). All recommendations made in this report are consistent with those minimum reserve standards.

A company may use its own experience with adequate margins where credible data are available for any period up to two years of claim duration. This would be graded into the GLTD table not later than the end of the fifth year. It is important to note that GLTD experience varies more widely from company to company and for a longer period of time than does individual disability income experience. Modifications can be made to the GLTD table by simple factor multiples to either the termination rates or to the GLTD tabular reserves. Reasonableness and adequacy of any such modification must be demonstrated to the state insurance commissioner's satisfaction.

A set of illustrative parametric modifiers are included in Appendix G for the key features of replacement ratio, industry grouping and broad occupation class. This suggests how a company might modify the GLTD Valuation Table to fit its own experience during the first two years.

Although a minimum valuation standard is being proposed, the company actuary is still responsible for holding reasonable and appropriate reserves, as stated in the cited Valuation Standards Committee's Report. This responsibility is also in full harmony with the concept of the Designated Valuation Actuary.

Margin for Valuation

The valuation margin is 10 percent of the basic termination rates at all durations. The effect of this margin on claim reserves is illustrated in Appendix E, Table E-2.

The exposure draft included a specific margin for valuation of GLTD claim reserves. The margin was introduced by setting the termination from disablement rates (death and recovery combined) in the valuation table equal to 90 percent of the Basic Table termination rates during the first five years, grading to 100 percent of the basic rates in the tenth and later durations. The final valuation table uses 90 percent of the Basic Table rates throughout.

The committee agreed with responses to the exposure draft and recommended that the explicit margin of 10% apply to all durations because the basic data represent experience several years old, there is some evidence of subsequent deterioration at all durations, experience varies significantly from company to company, and there is a tendency to sometimes use GLTD for retirement benefits for persons not critically disabled. Among these there is a good potential for improvement in mortality.

A company using its own experience for any period of valuation should allow a similar margin.

Interest Rate

The exposure draft did not include a recommended maximum valuation interest rate. Rather, it asked for suggestions from Society members. As a result of the response, the committee recommended a GLTD claims valuation interest rate equal to the maximum rate permitted by law for the valuation of whole life insurance. This is the flexible rate (5.5 percent for 1987) included in the NAIC Standard Valuation Law. This recommendation is made, while recognizing no relationship between whole life insurance and GLTD, for both practical and theoretical reasons. While there is no risk of disintermediation or of investing for future premiums, there are the usual risks of asset loss and reinvestment. Therefore, a reasonably conservative interest rate is appropriate.

Responses included suggestions of level rates ranging as low as 5 percent and as high as the rates used for single premium immediate annuities. The whole life rate is considered reasonably conservative in applying to claims by year of incurral. The recommended rate receives constant review to remain current, and the determining formula has been accepted for valuation purposes. GLTD claim reserves run out over a long period of time and involve a significant amount of reinvestment risk, as opposed to single premium immediate annuities that are generally issued to much older persons, with shorter pay-out exposure.

Special Considerations

Actuaries normally consider special characteristics in valuing any block of business and these comments, therefore, may be considered by some to be redundant. Nevertheless, as discussed in the exposure draft, reminders of significant varying characteristics are included for the benefit of the valuation actuary and the regulatory authorities.

An industry valuation table represents the composite experience of contributing companies and as such cannot be considered to fit precisely to any one company's experience. Margins can be, and are, added to broaden the acceptance of a table as being more reasonable for valuation of a large number of companies. The actuary must also consider any particularly unusual characteristics of the policies whose claims are being valued, and whether the current or evolving risk pattern is different from either its own company experience or the experience underlying the valuation table. These considerations may result in a strengthening of the reserve basis as described in Appendix G.

GLTD policies usually contain an Old Age, Survivors, and Disability Income (OASDI) offset provision. A company's own experience is a good representation of the probability of the offset becoming operative and of its permanence. OASDI claims administration is subjected to influence from political suasion, and furthermore, many companies assist the insured in applying for OASDI benefits. These factors should be considered in setting a margin for valuation.

Cost of living adjustments, or other scheduled variations in benefits must be appropriately reflected in the reserve formula. In some cases this necessitates the assumption of a conservative increase factor for benefits linked to the Consumer Price Index (CPI). In most cases the increase is a stated flat percentage of the basic monthly income benefit (for instance, 4 percent or 7 percent).

Some policies provide a residual disability benefit and many policies include an "own occupation" definition of disability. Claim reserves can first be calculated with the usual tables which contain only a very low exposure of residual or "own occupation" business. The reserves can then be increased by a factor representing a company's pricing assumptions as to the extra cost for the featured benefit. Eventually, specific tables may be developed for each particular definition of disability as experience data become available.

The actuary may wish to modify termination rates in the early durations for class, industry, size, or replacement ratio, to better reflect the impact of a company's business characteristics. These modifications are addressed further in Appendix G with an illustration of a method for determining a composite factor to apply to termination rates. Appendix H contains an APL program for calculating claim reserves.

The tables include the exposure of claims resulting from complications of pregnancy. They do not include experience or specific payments on

normal pregnancy. The tables are conservative for normal maternity claims. Therefore, for a high volume of specific benefit normal maternity claims the actuary may want to determine more appropriate annuity-certain factors.

Individual evaluation of the basic benefits of claims, other than specified amounts or normal maternity payments, can only lead to downward adjustments of the total reserve and should not be permitted. Valuation tables inherently allow for an averaging of claim severity and thus the validity of the table prescribes that the broad basic claim profile be left intact.

The Board of Governors of the Society of Actuaries accepted and approved this report and authorized its submission to the NAIC. This action occurred on May 27, 1987. The committee submitted the report at the June, 1987 meeting of the NAIC and recommended that the morbidity tables be adopted as the Commissioner's 1987 Group Disability Table for Claims Valuation (1987 CGDT). The Valuation Table was adopted by the NAIC in December 1987 as recommended.

APPENDIX A
REVIEW OF GLTD EXPERIENCE

The release, in 1985, of the Disability Termination Study (DTS) table for valuation of individual disability income policies pointed up the need for a similar table based on group disability experience. For the DTS, adopted by the NAIC as the 1985 Commissioners' Individual Disability Tables A (1985 CIDA), it was necessary to obtain, from an adequate number of insurers, recent data specially compiled for the purpose of developing relevant termination rates. For GLTD, the Society had already collected a large volume of credible data in useable form. While incidence rates are generally not needed for the valuation of GLTD, the committee felt that a complete table would prove useful.

The GLTD table has not been expressed in terms of individual parameters, as was done in the 1985 CIDA. The GLTD table has been expressed as separate tables by sex and select and ultimate duration for each of three elimination periods. Appendix G offers suggestions for introducing other parameters where greater flexibility is justified. The following sections describe some details of the analysis and evaluation of GLTD data.

Analysis of Intercompany GLTD Experience

GLTD experience is compiled annually by the Society of Actuaries Committee on Life and Health Insurance and published in each annual *TSA,*

Report. The data are available for each year since 1962. In this analysis, yearly actual to tabular (A/T) ratios were applied to an exposure model using a technique developed by Mr. John Haynes Miller, FSA, for his annual update articles in the *Disability News Letter*.

The exposure model is an analysis of claims exposed to termination at the end of the elimination period and at the beginning of each year thereafter. The display is by quinquennial age and years of disablement within each elimination period (3 months, 6 months, and 12 months) and by sex.

Tabular terminations are determined by the application of Benefit 2 termination rates to the model exposures. Actual terminations are obtained by applying the crude termination rates to the model exposures. An A/T ratio is calculated for each cell.

Multiplication of the "model exposure" by the corresponding A/T ratio for each cell according to sex, deferment period, age group and year of disablement produced weighted averages by age group and by duration which are displayed in Table A-1. In Table A-2, trend ratios and sex ratios are presented.

Evaluation of GLTD Life Experience for 1976–80

A. Evaluation of Results by the Exposure Model: The "exposure model" provided, for each sex and experience period, (1) a single ratio showing the level of experience by year of duration, *by age group* at disablement, and *for all ages* and durations combined and (2) similar ratios for prior experience periods. Also shown in Table A-1 is the experience of calendar years 1962–75, permitting a direct comparison between the experience of the latest recorded period, 1976–80, and all prior years for which data were available. As a break point, January 1, 1976 was ideal since 1976 marked, for most series, the peak of increasingly adverse disability results.

B. The Age-Duration Matrix: Table A-1 is a summary of the rows and columns of each two-dimensional matrix by years of duration and age-groups at incidence of disability. In addition, Table A-2 contains trend factors which are the quotients of the 1976–80 actual to tabular ratios divided by the corresponding 1962–75 ratios. Also, male to female sex ratios are shown, giving the male experience as a multiple of the experience on females.

C. Commentary on 1976–80 Experience: The basic references are the Benefit 2 and 3 tables which, after the first year of disablement, are identical to the 1964 CDT. Both Benefit 2 and 3 tables involved 3-month deferment periods, but under Benefit 3, income was retroactive to the date of disablement. Since this difference made the two types nonhomogeneous in the first year of disablement, the tabular rates used in the first year are those for Benefit 2 alone. For subsequent years of disablement only the combined results of Benefits 2 and 3 are published here.

TABLE A-1

GLTD Termination Experience
Compared to Benefit 2 Tabular Rates (Including Benefit 3 after Year 1)*
Ratios of Actual to Tabular Termination Rates

Sex/Calendar Year of Experience	Ages					Year of Disablement								Total
	20-29	30-39	40-49	50-59	60-64	1	2	3	4	5	6	7	8	
3-Month Elimination Period														
Males														
1962–70	130%	117%	116%	105%	121%	122%	105%	105%	88%	—	—	—	—	114%
1971–75	109	107	90	87	92	103	85	80	67	72%	86%	—	—	93
1972–76	110	105	89	83	86	100	83	77	62	70	78	—	—	90
1973–77	112	98	85	78	80	95	79	72	59	64	75	—	—	85
1974–78	109	99	83	75	74	92	74	70	54	73	79	—	—	82
1975–79	103	96	83	73	72	91	75	67	53	67	69	—	—	81
1976–80	105	98	82	74	70	91	78	64	50	70	65	—	—	81
1962–75	118	112	95	90	98	107	91	85	73	72	92	—	—	97
Females														
1962–70	111	115	114	114	90	124	98	78	81	—	—	—	—	110
1971–75	116	95	90	87	92	102	86	85	61	61	79	—	—	92
1972–76	109	93	94	89	89	108	90	70	53	49	49	—	—	93
1973–77	105	93	88	84	81	105	81	61	42	46	55	—	—	87
1974–78	107	90	83	75	79	100	72	55	38	51	46	—	—	82
1975–79	107	90	84	71	80	99	73	56	37	40	42	—	—	81
1976–80	108	90	85	68	74	98	71	54	36	35	38	—	—	79
1962–75	116	99	98	96	94	112	90	80	67	61	78	—	—	98
6-Month Elimination Period														
Males														
1962–70	94	91	88	82	76	76	91	94	72	73	119	—	—	84
1971–75	99	82	63	62	59	62	72	70	62	62	62	72	73	66
1972–76	98	87	67	66	59	65	74	71	65	66	70	84	84	69
1973–77	97	79	66	63	58	63	72	68	61	61	70	79	81	67
1974–78	96	73	63	59	54	61	68	63	55	67	75	68	68	63
1975–79	92	70	61	58	54	61	68	59	55	54	62	69	66	62
1976–80	91	72	61	60	55	63	67	56	54	53	64	71	61	63
1962–75	99	90	68	68	65	67	78	74	67	68	81	88	81	72

Sex/Calendar Year of Experience	Ages					Year of Disablement								Total
	20–29	30–39	40–49	50–59	60–64	1	2	3	4	5	6	7	8	
	6-Month Elimination Period													
Females														
1962–70	111%	92%	98%	79%	83%	78%	95%	111%	72%	67%	97%	—	—	87%
1971–75	91	77	70	62	61	68	80	69	48	48	53	42%	69%	67
1972–76	102	78	73	62	60	69	81	70	48	51	56	62	76	69
1973–77	94	76	65	56	63	68	74	63	43	45	47	54	67	64
1974–78	91	72	63	53	57	66	68	57	39	49	42	55	63	60
1975–79	90	68	61	53	61	67	70	56	39	43	39	47	45	60
1976–80	91	70	61	55	58	69	73	54	36	44	37	50	37	61
1962–75	104	83	76	67	67	71	84	79	57	57	69	62	71	73
	12-Month Elimination Period													
Males														
1962–70	95	72	69	77	68	—	72	72	75	68	103	—	—	74
1971–75	81	70	70	78	72	—	76	72	76	65	88	—	—	75
1972–76	89	83	67	74	78	—	76	67	89	66	75	—	—	75
1973–77	93	69	63	68	72	—	71	57	81	58	90	—	—	69
1974–78	92	54	59	63	69	—	66	49	73	65	74	—	—	63
1975–79	78	58	55	62	69	—	68	50	66	54	69	—	—	62
1976–80	90	58	63	68	70	—	74	53	65	57	97	—	—	67
1962–75	84	72	71	79	75	—	76	74	88	79	80	—	—	78
Females														
1962–70	64	47	99	68	69	—	75	94	50	73	50	—	—	74
1971–75	29	57	99	70	76	—	69	109	52	84	22	—	—	74
1972–76	48	35	68	53	76	—	58	68	50	50	50	—	—	58
1973–77	34	53	67	46	14	—	48	63	26	49	33	—	—	47
1974–78	78	53	54	39	33	—	52	65	17	33	24	—	—	46
1975–79	75	57	56	44	40	—	62	58	27	32	20	—	—	50
1976–80	77	45	59	46	37	—	57	62	37	32	24	—	—	50
1962–75	46	31	74	58	62	—	64	77	48	35	35	—	—	78

*1952 Reports

TABLE A-2

GLTD Termination Experience
Compared to Benefit 2 Tabular Rates (Including Benefit 3 after Year 1)*

Sex/Calendar Year of Experience	Ages					Year of Disablement								Total
	20–29	30–39	40–49	50–59	60–64	1	2	3	4	5	6	7	8	
Trend Ratios — Ratios of 1976–80 Experience to 1962–75 by Sex & Deferment Period														
Males														
3 Months	89%	88%	86%	82%	71%	85%	86%	75%	68%	97%	71%	—	—	83%
6	92	80	90	88	85	94	86	76	80	78	79	81%	75%	88
12	107	81	89	86	93	—	97	72	74	72	121	—	—	86
Females														
3 Months	93	91	87	71	79	88	79	68	54	57	49	—	—	81
6	88	84	80	82	87	97	87	68	63	77	54	81	52	83
12	167	145	80	79	60	—	89	80	77	91	69	—	—	64
Sex Ratios — Ratios of Males to Females — (M/F) by Deferment Period														
1962–75														
3 Months	102	113	97	94	104	96	81	106	109	118	118	—	—	99
6	95	108	89	101	97	94	93	94	118	119	117	142	114	99
12	183	232	96	136	121	—	119	96	183	226	229	—	—	100
1976–80														
3 Months	97	109	96	109	94	93	110	119	139	200	171	—	—	102
6	100	103	100	109	95	91	92	104	150	120	173	142	165	103
12	117	129	107	148	189	—	130	85	176	178	404	—	—	134

*1952 Reports

It should be noted that in Table A-1 the year 1 ratios for males on 3-month deferment policies have ranged from 91 percent to 122 percent, a much higher range than that for 6-month deferment. The marked differences for the first year of disablement, between the ratios under the 6-month and 3-month deferments, again testify to the very dramatic influence of deferment or elimination period selection. In applying the Benefit 2 rates to the exposures under the 6-month deferment policies, allowance was made for the fact that no payment is due for the fourth, fifth and sixth months of disablement under the latter. No attempt was made to adjust for deferment period selection. Thus, the differences in the A/T ratios may be attributed principally, if not entirely, to the effect on the experience of that phenomenon, and not to differences in the actual coverage. However, it is possible that some small portion of the difference is attributable to interactive factors other than deferment period selection, sex, age or duration of disability.

The committee wishes to acknowledge the contributions of two actuaries to the background material summarized above. In previous years the processing of these ratios of actual to tabular terminations and the development of average ratios by age group and year of disablement, based on the exposure model, was provided through the courtesy of Mr. J. Rae Jamieson, FSA, and the use of the North American Reassurance Company's computer. The computing work for the analysis of the 1976–80 and the 1962–75 combined experience was performed with the TPF&C computer facilities under the direction of Mr. Charles C. DeWeese, FSA.

Observing the trends and the apparent plateauing in 1976, it was determined that only the 1976–80 data be used for the first two years of duration (the monthly rates). The total of 13,083 terminations during the first two years of disablement were distributed as shown in Table A-3.

TABLE A-3

TERMINATIONS DURING THE FIRST 24-MONTHS OF DISABLEMENT
1976–80 GLTD

	Male	Female
3-Month Elimination Period	3,940	2,438
6-Month Elimination Period	4,103	2,213
12-Month Elimination Period	325	64

Source: Group Long Term Disability Study, *TSA, 1982 Reports.*

Reference was made to the 1975–79 data as a test for consistency.

For males, the 6-month elimination period data produced an apparently very good table by direct means. The 3-month elimination period tables had minor inconsistencies at the higher ages. The 12-month data was useful only for very broad consistency tests.

The committee further concluded that, in order to use all available data to obtain an adequate volume of exposure for the intermediate years (3 to 10), the data needed to be standardized for the long-term trends.

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APPENDIX B

TERMINATION RATES

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Termination Rates for the First 24 Months — Males, and Deferment Period Selection Factors

Whereas the DTS tables (*Transactions*, Vol. XXXVII), phase out the elimination period differentials at the end of the sixth month of disablement, the GLTD data show significant selection between the 3-, 6- and 12-month policies through the second year. The DTS data included virtually no experience with longer than 3 months deferment and the 90-day data were minimal.

Monthly termination from disablement rates (T) for the first 24-month durations for the 6-month elimination period (T6) and the 3-month elimination period (T3) were determined from the 1976–80 group long-term disability data collected by the Society of Actuaries and published in the *TSA, 1982 Reports*. Reference to prior years, primarily 1971–75, was used as a further guide to evaluate the results.

The Society data are grouped by decennial age to provide an optimum volume of claim terminations for each cell. Since we wanted to develop a table by quinquennial ages it was necessary, first, to determine preliminary rates, T6 and T3, by interpolation. The initial T6 rates were quite good. They seemed reasonable as to expected slope, were fairly smooth and when applied to an exposure model reproduced the actual terminations closely. The T3 rates were rough in several spots, presumably because of the relatively low volume of data. There was an anomaly in T3 at ages 57 and 62 at several durations where T3 was lower than T6.

Ratios, by duration, of T6/T3 in Table B-1 showed an upward trend by age, approaching or exceeding 1 at ages 57 and 62. T6 and T3 were recalculated from the combined exposures for durations 9 to 24 months at age 57 and 62. T6 and T3 are assumed equal for those ages and durations. T6 and T3 were then graduated interdependently by a process involving ratios of T6/T3.

The process was first to calculate a second set of T6 rates by multiplying the original T3 rates by graduated ratios of T6/T3. A set of tentative T6

TABLE B-1

BASIC GLTD TABLE
TERMINATION FROM DISABLEMENT RATIOS
DEATH AND RECOVERY — MALES

Duration of Disablement	(6-Month Elimination Period/3-Month Elimination Period) Age of Disablement								
	22	27	32	37	42	47	52	57	62
7TH Month	0.6261	0.6379	0.6041	0.5888	0.5961	0.5947	0.6000	0.6052	0.7018
8TH Month	0.7587	0.7819	0.7543	0.7566	0.8008	0.8333	0.8430	0.8687	0.9500
9TH Month	0.8129	0.8247	0.7939	0.7930	0.8288	0.8719	0.8712	1.0000	1.0000
10TH Month	0.8319	0.8483	0.8164	0.8026	0.8308	0.8693	0.8712	1.0000	1.0000
11TH Month	0.8333	0.8485	0.8249	0.8039	0.8286	0.8700	0.8703	1.0000	1.0000
12TH Month	0.8339	0.8492	0.8261	0.8047	0.8297	0.8672	0.8670	1.0000	1.0000
13TH Month	0.8352	0.8460	0.8284	0.8052	0.8179	0.8583	0.8600	1.0000	1.0000
14TH Month	0.8382	0.8432	0.8297	0.8050	0.8104	0.8391	0.8413	1.0000	1.0000
15TH Month	0.8432	0.8368	0.8353	0.8060	0.8016	0.8310	0.8315	1.0000	1.0000
16TH Month	0.8483	0.8230	0.8317	0.8065	0.8008	0.8300	0.8274	1.0000	1.0000
17TH Month	0.8552	0.8196	0.8316	0.8154	0.7982	0.8289	0.8291	1.0000	1.0000
18TH Month	0.8679	0.8200	0.8358	0.8230	0.8086	0.8391	0.8378	1.0000	1.0000
19TH Month	0.8816	0.8225	0.8387	0.8326	0.8173	0.8466	0.8417	1.0000	1.0000
20TH Month	0.8893	0.8392	0.8435	0.8443	0.8324	0.8562	0.8473	1.0000	1.0000
21ST Month	0.9023	0.8517	0.8465	0.8543	0.8497	0.8803	0.8760	1.0000	1.0000
22ND Month	0.9198	0.8807	0.8593	0.8710	0.8704	0.9098	0.9099	1.0000	1.0000
23RD Month	0.9498	0.9303	0.8907	0.9064	0.9007	0.9431	0.9423	1.0000	1.0000
24TH Month	1.0000	0.9892	0.9401	0.9490	0.9500	0.9741	0.9694	1.0000	1.0000
3RD Year	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
	(12-Month Elimination Period/6-Month Elimination Period) Age of Disablement								
13TH Month	0.4875	0.4462	0.4444	0.4804	0.5420	0.5943	0.6977	0.7589	1.1067
14TH Month	0.6832	0.6676	0.6580	0.7000	0.7431	0.7927	0.8805	0.9008	1.2090
15TH Month	0.7574	0.7554	0.7359	0.8091	0.8515	0.9153	0.9730	0.9590	1.2381
16TH Month	0.8065	0.8020	0.7748	0.8578	0.8942	0.9518	1.0000	0.9646	1.1864
17TH Month	0.8435	0.8358	0.8140	0.8726	0.9326	0.9742	1.0076	0.9434	1.0364
18TH Month	0.8754	0.8740	0.8616	0.9050	0.9645	1.0000	0.9597	0.8586	0.9434
19TH Month	0.9179	0.9207	0.9087	0.9365	0.9876	1.0000	0.9231	0.7766	0.9200
20TH Month	0.9639	0.9579	0.9588	0.9721	1.0000	1.0000	0.9099	0.7528	0.8571
21ST Month	1.0000	0.9900	0.9945	0.9941	1.0068	1.0080	0.9245	0.7765	0.8542
22ND Month	0.9862	0.9948	1.0000	0.9753	1.0000	1.0083	0.9505	0.8148	0.8511
23RD Month	0.9808	0.9733	1.0000	0.9677	0.9926	1.0172	0.9694	0.8590	0.8511
24TH Month	0.9703	0.9565	0.9873	0.9664	0.9925	1.0265	1.0105	0.9067	0.8750
3RD Year	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

rates were then developed by weighting the original T6 rates by the proportion of second year survivors from the 6 month data (0.684) and the second set of T6 rates by the corresponding proportion of survivors from the 3 month data (0.316). The tentative T3 rates were calculated by dividing the tentative T6 rates by the graduated ratios. Continuance tables were produced and graphs of the termination rates were drawn for quinquennial ages. Ratios of prevalence or continuance were calculated (6C/3C). The ratios 6C/3C and the age and duration first differences for the tentative T6 and T3 were used for small final adjustments to produce final sets of T6 and T3. Graphs of the final termination rates are shown in Figures B-1 to B-3.

