

**TRANSACTIONS OF SOCIETY OF ACTUARIES
1969 REPORTS**

**REPORTS OF THE COMMITTEE ON EXPERIENCE
UNDER INDIVIDUAL HEALTH INSURANCE**

**I. EXPERIENCE UNDER INDIVIDUAL
LOSS-OF-TIME POLICIES, 1966-67**

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**SUMMARY OF EXPERIENCE UNDER INDIVIDUAL
LOSS-OF-TIME POLICIES, 1966-67**

The first part of the study covers experience in the first year of the benefit period. Results of data submitted by seventeen companies are

presented for males in Occupation Groups I and II and for females in Occupation Group I. Annual claim rates, average claim durations, and annual claim costs are shown for accident disability, sickness disability, and total sickness and accident disability. Annual claim costs by duration measured from data of disablement are also presented. A further part of the first-year study examines the trends in the claim rates, durations, and costs for 0-day accident, 7-day sickness, and the combination of these two during 1960-61, 1962-63, 1964-65, 1966-67, and 1960-67. Over-all evaluation of the results does not reveal a significant variation from the 1964-65 experience.

The second part of the study involves experience in the second year of the benefit period. The study is confined to male claims under policies with 0-day accident and 7-day sickness elimination periods. Claim rates, durations, and claim costs are shown for 0-day accident, 7-day sickness, and the combination of these two. Again, the results are quite similar to the previous study.

THIS report presents a two-part analysis of morbidity experience under individual loss-of-time policies during the calendar years 1966 and 1967. Part A covers experience in the first year of the benefit period, and Part B covers experience in the second year of the benefit period.

A. EXPERIENCE IN FIRST YEAR OF BENEFIT PERIOD

This section of the report presents an analysis of morbidity experience under individual loss-of-time policies during calendar years 1966-67 and a comparison of this experience with results for the periods 1960-61, 1962-63, and 1964-65. The study is limited to experience in the first year of the benefit period. Policies with benefit periods of less than one year are excluded from the study. The reporting system used for this study is generally the same as that used for the previous studies. This system is described in detail in the *1959 Reports* (pp. 126-28). Previous studies appear in the *1967 Reports*, *1965 Reports*, *1963 Reports*, *1961 Reports*, and *1959 Reports*.

The tables contain experience for males in Occupation Groups I and II and for females in Occupation Group I; for convenience, these three groups are referred to hereafter in the report as "Male I," "Male II," and "Female I." The amount of data on females in Occupation Group II was insufficient to warrant a study of this group.

Occupation Group I consists of occupations that involve little exposure to an accident hazard and do not require heavy physical activity. In

addition to those occupations involving white-collar and professional workers, Group I also includes occupations of persons engaged in trades and service work whose duties are light and nonhazardous, persons superintending manufacturing and construction operations, and so forth. Occupation Group II consists of occupations that involve a greater degree of exposure to accident hazards or in which the physical requirements of the job are reflected in longer periods of disability due either to sickness or to injury than the Group I occupations. These generally include construction workers, drivers of heavy vehicles, mechanics, those engaged in skilled and semiskilled jobs in manufacturing industries, and the like. Persons whose work requires perfect, or nearly perfect, physical condition would also be in Group II, since such persons may be disabled by a relatively minor injury.

The presentation of data generally follows the format used in prior reports. Accident and sickness disability experience is shown separately. Total