FIGURE B-1

TERMINATION RATES — 3-MONTH ELIMINATION PERIOD

MALES — Ages 22, 32, 42, 52, 62
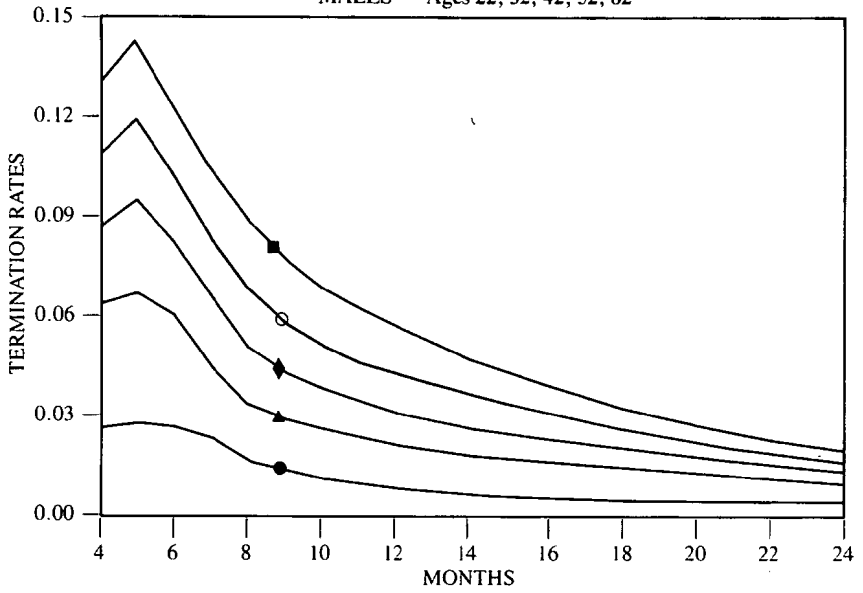
FEMALES — Ages 22, 32, 42, 52, 62

FIGURE B-2
TERMINATION RATES — 6-MONTH ELIMINATION PERIOD
MALES — Ages 22, 32, 42, 52, 62

FEMALES — Ages 22, 32, 42, 52, 62
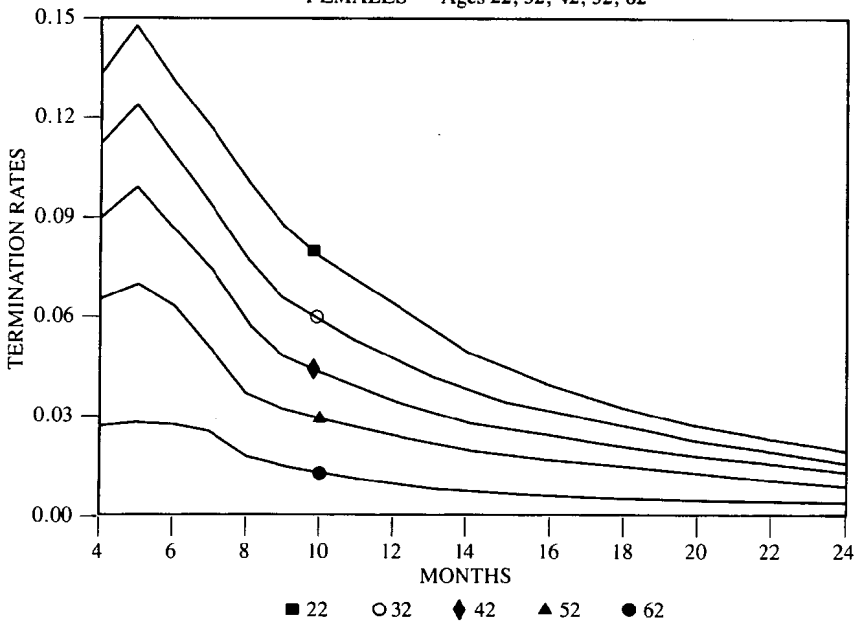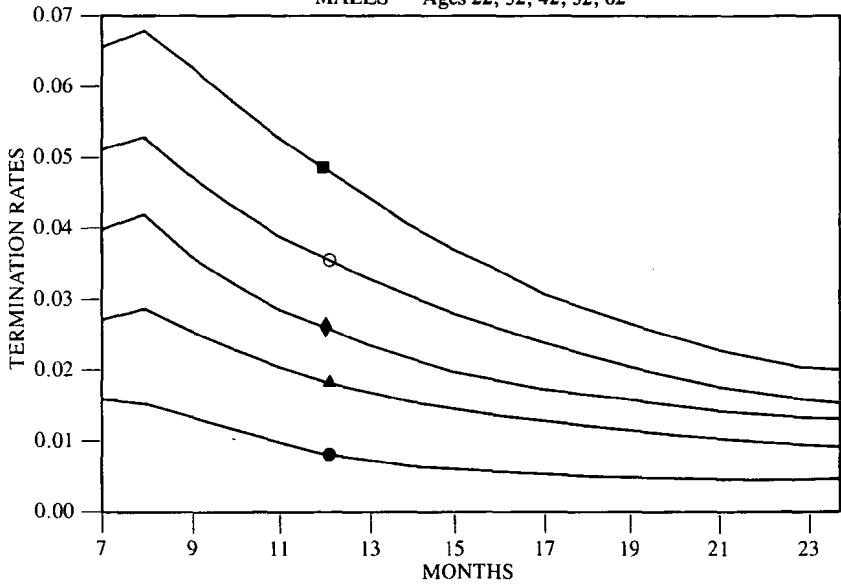

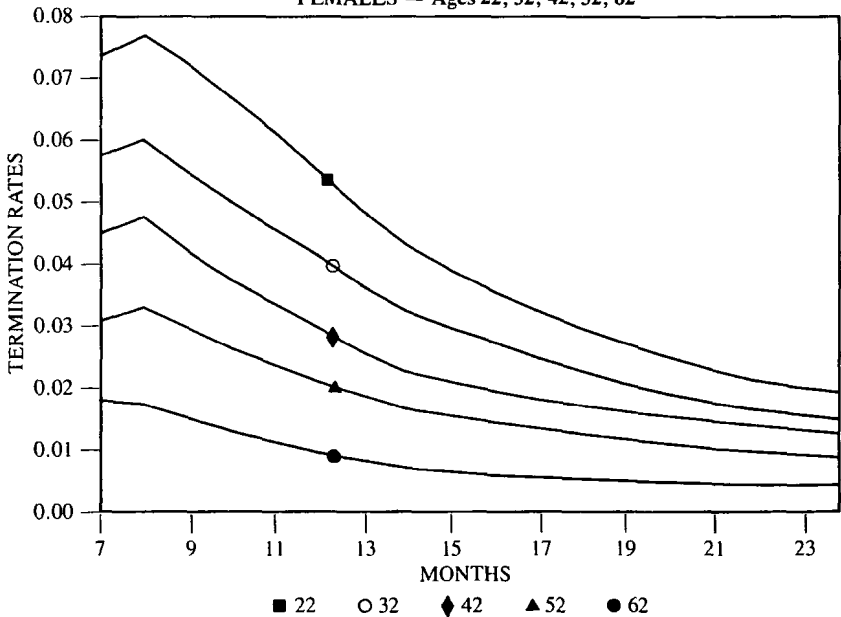■ 22   ○ 32   ◆ 42   ▲ 52   ● 62

FIGURE B-3
TERMINATION RATES — 12-MONTH ELIMINATION PERIOD
MALES — Ages 22, 32, 42, 52, 62
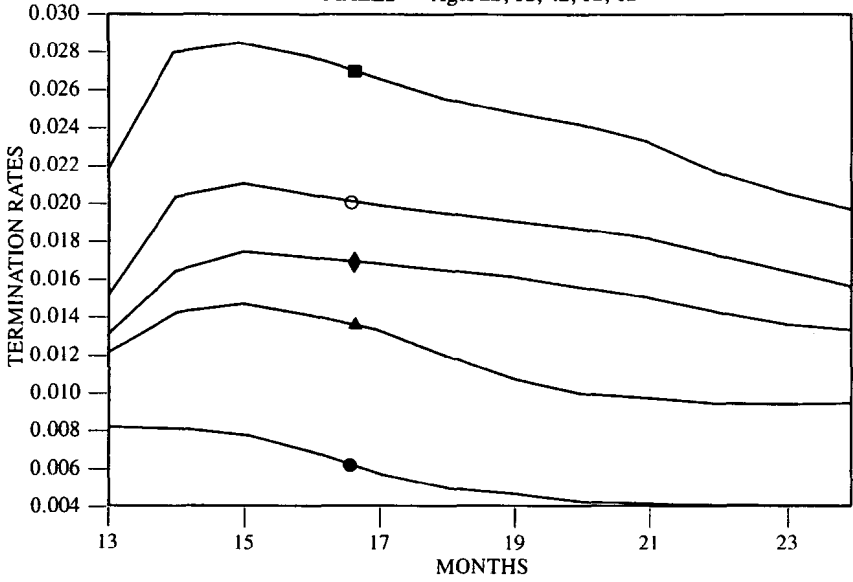
FEMALES — Ages 22, 32, 42, 52, 62
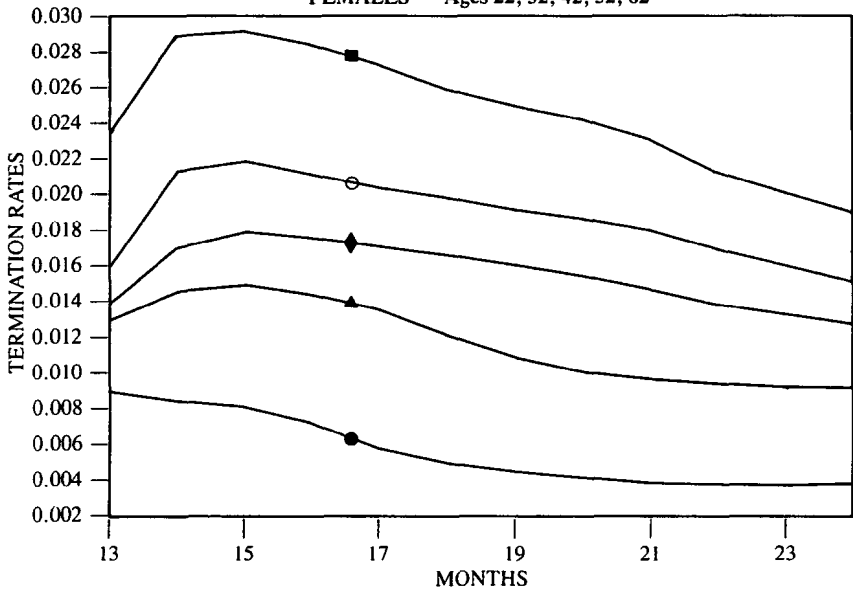
■ 22   ○ 32   ◆ 42   ▲ 52   ● 62

The T12 rates were developed from the final T6 rates using a somewhat similar process. A set of ratios T12/T6 was developed for decennial ages, from the 1962–80 "Male and Female combined" Society data, adjusted to a male-only basis, and applied to the final T6 to obtain T12. Quinquennial age values for T12 were then obtained by Lagrange interpolation. Continuance tables were produced, as well as ratios of prevalence 12C/6C. The graphs, ratios and first differences by quinquennial age and duration were used to make minor adjustments to obtain the final set of T12.

Termination Rates for Years 3–10 — Males

Crude termination rates for the different elimination periods appeared to converge towards the end of the second year. Accordingly, rates for the third and later years were determined to be the same for all elimination periods. Society data for years of exposure 1962–80 were standardized as described below in Trend Analysis and Adjustment to represent male data for exposure years 1976–80. Available data for all elimination periods were combined and used to produce crude rates of termination by decennial age group for duration years 3 to 8. The decennial rates were considered to be representative of ages 25, 35, 45, 55 and 62 as shown in Table B-2 and Figures B-4 and B-5. The next objective was to produce a set of termination rates grading smoothly from the second year into the eleventh year ultimate rates from the 1985 CIDA table. For this purpose, a value was inserted for the second year by annualizing the rates for months 21 to 24, and the eleventh year rates were set equal to those of the 1985 CIDA. A two-way Whitaker-Henderson graduation was used to determine termination rates for years 3 to 10. Reasonableness was further assured with minor adjustments from comparing graphs of crude rates to graduated rates and from reviewing the resulting continuance table ratios. Termination rates for quinquennial ages were obtained by Lagrange interpolation.

A. Trend Analysis and Adjustment: In the making of premium rates for property and casualty lines, a common problem is the necessity of developing rates for a myriad of classifications. This is encountered in automobile, homeowners and many, if not most, other categories. If to obtain more credible data for classes or subdivisions the period of observation is extended beyond one year and if there are significant secular or cyclical trends within the extended period, the results no longer reflect the current or recent level of experience. The solution has been to compute trend factors on an overall basis or for major groupings of the more refined classifications. As a simple illustration, if costs have been rising by 5 percent annually, the most recent data would be taken at face value, but the incidence rates, or the claim cost, of the

TABLE B-2

GLTD MALE RATES OF TERMINATION FROM DISABLEMENT (DEATH AND RECOVERY)
SOCIETY OF ACTUARIES DATA VS. GLTD BASIC TABLE

| Duration of Disablement	Ages < 30 (25)*				Ages 30–39 (35)*				Ages 40–49 (45)*			
	'62–'80	'75–'79	'76–'80	GLTD	'62–'80	'75–'79	'76–'80	GLTD	'62–'80	'75–'79	'76–'80	GLTD
3-Month Elimination Period												
1ST Year (9 Month)	0.631	0.605	0.598	0.570	0.535	0.498	0.507	0.485	0.432	0.401	0.394	0.395
2ND Year	0.370	0.310	0.345	0.321	0.287	0.266	0.267	0.262	0.201	0.185	0.190	0.205
3RD Year	0.181	0.159	0.179	0.188	0.182	0.156	0.161	0.150	0.120	0.108	0.105	0.110
4TH Year	0.069	0.042	0.066	0.127	0.084	0.067	0.071	0.089	0.081	0.082	0.073	0.061
5TH Year	0.066	0.090	0.070	0.100	0.106	0.113	0.103	0.069	0.050	0.057	0.058	0.049
6TH Year	0.032	0.046	0.023	0.076	0.083	0.071	0.087	0.057	0.030	0.029	0.028	0.044
6-Month Elimination Period												
1ST Year (6 Month)	0.314	0.294	0.300	0.283	0.242	0.200	0.210	0.223	0.177	0.174	0.176	0.174
2ND Year	0.338	0.330	0.303	0.284	0.263	0.229	0.239	0.224	0.162	0.157	0.153	0.174
3RD Year	0.256	0.228	0.218	0.188	0.163	0.146	0.148	0.150	0.105	0.095	0.086	0.110
4TH Year	0.153	0.155	0.182	0.127	0.101	0.100	0.091	0.089	0.062	0.060	0.055	0.061
5TH Year	0.067	0.052	0.063	0.100	0.063	0.061	0.058	0.069	0.049	0.046	0.047	0.049
6TH Year	0.078	0.081	0.075	0.076	0.043	0.040	0.047	0.057	0.044	0.042	0.044	0.044
7TH Year	0.080	0.079	0.065	0.058	0.072	0.055	0.066	0.048	0.045	0.034	0.040	0.041
8TH Year	0.014	0.037	0.018	0.044	0.034	0.029	0.027	0.042	0.052	0.049	0.050	0.040
12-Month Elimination Period												
2ND Year	0.296	0.329	0.356	0.233	0.221	0.234	0.197	0.189	0.170	0.143	0.174	0.159
3RD Year	0.163	0.098	0.136	0.188	0.103	0.080	0.093	0.150	0.112	0.068	0.091	0.110
4TH Year	0.193	0.141	0.157	0.127	0.076	0.051	0.045	0.089	0.081	0.042	0.034	0.061
5TH Year	0.167	0.114	0.150	0.100	0.052	0.047	0.033	0.069	0.037	0.037	0.038	0.049
6TH Year	0.055	—	—	0.076	0.080	—	0.081	0.057	0.063	0.089	0.089	0.044
7TH Year	—	—	—	0.058	—	—	—	0.048	—	—	—	0.041
8TH Year	—	—	—	0.044	—	—	—	0.042	—	—	—	0.040

Duration of Disablement	Ages 50–59 (55)*				Ages 60–64 (62)*			
	'62–'80	'75–'79	'76–'80	GLTD	'62–'80	'75–'79	'76–'80	GLTD
3-Month Elimination Period								
1ST Year (9 Month)	0.297	0.268	0.271	0.278	0.230	0.196	0.192	0.151
2ND Year	0.131	0.117	0.123	0.138	0.099	0.085	0.084	0.064
3RD Year	0.086	0.084	0.076	0.076	0.093	0.085	0.077	0.055
4TH Year	0.058	0.052	0.051	0.053	0.063	0.060	0.049	0.051
5TH Year	0.066	0.059	0.062	0.050	0.071	0.041	0.071	0.049
6TH Year	0.067	0.066	0.060	0.045	—	—	—	0.046
6-Month Elimination Period								
1ST Year (6 Month)	0.118	0.114	0.120	0.119	0.084	0.071	0.078	0.072
2ND Year	0.117	0.104	0.110	0.123	0.100	0.094	0.094	0.064
3RD Year	0.076	0.071	0.069	0.076	0.071	0.065	0.061	0.055
4TH Year	0.061	0.054	0.054	0.053	0.063	0.058	0.050	0.051
5TH Year	0.057	0.053	0.050	0.050	0.042	0.032	0.039	0.049
6TH Year	0.062	0.053	0.055	0.045	0.049	0.040	0.024	0.046
7TH Year	0.059	0.058	0.057	0.041	0.032	0.033	0.022	0.046
8TH Year	0.051	0.051	0.046	0.040	0.024	0.032	0.026	0.048
12-Month Elimination Period								
2ND Year	0.120	0.095	0.109	0.114	0.123	0.121	0.124	0.065
3RD Year	0.083	0.075	0.071	0.076	0.080	0.062	0.056	0.055
4TH Year	0.087	0.091	0.092	0.053	0.058	0.062	0.066	0.051
5TH Year	0.070	0.055	0.058	0.050	0.021	0.031	0.040	0.049
6TH Year	0.081	0.052	0.079	0.045	0.033	—	—	0.046
7TH Year	—	—	—	0.041	—	—	—	0.046
8TH Year	—	—	—	0.040	—	—	—	0.048

*Ages in ( ) are GLTD Basic Table.

FIGURE B-4

TERMINATION RATES

MALES — 3-Month Elimination Period
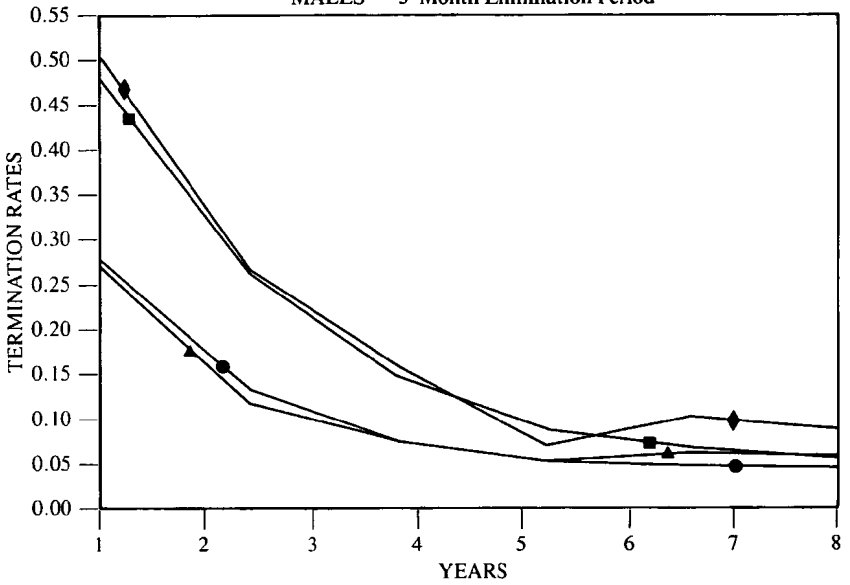
FEMALES — 3-Month Elimination Period
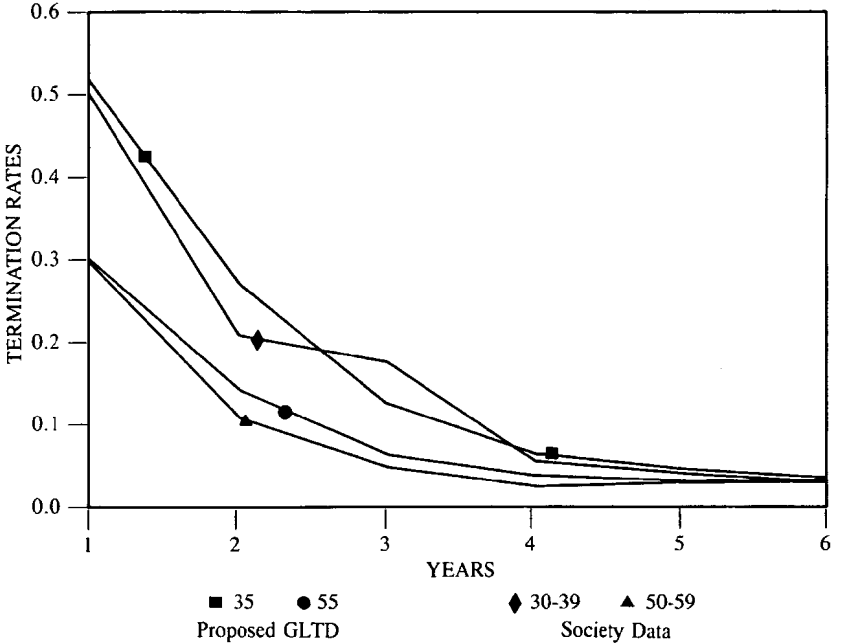
■ 35	● 55	◆ 30-39	▲ 50-59
Proposed GLTD		Society Data	

FIGURE B-5
TERMINATION RATES
MALES — 6-Month Elimination Period
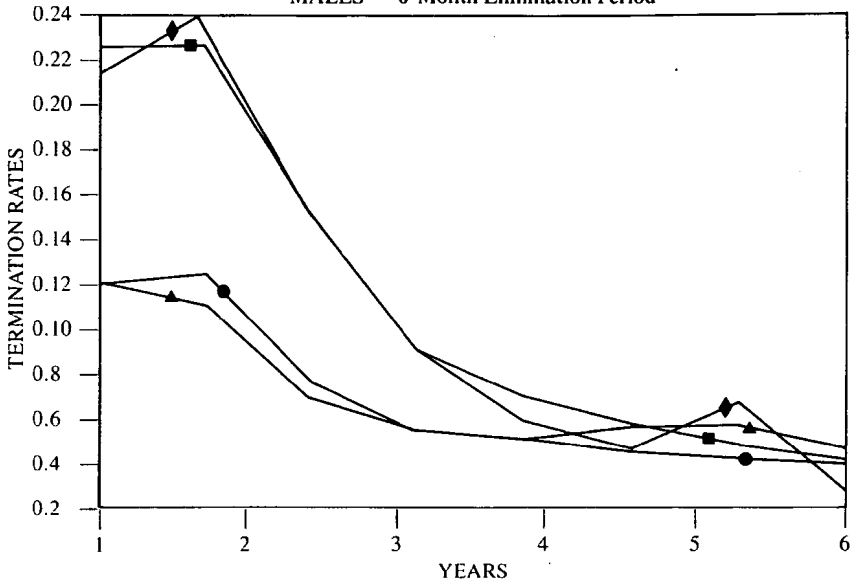
FEMALES — 6-Month Elimination Period
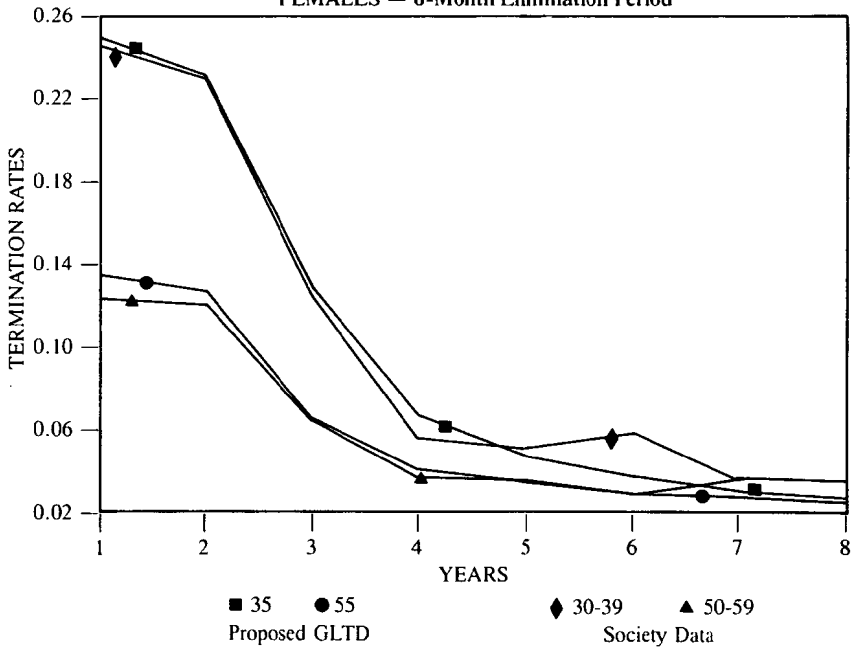
■ 35   ● 55   ♦ 30-39   ▲ 50-59
Proposed GLTD   Society Data

preceding years would be multiplied by (1.05), $(1.05)^2$, $(1.05)^3$, and so on, thus adjusting to the loss level of the latest experience year. A further comparable adjustment might be introduced to compensate for the lag between the experience period and the year in which the rates are to be effective. Thus, by use of the ratios shown in Table A-2, the comparatively high termination rates developed from the 1962–75 experience may be reduced to the level which prevailed in 1976–80.

B. Sex Differentials: The multiplicity of rating classifications also has led to the use of classification modifiers which raise or lower the experience in a subclass relative to that of a major class. For example, experience by individual counties can be raised or lowered to the state level by a series of modifying factors. Having ascertained a pure premium reflecting the state loss level, these factors can be applied to the state pure premium to determine consistent rates by county, based upon the previously established relationships. Otherwise, among small counties, one might be rated higher in one year than an adjoining and quite similar county, only to have the relationship reversed the next year, perhaps as the result of one or a few large claims.

C. Trend and Sex Ratios: The trend ratios and sex ratios shown in Table A-2 are based on the unweighted and ungraduated totals for each age group and each year of duration respectively. To obtain a two-dimensional matrix by age group and year of duration, the Whittaker-Henderson multidimensional graduation formula published by Frank E. Knorr, ASA, in *Transactions* Volume XXXVI has been utilized. In the course of the work of the Committee in developing the DTS Report, Mr. Knorr, a Committee member, extended the work of Steven F. McKay, FSA, and John C. Wilkin, FSA, who had produced a two-dimensional formula for graduating a disabled life table based on OASDI experience. They kindly supplied their formula and computer program, which have since been published.[*]

D. Use of Trend and Sex Ratios: A similar procedure has been followed by some health actuaries in ratemaking for medical or hospital insurance, but the committee members are not aware of any other application in the field of life or health insurance. The validity of the method rests, in large part, on the premise that the relative experience of individual cells, in a matrix such as the common age-duration grid encountered in any experience analyzed on a select basis, remains fairly stable. This assumption can, of course, be tested over a period of years for which experience data are available. By adjusting for trend and sex it is possible to combine, in the present calculation, 160 cells by age group, duration of disablement, sex, and experience period (before and after 1/1/76) into 40 age-duration cells, while quadrupling — on the average — the number of exposures in each cell. Then, by the use of the same modifying factors, it is possible to create for each sex the required 80 numbers by age group and duration, based on the broadest possible statistical base. The 1962–75 period is not of interest

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[*]Steven F. McKay, FSA, and John C. Wilkins, FSA, "Derivation of a Two-Dimensional Whittaker-Henderson Type B Graduation Formula," Appendix: Social Security Administration, Office of the Actuary, Actuarial Study No. 74, DHEW Pub. No. (SSA): 77–11521.

except for what its experience after modification can contribute to the credibility and validity of the final results.

To standardize the experience, the effect of the variable sex is removed by multiplying the female termination rates (or actual terminations) by the Male/Female (M/F) ratios. The experience of females, so modified, can then be merged with the male experience and the combined results evaluated. Next, smoothed rates for females are obtained by dividing the graduated rates for males by the same M/F ratios. Thus for each sex, the credibility of the final rates is enhanced by the broadened volume of experience utilized.

E. Dissertations on Classification Differentials and Trend Factors: Relevant discussion bearing on the adjustment for classification and trend includes the following:

1. In casualty ratemaking, "classification differentials" are employed to deal with subdivisions which affect the premium rate. This treatment is discussed in a paper by Philipp K. Stern, "Ratemaking Procedure for Automobile Liability Insurance," *Proceedings of the Casualty Actuarial Society*, Vol. LII, page 139.

2. Classification differentials are also dealt with in a paper by Jeffrey T. Lang, "General Liability Insurance Ratemaking," *Proceedings of the Casualty Actuarial Society*, Vol. LIII, page 26.

3. Trend presents a problem when there are significant changes from year to year during the experience period. Distortion from this source can be avoided by limiting the experience period to a short term, such as one year. However, when the data are sparse, and particularly when there are many subdivisions that must be recognized, the results cannot be accorded much credibility. A solution, used in casualty ratemaking, is to introduce trend factors which permit the raising and lowering of the experience in each year or period of exposure to the level of the year or years to which the end results are considered to be applicable. Techniques employed for this purpose are discussed by Charles F. Cook in the paper "Trend and Loss Development Factors," *Proceedings of the Casualty Actuarial Society*, Vol. LVII: 1.

Termination Rates for Females

Based largely upon the ratios of crude termination rates of disablement of females to those for males (F/M), it was determined that a good and practical approach to a GLTD table for females was to use the same ratios F/M as resulted in the 1985 CIDA. These are illustrated in Table B-3 and Figures B-6 to B-8. Table B-4 provides a comparison of Society termination experience and that of the GLTD Basic Table.

Termination Rates for Years 11 and Higher — Males

Termination rates for years 11 and higher were based upon the ultimate rates of the 1985 CIDA table. A review of the approach to their construction and values can be found in the *Transactions*, Vol. XXXVII. Essentially, the

TABLE B-3

GLTD CRUDE TERMINATION RATE RATIOS F/M

Duration of Disablement in Years	Age Group					Proposed All Ages F/M (1985 CIDA)
	< 30	30–39	40–49	50–59	60–64	
	6-Month Elimination Period (1962–80 experience)					
1 (6 Month)	1.031	0.993	1.095	1.074	1.142	1.115
2	0.986	0.951	1.212	1.078	1.004	1.024
3	0.989	0.930	1.075	1.013	0.990	0.852
4	0.683	0.641	0.918	0.748	0.559	0.771
5	1.515	0.956	0.850	0.704	1.161	0.696
6	—	1.604	0.804	0.559	—	0.667
7	—	—	0.789	0.689	—	0.650
8	—	—	0.621	0.810	—	0.653
9	—	—	—	—	—	0.661
	6-Month Elimination Period (1976–80 experience)					
1 (6 Month)	1.090	1.164	1.085	1.027	1.155	1.115
2	1.024	0.952	1.085	1.099	1.548	1.024
3	1.136	0.838	1.061	0.932	0.884	0.852
4	0.526	0.619	0.821	0.676	—	0.771
5	—	0.858	0.793	0.731	—	0.696
6	—	1.263	0.536	0.518	—	0.667
7	—	—	0.935	0.671	—	0.650
8	—	—	—	0.782	—	0.653
9	—	—	—	—	—	0.661
	3-Month Elimination Period (1962–80 experience)					
1 (9 Month)	0.951	0.976	1.091	1.123	1.001	1.062
2	1.065	0.812	0.928	0.948	1.022	1.024
3	1.185	0.988	1.028	0.771	0.618	0.852
4	—	0.768	0.625	0.672	1.263	0.771
5	—	—	0.433*	0.584	—	0.696
6	—	—	1.112	0.640	—	0.667
	3-Month Elimination Period (1976–80 experience)					
1 (9 Month)	0.997	0.987	1.124	1.086	1.145	1.062
2	1.101	0.768	0.924	0.881	1.000	1.024
3	0.990	1.083	1.022	0.687	0.611	0.852
4	—	—	0.676	0.523	1.150	0.771
5	—	—	0.288*	0.516	—	0.696
6	—	—	0.968*	0.590	—	0.667
7	—	—	—	—	—	0.650
8	—	—	—	—	—	0.653
9	—	—	—	—	—	0.661
10	—	—	—	—	—	0.667

*Fewer than 10 terminations.

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FIGURE B-6

TERMINATION RATIOS — FEMALE/MALE

3-Month Elimination Period

■ <30   ● 30-39   ◆ 40-49   ▲ 50-59   ○ Proposed
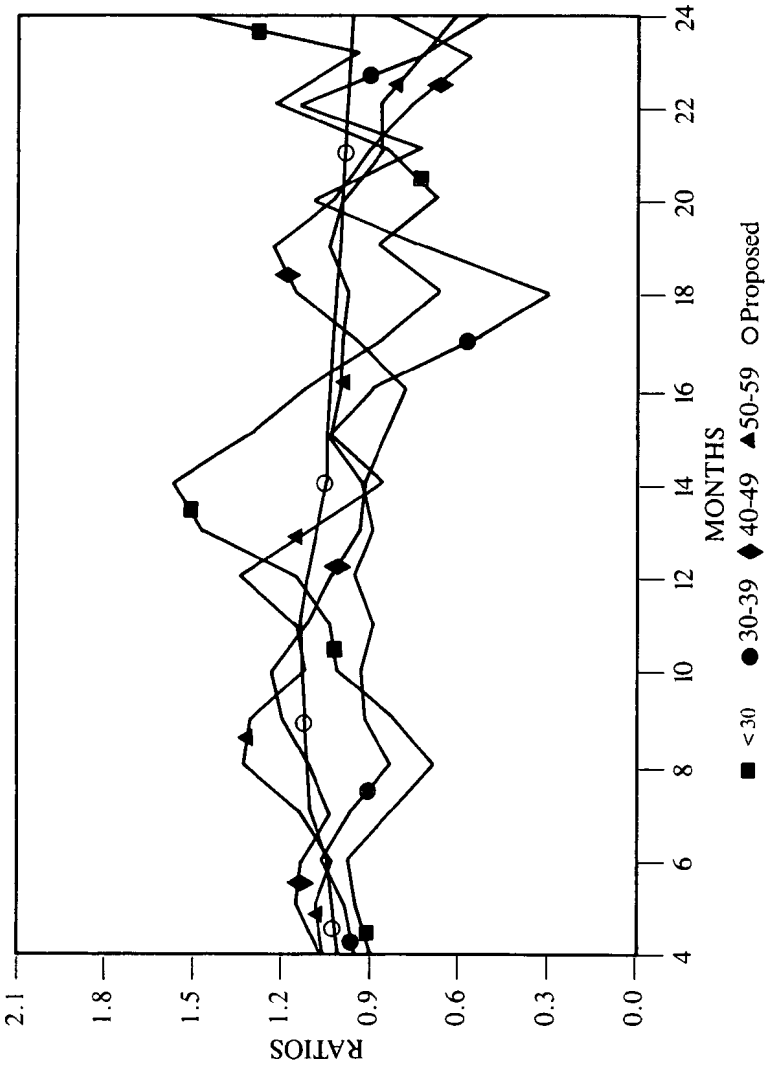
FIGURE B-7
TERMINATION RATIOS — FEMALE/MALE
6-Month Elimination Period

RATIOS

MONTHS

■ <30   ● 30-39   ◆ 40-49   ▲ 50-59   ○ Proposed

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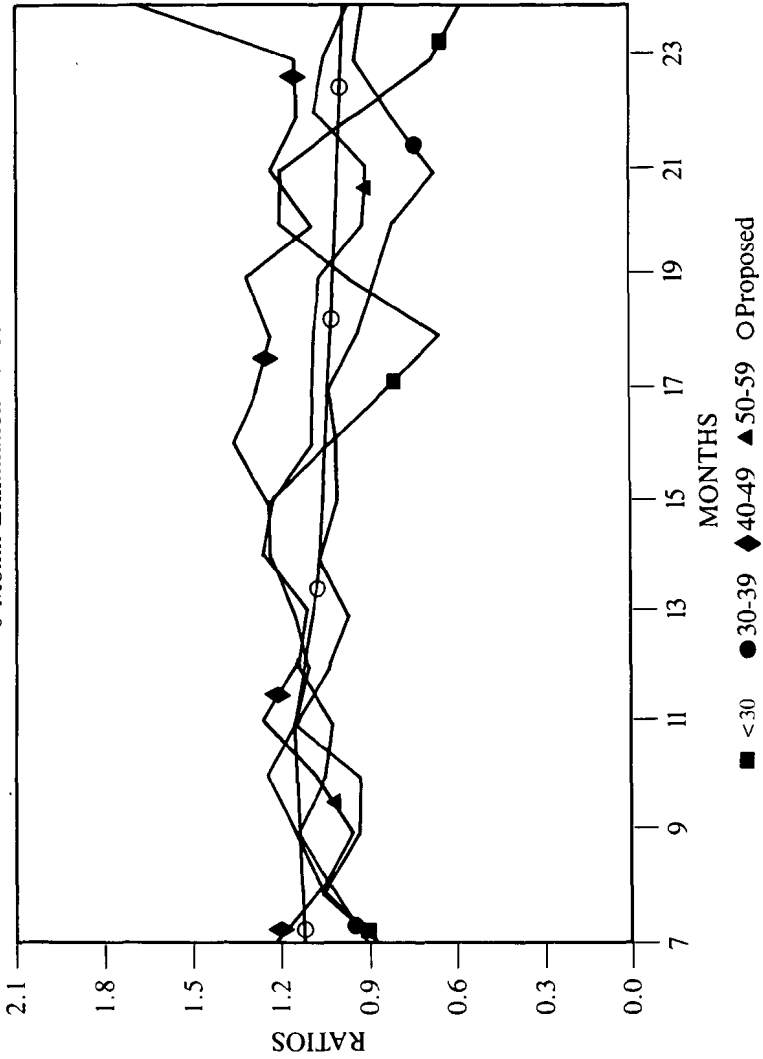
FIGURE B-8
TERMINATION RATIOS — FEMALE/MALE
12-Month Elimination Period

■ <30 ● 30-39 ◆ 40-49 ▲ 50-59 ○ Proposed
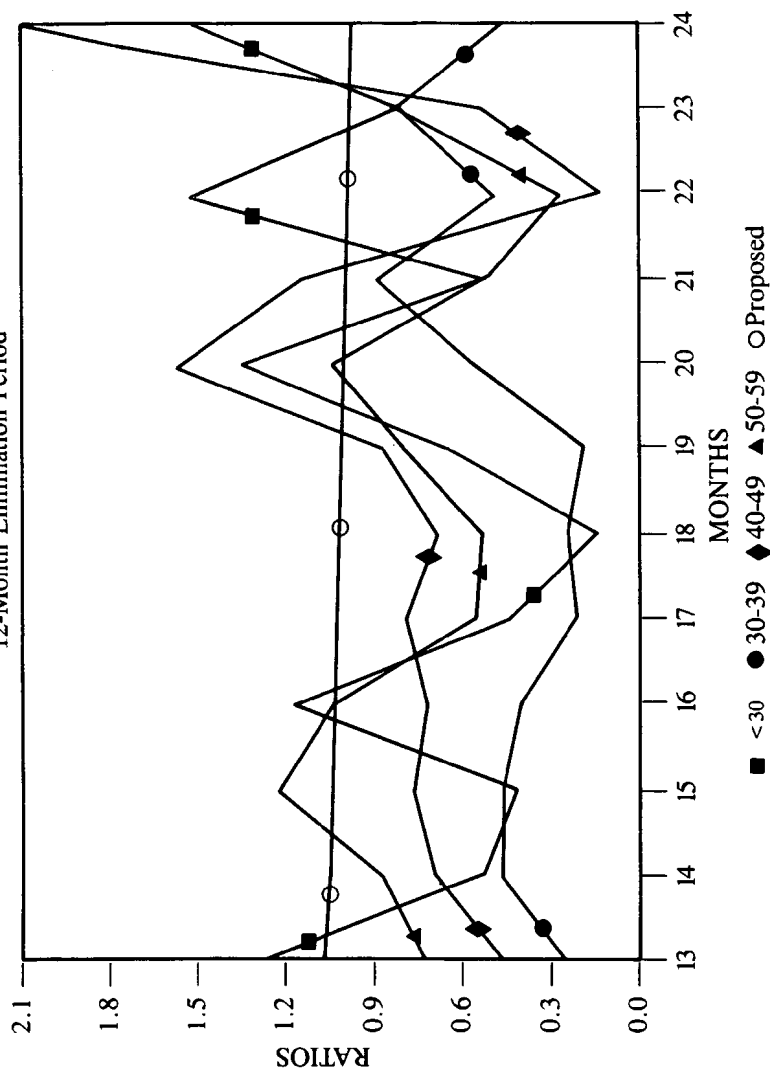
TABLE B-4

GLTD FEMALE RATES OF TERMINATION FROM DISABLEMENT (DEATH AND RECOVERY)
SOCIETY OF ACTUARIES DATA VS. GLTD BASIC TABLE

Duration of Disablement	Ages < 30 (25)*				Ages 30–39 (35)*				Ages 40–49 (45)*			
	'62–'80	'75–'79	'76–'80	GLTD	'62–'80	'75–'79	'76–'80	GLTD	'62–'80	'75–'79	'76–'80	GLTD
3-Month Elimination Period												
1ST Year (9 Month)	0.600	0.588	0.596	0.601	0.522	0.529	0.500	0.514	0.471	0.442	0.443	0.419
2ND Year	0.394	0.376	0.380	0.328	0.233	0.183	0.205	0.268	0.187	0.167	0.176	0.210
3RD Year	0.215	0.199	0.178	0.161	0.180	0.148	0.175	0.128	0.124	0.101	0.107	0.094
4TH Year	0.092	0.085	0.090	0.098	0.064	0.054	0.058	0.068	0.051	0.045	0.049	0.047
5TH Year	0.089	0.082	0.094	0.070	0.031	0.026	0.042	0.048	0.022	0.020	0.017	0.034
6TH Year	0.013	—	—	0.051	0.020	0.015	0.025	0.038	0.034	0.032	0.027	0.029
6-Month Elimination Period												
1ST Year (6 Month)	0.324	0.316	0.327	0.314	0.240	0.226	0.245	0.249	0.194	0.181	0.190	0.194
2ND Year	0.333	0.298	0.311	0.291	0.250	0.216	0.228	0.229	0.197	0.168	0.166	0.178
3RD Year	0.253	0.277	0.247	0.161	0.152	0.132	0.124	0.128	0.113	0.101	0.091	0.094
4TH Year	0.105	0.089	0.096	0.098	0.065	0.054	0.056	0.068	0.057	0.046	0.045	0.047
5TH Year	0.101	0.070	0.088	0.070	0.060	0.050	0.050	0.048	0.042	0.041	0.038	0.034
6TH Year	0.068	0.046	0.046	0.051	0.069	0.063	0.059	0.038	0.036	0.031	0.023	0.029
7TH Year	0.059	0.064	0.038	0.038	0.039	0.033	0.036	0.031	0.036	0.033	0.037	0.027
8TH Year	0.025	—	—	0.028	0.030	0.017	—	0.027	0.026	0.025	0.021	0.026
12-Month Elimination Period												
2ND Year	0.234	0.361	0.243	0.237	0.109	0.164	0.125	0.192	0.137	0.136	0.116	0.162
3RD Year	0.173	0.201	0.209	0.161	0.150	0.161	0.142	0.128	0.163	0.126	0.167	0.094
4TH Year	0.108	—	0.234	0.098	0.057	0.098	0.066	0.068	0.040	0.028	0.032	0.047
5TH Year	—	—	—	0.070	—	—	—	0.048	0.050	0.054	0.052	0.034
6TH Year	—	—	—	0.051	—	—	—	0.038	0.024	0.031	0.034	0.029
7TH Year	—	—	—	0.038	—	—	—	0.031	—	—	—	0.027
8TH Year	—	—	—	0.028	—	—	—	0.027	—	—	—	0.026

Duration of Disablement	Ages 50–59 (55)*				Ages 60–64 (62)*			
	'62–'80	'75–'79	'76–'80	GLTD	'62–'80	'75–'79	'76–'80	GLTD
3-Month Elimination Period								
1ST Year (9 Month)	0.334	0.296	0.294	0.297	0.230	0.224	0.220	0.162
2ND Year	0.124	0.117	0.109	0.142	0.101	0.100	0.084	0.066
3RD Year	0.066	0.060	0.052	0.065	0.057	0.059	0.047	0.047
4TH Year	0.039	0.030	0.027	0.041	0.080	0.071	0.056	0.039
5TH Year	0.038	0.039	0.032	0.035	0.067	0.063	0.047	0.034
6TH Year	0.043	0.040	0.036	0.030	0.116	0.070	—	0.030
6-Month Elimination Period								
1ST Year (6 Month)	0.127	0.118	0.123	0.133	0.096	0.100	0.090	0.080
2ND Year	0.127	0.115	0.120	0.126	0.100	0.089	0.099	0.066
3RD Year	0.077	0.061	0.064	0.065	0.071	0.058	0.054	0.047
4TH Year	0.046	0.037	0.037	0.041	0.035	0.048	0.027	0.039
5TH Year	0.040	0.036	0.036	0.035	0.049	0.044	0.056	0.034
6TH Year	0.035	0.027	0.028	0.030	0.068	—	—	0.030
7TH Year	0.040	0.036	0.038	0.027	0.015	—	—	0.030
8TH Year	0.041	0.041	0.036	0.026	0.055	—	—	0.032
12-Month Elimination Period								
2ND Year	0.104	0.091	0.096	0.117	0.102	0.109	0.102	0.067
3RD Year	0.088	0.079	0.074	0.065	0.049	—	—	0.047
4TH Year	0.036	0.033	0.042	0.041	0.095	—	—	0.039
5TH Year	0.033	0.029	0.029	0.035	—	—	—	0.034
6TH Year	0.028	0.013	0.016	0.030	—	—	—	0.030
7TH Year	—	—	—	0.027	—	—	—	0.030
8TH Year	—	—	—	0.026	—	—	—	0.032

*Ages in ( ) are GLTD Basic Table.

termination rates were developed by an empirical formula based upon the review of the Society Group Waiver data, the Intercompany Disability Waiver of Premium Study, the Social Security Experience Study, and a study by Mutual of Omaha. Ultimate GLTD termination from disablement rates are the 1985 CIDA rates through age 50, grading to 65 percent of the 1985 CIDA rates at ages 65 and higher. The ultimate rates were reviewed separately by three major GLTD writers who suggested the modifications to the 1985 CIDA termination rates to be more representative of the experience they had observed in GLTD. The basic logic proposed for the lower termination rates at these older ages for GLTD than for individual disability income claims is that GLTD is more subject to use in early retirement by persons less seriously disabled and insurers have less control in underwriting and claim approval for group coverages.

Although there is no connection between this GLTD table and the 1980 CSO table, it is interesting to compare them.

	1980 CSO Deaths/1000		GLTD Ultimate Term/1000*		Ratio GLTD/1980 CSO	
Age	M	F	M	F	M	F
50	6.71	4.96	33.40	22.40	4.99	4.52
55	10.47	7.09	36.00	24.10	3.44	3.40
60	16.08	9.47	37.70	25.30	2.34	2.67
65	25.42	14.59	43.20	29.00	1.70	1.99
70	39.71	22.11	59.50	39.90	1.50	1.80
75	64.19	38.24	84.60	56.70	1.32	1.48

*Terminations per 1,000.

APPENDIX C
RATES OF DISABLEMENT

Rates of Disablement were developed from the 1976–80 Society data. Reference to earlier data for successive five-year exposures show a continuous deterioration in incidence rates at all ages. Therefore, the Committee decided to develop rates from the latest available data, the experience of 1976–80.

The process involved using quinquennial data where available and extrapolating to quinquennial imputed claims, exposures and incidence rates where quinquennial data were not available (less than age 40). The crude

incidence rates were graduated and applied to the exposures to check that they produced roughly the actual claim pattern and total claims by elimination period and age.

The same process was used to develop real and imputed exposures and claims for females. A set of incidence rates for females was developed from the rates for males by a table of F/M ratios determined empirically from reference to several sources. These incidence rates were graduated, as in the case with the rates for males, graphically, with reference not only to the incidence rates themselves but also with reference to the relationship within elimination periods and within the final continuance tables. The rates so determined were applied to the exposures to assure that the claim patterns by age and elimination period were reasonable and that they produced approximately the observed claims in total by elimination period.

Historical Comparisons, Males — 6-Month Elimination Period

A 19-year comparison follows. Since each annual report uses an updated basis for tabular, or "expected," rates, only crude rates are shown in Table C-1. The crude rates for ages under 40 are doubtless affected by changes in the age distribution. There is no way to detect or measure these changes since no finer distribution by age group is readily available for ages under 40.

TABLE C-1

GLTD — MALES[1]
6-MONTH ELIMINATION PERIOD — ALL EXPERIENCE UNITS
CRUDE RATES OF DISABLEMENT PER 1,000

Period of Exposure	Attained Ages						Age-Adjusted Averages[2]		
	Under 40	40–44	45–49	50–54	55–59	60–64	Under 50	50 & Over	All Ages
1962–65	0.75	1.43	2.31	4.59	8.62	12.96	1.15	7.78	2.81
1965–69	0.62	1.56	2.98	5.40	9.04	16.65	1.21	9.08	3.17
1966–70	0.70	1.78	3.12	6.09	9.87	17.27	1.32	9.81	3.44
1971–75	0.85	1.76	3.38	6.39	11.60	15.52	1.46	10.16	3.64
1976–80	1.02	2.02	3.56	6.33	12.20	16.63	1.65	10.58	3.88
	Percentage Increase from Preceding Experience Period[3]								
1966–70	− 7%	24%	35%	33%	15%	33%	15%	26%	22%
1971–75	21	− 1	8	5	18	− 10	11	4	6
1976–80	20	15	5	− 1	5	7	13	4	7
	11-Year Comparison; Percentage Increase from 1965–69 to 1976–80								
All Years	65%	29%	19%	17%	35%	0%	36%	16%	22%

(1) From Table I-1 page 279, *TSA, 1982 Reports*, and earlier reports.
(2) Weighted on 69–73 Exposures: 48.06%, 13.80, 13.14, 10.97, 8.62, 5.41, for the first six columns respectively.
(3) 1966–70 averages compared to those of 1962–65; 71–75 to 66–70; 76–80 to 71–75.

Development of Crude Incidence Rates for Males

The most difficult aspect of creating a table of disability claim rates (or rates of incidence) arose from the unfortunate absence of subdivisions of the experience for ages under 40. It was necessary to make a subdivision into quinquennial age groups largely by empirical means. From group life experience data some clues were obtained as to the composition of the total broad quinquennial age groups. Then, the experience on loss of time policies made possible some assumptions as to the relative level of experience in the 20's of age vis-a-vis the 30's. From a first approximation based on these premises, trial and error iteration led to a subdivision of the exposed and of the actual claims which appeared to be plausible and which reproduced the actual claims for ages 20–39. Separate calculations were made for the 3-month, 6-month and 12-month elimination periods. Table C-2 contains the results of this work.

Development of F/M Ratios for Incidence Rates

Table C-3 displays F/M incidence rates, crude and graduated. The 1976–80 GLTD data show rather erratic tendencies. The DTS ratios derived from graduated incidence rates differ greatly in magnitude by occupation class.

For further evidence, reference was made to the 1976 Report of the New York Superintendent of Insurance. To obtain valid and current data, in defense against a unisex proposal of the American Civil Liberties Union, the superintendent called for data and obtained in 1976 returns from an unprecedented number of disability insurers. Extensive analysis by all relevant and available parameters led to the conclusion that an appropriate F/M ratio could be expressed as a function of age without distinction by occupation class or between the shorter elimination periods (3 months and 6 months).

The New York F/M ratios are cited only because they give credence to the general shape and pattern of the F/M ratios shown in Table C-3. The ratios published in the New York report for combined accident and sickness coverage were as follows:

F/M RATIOS BASED ON COST OF DISABILITY
ACCIDENT AND SICKNESS COMBINED

Age Group	20–29	30–39	40–49	50–59	60–69
F/M Ratio	1.43	2.22	1.90	1.31	0.98

TABLE C-2

TEST OF PROPOSED INCIDENCE RATES TO THE GLTD EXPERIENCE, 1976–80

Central Age	Males			Females		
	3-Month	6-Month	12-Month	3-Month	6-Month	12-Month
Exposures						
22	77,500	297,100	41,900	47,878	191,399	10,459
27	95,900	368,700	51,900	59,251	236,858	12,943
32	81,300	312,800	44,000	50,273	200,971	10,982
37	68,063	261,964	36,933	42,094	168,273	9,195
42	66,798	292,924	33,675	30,154	119,973	8,901
47	59,118	284,396	35,376	27,917	116,109	9,657
52	52,954	263,103	36,756	25,588	109,636	9,768
57	41,923	212,873	29,205	20,896	84,254	8,408
62	26,336	119,112	15,085	11,853	47,214	3,518
All Ages	569,892	2,413,672	324,830	315,904	1,274,687	83,831
Actual Claims						
22	107	241	30	108	205	12
27	146	328	40	134	237	16
32	144	329	42	144	297	16
37	153	369	49	179	367	21
42	228	591	48	146	365	31
47	340	1,013	99	214	525	35
52	442	1,665	188	243	812	83
57	646	2,598	272	278	917	83
62	560	1,981	172	209	613	25
All Ages	2,766	9,115	940	1,655	4,338	322
Tabular Claims (Exposure multiplied by the rates from Table C-4)						
22	115	238	21	90	191	8
27	151	328	31	121	274	13
32	146	328	33	134	312	15
37	159	359	38	166	390	20
42	222	592	54	151	366	30
47	318	1,012	103	195	537	37
52	475	1,742	205	253	798	65
57	631	2,527	292	283	900	80
62	562	1,990	203	190	592	35
All Ages	2,779	9,116	980	1,583	4,360	303
Actual to Tabular All Ages	99.6%	100.0%	95.9%	104.5%	99.5%	106.3%
All Elimination Periods	99.6%			101.1%		

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TABLE C-3

INCIDENCE RATES — GLTD
CRUDE RATES OF DISABLEMENT
PER 1,000 LIVES EXPOSED
1976–80 EXPERIENCE

Attained Age	3-Month Elimination Period		6-Month Elimination Period		12-Month Elimination Period	
	M	F	M	F	M	F
<40	1.70	2.83	1.02	1.39	0.92	1.49
40–44	3.41	4.84	2.02	3.04	1.43	3.48
45–49	5.75	7.67	3.56	4.52	2.80	3.62
50–54	8.35	9.50	6.33	7.41	5.11	8.50
55–59	15.41	13.30	12.20	10.88	9.31	9.87
60–64	21.26	17.63	16.63	12.98	11.40	7.11

	Ratio F/M		
<40	1.66	1.36	1.62
40–44	1.42	1.50	2.43
45–49	1.33	1.27	1.29
50–54	1.14	1.17	1.66
55–59	0.86	0.89	1.06
60–64	0.83	0.78	0.62

		Summary F/M Ratios				
Attained Age		Crude 1976–80 GLTD			Used for GLTD Table	
GLTD	CIDA	3-Month	6-Month	12-Month	CIDA-3&6 Month	12-Month Elimination Period
<40	22	—	—	—	1.25	1.50
	27	—	—	—	1.30	1.65
	32	1.66	1.36	1.62	1.48	1.80
	37	—	—	—	1.69	2.15
40–44	42	1.42	1.50	2.43	1.51	2.10
45–49	47	1.33	1.27	1.29	1.30	1.30
50–54	52	1.14	1.17	1.66	1.10	1.20
55–59	57	0.86	0.89	1.06	0.90	0.95
60–62	62	0.83	0.78	0.62	0.75	0.75

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Table C-4 shows the final GLTD incidence rates as developed for this study. Figures C-1 to C-3 illustrate the incidence rates for 3-, 6- and 12-month elimination periods, respectively. Figure C-4 is a comparison of the final proposed incidence rates to the 1976–80 Society data with elimination periods of 3, 6 and 12 months.

TABLE C-4

GLTD INCIDENCE RATES PER 1000

Age	Proposed Incidence Rates			Society Data–1976–80*		
	Male					
	3-Month	6-Month	12-Month	3-Month	6-Month	12-Month
22	1.480	0.800	0.506	1.32 (1.38)	0.78 (0.81)	0.50 (0.72)
27	1.570	0.890	0.593	1.47 (1.52)	0.87 (0.89)	0.60 (0.77)
32	1.800	1.050	0.745	1.70 (1.77)	1.02 (1.05)	0.92 (0.95)
37	2.338	1.370	1.028	2.23 (2.25)	1.35 (1.41)	1.00 (1.33)
42	3.327	2.020	1.594	3.41 —	2.02 —	1.43 —
47	5.383	3.560	2.917	5.75 —	3.56 —	2.80 —
52	8.971	6.620	5.567	8.35 —	6.33 —	5.11 —
57	15.040	11.870	10.010	15.41 —	12.20 —	9.31 —
62	21.333	16.710	13.450	21.26 —	16.63 —	11.40 —
	Female					
	3-Month	6-Month	12-Month	3-Month	6-Month	12-Month
22	1.880	1.000	0.758	1.80 (2.26)	1.00 (1.07)	0.66 (1.15)
27	2.041	1.157	0.978	2.15 (2.26)	1.16 (1.00)	1.09 (1.24)
32	2.664	1.554	1.341	2.83 (2.86)	1.39 (1.48)	1.49 (1.46)
37	3.951	2.315	2.210	3.80 (4.25)	2.21 (2.18)	3.00 (2.28)
42	5.024	3.050	3.347	4.84 —	3.04 —	3.48 —
47	6.998	4.628	3.792	7.67 —	4.52 —	3.62 —
52	9.868	7.282	6.680	9.50 —	7.41 —	8.50 —
57	13.536	10.683	9.510	13.30 —	10.88 —	9.87 —
62	16.000	12.532	10.088	17.63 —	12.98 —	7.11 —

*Rates under 40 are by rough graduation.

Rates in ( ) are crude rates from model.

FIGURE C-1
INCIDENCE RATES PER 1000
FOR 3–MONTH ELIMINATION PERIOD

INCIDENCE RATES

AGES

■ MT3   ● MS3   ◆ FT3   ▲ FS3

F — Female   T — Proposed Incidence Rates
M — Male   S — Society Data, 1976-80
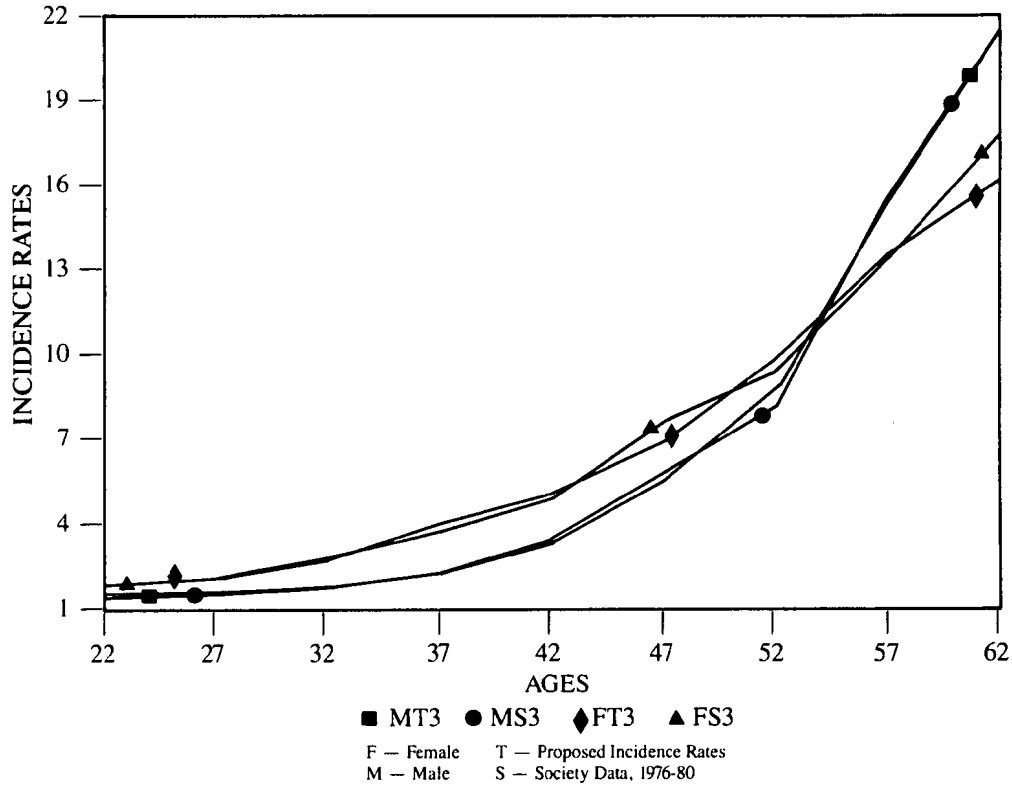
FIGURE C-2
INCIDENCE RATES PER 1000
FOR 6–MONTH ELIMINATION PERIOD

INCIDENCE RATES

AGES

■ MT6 ● MS6 ◆ FT6 ▲ FS6

F — Female   T — Proposed Incidence Rates
M — Male   S — Society Data, 1976-80
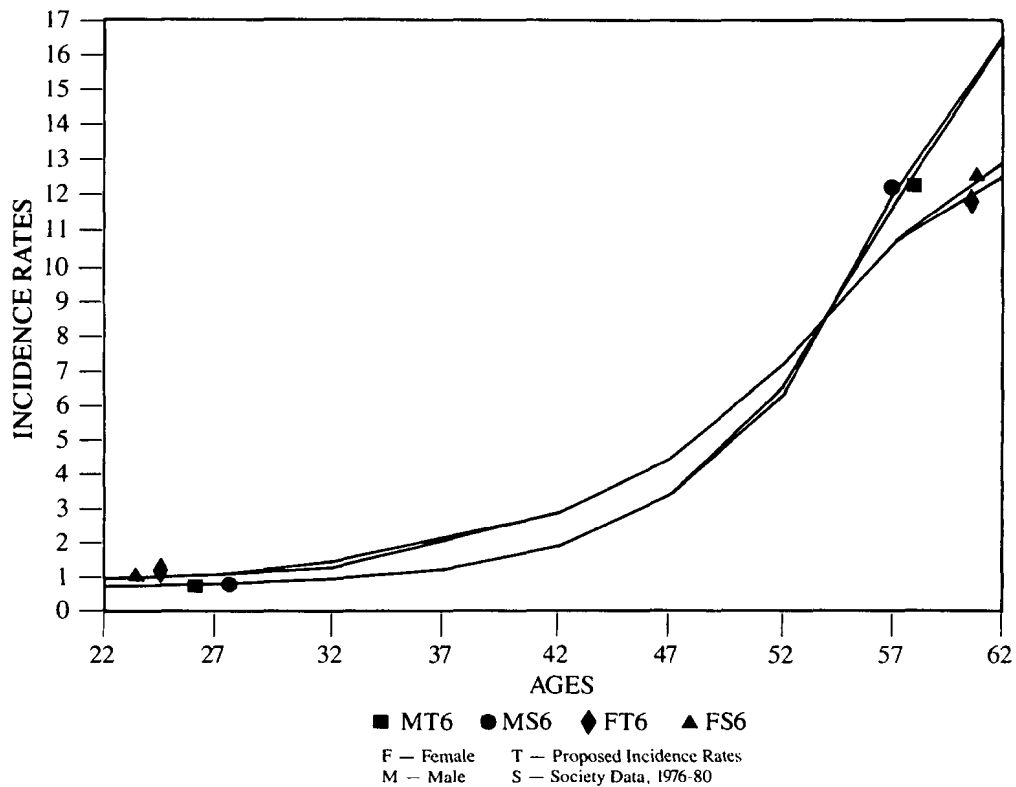
FIGURE C-3
INCIDENCE RATES PER 1000
FOR 12–MONTH ELIMINATION PERIOD

INCIDENCE RATES

AGES
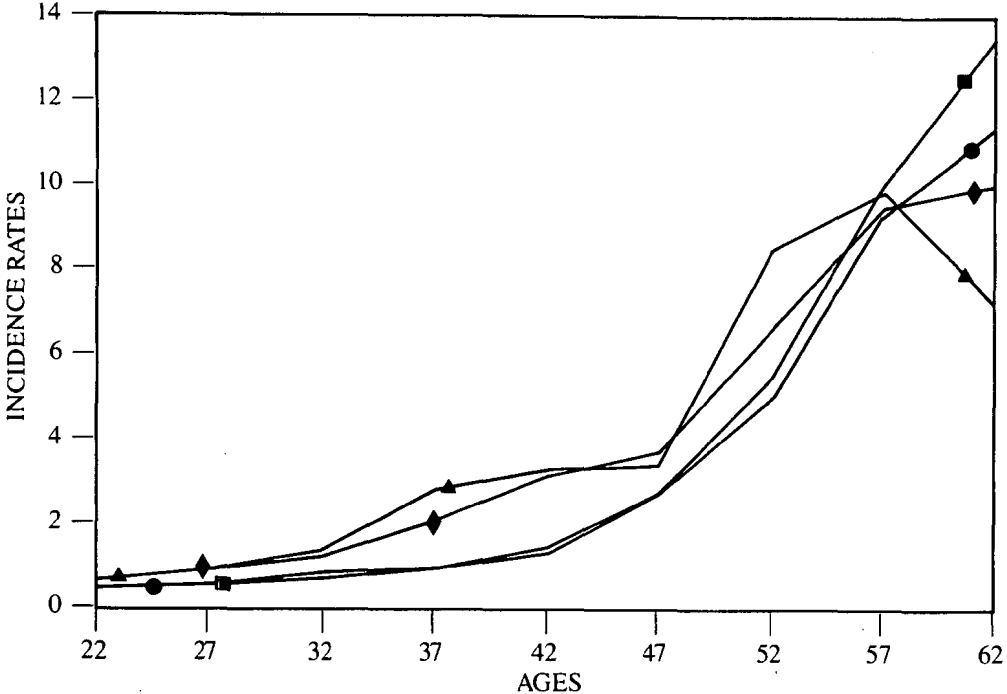
■ MT12 ● MS12 ◆ FT12 ▲ FS12

F — Female   T — Proposed Incidence Rates
M — Male   S — Society Data, 1976-80

FIGURE C-4
INCIDENCE RATES PER 1000
MALE VS. FEMALE

■ MT3　● MS3　◆ MT6　▲ MS6　○ MT12　▼MS12

M — Male　　T — Proposed Incidence Rates　　3, 6, 12 – Month Elimination Periods
　　　　　　　S — Society Data, 1976-80

■ FT3　● FS3　◆ FT6　▲ FS6　○ FT12　▼FS12

F — Female　　T — Proposed Incidence Rates　　3, 6, 12 – Month Elimination Periods
　　　　　　　　S — Society Data, 1976-80
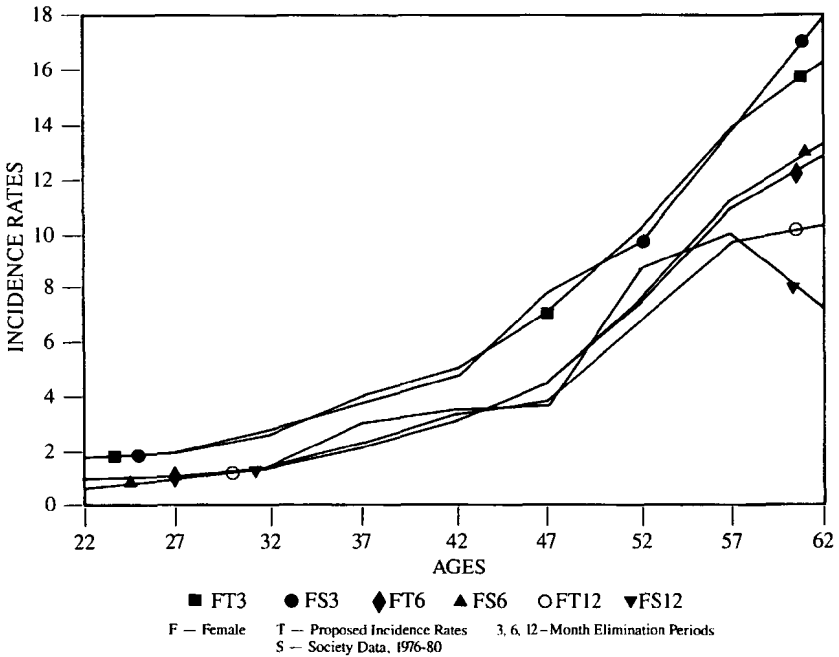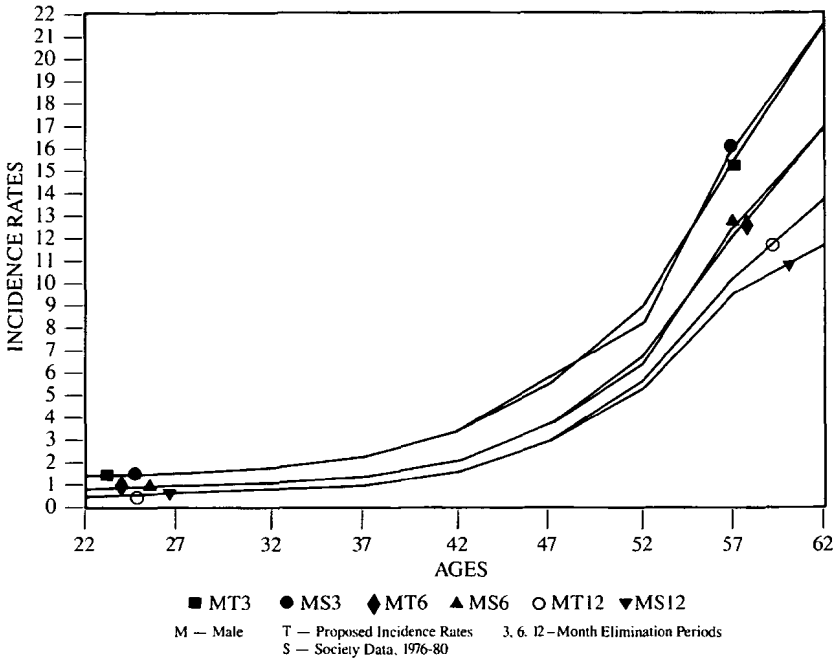
TABLE D-1

BASIC GLTD TABLE
TERMINATION FROM DISABLEMENT RATES
DEATH AND RECOVERY — MALES

Duration of Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
	3-MONTH ELIMINATION PERIOD								
3 Months*	1.4800	1.5700	1.8000	2.3380	3.3270	5.3830	8.9710	15.0400	21.3330
4TH Month	0.1289	0.1168	0.1074	0.0966	0.0865	0.0760	0.0638	0.0479	0.0268
5TH Month	0.1422	0.1291	0.1187	0.1064	0.0941	0.0815	0.0673	0.0498	0.0275
6TH Month	0.1241	0.1118	0.1024	0.0922	0.0826	0.0726	0.0610	0.0461	0.0263
7TH Month	0.1043	0.0928	0.0836	0.0749	0.0666	0.0565	0.0455	0.0347	0.0228
8TH Month	0.0891	0.0784	0.0692	0.0604	0.0517	0.0426	0.0344	0.0259	0.0160
9TH Month	0.0775	0.0679	0.0592	0.0512	0.0438	0.0359	0.0295	0.0204	0.0132
10TH Month	0.0690	0.0600	0.0523	0.0456	0.0390	0.0329	0.0264	0.0185	0.0112
11TH Month	0.0630	0.0548	0.0474	0.0413	0.0350	0.0300	0.0239	0.0168	0.0097
12TH Month	0.0578	0.0504	0.0437	0.0379	0.0317	0.0271	0.0218	0.0154	0.0085
13TH Month	0.0528	0.0461	0.0402	0.0349	0.0291	0.0247	0.0200	0.0141	0.0075
14TH Month	0.0482	0.0421	0.0370	0.0323	0.0269	0.0230	0.0189	0.0131	0.0067
15TH Month	0.0440	0.0386	0.0340	0.0299	0.0252	0.0213	0.0178	0.0122	0.0063
16TH Month	0.0402	0.0356	0.0315	0.0279	0.0236	0.0200	0.0168	0.0113	0.0059
17TH Month	0.0366	0.0327	0.0291	0.0260	0.0223	0.0187	0.0158	0.0106	0.0055
18TH Month	0.0333	0.0300	0.0268	0.0243	0.0209	0.0174	0.0148	0.0099	0.0053
19TH Month	0.0304	0.0276	0.0248	0.0227	0.0197	0.0163	0.0139	0.0094	0.0050
20TH Month	0.0280	0.0255	0.0230	0.0212	0.0185	0.0153	0.0131	0.0089	0.0049
21ST Month	0.0256	0.0236	0.0215	0.0199	0.0173	0.0142	0.0121	0.0085	0.0048
22ND Month	0.0237	0.0218	0.0199	0.0186	0.0162	0.0133	0.0111	0.0081	0.0047
23RD Month	0.0219	0.0201	0.0183	0.0171	0.0151	0.0123	0.0104	0.0078	0.0047
24TH Month	0.0202	0.0186	0.0167	0.0157	0.0140	0.0116	0.0098	0.0075	0.0048

*Rates of disablement per 1,000 lives.

Duration of Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
6-MONTH ELIMINATION PERIOD									
6 Months*	0.8000	0.8900	1.0500	1.3700	2.0200	3.5600	6.6200	11.8700	16.7100
7TH Month	0.0653	0.0592	0.0505	0.0441	0.0397	0.0336	0.0273	0.0210	0.0160
8TH Month	0.0676	0.0613	0.0522	0.0457	0.0414	0.0355	0.0290	0.0225	0.0152
9TH Month	0.0630	0.0560	0.0470	0.0406	0.0363	0.0313	0.0257	0.0204	0.0132
10TH Month	0.0574	0.0509	0.0427	0.0366	0.0324	0.0286	0.0230	0.0185	0.0112
11TH Month	0.0525	0.0465	0.0391	0.0332	0.0290	0.0261	0.0208	0.0168	0.0097
12TH Month	0.0482	0.0428	0.0361	0.0305	0.0263	0.0235	0.0189	0.0154	0.0085
13TH Month	0.0441	0.0390	0.0333	0.0281	0.0238	0.0212	0.0172	0.0141	0.0075
14TH Month	0.0404	0.0355	0.0307	0.0260	0.0218	0.0193	0.0159	0.0131	0.0067
15TH Month	0.0371	0.0323	0.0284	0.0241	0.0202	0.0177	0.0148	0.0122	0.0063
16TH Month	0.0341	0.0293	0.0262	0.0225	0.0189	0.0166	0.0139	0.0113	0.0059
17TH Month	0.0313	0.0268	0.0242	0.0212	0.0178	0.0155	0.0131	0.0106	0.0055
18TH Month	0.0289	0.0246	0.0224	0.0200	0.0169	0.0146	0.0124	0.0099	0.0053
19TH Month	0.0268	0.0227	0.0208	0.0189	0.0161	0.0138	0.0117	0.0094	0.0050
20TH Month	0.0249	0.0214	0.0194	0.0179	0.0154	0.0131	0.0111	0.0089	0.0049
21ST Month	0.0231	0.0201	0.0182	0.0170	0.0147	0.0125	0.0106	0.0085	0.0048
22ND Month	0.0218	0.0192	0.0171	0.0162	0.0141	0.0121	0.0101	0.0081	0.0047
23RD Month	0.0208	0.0187	0.0163	0.0155	0.0136	0.0116	0.0098	0.0078	0.0047
24TH Month	0.0202	0.0184	0.0157	0.0149	0.0133	0.0113	0.0095	0.0075	0.0048
12-MONTH ELIMINATION PERIOD									
12 Months*	0.5060	0.5930	0.7450	1.0280	1.5940	2.9170	5.5670	10.0100	13.4500
13TH Month	0.0215	0.0174	0.0148	0.0135	0.0129	0.0126	0.0120	0.0107	0.0083
14TH Month	0.0276	0.0237	0.0202	0.0182	0.0162	0.0153	0.0140	0.0118	0.0081
15TH Month	0.0281	0.0244	0.0209	0.0195	0.0172	0.0162	0.0144	0.0117	0.0078
16TH Month	0.0275	0.0235	0.0203	0.0193	0.0169	0.0158	0.0139	0.0109	0.0070
17TH Month	0.0264	0.0224	0.0197	0.0185	0.0166	0.0151	0.0132	0.0100	0.0057
18TH Month	0.0253	0.0215	0.0193	0.0181	0.0163	0.0146	0.0119	0.0085	0.0050
19TH Month	0.0246	0.0209	0.0189	0.0177	0.0159	0.0138	0.0108	0.0073	0.0046
20TH Month	0.0240	0.0205	0.0186	0.0174	0.0154	0.0131	0.0101	0.0067	0.0042
21ST Month	0.0231	0.0199	0.0181	0.0169	0.0148	0.0126	0.0098	0.0066	0.0041
22ND Month	0.0215	0.0191	0.0171	0.0158	0.0141	0.0122	0.0096	0.0066	0.0040
23RD Month	0.0204	0.0182	0.0163	0.0150	0.0135	0.0118	0.0095	0.0067	0.0040
24TH Month	0.0196	0.0176	0.0155	0.0144	0.0132	0.0116	0.0096	0.0068	0.0042

*Rates of disablement per 1,000 lives.

TABLE D-1 — *Continued*

Duration of Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
	ALL ELIMINATION PERIODS								
3RD Year	0.1960	0.1814	0.1628	0.1419	0.1213	0.1024	0.0857	0.0707	0.0552
4TH Year	0.1370	0.1193	0.0999	0.0816	0.0673	0.0581	0.0537	0.0523	0.0505
5TH Year	0.1059	0.0938	0.0784	0.0635	0.0529	0.0482	0.0485	0.0505	0.0488
6TH Year	0.0796	0.0730	0.0627	0.0525	0.0458	0.0427	0.0437	0.0465	0.0458
7TH Year	0.0601	0.0564	0.0509	0.0456	0.0427	0.0402	0.0405	0.0434	0.0456
8TH Year	0.0454	0.0440	0.0418	0.0402	0.0405	0.0390	0.0394	0.0433	0.0484
9TH Year	0.0342	0.0352	0.0353	0.0360	0.0386	0.0381	0.0388	0.0446	0.0528
10TH Year	0.0273	0.0285	0.0303	0.0326	0.0364	0.0369	0.0373	0.0449	0.0572
11TH Year	0.0242	0.0254	0.0275	0.0306	0.0350	0.0366	0.0386	0.0489	0.0683
12TH Year	0.0244	0.0258	0.0280	0.0315	0.0355	0.0369	0.0397	0.0521	0.0733
13TH Year	0.0246	0.0261	0.0286	0.0324	0.0357	0.0374	0.0414	0.0557	0.0787
14TH Year	0.0249	0.0265	0.0292	0.0334	0.0360	0.0377	0.0432	0.0595	0.0846
15TH Year	0.0251	0.0270	0.0299	0.0342	0.0363	0.0382	0.0460	0.0641	0.0909
16TH Year	0.0254	0.0275	0.0306	0.0350	0.0366	0.0386	0.0489	0.0683	0.0978
17TH Year	0.0258	0.0280	0.0315	0.0355	0.0369	0.0397	0.0521	0.0733	0.1052
18TH Year	0.0261	0.0286	0.0324	0.0357	0.0374	0.0414	0.0557	0.0787	0.1133
19TH Year	0.0265	0.0292	0.0334	0.0360	0.0377	0.0432	0.0595	0.0846	0.1221
20TH Year	0.0270	0.0299	0.0342	0.0363	0.0382	0.0460	0.0641	0.0909	0.1314
21ST Year	0.0275	0.0306	0.0350	0.0366	0.0386	0.0489	0.0683	0.0978	0.1416
22ND Year	0.0280	0.0315	0.0355	0.0369	0.0397	0.0521	0.0733	0.1052	0.1524
23RD Year	0.0286	0.0324	0.0357	0.0374	0.0414	0.0557	0.0787	0.1133	0.1641
24TH Year	0.0292	0.0334	0.0360	0.0377	0.0432	0.0595	0.0846	0.1221	0.1766
25TH Year	0.0299	0.0342	0.0363	0.0382	0.0460	0.0641	0.0909	0.1314	0.1899
26TH Year	0.0306	0.0350	0.0366	0.0386	0.0489	0.0683	0.0978	0.1416	0.2041
27TH Year	0.0315	0.0355	0.0369	0.0397	0.0521	0.0733	0.1052	0.1524	0.2192
28TH Year	0.0324	0.0357	0.0374	0.0414	0.0557	0.0787	0.1133	0.1641	0.2352
29TH Year	0.0334	0.0360	0.0377	0.0432	0.0595	0.0846	0.1221	0.1766	0.2520
30TH Year	0.0342	0.0363	0.0382	0.0460	0.0641	0.0909	0.1314	0.1899	0.2697
31ST Year	0.0350	0.0366	0.0386	0.0489	0.0683	0.0978	0.1416	0.2041	0.2883
32ND Year	0.0355	0.0369	0.0397	0.0521	0.0733	0.1052	0.1524	0.2192	0.3076
33RD Year	0.0357	0.0374	0.0414	0.0557	0.0787	0.1133	0.1641	0.2352	0.3277
34TH Year	0.0360	0.0377	0.0432	0.0595	0.0846	0.1221	0.1766	0.2520	0.3484
35TH Year	0.0363	0.0382	0.0460	0.0641	0.0909	0.1314	0.1899	0.2697	0.3696
36TH Year	0.0366	0.0386	0.0489	0.0683	0.0978	0.1416	0.2041	0.2883	0.3913
37TH Year	0.0369	0.0397	0.0521	0.0733	0.1052	0.1524	0.2192	0.3076	0.4132
38TH Year	0.0374	0.0414	0.0557	0.0787	0.1133	0.1641	0.2352	0.3277	0.4352
39TH Year	0.0377	0.0432	0.0595	—	—	—	—	—	—
40TH Year	0.0382	0.0460	—	—	—	—	—	—	—
41ST Year	0.0386	0.0489	—	—	—	—	—	—	—
42ND Year	0.0397	0.0521	—	—	—	—	—	—	—
43RD Year	0.0414	0.0557	—	—	—	—	—	—	—
44TH Year	0.0432	0.0595	—	—	—	—	—	—	—
45TH Year	0.0460	—	—	—	—	—	—	—	—
46TH Year	0.0489	—	—	—	—	—	—	—	—
47TH Year	0.0521	—	—	—	—	—	—	—	—
48TH Year	0.0557	—	—	—	—	—	—	—	—
49TH Year	0.0595	—	—	—	—	—	—	—	—

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TABLE D-1 —*Continued*

BASIC GLTD TABLE
TERMINATION FROM DISABLEMENT RATES
DEATH AND RECOVERY — **FEMALES**

Duration of Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
	3-MONTH ELIMINATION PERIOD								
3 Months*	1.8800	2.0410	2.6640	3.9510	5.0240	6.9980	9.8680	13.5360	16.0000
4TH Month	0.1317	0.1194	0.1098	0.0987	0.0884	0.0777	0.0652	0.0490	0.0274
5TH Month	0.1477	0.1341	0.1233	0.1105	0.0978	0.0847	0.0699	0.0517	0.0286
6TH Month	0.1304	0.1175	0.1076	0.0969	0.0868	0.0763	0.0641	0.0485	0.0276
7TH Month	0.1160	0.1032	0.0930	0.0833	0.0741	0.0628	0.0506	0.0386	0.0254
8TH Month	0.0999	0.0879	0.0776	0.0677	0.0580	0.0478	0.0386	0.0290	0.0179
9TH Month	0.0876	0.0767	0.0669	0.0579	0.0495	0.0406	0.0333	0.0231	0.0149
10TH Month	0.0786	0.0683	0.0596	0.0519	0.0444	0.0375	0.0301	0.0211	0.0128
11TH Month	0.0723	0.0629	0.0544	0.0474	0.0402	0.0344	0.0274	0.0193	0.0111
12TH Month	0.0645	0.0562	0.0488	0.0423	0.0354	0.0302	0.0243	0.0172	0.0095
13TH Month	0.0572	0.0499	0.0435	0.0378	0.0315	0.0268	0.0217	0.0153	0.0081
14TH Month	0.0507	0.0442	0.0389	0.0339	0.0283	0.0242	0.0199	0.0138	0.0070
15TH Month	0.0459	0.0403	0.0355	0.0312	0.0263	0.0222	0.0186	0.0127	0.0066
16TH Month	0.0418	0.0370	0.0327	0.0290	0.0245	0.0208	0.0175	0.0117	0.0061
17TH Month	0.0378	0.0338	0.0301	0.0269	0.0230	0.0193	0.0163	0.0109	0.0057
18TH Month	0.0341	0.0307	0.0274	0.0249	0.0214	0.0178	0.0152	0.0101	0.0054
19TH Month	0.0308	0.0280	0.0251	0.0230	0.0200	0.0165	0.0141	0.0095	0.0051
20TH Month	0.0282	0.0257	0.0231	0.0213	0.0186	0.0154	0.0132	0.0090	0.0049
21ST Month	0.0255	0.0236	0.0215	0.0199	0.0173	0.0142	0.0121	0.0085	0.0048
22ND Month	0.0235	0.0216	0.0197	0.0184	0.0160	0.0132	0.0110	0.0080	0.0047
23RD Month	0.0215	0.0197	0.0180	0.0168	0.0148	0.0121	0.0102	0.0077	0.0046
24TH Month	0.0197	0.0181	0.0163	0.0153	0.0136	0.0113	0.0095	0.0073	0.0047

*Rates of disablement per 1,000 lives.

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Duration of Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
	6-MONTH ELIMINATION PERIOD								
6 Months*	1.0000	1.1570	1.5540	2.3150	3.0500	4.6280	7.2820	10.6830	12.5320
7TH Month	0.0726	0.0658	0.0562	0.0490	0.0441	0.0374	0.0304	0.0234	0.0178
8TH Month	0.0758	0.0687	0.0585	0.0512	0.0464	0.0398	0.0325	0.0252	0.0170
9TH Month	0.0712	0.0633	0.0531	0.0459	0.0410	0.0354	0.0290	0.0231	0.0149
10TH Month	0.0654	0.0580	0.0486	0.0417	0.0369	0.0326	0.0262	0.0211	0.0128
11TH Month	0.0603	0.0534	0.0449	0.0381	0.0333	0.0300	0.0239	0.0193	0.0111
12TH Month	0.0538	0.0478	0.0403	0.0340	0.0294	0.0262	0.0211	0.0172	0.0095
13TH Month	0.0478	0.0422	0.0361	0.0304	0.0258	0.0230	0.0186	0.0153	0.0081
14TH Month	0.0425	0.0373	0.0323	0.0273	0.0229	0.0203	0.0167	0.0138	0.0070
15TH Month	0.0387	0.0337	0.0296	0.0252	0.0211	0.0185	0.0155	0.0127	0.0066
16TH Month	0.0354	0.0304	0.0272	0.0234	0.0196	0.0172	0.0144	0.0117	0.0061
17TH Month	0.0323	0.0277	0.0250	0.0219	0.0184	0.0160	0.0135	0.0109	0.0057
18TH Month	0.0296	0.0252	0.0229	0.0205	0.0173	0.0150	0.0127	0.0101	0.0054
19TH Month	0.0272	0.0230	0.0211	0.0192	0.0163	0.0140	0.0119	0.0095	0.0051
20TH Month	0.0250	0.0215	0.0195	0.0180	0.0155	0.0132	0.0112	0.0090	0.0049
21ST Month	0.0231	0.0201	0.0182	0.0170	0.0147	0.0125	0.0106	0.0085	0.0048
22ND Month	0.0216	0.0190	0.0169	0.0160	0.0140	0.0120	0.0100	0.0080	0.0047
23RD Month	0.0204	0.0184	0.0160	0.0152	0.0134	0.0114	0.0096	0.0077	0.0046
24TH Month	0.0197	0.0179	0.0153	0.0145	0.0130	0.0110	0.0093	0.0073	0.0047
	12-MONTH ELIMINATION PERIOD								
12 Months*	0.7580	0.9780	1.3410	2.2100	3.3470	3.7920	6.6800	9.5100	10.0880
13TH Month	0.0233	0.0188	0.0160	0.0146	0.0140	0.0136	0.0130	0.0116	0.0090
14TH Month	0.0290	0.0249	0.0212	0.0191	0.0170	0.0161	0.0147	0.0124	0.0085
15TH Month	0.0293	0.0255	0.0218	0.0204	0.0180	0.0169	0.0150	0.0122	0.0081
16TH Month	0.0286	0.0244	0.0211	0.0201	0.0176	0.0164	0.0144	0.0113	0.0073
17TH Month	0.0273	0.0231	0.0204	0.0191	0.0171	0.0156	0.0136	0.0103	0.0059
18TH Month	0.0259	0.0220	0.0198	0.0185	0.0167	0.0150	0.0122	0.0087	0.0051
19TH Month	0.0249	0.0212	0.0192	0.0179	0.0161	0.0140	0.0110	0.0074	0.0047
20TH Month	0.0241	0.0206	0.0187	0.0175	0.0155	0.0132	0.0102	0.0067	0.0042
21ST Month	0.0231	0.0199	0.0181	0.0169	0.0148	0.0126	0.0098	0.0066	0.0041
22ND Month	0.0213	0.0189	0.0169	0.0156	0.0140	0.0121	0.0095	0.0065	0.0040
23RD Month	0.0200	0.0179	0.0160	0.0147	0.0133	0.0116	0.0093	0.0066	0.0039
24TH Month	0.0191	0.0171	0.0151	0.0140	0.0129	0.0113	0.0094	0.0066	0.0041

*Rates of disablement per 1,000 lives.

Duration of Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
	ALL ELIMINATION PERIODS								
3RD Year	0.1670	0.1546	0.1387	0.1209	0.1033	0.0872	0.0730	0.0602	0.0470
4TH Year	0.1056	0.0920	0.0770	0.0629	0.0519	0.0448	0.0414	0.0403	0.0389
5TH Year	0.0737	0.0653	0.0546	0.0442	0.0368	0.0335	0.0338	0.0351	0.0340
6TH Year	0.0531	0.0487	0.0418	0.0350	0.0305	0.0285	0.0291	0.0310	0.0305
7TH Year	0.0391	0.0367	0.0331	0.0296	0.0278	0.0261	0.0263	0.0282	0.0296
8TH Year	0.0296	0.0287	0.0273	0.0263	0.0264	0.0255	0.0257	0.0283	0.0316
9TH Year	0.0226	0.0233	0.0233	0.0238	0.0255	0.0252	0.0256	0.0295	0.0349
10TH Year	0.0182	0.0190	0.0202	0.0217	0.0243	0.0246	0.0249	0.0299	0.0382
11TH Year	0.0162	0.0170	0.0184	0.0205	0.0234	0.0245	0.0259	0.0328	0.0458
12TH Year	0.0163	0.0173	0.0188	0.0211	0.0238	0.0247	0.0266	0.0349	0.0491
13TH Year	0.0165	0.0175	0.0192	0.0217	0.0239	0.0251	0.0277	0.0373	0.0527
14TH Year	0.0167	0.0178	0.0196	0.0224	0.0241	0.0253	0.0290	0.0399	0.0567
15TH Year	0.0168	0.0181	0.0200	0.0229	0.0243	0.0256	0.0308	0.0429	0.0609
16TH Year	0.0170	0.0184	0.0205	0.0234	0.0245	0.0259	0.0328	0.0458	0.0655
17TH Year	0.0173	0.0188	0.0211	0.0238	0.0247	0.0266	0.0349	0.0491	0.0705
18TH Year	0.0175	0.0192	0.0217	0.0239	0.0250	0.0277	0.0373	0.0527	0.0759
19TH Year	0.0178	0.0196	0.0224	0.0241	0.0253	0.0290	0.0399	0.0567	0.0818
20TH Year	0.0181	0.0200	0.0229	0.0243	0.0256	0.0308	0.0429	0.0609	0.0881
21ST Year	0.0184	0.0205	0.0234	0.0245	0.0258	0.0328	0.0458	0.0655	0.0949
22ND Year	0.0188	0.0211	0.0238	0.0247	0.0266	0.0349	0.0491	0.0705	0.1021
23RD Year	0.0192	0.0217	0.0239	0.0250	0.0277	0.0373	0.0527	0.0759	0.1100
24TH Year	0.0196	0.0224	0.0241	0.0253	0.0290	0.0399	0.0567	0.0818	0.1183
25TH Year	0.0200	0.0229	0.0243	0.0256	0.0308	0.0429	0.0609	0.0881	0.1273
26TH Year	0.0205	0.0234	0.0245	0.0258	0.0328	0.0458	0.0655	0.0949	0.1367
27TH Year	0.0211	0.0238	0.0247	0.0266	0.0349	0.0491	0.0705	0.1021	0.1469
28TH Year	0.0217	0.0239	0.0250	0.0277	0.0373	0.0527	0.0759	0.1100	0.1576
29TH Year	0.0224	0.0241	0.0253	0.0290	0.0399	0.0567	0.0818	0.1183	0.1688
30TH Year	0.0229	0.0243	0.0256	0.0308	0.0429	0.0609	0.0881	0.1273	0.1807
31ST Year	0.0234	0.0245	0.0258	0.0328	0.0458	0.0655	0.0949	0.1367	0.1931
32ND Year	0.0238	0.0247	0.0266	0.0349	0.0491	0.0705	0.1021	0.1469	0.2061
33RD Year	0.0239	0.0250	0.0277	0.0373	0.0527	0.0759	0.1100	0.1576	0.2195
34TH Year	0.0241	0.0253	0.0290	0.0399	0.0567	0.0818	0.1183	0.1688	0.2334
35TH Year	0.0243	0.0256	0.0308	0.0429	0.0609	0.0881	0.1273	0.1807	0.2476
36TH Year	0.0245	0.0258	0.0328	0.0458	0.0655	0.0949	0.1367	0.1931	0.2622
37TH Year	0.0247	0.0266	0.0349	0.0491	0.0705	0.1021	0.1469	0.2061	0.2768
38TH Year	0.0250	0.0277	0.0373	0.0527	0.0759	0.1100	0.1576	0.2195	0.2916
39TH Year	0.0253	0.0290	0.0399	—	—	—	—	—	—
40TH Year	0.0256	0.0308	—	—	—	—	—	—	—
41ST Year	0.0258	0.0328	—	—	—	—	—	—	—
42ND Year	0.0266	0.0349	—	—	—	—	—	—	—
43RD Year	0.0277	0.0373	—	—	—	—	—	—	—
44TH Year	0.0290	0.0399	—	—	—	—	—	—	—
45TH Year	0.0308	—	—	—	—	—	—	—	—
46TH Year	0.0328	—	—	—	—	—	—	—	—
47TH Year	0.0349	—	—	—	—	—	—	—	—
48TH Year	0.0373	—	—	—	—	—	—	—	—
49TH Year	0.0399	—	—	—	—	—	—	—	—

*Rates of disablement per 1,000 lives.

APPENDIX E

GLTD VALUATION TABLE
(1987 CGDT)

A specific margin was added to the Basic Table to obtain the proposed GLTD Valuation Table. The margin was introduced by decreasing the termination rates (death and recovery combined) to 90 percent of the GLTD Basic Table rates at all durations. Table E-1 is the GLTD Valuation Table. The results in this table are divided into male and female as well as by elimination period for the first 24 months. Because the effect of elimination period is not significant after the first two years, there is only one section for the third and later years for each of males and females.

Table E-2 is a comparison of the GLTD Valuation Table to the GLTD Basic Table expressed as a ratio of claim reserves for benefits to age 65 at 5½ percent. Table E-3 illustrates the difference in claim reserves for $100 per month benefit to age 65 between the 1964 CDT and the GLTD Valuation Table for 3-, 6- and 12-month elimination periods.

TABLE E-1

GLTD VALUATION TABLE
TERMINATION FROM DISABLEMENT RATES
DEATH AND RECOVERY — MALES

Duration of Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
	3-MONTH ELIMINATION PERIOD								
3 Months*	1.4800	1.5700	1.8000	2.3380	3.3270	5.3830	8.9710	15.0400	21.3330
4TH Month	0.1160	0.1051	0.0967	0.0869	0.0779	0.0684	0.0574	0.0431	0.0241
5TH Month	0.1280	0.1162	0.1068	0.0958	0.0847	0.0734	0.0606	0.0448	0.0248
6TH Month	0.1117	0.1006	0.0922	0.0830	0.0743	0.0653	0.0549	0.0415	0.0237
7TH Month	0.0939	0.0835	0.0752	0.0674	0.0599	0.0509	0.0410	0.0312	0.0205
8TH Month	0.0802	0.0706	0.0623	0.0544	0.0465	0.0383	0.0310	0.0233	0.0144
9TH Month	0.0698	0.0611	0.0533	0.0461	0.0394	0.0323	0.0266	0.0184	0.0119
10TH Month	0.0621	0.0540	0.0471	0.0410	0.0351	0.0296	0.0238	0.0167	0.0101
11TH Month	0.0567	0.0493	0.0427	0.0372	0.0315	0.0270	0.0215	0.0151	0.0087
12TH Month	0.0520	0.0454	0.0393	0.0341	0.0285	0.0244	0.0196	0.0139	0.0077
13TH Month	0.0475	0.0415	0.0362	0.0314	0.0262	0.0222	0.0180	0.0127	0.0068
14TH Month	0.0434	0.0379	0.0333	0.0291	0.0242	0.0207	0.0170	0.0118	0.0060
15TH Month	0.0396	0.0347	0.0306	0.0269	0.0227	0.0192	0.0160	0.0110	0.0057
16TH Month	0.0362	0.0320	0.0284	0.0251	0.0212	0.0180	0.0151	0.0102	0.0053
17TH Month	0.0329	0.0294	0.0262	0.0234	0.0201	0.0168	0.0142	0.0095	0.0050
18TH Month	0.0300	0.0270	0.0241	0.0219	0.0188	0.0157	0.0133	0.0089	0.0048
19TH Month	0.0274	0.0248	0.0223	0.0204	0.0177	0.0147	0.0125	0.0085	0.0045
20TH Month	0.0252	0.0230	0.0207	0.0191	0.0167	0.0138	0.0118	0.0080	0.0044
21ST Month	0.0230	0.0212	0.0194	0.0179	0.0156	0.0128	0.0109	0.0077	0.0043
22ND Month	0.0213	0.0196	0.0179	0.0167	0.0146	0.0120	0.0100	0.0073	0.0042
23RD Month	0.0197	0.0181	0.0165	0.0154	0.0136	0.0111	0.0094	0.0070	0.0042
24TH Month	0.0182	0.0167	0.0150	0.0141	0.0126	0.0104	0.0088	0.0068	0.0043

*Rates of disablement per 1,000 lives.

Duration of Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
	6-MONTH ELIMINATION PERIOD								
6 Months*	0.8000	0.8900	1.0500	1.3700	2.0200	3.5600	6.6200	11.8700	16.7100
7TH Month	0.0588	0.0533	0.0455	0.0397	0.0357	0.0302	0.0246	0.0189	0.0144
8TH Month	0.0608	0.0552	0.0470	0.0411	0.0373	0.0320	0.0261	0.0203	0.0137
9TH Month	0.0567	0.0504	0.0423	0.0365	0.0327	0.0282	0.0231	0.0184	0.0119
10TH Month	0.0517	0.0458	0.0384	0.0329	0.0292	0.0257	0.0207	0.0167	0.0101
11TH Month	0.0473	0.0419	0.0352	0.0299	0.0261	0.0235	0.0187	0.0151	0.0087
12TH Month	0.0434	0.0385	0.0325	0.0275	0.0237	0.0212	0.0170	0.0139	0.0077
13TH Month	0.0397	0.0351	0.0300	0.0253	0.0214	0.0191	0.0155	0.0127	0.0068
14TH Month	0.0364	0.0320	0.0276	0.0234	0.0196	0.0174	0.0143	0.0118	0.0060
15TH Month	0.0334	0.0291	0.0256	0.0217	0.0182	0.0159	0.0133	0.0110	0.0057
16TH Month	0.0307	0.0264	0.0236	0.0203	0.0170	0.0149	0.0125	0.0102	0.0053
17TH Month	0.0282	0.0241	0.0218	0.0191	0.0160	0.0140	0.0118	0.0095	0.0050
18TH Month	0.0260	0.0221	0.0202	0.0180	0.0152	0.0131	0.0112	0.0089	0.0048
19TH Month	0.0241	0.0204	0.0187	0.0170	0.0145	0.0124	0.0105	0.0085	0.0045
20TH Month	0.0224	0.0193	0.0175	0.0161	0.0139	0.0118	0.0100	0.0080	0.0044
21ST Month	0.0208	0.0181	0.0164	0.0153	0.0132	0.0113	0.0095	0.0077	0.0043
22ND Month	0.0196	0.0173	0.0154	0.0146	0.0127	0.0109	0.0091	0.0073	0.0042
23RD Month	0.0187	0.0168	0.0147	0.0140	0.0122	0.0104	0.0088	0.0070	0.0042
24TH Month	0.0182	0.0166	0.0141	0.0134	0.0120	0.0102	0.0086	0.0068	0.0043
	12-MONTH ELIMINATION PERIOD								
12 Months*	0.5060	0.5930	0.7450	1.0280	1.5940	2.9170	5.5670	10.0100	13.4500
13TH Month	0.0194	0.0157	0.0133	0.0122	0.0116	0.0113	0.0108	0.0096	0.0075
14TH Month	0.0248	0.0213	0.0182	0.0164	0.0146	0.0138	0.0126	0.0106	0.0073
15TH Month	0.0253	0.0220	0.0188	0.0176	0.0155	0.0146	0.0130	0.0105	0.0070
16TH Month	0.0248	0.0212	0.0183	0.0174	0.0152	0.0142	0.0125	0.0098	0.0063
17TH Month	0.0238	0.0202	0.0177	0.0167	0.0149	0.0136	0.0119	0.0090	0.0051
18TH Month	0.0228	0.0194	0.0174	0.0163	0.0147	0.0131	0.0107	0.0077	0.0045
19TH Month	0.0221	0.0188	0.0170	0.0159	0.0143	0.0124	0.0097	0.0066	0.0041
20TH Month	0.0216	0.0185	0.0167	0.0157	0.0139	0.0118	0.0091	0.0060	0.0038
21ST Month	0.0208	0.0179	0.0163	0.0152	0.0133	0.0113	0.0088	0.0059	0.0037
22ND Month	0.0194	0.0172	0.0154	0.0142	0.0127	0.0110	0.0086	0.0059	0.0036
23RD Month	0.0184	0.0164	0.0147	0.0135	0.0122	0.0106	0.0086	0.0060	0.0036
24TH Month	0.0176	0.0158	0.0140	0.0130	0.0119	0.0104	0.0086	0.0061	0.0038

*Rates of disablement per 1,000 lives.

Duration of Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
	ALL ELIMINATION PERIODS								
3RD Year	0.1764	0.1633	0.1465	0.1277	0.1092	0.0922	0.0771	0.0636	0.0497
4TH Year	0.1233	0.1074	0.0899	0.0734	0.0606	0.0523	0.0483	0.0471	0.0455
5TH Year	0.0953	0.0844	0.0706	0.0572	0.0476	0.0434	0.0437	0.0455	0.0439
6TH Year	0.0716	0.0657	0.0564	0.0473	0.0412	0.0384	0.0393	0.0419	0.0412
7TH Year	0.0541	0.0508	0.0458	0.0410	0.0384	0.0362	0.0365	0.0391	0.0410
8TH Year	0.0409	0.0396	0.0376	0.0362	0.0365	0.0351	0.0355	0.0390	0.0436
9TH Year	0.0308	0.0317	0.0318	0.0324	0.0347	0.0343	0.0349	0.0401	0.0475
10TH Year	0.0246	0.0257	0.0273	0.0293	0.0328	0.0332	0.0336	0.0404	0.0515
11TH Year	0.0218	0.0229	0.0248	0.0275	0.0315	0.0329	0.0347	0.0440	0.0615
12TH Year	0.0220	0.0232	0.0252	0.0284	0.0320	0.0332	0.0357	0.0469	0.0660
13TH Year	0.0221	0.0235	0.0257	0.0292	0.0321	0.0337	0.0373	0.0501	0.0708
14TH Year	0.0224	0.0239	0.0263	0.0301	0.0324	0.0339	0.0389	0.0536	0.0761
15TH Year	0.0226	0.0243	0.0269	0.0308	0.0327	0.0344	0.0414	0.0577	0.0818
16TH Year	0.0229	0.0248	0.0275	0.0315	0.0329	0.0347	0.0440	0.0615	0.0880
17TH Year	0.0232	0.0252	0.0284	0.0320	0.0332	0.0357	0.0469	0.0660	0.0947
18TH Year	0.0235	0.0257	0.0292	0.0321	0.0337	0.0373	0.0501	0.0708	0.1020
19TH Year	0.0239	0.0263	0.0301	0.0324	0.0339	0.0389	0.0536	0.0761	0.1099
20TH Year	0.0243	0.0269	0.0308	0.0327	0.0344	0.0414	0.0577	0.0818	0.1183
21ST Year	0.0248	0.0275	0.0315	0.0329	0.0347	0.0440	0.0615	0.0880	0.1274
22ND Year	0.0252	0.0284	0.0320	0.0332	0.0357	0.0469	0.0660	0.0947	0.1372
23RD Year	0.0257	0.0292	0.0321	0.0337	0.0373	0.0501	0.0708	0.1020	0.1477
24TH Year	0.0263	0.0301	0.0324	0.0339	0.0389	0.0536	0.0761	0.1099	0.1589
25TH Year	0.0269	0.0308	0.0327	0.0344	0.0414	0.0577	0.0818	0.1183	0.1709
26TH Year	0.0275	0.0315	0.0329	0.0347	0.0440	0.0615	0.0880	0.1274	0.1837
27TH Year	0.0284	0.0320	0.0332	0.0357	0.0469	0.0660	0.0947	0.1372	0.1973
28TH Year	0.0292	0.0321	0.0337	0.0373	0.0501	0.0708	0.1020	0.1477	0.2117
29TH Year	0.0301	0.0324	0.0339	0.0389	0.0536	0.0761	0.1099	0.1589	0.2268
30TH Year	0.0308	0.0327	0.0344	0.0414	0.0577	0.0818	0.1183	0.1709	0.2427
31ST Year	0.0315	0.0329	0.0347	0.0440	0.0615	0.0880	0.1274	0.1837	0.2595
32ND Year	0.0320	0.0332	0.0357	0.0469	0.0660	0.0947	0.1372	0.1973	0.2768
33RD Year	0.0321	0.0337	0.0373	0.0501	0.0708	0.1020	0.1477	0.2117	0.2949
34TH Year	0.0324	0.0339	0.0389	0.0536	0.0761	0.1099	0.1589	0.2268	0.3136
35TH Year	0.0327	0.0344	0.0414	0.0577	0.0818	0.1183	0.1709	0.2427	0.3326
36TH Year	0.0329	0.0347	0.0440	0.0615	0.0880	0.1274	0.1837	0.2595	0.3522
37TH Year	0.0332	0.0357	0.0469	0.0660	0.0947	0.1372	0.1973	0.2768	0.3719
38TH Year	0.0337	0.0373	0.0501	0.0708	0.1020	0.1477	0.2117	0.2949	0.3917
39TH Year	0.0339	0.0389	0.0536	—	—	—	—	—	—
40TH Year	0.0344	0.0414	—	—	—	—	—	—	—
41ST Year	0.0347	0.0440	—	—	—	—	—	—	—
42ND Year	0.0357	0.0469	—	—	—	—	—	—	—
43RD Year	0.0373	0.0501	—	—	—	—	—	—	—
44TH Year	0.0389	0.0536	—	—	—	—	—	—	—
45TH Year	0.0414	—	—	—	—	—	—	—	—
46TH Year	0.0440	—	—	—	—	—	—	—	—
47TH Year	0.0469	—	—	—	—	—	—	—	—
48TH Year	0.0501	—	—	—	—	—	—	—	—
49TH Year	0.0536	—	—	—	—	—	—	—	—

TABLE E-1 — *Continued*

GLTD VALUATION TABLE
TERMINATION FROM DISABLEMENT RATES
DEATH AND RECOVERY — **FEMALES**

Duration of Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
	3-MONTH ELIMINATION PERIOD								
3 Months*	1.8800	2.0410	2.6640	3.9510	5.0240	6.9980	9.8680	13.5360	16.0000
4TH Month	0.1185	0.1075	0.0988	0.0888	0.0796	0.0699	0.0587	0.0441	0.0247
5TH Month	0.1329	0.1207	0.1110	0.0995	0.0880	0.0762	0.0629	0.0465	0.0257
6TH Month	0.1174	0.1058	0.0968	0.0872	0.0781	0.0687	0.0577	0.0437	0.0248
7TH Month	0.1044	0.0929	0.0837	0.0750	0.0667	0.0565	0.0455	0.0347	0.0229
8TH Month	0.0899	0.0791	0.0698	0.0609	0.0522	0.0430	0.0347	0.0261	0.0161
9TH Month	0.0788	0.0690	0.0602	0.0521	0.0446	0.0365	0.0300	0.0208	0.0134
10TH Month	0.0707	0.0615	0.0536	0.0467	0.0400	0.0338	0.0271	0.0190	0.0115
11TH Month	0.0651	0.0566	0.0490	0.0427	0.0362	0.0310	0.0247	0.0174	0.0100
12TH Month	0.0581	0.0506	0.0439	0.0381	0.0319	0.0272	0.0219	0.0155	0.0086
13TH Month	0.0515	0.0449	0.0392	0.0340	0.0284	0.0241	0.0195	0.0138	0.0073
14TH Month	0.0456	0.0398	0.0350	0.0305	0.0255	0.0218	0.0179	0.0124	0.0063
15TH Month	0.0413	0.0363	0.0320	0.0281	0.0237	0.0200	0.0167	0.0114	0.0059
16TH Month	0.0376	0.0333	0.0294	0.0261	0.0221	0.0187	0.0158	0.0105	0.0055
17TH Month	0.0340	0.0304	0.0271	0.0242	0.0207	0.0174	0.0147	0.0098	0.0051
18TH Month	0.0307	0.0276	0.0247	0.0224	0.0193	0.0160	0.0137	0.0091	0.0049
19TH Month	0.0277	0.0252	0.0226	0.0207	0.0180	0.0149	0.0127	0.0086	0.0046
20TH Month	0.0254	0.0231	0.0208	0.0192	0.0167	0.0139	0.0119	0.0081	0.0044
21ST Month	0.0230	0.0212	0.0194	0.0179	0.0156	0.0128	0.0109	0.0077	0.0043
22ND Month	0.0212	0.0194	0.0177	0.0166	0.0144	0.0119	0.0099	0.0072	0.0042
23RD Month	0.0194	0.0177	0.0162	0.0151	0.0133	0.0109	0.0092	0.0069	0.0041
24TH Month	0.0177	0.0163	0.0147	0.0138	0.0122	0.0102	0.0086	0.0066	0.0042

*Rates of disablement per 1,000 lives.

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Duration of Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
	6-MONTH ELIMINATION PERIOD								
6 Months*	1.0000	1.1570	1.5540	2.3150	3.0500	4.6280	7.2820	10.6830	12.5320
7TH Month	0.0653	0.0592	0.0506	0.0441	0.0397	0.0337	0.0274	0.0211	0.0160
8TH Month	0.0682	0.0618	0.0527	0.0461	0.0418	0.0358	0.0293	0.0227	0.0153
9TH Month	0.0641	0.0570	0.0478	0.0413	0.0369	0.0319	0.0261	0.0208	0.0134
10TH Month	0.0589	0.0522	0.0437	0.0375	0.0332	0.0293	0.0236	0.0190	0.0115
11TH Month	0.0543	0.0481	0.0404	0.0343	0.0300	0.0270	0.0190	0.0174	0.0100
12TH Month	0.0484	0.0430	0.0363	0.0306	0.0265	0.0236	0.0190	0.0155	0.0086
13TH Month	0.0430	0.0380	0.0325	0.0274	0.0232	0.0207	0.0167	0.0138	0.0073
14TH Month	0.0383	0.0336	0.0291	0.0246	0.0206	0.0183	0.0150	0.0124	0.0063
15TH Month	0.0348	0.0303	0.0266	0.0227	0.0190	0.0167	0.0140	0.0114	0.0059
16TH Month	0.0319	0.0274	0.0245	0.0211	0.0176	0.0155	0.0130	0.0105	0.0055
17TH Month	0.0291	0.0249	0.0225	0.0197	0.0166	0.0144	0.0122	0.0098	0.0051
18TH Month	0.0266	0.0227	0.0206	0.0185	0.0156	0.0135	0.0114	0.0091	0.0049
19TH Month	0.0245	0.0207	0.0190	0.0173	0.0147	0.0126	0.0107	0.0086	0.0046
20TH Month	0.0225	0.0194	0.0176	0.0162	0.0140	0.0119	0.0101	0.0081	0.0044
21ST Month	0.0208	0.0181	0.0164	0.0153	0.0132	0.0113	0.0095	0.0077	0.0043
22ND Month	0.0194	0.0171	0.0152	0.0144	0.0126	0.0108	0.0090	0.0072	0.0042
23RD Month	0.0184	0.0166	0.0144	0.0137	0.0121	0.0103	0.0086	0.0069	0.0041
24TH Month	0.0177	0.0161	0.0138	0.0131	0.0117	0.0099	0.0084	0.0066	0.0042
	12-MONTH ELIMINATION PERIOD								
12 Months*	0.7580	0.9780	1.3410	2.2100	3.3470	3.7920	6.6800	9.5100	10.0880
13TH Month	0.0210	0.0169	0.0144	0.0131	0.0126	0.0122	0.0117	0.0104	0.0081
14TH Month	0.0261	0.0224	0.0191	0.0172	0.0153	0.0145	0.0132	0.0112	0.0077
15TH Month	0.0264	0.0230	0.0196	0.0184	0.0162	0.0152	0.0135	0.0110	0.0073
16TH Month	0.0257	0.0220	0.0190	0.0181	0.0158	0.0148	0.0130	0.0102	0.0066
17TH Month	0.0246	0.0208	0.0184	0.0172	0.0154	0.0140	0.0122	0.0093	0.0053
18TH Month	0.0233	0.0198	0.0178	0.0167	0.0150	0.0135	0.0110	0.0078	0.0046
19TH Month	0.0224	0.0191	0.0173	0.0161	0.0145	0.0126	0.0099	0.0067	0.0042
20TH Month	0.0217	0.0185	0.0168	0.0158	0.0140	0.0119	0.0092	0.0060	0.0038
21ST Month	0.0208	0.0179	0.0163	0.0152	0.0133	0.0113	0.0088	0.0059	0.0037
22ND Month	0.0192	0.0170	0.0152	0.0140	0.0126	0.0109	0.0086	0.0059	0.0036
23RD Month	0.0180	0.0161	0.0144	0.0132	0.0120	0.0104	0.0084	0.0059	0.0035
24TH Month	0.0172	0.0154	0.0136	0.0126	0.0116	0.0102	0.0085	0.0059	0.0037

*Rates of disablement per 1,000 lives.

Duration from Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
	ALL ELIMINATION PERIODS								
3RD Year	0.1503	0.1391	0.1248	0.1088	0.0930	0.0785	0.0657	0.0542	0.0423
4TH Year	0.0950	0.0828	0.0693	0.0566	0.0467	0.0403	0.0373	0.0363	0.0350
5TH Year	0.0663	0.0588	0.0491	0.0398	0.0331	0.0302	0.0304	0.0316	0.0306
6TH Year	0.0478	0.0438	0.0376	0.0315	0.0275	0.0257	0.0262	0.0279	0.0275
7TH Year	0.0352	0.0330	0.0298	0.0266	0.0250	0.0235	0.0237	0.0254	0.0266
8TH year	0.0266	0.0258	0.0246	0.0237	0.0238	0.0230	0.0231	0.0255	0.0284
9TH Year	0.0203	0.0210	0.0210	0.0214	0.0230	0.0227	0.0230	0.0266	0.0314
10TH Year	0.0164	0.0171	0.0182	0.0195	0.0219	0.0221	0.0224	0.0269	0.0344
11TH Year	0.0146	0.0153	0.0166	0.0185	0.0211	0.0221	0.0233	0.0295	0.0412
12TH Year	0.0147	0.0156	0.0169	0.0190	0.0214	0.0222	0.0239	0.0314	0.0442
13TH Year	0.0149	0.0158	0.0173	0.0195	0.0215	0.0226	0.0249	0.0336	0.0474
14TH Year	0.0150	0.0160	0.0176	0.0202	0.0217	0.0228	0.0261	0.0359	0.0510
15TH Year	0.0151	0.0163	0.0180	0.0206	0.0219	0.0230	0.0277	0.0386	0.0548
16TH Year	0.0153	0.0166	0.0185	0.0211	0.0221	0.0233	0.0295	0.0412	0.0590
17TH Year	0.0156	0.0169	0.0190	0.0214	0.0222	0.0239	0.0314	0.0442	0.0635
18TH Year	0.0158	0.0173	0.0195	0.0215	0.0225	0.0249	0.0336	0.0474	0.0683
19TH Year	0.0160	0.0176	0.0202	0.0217	0.0228	0.0261	0.0359	0.0510	0.0736
20TH Year	0.0163	0.0180	0.0206	0.0219	0.0230	0.0277	0.0386	0.0548	0.0793
21ST Year	0.0166	0.0185	0.0211	0.0221	0.0232	0.0295	0.0412	0.0590	0.0854
22ND Year	0.0169	0.0190	0.0214	0.0222	0.0239	0.0314	0.0442	0.0635	0.0919
23RD Year	0.0173	0.0195	0.0215	0.0225	0.0249	0.0336	0.0474	0.0683	0.0990
24TH Year	0.0176	0.0202	0.0217	0.0228	0.0261	0.0359	0.0510	0.0736	0.1065
25TH year	0.0180	0.0206	0.0219	0.0230	0.0277	0.0386	0.0548	0.0793	0.1146
26TH Year	0.0185	0.0211	0.0221	0.0232	0.0295	0.0412	0.0590	0.0854	0.1230
27TH Year	0.0190	0.0214	0.0222	0.0239	0.0314	0.0442	0.0635	0.0919	0.1322
28TH Year	0.0195	0.0215	0.0225	0.0249	0.0336	0.0474	0.0683	0.0990	0.1418
29TH Year	0.0202	0.0217	0.0228	0.0261	0.0359	0.0510	0.0736	0.1065	0.1519
30TH Year	0.0206	0.0219	0.0230	0.0277	0.0386	0.0548	0.0793	0.1146	0.1626
31ST Year	0.0211	0.0221	0.0232	0.0295	0.0412	0.0590	0.0854	0.1230	0.1738
32ND Year	0.0214	0.0222	0.0239	0.0314	0.0442	0.0635	0.0919	0.1322	0.1855
33RD Year	0.0215	0.0225	0.0249	0.0336	0.0474	0.0683	0.0990	0.1418	0.1976
34TH Year	0.0217	0.0228	0.0261	0.0359	0.0510	0.0736	0.1065	0.1519	0.2101
35TH Year	0.0219	0.0230	0.0277	0.0386	0.0548	0.0793	0.1146	0.1626	0.2228
36TH Year	0.0221	0.0232	0.0295	0.0412	0.0590	0.0854	0.1230	0.1738	0.2360
37TH Year	0.0222	0.0239	0.0314	0.0442	0.0635	0.0919	0.1322	0.1855	0.2491
38TH Year	0.0225	0.0249	0.0336	0.0474	0.0683	0.0990	0.1418	0.1976	0.2624
39TH Year	0.0228	0.0261	0.0359	—	—	—	—	—	—
40TH Year	0.0230	0.0277	—	—	—	—	—	—	—
41ST Year	0.0232	0.0295	—	—	—	—	—	—	—
42ND Year	0.0239	0.0314	—	—	—	—	—	—	—
43RD Year	0.0249	0.0336	—	—	—	—	—	—	—
44TH Year	0.0261	0.0359	—	—	—	—	—	—	—
45TH Year	0.0277	—	—	—	—	—	—	—	—
46TH Year	0.0295	—	—	—	—	—	—	—	—
47TH Year	0.0314	—	—	—	—	—	—	—	—
48TH Year	0.0336	—	—	—	—	—	—	—	—
49TH Year	0.0359	—	—	—	—	—	—	—	—

*Rates of disablement per 1,000 lives.

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GLTD Valuation Table vs. GLTD Basic Table
Ratio of Claim Reserves
Valuation to Basic*
Benefit to Age 65 — 5 ½%

Duration from Disablement	Male				Female			
	27	37	47	57	27	37	47	57
3-Month Elimination Period								
3 Months	1.17	1.13	1.09	1.05	1.16	1.13	1.09	1.05
9 Months	1.11	1.08	1.06	1.03	1.10	1.08	1.05	1.03
18 Months	1.08	1.06	1.04	1.02	1.06	1.05	1.03	1.02
3 Years	1.05	1.04	1.03	1.01	1.04	1.03	1.02	1.01
5 Years	1.04	1.03	1.02	1.01	1.03	1.02	1.01	1.00
10 Years	1.03	1.02	1.01	—	1.02	1.02	1.01	—
6-Month Elimination Period								
6 Months	1.12	1.09	1.06	1.03	1.11	1.08	1.06	1.03
9 Months	1.10	1.08	1.05	1.03	1.09	1.07	1.05	1.03
18 Months	1.08	1.06	1.04	1.02	1.06	1.05	1.03	1.02
3 Years	1.05	1.04	1.03	1.01	1.04	1.03	1.02	1.01
5 Years	1.04	1.03	1.02	1.01	1.03	1.02	1.01	1.00
10 Years	1.03	1.02	1.01	—	1.02	1.02	1.01	—
12-Month Elimination Period								
12 Months	1.09	1.07	1.05	1.02	1.07	1.06	1.04	1.02
18 Months	1.08	1.06	1.04	1.02	1.06	1.05	1.03	1.02
3 Years	1.05	1.04	1.03	1.01	1.04	1.03	1.02	1.01
5 Years	1.04	1.03	1.02	1.01	1.03	1.02	1.01	1.00
10 Years	1.03	1.02	1.01	—	1.02	1.02	1.01	—

*Termination rates in Valuation Table are 90% of termination rates in Basic Table at all durations.

CLAIM RESERVES
GLTD
$100 PER MONTH BENEFIT TO AGE 65

Age	Duration from Disablement	1964 CDT		Proposed GLTD Valuation Table — 5 ½%					
				3-month		Elimination Period 6-month		12-month	
		3%	5 ½%	Male	Female	Male	Female	Male	Female
27	4 Months	1,947	1,646	4,984	5,314	—	—	—	—
	9 Months	5,802	4,827	7,150	7,991	7,632	8,571	—	—
	18 Months	7,772	6,409	9,424	10,979	9,545	11,119	9,575	11,155
	36-48 Months	10,226	8,328	11,865	13,674	11,865	13,674	11,865	13,674
	60-72 Months	11,596	9,432	13,066	14,606	13,066	14,606	13,066	14,606
37	4 Months	2,284	1,937	6,044	6,351	—	—	—	—
	9 Months	6,656	5,583	8,030	8,742	8,521	9,318	—	—
	18 Months	8,614	7,193	9,848	11,056	9,962	11,185	9,985	11,213
	36-48 Months	10,653	8,873	11,502	12,828	11,502	12,828	11,502	12,828
	60-72 Months	11,360	9,514	11,783	12,933	11,783	12,933	11,783	12,933
47	4 Months	2,717	2,382	6,604	6,798	—	—	—	—
	9 Months	6,576	5,734	8,071	8,520	8,344	8,827	—	—
	18 Months	7,977	6,957	9,143	9,862	9,203	9,928	9,199	9,922
	36-48 Months	8,849	7,767	9,592	10,315	9,592	10,315	9,592	10,315
	60-72 Months	8,686	7,719	9,049	9,636	9,049	9,636	9,049	9,636
57	4 Months	2,640	2,459	5,183	5,201	—	—	—	—
	9 Months	4,702	4,382	5,607	5,707	5,607	5,707	—	—
	18 Months	5,006	4,691	5,528	5,696	5,528	5,696	5,570	5,740
	36-48 Months	4,123	3,926	4,361	4,489	4,361	4,489	4,361	4,489
	60-72 Months	2,606	2,532	2,671	2,717	2,671	2,717	2,671	2,717

All values were developed from the formula in Appendix H.

APPENDIX F

Since actuaries usually work with incidence and termination rates, a set of continuance tables, and corresponding graphs (F-1 and F-2), are included here for analytical purposes.

FIGURE F-1
CONTINUANCE TABLE — 3- AND 6-MONTH ELIMINATION PERIOD
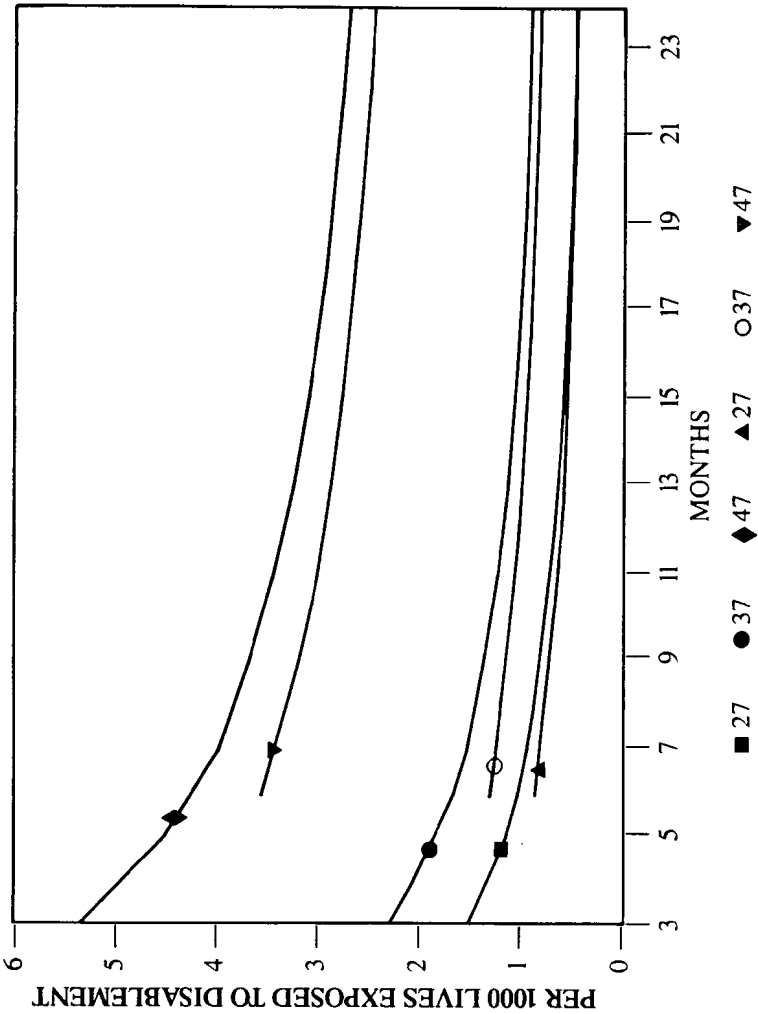Males — Ages 27, 37, 47

FIGURE F-2
CONTINUANCE TABLE — 3- AND 6-MONTH ELIMINATION PERIOD
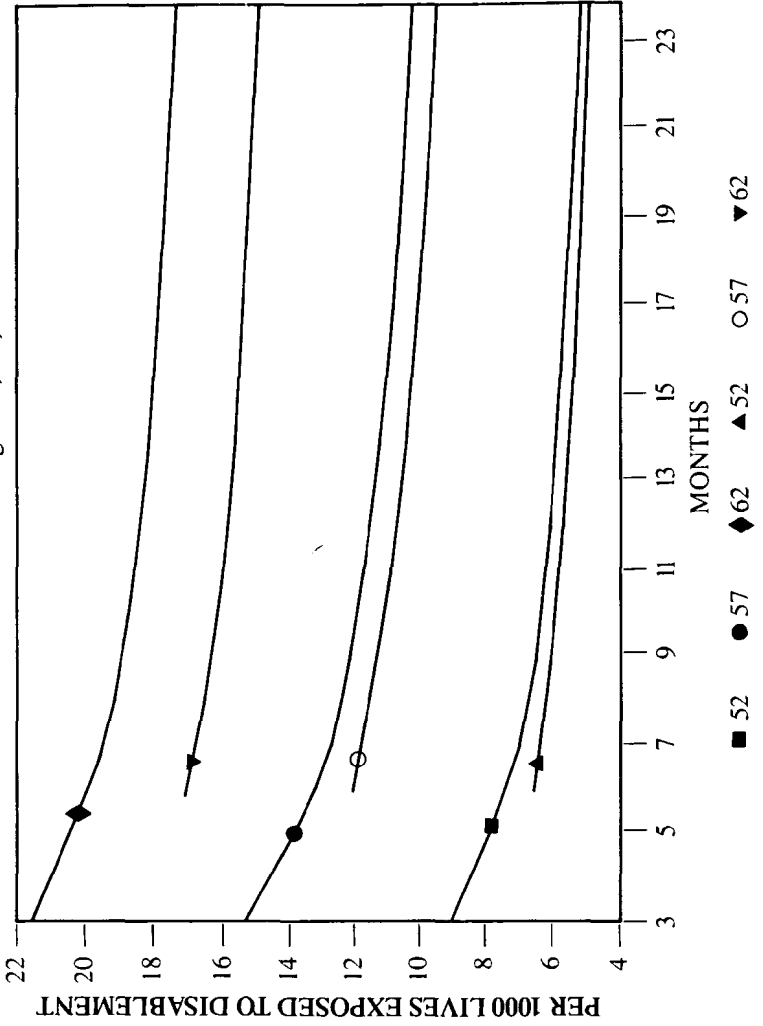MALES — Ages 52, 57, 62

TABLE F-1

Duration from Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
3 Months	1.4800	1.5700	1.8000	2.3380	3.3270	5.3830	8.9710	15.0400	21.3330
4 Months	1.3083	1.4050	1.6259	2.1348	3.0678	5.0148	8.4561	14.3918	20.8189
5 Months	1.1409	1.2417	1.4523	1.9303	2.8080	4.6467	7.9436	13.7470	20.3026
6 Months	1.0134	1.1168	1.3184	1.7701	2.5993	4.3433	7.5075	13.1765	19.8214
7 Months	0.9183	1.0236	1.2192	1.6508	2.4436	4.1222	7.1997	12.7654	19.4151
8 Months	0.8446	0.9513	1.1433	1.5610	2.3300	3.9643	6.9765	12.4680	19.1355
9 Months	0.7857	0.8932	1.0823	1.4890	2.2382	3.8363	6.7909	12.2386	18.9078
10 Months	0.7369	0.8449	1.0314	1.4280	2.1597	3.7227	6.6293	12.0342	18.7168
11 Months	0.6951	0.8033	0.9873	1.3749	2.0916	3.6222	6.4868	11.8525	18.5540
12 Months	0.6589	0.7668	0.9485	1.3280	2.0320	3.5338	6.3597	11.6877	18.4111
13 Months	0.6276	0.7350	0.9142	1.2863	1.9788	3.4554	6.2452	11.5393	18.2859
14 Months	0.6004	0.7071	0.8837	1.2488	1.9309	3.3839	6.1390	11.4031	18.1762
15 Months	0.5766	0.6826	0.8567	1.2153	1.8871	3.3189	6.0408	11.2777	18.0726
16 Months	0.5558	0.6608	0.8324	1.1847	1.8471	3.2591	5.9496	11.1627	17.9768
17 Months	0.5375	0.6413	0.8106	1.1570	1.8099	3.2044	5.8651	11.0566	17.8869
18 Months	0.5213	0.6240	0.7910	1.1317	1.7759	3.1541	5.7871	10.9582	17.8011
19 Months	0.5071	0.6085	0.7734	1.1086	1.7445	3.1077	5.7147	10.8651	17.7210
20 Months	0.4943	0.5945	0.7574	1.0874	1.7153	3.0648	5.6473	10.7781	17.6430
21 Months	0.4829	0.5819	0.7427	1.0680	1.6886	3.0256	5.5858	10.6952	17.5671
22 Months	0.4726	0.5705	0.7294	1.0501	1.6639	2.9893	5.5299	10.6171	17.4933
23 Months	0.4633	0.5602	0.7174	1.0340	1.6413	2.9561	5.4779	10.5428	17.4199
24 Months	0.4549	0.5509	0.7066	1.0194	1.6206	2.9254	5.4297	10.4711	17.3450
3 Years	0.3746	0.4609	0.6031	0.8892	1.4436	2.6557	5.0111	9.8051	16.4829
4 Years	0.3285	0.4114	0.5489	0.8239	1.3562	2.5168	4.7690	9.3433	15.7329
5 Years	0.2972	0.3767	0.5101	0.7768	1.2916	2.4075	4.5606	8.9182	15.0423
6 Years	0.2759	0.3519	0.4813	0.7401	1.2384	2.3151	4.3814	8.5445	14.4225
7 Years	0.2609	0.3340	0.4593	0.7097	1.1908	2.2313	4.2215	8.2104	13.8312
8 Years	0.2503	0.3208	0.4420	0.6840	1.1474	2.1530	4.0716	7.8902	13.2282
9 Years	0.2426	0.3107	0.4280	0.6619	1.1076	2.0791	3.9295	7.5738	12.5998
10 Years	0.2366	0.3027	0.4163	0.6425	1.0712	2.0101	3.7975	7.2678	11.9509
11 Years	0.2314	0.2957	0.4060	0.6248	1.0375	1.9440	3.6657	6.9480	11.2159
12 Years	0.2264	0.2889	0.3957	0.6071	1.0043	1.8794	3.5348	6.6222	10.4757
13 Years	0.2213	0.2821	0.3856	0.5893	0.9720	1.8161	3.4030	6.2904	9.7340
14 Years	0.2164	0.2753	0.3754	0.5716	0.9406	1.7545	3.2706	5.9532	8.9933
15 Years	0.2115	0.2687	0.3653	0.5540	0.9098	1.6942	3.1352	5.6097	8.2576
16 Years	0.2067	0.2620	0.3553	0.5365	0.8799	1.6354	2.9973	5.2647	7.5309
17 Years	0.2019	0.2554	0.3452	0.5194	0.8507	1.5770	2.8567	4.9173	6.8178
18 Years	0.1971	0.2488	0.3351	0.5027	0.8220	1.5182	2.7136	4.5691	6.1223
19 Years	0.1924	0.2423	0.3250	0.4864	0.7941	1.4591	2.5681	4.2214	5.4495
20 Years	0.1877	0.2358	0.3150	0.4705	0.7668	1.3987	2.4199	3.8761	4.8048
21 Years	0.1831	0.2293	0.3051	0.4550	0.7402	1.3372	2.2711	3.5350	4.1927
22 Years	0.1785	0.2228	0.2953	0.4399	0.7138	1.2744	2.1212	3.2002	3.6175
23 Years	0.1739	0.2163	0.2858	0.4251	0.6871	1.2106	1.9710	2.8738	3.0832
24 Years	0.1693	0.2098	0.2766	0.4107	0.6604	1.1457	1.8210	2.5580	2.5932
25 Years	0.1647	0.2033	0.2675	0.3966	0.6331	1.0796	1.6721	2.2554	2.1501

CONTINUANCE IN GLTD VALUATION TABLE
FEMALES — 3-MONTH ELIMINATION PERIOD
(PER 1,000 LIVES EXPOSED TO DISABLEMENT)

Duration from Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
3 Months	1.8800	2.0410	2.6640	3.9510	5.0240	6.9980	9.8680	13.5360	16.0000
4 Months	1.6572	1.8216	2.4008	3.6002	4.6241	6.5088	9.2887	12.9391	15.6048
5 Months	1.4370	1.6017	2.1343	3.2419	4.2172	6.0129	8.7045	12.3374	15.2038
6 Months	1.2683	1.4323	1.9277	2.9592	3.8878	5.5998	8.2022	11.7983	14.8267
7 Months	1.1359	1.2992	1.7664	2.7373	3.6285	5.2834	7.8290	11.3889	14.4872
8 Months	1.0338	1.1964	1.6431	2.5706	3.4391	5.0562	7.5574	11.0916	14.2539
9 Months	0.9523	1.1139	1.5442	2.4367	3.2857	4.8717	7.3306	10.8609	14.0629
10 Months	0.8850	1.0454	1.4614	2.3229	3.1543	4.7070	7.1320	10.6545	13.9012
11 Months	0.8274	0.9862	1.3898	2.2237	3.0401	4.5611	6.9558	10.4692	13.7622
12 Months	0.7793	0.9363	1.3288	2.1390	2.9431	4.4370	6.8035	10.3069	13.6438
13 Months	0.7392	0.8943	1.2767	2.0662	2.8595	4.3301	6.6708	10.1646	13.5442
14 Months	0.7054	0.8587	1.2320	2.0032	2.7866	4.2357	6.5514	10.0386	13.4589
15 Months	0.6763	0.8275	1.1926	1.9469	2.7206	4.1510	6.4420	9.9242	13.3795
16 Months	0.6509	0.8000	1.1575	1.8961	2.6604	4.0734	6.3402	9.8200	13.3059
17 Months	0.6288	0.7756	1.1261	1.8502	2.6054	4.0025	6.2470	9.7237	13.2381
18 Months	0.6094	0.7542	1.0983	1.8088	2.5551	3.9384	6.1614	9.6352	13.1732
19 Months	0.5926	0.7352	1.0735	1.7713	2.5091	3.8798	6.0832	9.5524	13.1126
20 Months	0.5775	0.7182	1.0512	1.7373	2.4672	3.8258	6.0108	9.4750	13.0549
21 Months	0.5642	0.7030	1.0308	1.7062	2.4287	3.7769	5.9453	9.4020	12.9988
22 Months	0.5523	0.6894	0.0125	1.6779	2.3937	3.7319	5.8864	9.3343	12.9442
23 Months	0.5416	0.6772	0.9961	1.6526	2.3619	3.6912	5.8323	9.2699	12.8911
24 Months	0.5320	0.6661	0.9815	1.6298	2.3331	3.6536	5.7821	9.2088	12.8369
3 Years	0.4520	0.5735	0.8590	1.4524	2.1161	3.3668	5.4022	8.7096	12.2939
4 Years	0.4091	0.5260	0.7995	1.3702	2.0173	3.2311	5.2007	8.3935	11.8637
5 Years	0.3820	0.4951	0.7602	1.3157	1.9505	3.1335	5.0426	8.1283	11.5006
6 Years	0.3637	0.4734	0.7316	1.2743	1.8969	3.0530	4.9105	7.9015	11.1844
7 Years	0.3509	0.4578	0.7098	1.2404	1.8494	2.9812	4.7941	7.7008	10.8869
8 Years	0.3416	0.4459	0.6924	1.2110	1.8054	2.9127	4.6834	7.5044	10.5777
9 Years	0.3346	0.4366	0.6778	1.1851	1.7639	2.8466	4.5757	7.3048	10.2455
10 Years	0.3291	0.4291	0.6655	1.1619	1.7253	2.7836	4.4732	7.1083	9.8931
11 Years	0.3243	0.4225	0.6544	1.1404	1.6889	2.7221	4.3689	6.8986	9.4855
12 Years	0.3196	0.4160	0.6434	1.1188	1.6527	2.6617	4.2645	6.6820	9.0662
13 Years	0.3148	0.4094	0.6323	1.0970	1.6172	2.6015	4.1583	6.4575	8.6365
14 Years	0.3101	0.4028	0.6211	1.0748	1.5821	2.5422	4.0498	6.2256	8.1960
15 Years	0.3054	0.3963	0.6099	1.0527	1.5475	2.4838	3.9376	5.9853	7.7469
16 Years	0.3007	0.3897	0.5987	1.0305	1.5133	2.4259	3.8215	5.7387	7.2898
17 Years	0.2960	0.3831	0.5873	1.0084	1.4797	2.3679	3.7015	5.4851	6.8269
18 Years	0.2914	0.3765	0.5758	0.9867	1.4464	2.3089	3.5771	5.2251	6.3606
19 Years	0.2867	0.3699	0.5642	0.9653	1.4134	2.2487	3.4487	4.9586	5.8925
20 Years	0.2820	0.3632	0.5526	0.9442	1.3809	2.1864	3.3156	4.6869	5.4252
21 Years	0.2773	0.3565	0.5409	0.9233	1.3488	2.1219	3.1790	4.4104	4.9619
22 Years	0.2727	0.3497	0.5293	0.9028	1.3166	2.0553	3.0385	4.1303	4.5059
23 Years	0.2679	0.3429	0.5180	0.8825	1.2838	1.9862	2.8944	3.8482	4.0598
24 Years	0.2632	0.3360	0.5067	0.8624	1.2503	1.9149	2.7468	3.5650	3.6275
25 Years	0.2585	0.3290	0.4956	0.8425	1.2157	1.8410	2.5963	3.2823	3.2117

TABLE F-3

CONTINUANCE IN GLTD VALUATION TABLE
MALES — 6-MONTH ELIMINATION PERIOD
(PER 1,000 LIVES EXPOSED TO DISABLEMENT)

Duration from Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
6 Months	0.8000	0.8900	1.0500	1.3700	2.0200	3.5600	6.6200	11.8700	16.7100
7 Months	0.7530	0.8426	1.0022	1.3156	1.9479	3.4525	6.4571	11.6457	16.4694
8 Months	0.7072	0.7961	0.9551	1.2615	1.8752	3.3420	6.2886	11.4093	16.2437
9 Months	0.6671	0.7559	0.9147	1.2155	1.8139	3.2478	6.1433	11.1993	16.0504
10 Months	0.6326	0.7213	0.8796	1.1755	1.7609	3.1643	6.0162	11.0123	15.8883
11 Months	0.6027	0.6911	0.8486	1.1404	1.7150	3.0899	5.9037	10.8460	15.7501
12 Months	0.5765	0.6645	0.8211	1.1090	1.6743	3.0244	5.8033	10.6952	15.6288
13 Months	0.5536	0.6412	0.7964	1.0809	1.6385	2.9667	5.7134	10.5594	15.5226
14 Months	0.5335	0.6206	0.7744	1.0556	1.6064	2.9150	5.6317	10.4348	15.4294
15 Months	0.5157	0.6026	0.7546	1.0327	1.5772	2.8687	5.5568	10.3200	15.3415
16 Months	0.4998	0.5867	0.7368	1.0118	1.5503	2.8259	5.4873	10.2148	15.2602
17 Months	0.4857	0.5725	0.7207	0.9924	1.5255	2.7864	5.4226	10.1177	15.1839
18 Months	0.4731	0.5599	0.7062	0.9746	1.5024	2.7499	5.3618	10.0277	15.1110
19 Months	0.4617	0.5485	0.6930	0.9580	1.4806	2.7158	5.3055	9.9424	15.0430
20 Months	0.4514	0.5379	0.6809	0.9426	1.4600	2.6837	5.2525	9.8629	14.9768
21 Months	0.4420	0.5281	0.6697	0.9282	1.4407	2.6534	5.2026	9.7870	14.9124
22 Months	0.4333	0.5190	0.6594	0.9146	1.4224	2.6245	5.1552	9.7155	14.8498
23 Months	0.4252	0.5103	0.6497	0.9018	1.4051	2.5972	5.1099	9.6475	14.7874
24 Months	0.4175	0.5018	0.6405	0.8897	1.3882	2.5707	5.0659	9.5819	14.7238
3 Years	0.3438	0.4199	0.5467	0.7761	1.2366	2.3337	4.6753	8.9725	13.9920
4 Years	0.3014	0.3748	0.4975	0.7191	1.1617	2.2116	4.4495	8.5499	13.3554
5 Years	0.2727	0.3431	0.4624	0.6780	1.1064	2.1156	4.2551	8.1609	12.7691
6 Years	0.2532	0.3206	0.4363	0.6459	1.0608	2.0344	4.0878	7.8189	12.2430
7 Years	0.2395	0.3043	0.4163	0.6195	1.0201	1.9608	3.9386	7.5132	11.7410
8 Years	0.2297	0.2923	0.4007	0.5970	0.9828	1.8919	3.7988	7.2202	11.2291
9 Years	0.2226	0.2830	0.3879	0.5777	0.9487	1.8270	3.6662	6.9307	10.6957
10 Years	0.2171	0.2757	0.3774	0.5608	0.9176	1.7664	3.5431	6.6507	10.1449
11 Years	0.2124	0.2694	0.3680	0.5453	0.8887	1.7083	3.4201	6.3580	9.5210
12 Years	0.2077	0.2632	0.3587	0.5299	0.8603	1.6516	3.2980	6.0598	8.8926
13 Years	0.2031	0.2570	0.3495	0.5144	0.8326	1.5959	3.1750	5.7562	8.2630
14 Years	0.1986	0.2509	0.3403	0.4989	0.8057	1.5418	3.0515	5.4477	7.6342
15 Years	0.1941	0.2447	0.3312	0.4835	0.7793	1.4888	2.9252	5.1334	7.0097
16 Years	0.1897	0.2387	0.3221	0.4683	0.7537	1.4371	2.7964	4.8177	6.3929
17 Years	0.1853	0.2327	0.3129	0.4533	0.7287	1.3858	2.6653	4.4997	5.7875
18 Years	0.1809	0.2267	0.3038	0.4388	0.7041	1.3341	2.5318	4.1811	5.1971
19 Years	0.1766	0.2207	0.2946	0.4245	0.6802	1.2822	2.3961	3.8629	4.6260
20 Years	0.1723	0.2148	0.2856	0.4107	0.6568	1.2291	2.2578	3.5470	4.0787
21 Years	0.1680	0.2089	0.2766	0.3972	0.6340	1.1750	2.1190	3.2348	3.5591
22 Years	0.1638	0.2029	0.2677	0.3840	0.6114	1.1199	1.9791	2.9285	3.0708
23 Years	0.1596	0.1970	0.2591	0.3710	0.5886	1.0638	1.8390	2.6298	2.6172
24 Years	0.1554	0.1911	0.2507	0.3585	0.5657	1.0068	1.6990	2.3408	2.2014
25 Years	0.1512	0.1852	0.2425	0.3461	0.5423	0.9487	1.5601	2.0639	1.8251

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TABLE F-4

CONTINUANCE IN GLTD VALUATION TABLE
FEMALES — 6-MONTH ELIMINATION PERIOD
(PER 1,000 LIVES EXPOSED TO DISABLEMENT)

Duration from Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
6 Months	1.0000	1.1570	1.5540	2.3150	3.0500	4.6280	7.2820	10.6830	12.5320
7 Months	0.9347	1.0885	1.4754	2.2129	2.9289	4.4720	7.0825	10.4576	12.3315
8 Months	0.8710	1.0212	1.3976	2.1109	2.8065	4.3119	6.8750	10.2202	12.1428
9 Months	0.8151	0.9630	1.3308	2.0237	2.7029	4.1744	6.6955	10.0076	11.9801
10 Months	0.7671	0.9128	1.2727	1.9478	2.6132	4.0521	6.5375	9.8175	11.8423
11 Months	0.7255	0.8689	1.2212	1.8810	2.5348	3.9427	6.3969	9.6467	11.7239
12 Months	0.6903	0.8315	1.1769	1.8235	2.4676	3.8496	6.2754	9.4971	11.6231
13 Months	0.6607	0.7999	1.1387	1.7735	2.4104	3.7699	6.1706	9.3661	11.5382
14 Months	0.6354	0.7730	1.1055	1.7299	2.3607	3.7009	6.0780	9.2499	11.4655
15 Months	0.6132	0.7496	1.0761	1.6906	2.3159	3.6391	5.9930	9.1445	11.3979
16 Months	0.5937	0.7291	1.0498	1.6549	2.2751	3.5827	5.9150	9.0485	11.3352
17 Months	0.5764	0.7109	1.0261	1.6223	2.2373	3.5311	5.8429	8.9598	11.2774
18 Months	0.5611	0.6948	1.0050	1.5923	2.2024	3.4835	5.7763	8.8783	11.2221
19 Months	0.5473	0.6804	0.9859	1.5648	2.1701	3.4396	5.7145	8.8019	11.1705
20 Months	0.5350	0.6672	0.9685	1.5394	2.1397	3.3986	5.6568	8.7306	11.1214
21 Months	0.5239	0.6551	0.9527	1.5159	2.1114	3.3602	5.6030	8.6634	11.0735
22 Months	0.5137	0.6439	0.9382	1.4940	2.0848	3.3240	5.5526	8.6010	11.0270
23 Months	0.5043	0.6332	0.9247	1.4736	2.0596	3.2897	5.5048	8.5417	10.9818
24 Months	0.4953	0.6230	0.9119	1.4543	2.0355	3.2571	5.4586	8.4853	10.9357
3 Years	0.4209	0.5364	0.7981	1.2960	1.8462	3.0015	5.1000	8.0254	10.4731
4 Years	0.3809	0.4919	0.7428	1.2227	1.7600	2.8805	4.9097	7.7341	10.1066
5 Years	0.3557	0.4630	0.7063	1.1740	1.7017	2.7935	4.7605	7.4897	9.7973
6 Years	0.3387	0.4427	0.6798	1.1370	1.6549	2.7217	4.6358	7.2807	9.5279
7 Years	0.3267	0.4281	0.6595	1.1068	1.6136	2.6578	4.5259	7.0958	9.2744
8 Years	0.3180	0.4171	0.6433	1.0806	1.5752	2.5966	4.4213	6.9148	9.0110
9 Years	0.3116	0.4083	0.6298	1.0574	1.5389	2.5377	4.3196	6.7309	8.7281
10 Years	0.3065	0.4013	0.6183	1.0368	1.5052	2.4816	4.2229	6.5498	8.4278
11 Years	0.3020	0.3952	0.6081	1.0176	1.4735	2.4268	4.1245	6.3566	8.0806
12 Years	0.2976	0.3890	0.5978	0.9983	1.4419	2.3729	4.0259	6.1570	7.7235
13 Years	0.2931	0.3829	0.5874	0.9788	1.4109	2.3193	3.9257	5.9501	7.3574
14 Years	0.2887	0.3768	0.5771	0.9591	1.3803	2.2664	3.8232	5.7365	6.9821
15 Years	0.2844	0.3706	0.5667	0.9393	1.3501	2.2143	3.7173	5.5151	6.5995
16 Years	0.2800	0.3645	0.5562	0.9195	1.3203	2.1627	3.6077	5.2879	6.2101
17 Years	0.2757	0.3583	0.5457	0.8998	1.2909	2.1110	3.4944	5.0542	5.8158
18 Years	0.2713	0.3521	0.5350	0.8805	1.2619	2.0584	3.3770	4.8146	5.4186
19 Years	0.2670	0.3459	0.5242	0.8614	1.2331	2.0047	3.2557	4.5690	5.0198
20 Years	0.2626	0.3397	0.5134	0.8425	1.2048	1.9492	3.1301	4.3187	4.6217
21 Years	0.2582	0.3334	0.5026	0.8239	1.1768	1.8917	3.0011	4.0639	4.2270
22 Years	0.2539	0.3271	0.4918	0.8056	1.1487	1.8323	2.8684	3.8058	3.8386
23 Years	0.2495	0.3207	0.4812	0.7875	1.1201	1.7707	2.7325	3.5459	3.4585
24 Years	0.2451	0.3142	0.4708	0.7695	1.0908	1.7071	2.5931	3.2849	3.0902
25 Years	0.2407	0.3077	0.4605	0.7518	1.0606	1.6412	2.4510	3.0244	2.7361

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TABLE F-5

CONTINUANCE IN GLTD VALUATION TABLE
MALES — 12-MONTH ELIMINATION PERIOD
(PER 1,000 LIVES EXPOSED TO DISABLEMENT)

Duration from Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
12 Months	0.5060	0.5930	0.7450	1.0280	1.5940	2.9170	5.5670	10.0100	13.4500
13 Months	0.4962	0.5837	0.7351	1.0155	1.5755	2.8840	5.5069	9.9139	13.3491
14 Months	0.4839	0.5713	0.7217	0.9988	1.5525	2.8442	5.4375	9.8088	13.2517
15 Months	0.4716	0.5587	0.7081	0.9812	1.5284	2.8027	5.3668	9.7058	13.1589
16 Months	0.4599	0.5468	0.6952	0.9642	1.5052	2.7629	5.2997	9.6107	13.0760
17 Months	0.4490	0.5358	0.6829	0.9481	1.4828	2.7253	5.2367	9.5242	13.0093
18 Months	0.4388	0.5254	0.6710	0.9326	1.4610	2.6896	5.1806	9.4509	12.9508
19 Months	0.4291	0.5155	0.6596	0.9178	1.4401	2.6563	5.1304	9.3885	12.8977
20 Months	0.4198	0.5060	0.6486	0.9034	1.4201	2.6249	5.0837	9.3322	12.8487
21 Months	0.4111	0.4969	0.6380	0.8896	1.4012	2.5953	5.0389	9.2771	12.8011
22 Months	0.4031	0.4884	0.6282	0.8770	1.3834	2.5667	4.9956	9.2224	12.7551
23 Months	0.3957	0.4804	0.6189	0.8652	1.3665	2.5395	4.9526	9.1670	12.7091
24 Months	0.3887	0.4728	0.6103	0.8539	1.3503	2.5131	4.9101	9.1111	12.6608
3 Years	0.3201	0.3956	0.5209	0.7449	1.2028	2.2814	4.5315	8.5317	12.0316
4 Years	0.2807	0.3531	0.4740	0.6902	1.1299	2.1621	4.3126	8.1298	11.4842
5 Years	0.2539	0.3233	0.4406	0.6507	1.0761	2.0683	4.1242	7.7599	10.9800
6 Years	0.2357	0.3021	0.4157	0.6199	1.0318	1.9888	3.9621	7.4348	10.5276
7 Years	0.2230	0.2867	0.3967	0.5945	0.9922	1.9168	3.8175	7.1441	10.0960
8 Years	0.2139	0.2754	0.3818	0.5730	0.9560	1.8496	3.6819	6.8654	9.6558
9 Years	0.2073	0.2666	0.3696	0.5544	0.9228	1.7861	3.5534	6.5901	9.1972
10 Years	0.2022	0.2598	0.3595	0.5382	0.8925	1.7268	3.4340	6.3239	8.7235
11 Years	0.1978	0.2538	0.3506	0.5234	0.8644	1.6700	3.3149	6.0456	8.1870
12 Years	0.1934	0.2479	0.3418	0.5085	0.8367	1.6146	3.1965	5.7621	7.6467
13 Years	0.1891	0.2421	0.3330	0.4937	0.8099	1.5601	3.0773	5.4734	7.1053
14 Years	0.1849	0.2363	0.3242	0.4788	0.7836	1.5073	2.9576	5.1801	6.5646
15 Years	0.1807	0.2306	0.3155	0.4641	0.7580	1.4554	2.8352	4.8812	6.0276
16 Years	0.1766	0.2249	0.3068	0.4494	0.7331	1.4049	2.7104	4.5810	5.4972
17 Years	0.1725	0.2192	0.2981	0.4351	0.7087	1.3548	2.5833	4.2786	4.9766
18 Years	0.1684	0.2136	0.2894	0.4211	0.6849	1.3042	2.4539	3.9757	4.4690
19 Years	0.1644	0.2079	0.2807	0.4075	0.6616	.1.2535	2.3223	3.6731	3.9778
20 Years	0.1604	0.2024	0.2721	0.3941	0.6389	1.2016	2.1883	3.3727	3.5073
21 Years	0.1564	0.1968	0.2635	0.3812	0.6167	1.1487	2.0538	3.0759	3.0604
22 Years	0.1525	0.1912	0.2551	0.3685	0.5947	1.0948	1.9182	2.7846	2.6405
23 Years	0.1486	0.1856	0.2469	0.3561	0.5725	1.0400	1.7824	2.5006	2.2505
24 Years	0.1447	0.1800	0.2389	0.3440	0.5502	0.9843	1.6468	2.2258	1.8929
25 Years	0.1408	0.1745	0.2311	0.3322	0.5275	0.9275	1.5121	1.9625	1.5694

TABLE F-6

Duration from Disablement	Age of Disablement								
	22	27	32	37	42	47	52	57	62
12 Months	0.7580	0.9780	1.3410	2.2100	3.3470	3.7920	6.6800	9.5100	10.0880
13 Months	0.7421	0.9615	1.3217	2.1810	3.3048	3.7457	6.6018	9.4111	10.0063
14 Months	0.7227	0.9399	1.2964	2.1435	3.2543	3.6914	6.5147	9.3057	9.9292
15 Months	0.7036	0.9183	1.2710	2.1041	3.2015	3.6353	6.4268	9.2033	9.8568
16 Months	0.6856	0.8981	1.2469	2.0660	3.1510	3.5815	6.3432	9.1095	9.7917
17 Months	0.6687	0.8794	1.2239	2.0305	3.1024	3.5314	6.2658	9.0247	9.7398
18 Months	0.6531	0.8620	1.2022	1.9966	3.0559	3.4837	6.1969	8.9543	9.6950
19 Months	0.6385	0.8456	1.1814	1.9644	3.0116	3.4398	6.1355	8.8944	9.6543
20 Months	0.6246	0.8299	1.1615	1.9334	2.9694	3.3989	6.0791	8.8410	9.6176
21 Months	0.6116	0.8151	1.1426	1.9040	2.9299	3.3605	6.0256	8.7888	9.5820
22 Months	0.5999	0.8012	1.1252	1.8773	2.8930	3.3238	5.9738	8.7370	9.5475
23 Months	0.5891	0.7883	1.1090	1.8526	2.8583	3.2893	5.9236	8.6854	9.5141
24 Months	0.5790	0.7762	1.0939	1.8292	2.8251	3.2557	5.8732	8.6342	9.4789
3 Years	0.4919	0.6682	0.9574	1.6302	2.5624	3.0001	5.4874	8.1662	9.0779
4 Years	0.4452	0.6129	0.8911	1.5379	2.4427	2.8792	5.2827	7.8698	8.7602
5 Years	0.4157	0.5768	0.8473	1.4767	2.3619	2.7923	5.1221	7.6211	8.4921
6 Years	0.3958	0.5516	0.8154	1.4302	2.2969	2.7205	4.9879	7.4085	8.2586
7 Years	0.3819	0.5334	0.7911	1.3922	2.2395	2.6566	4.8697	7.2203	8.0389
8 Years	0.3717	0.5196	0.7717	1.3592	2.1862	2.5955	4.7572	7.0362	7.8106
9 Years	0.3642	0.5087	0.7555	1.3301	2.1359	2.5366	4.6478	6.8490	7.5654
10 Years	0.3582	0.5000	0.7417	1.3041	2.0892	2.4805	4.5437	6.6648	7.3051
11 Years	0.3530	0.4923	0.7294	1.2800	2.0451	2.4257	4.4378	6.4682	7.0042
12 Years	0.3478	0.4847	0.7171	1.2557	2.0013	2.3718	4.3317	6.2651	6.6946
13 Years	0.3426	0.4770	0.7047	1.2312	1.9583	2.3182	4.2239	6.0545	6.3773
14 Years	0.3375	0.4694	0.6923	1.2063	1.9158	2.2654	4.1136	5.8372	6.0520
15 Years	0.3324	0.4617	0.6798	1.1815	1.8738	2.2133	3.9997	5.6119	5.7204
16 Years	0.3273	0.4541	0.6672	1.1566	1.8324	2.1617	3.8817	5.3807	5.3829
17 Years	0.3222	0.4464	0.6546	1.1318	1.7917	2.1100	3.7598	5.1428	5.0410
18 Years	0.3171	0.4387	0.6418	1.1075	1.7514	2.0575	3.6335	4.8991	4.6967
19 Years	0.3120	0.4309	0.6288	1.0834	1.7115	2.0038	3.5030	4.6492	4.3511
20 Years	0.3069	0.4232	0.6159	1.0597	1.6721	1.9483	3.3678	4.3944	4.0060
21 Years	0.3018	0.4154	0.6029	1.0363	1.6333	1.8908	3.2291	4.1352	3.6639
22 Years	0.2967	0.4075	0.5900	1.0133	1.5943	1.8315	3.0863	3.8726	3.3272
23 Years	0.2916	0.3995	0.5773	0.9905	1.5546	1.7699	2.9401	3.6081	2.9978
24 Years	0.2865	0.3914	0.5648	0.9679	1.5140	1.7064	2.7901	3.3425	2.6785
25 Years	0.2813	0.3834	0.5524	0.9456	1.4721	1.6405	2.6372	3.0775	2.3716

Note: Contrary to expectations, but consistent with the data, the prevalence rates in the female—12 mo. e.p. continuance table are larger than the corresponding rates in the 6 mo. e.p. table.

APPENDIX G
A CASE FOR SPECIAL ADJUSTMENTS TO THE GLTD VALUATION TABLE

The GLTD Valuation Table was constructed to represent the industry average experience of the period 1976–80. There are three general reasons for which it may be appropriate for a company to make its own adjustments to this table if it wishes a closer fit to its own mix of business. First, it may have significant data about its own prior experience. Such data might be substantially different from that underlying this table. This could be due to variations in product, company practices, administration, claim procedures, and/or special market concentrations.

Second, the current or evolving risk pattern may be different from either a company's own experience or the experience underlying this table. For example, sales prior to the last couple of years may have been concentrated in more conservative plan designs than is now the case. More liberalized definitions of disability and richer benefits not only affect claim incidence, but will also decrease termination rates. Even if a company has significant studies of its own past experience, any evolutionary process underway should be carefully considered in valuing future claim liabilities. A particular concern would be the lengthening of the period of time for which the "own occupation" definition of disablement applies. Competition in the marketplace is forcing continued liberalization of benefits and the actuary must react accordingly.

Third, offsets due to OASDI may be considered in a company's adjustments. The possibility of tightening of OASDI requirements for approval and continuation of claims makes this category of adjustment factors more risky and the actuary needs to carefully consider the future rather than to rely solely on past experience.

Caution should be observed in assigning values to different risk classes. The true cost of many extra risks is often divided between increased claim incidence and decreased termination rates. It is not appropriate to adjust termination rates for any portion of extra risk that is more appropriately attributed to increased incidence.

For relatively stable risks the simple broad-based adjustment techniques of the past may be appropriate. These would include (a) multiplicative adjustments to reserve factors and (b) adjustments to basic termination rates prior to calculation of reserve factors. "Broad-based" refers to the fact that the adjustments are applied similarly to all claimants regardless of individual risk characteristics.

However, two important considerations may lead to the need for more complex adjustments. First, the development of target marketing has been responsible for the development of risk profiles that may be constantly changing or evolving in directions other than as represented by either an individual company's past experience or the composite experience underlying these recommended tables. Second, with today's computer capabilities it may be relatively easy to include more complex recognition of risk characteristics. It is now a simple matter to create adjusted termination rates as many times as needed in a seriatim reserve valuation. Individual companies will vary in the way these adjustments are made. Some will choose to adjust broad benefit underwriting categories whereas others will make adjustments based on individual claimant risk characteristics.

Appropriate Adjustment Techniques

The following factors, while possibly the most important for many companies, are not the only ones which may be appropriate. Depending on each company's underwriting philosophy and/or claim experience, other factors such as case size or definition of disability might be introduced.

For illustrative purposes, the following approach might be used to derive a termination rate adjustment factor. It would be reasonable to keep this factor constant for up to two or three years, thereafter grading linearly to 1.00 by the end of the fifth year of disablement. It must be emphasized that

a. these illustrative factors are subjective.
b. the factor being developed here is based on a multiplicative approach. Any particular company might choose to develop adjustment factors by some equally valid additive approach.

OCCUPATION CLASS FACTOR: (might vary further by age and sex)

Occupation Class	Factor (OF)
1 (best white collar)	1.05
2 (other white collar)	1.02
3 (best of blue collar)	0.98
4 (2nd quartile — blue collar)	0.93
5 (3rd quartile — blue collar)	0.90
6 (worst of blue collar)	0.85

INDUSTRY FACTOR:

Industries	SIC Codes	Factor (*IF*)
Agriculture, Forestry, Fishing, Mining, Construction	0100–1799	0.85
Manufacturing	2000–3999	0.70
Transportation, Communications, Public Utilities	4000–4999	0.95
Wholesale and Retail Trade	5000–5299	1.00
Finance, Insurance, Real Estate	6000–6799	1.05
Services		
Hotels/Rooming	7000–7099	0.85
Personal and Business	7200–7399	1.02
Auto/Miscellaneous	7500–7699	1.00
Motion Pictures/Amusement	7800–7999	0.98
Doctors' Offices	8010–8049	1.05
Hospital and Other Health	8000–8009,	0.90
	8050–8099	0.90
Legal	8100–8199	1.02
Colleges/Universities	8220–8229	1.02
Other Education	8200–8219,	0.95
	8230–8299	0.95
Social	8300–8399	0.98
Museums, Galleries, etc.	8400–8499	1.00
Membership Organizations	8600–8699	0.98
Private Households	8800–8899	0.85
Architects, Engineers, Accountants	8910–8919,	1.05
	8930–8939	1.05
Other Miscellaneous	8900–8909,	1.00
	8920–8929,	1.00
	8940–8999	1.00
Government/Public Administration	9000–9999	0.90

REPLACEMENT RATIO FACTOR:

Claimant's Replacement Ratio from All Sources	Factor (RRF)
Under 0.500	1.20
0.500 – 0.599	1.10
0.600 – 0.629	1.00
0.630 – 0.699	0.95
0.700 – 0.799	0.85
0.800 – 0.899	0.80
0.900 – 0.999	0.75
1.000 +	0.70

Alternative, Less Desirable, LTD Benefit Ratio	Alternative Factor (RRF)
Under 0.500	1.15
0.500 – 0.599	1.05
0.600 – 0.649	1.00
0.650 – 0.699	0.90
0.700 +	0.80

SPECIAL: (SPF)

This is reserved for those cases not normally written, but possibly written under specially designed conditions. This includes such groups as Unions, Organization Members, and so on. It must be specifically selected for each case or group.

FINAL TERMINATION RATE ADJUSTMENT FACTOR (FA):

$$FA = OF \times IF \times RRF \times SPF$$

APPENDIX H

APL PROGRAM FOR CLAIM RESERVE CALCULATIONS

The following APL program was used to calculate the illustrations in Tables E-2 and E-3. The program will calculate a GLTD claim reserve per $100 of monthly benefit, given the input items described in the first lines of the program. It also needs the valuation table termination rates stored in the following global variables:

TR3 — Three-dimensional array of termination rates for a 3-month elimination period. Each plane is a 9 by 21 matrix. The first plane is for males and the second is for females.

TR6 — Three-dimensional array for a 6-month elimination period, with each plane as a 9 by 18 matrix.

TR12 — Three-dimensional array for a 12-month elimination period, with each plane as a 9 by 12 matrix.

TRA — Three-dimensional array for all elimination periods, with each plane as a 9 by 16 array. Once these numbers are selected from the larger submitted tables it is easy to see the remaining ultimate rates as 60 element vectors for males and females. These vectors are the rows for TRU.

TRU — Two-dimensional array of ultimate rates. The first row is for males and the second is for females.

Disabled Life Reserve (for a given elimination period) (formula used for the following program)

n = duration in years from disablement to valuation, rounded down to the next lower duration of the continuance table if not already at an exact duration

k = 1/12 for $t < 24$ months
    1   for $t \geq 2$ years

e = duration in years from disablement to the end of benefits, rounded to the last completed duration prior to expiration of benefits.

$$D_{x+t} = v^t \, \ell_{x+t}$$

$$DH_{x+t} = 1/2 \, (D_{x+t} + D_{x+t+k})$$

$$B_{x+t} = \begin{array}{l} 1 \text{ for } t < 2 \\ 12 \text{ for } t \geq 2 \end{array}$$

$$S_{x+t} = \sum_{z=3/12}^{z=t} B_{x+z} \, DH_{x+z}$$

$$P_{x+t} = B_{x+t} \, (1/8 \, D_{x+t} + 3/8 \, D_{x+t+k})$$

$$DLR^e_{x+n} = \frac{S_{x+e} - S_{x+n} + P_{x+n}}{DH_{x+n}}$$

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      ∇ R←I RESERVE A;X;N;E;L;D;DH;P;S;SE;B;DIS;AF;GRADE
[1]   ⍝R IS A DISABLED LIFE RESERVE FOR 100/MO. FOR AGE AT DISABILITY OF A[1]
[2]   ⍝ALREADY DISABLED FOR DURATION A[2] IN YEARS;
[3]   ⍝RECEIVING BENEFITS UNTIL DURATION A[3] FROM DISABILITY IN YEARS;
[4]   ⍝BASED ON A CONTRACT WITH ELIMINATION PERIOD A[4] IN MONTHS;
[5]   ⍝FOR SEX A[5] (1=MALE, 2=FEMALE)
[6]   ⍝AT A LEVEL INTEREST RATE OF I.
[7]    AF←A[6] ⍝TERMINATION RATE ADJUSTMENT FACTOR THAT IS LEVEL FOR 2 YEARS
[8]   ⍝OF DISABILITY, GRADING TO ZERO AFTER 5 YEARS OF DISABILITY.IF THE
[9]   ⍝TERMINATION RATES ARE TO MULTIPLIED BY 1.10 THE A[6] MUST BE .10
[10]   SE←A[5] ⍝SEX OF CLAIMANT (1=MALE, 2=FEMALE)
[11]   X←1⌈9⌊⌊0.5+0.2×A[1]-17
[12]   →(EP3,EP6,EP12)[+/A[4]≥ 3 6 12]
[13]  EP3:E←N←+/A[2]≥((2+⍳22)÷12),2+⍳76
[14]   →SKIP3×⍳((1>A[3]-A[2])∧A[3]>2)∨((1÷12)>A[3]-A[2])∧A[3]≤2
[15]   E←⁻1++/A[3]≥((1.5+⍳22)÷12),1.5+⍳76
[16]  SKIP3:GRADE← 9 97 ρ(22ρ1), 0.75 0.5 0.25 ,72ρ0
[17]   DIS←INCIDENCE[SE;1;]
[18]   L←(1+GRADE×AF)×TR3[SE;;],TRA[SE;;],(TRU[SE;],40ρ1)[(0,5×⍳8)∘.+⍳60]
[19]   L←(DIS∘.+98ρ0)×x\(9 1 ρ1),1-L
[20]   D←L÷ 9 98 ρ(1+I)*((2+⍳22)÷12),2+⍳76
[21]   DH←0.5×(0 1 ↓D)+ 0 ⁻1 ↓D
[22]   S←+\DH×B← 9 97 ρ(21ρ1),76ρ12
[23]   P←B×(0.375× 0 ⁻1 ↓D)+0.375× 0 1 ↓D
[24]   R←(S[X;E]+P[X;N]-S[X;N])÷DH[X;N]
[25]   →END
[26]  EP6:E←N←+/A[2]≥((5+⍳19)÷12),2+⍳76
[27]   →SKIP6×⍳((1>A[3]-A[2])∧A[3]>2)∨((1÷12)>A[3]-A[2])∧A[3]≤2
[28]   E←⁻1++/A[3]≥((4.5+⍳19)÷12),1.5+⍳76
[29]  SKIP6:GRADE← 9 94 ρ(19ρ1), 0.75 0.5 0.25 ,72ρ0
[30]   DIS←INCIDENCE[SE;2;]
[31]   L←(1+GRADE×AF)×TR6[SE;;],TRA[SE;;],(TRU[SE;],40ρ1)[(0,5×⍳8)∘.+⍳60]
[32]   L←(DIS∘.+95ρ0)×x\(9 1 ρ1),1-L
[33]   D←L÷ 9 95 ρ(1+I)*((5+⍳19)÷12),2+⍳76
[34]   DH←0.5×(0 1 ↓D)+ 0 ⁻1 ↓D
[35]   S←+\DH×B← 9 94 ρ(18ρ1),76ρ12
[36]   P←B×(0.125× 0 ⁻1 ↓D)+0.375× 0 1 ↓D
[37]   R←(S[X;E]+P[X;N]-S[X;N])÷DH[X;N]
[38]   →END
[39]  EP12:E←N←+/A[2]≥((11+⍳13)÷12),2+⍳76
[40]   →SKIP12×⍳((1>A[3]-A[2])∧A[3]>2)∨((1÷12)>A[3]-A[2])∧A[3]≤2
[41]   E←⁻1++/A[3]≥((10.5+⍳13)÷12),1.5+⍳76
[42]  SKIP12:GRADE← 9 88 ρ(13ρ1), 0.75 0.5 0.25 ,72ρ0
[43]   DIS←INCIDENCE[SE;3;]
[44]   L←(1+GRADE×AF)×TR12[SE;;],TRA[SE;;],(TRU[SE;],40ρ1)[(0,5×⍳8)∘.+⍳60]
[45]   L←(DIS∘.+89ρ0)×x\(9 1 ρ1),1-L
[46]   D←L÷ 9 89 ρ(1+I)*((11+⍳13)÷12),2+⍳76
[47]   DH←0.5×(0 1 ↓D)+ 0 ⁻1 ↓D
[48]   S←+\DH×B← 9 88 ρ(12ρ1),76ρ12
[49]   P←B×(0.125× 0 ⁻1 ↓D)+0.375× 0 1 ↓D
[50]   R←(S[X;E]+P[X;N]-S[X;N])÷DH[X;N]
[51]  END:R←⌊0.5+100×R
      ∇
```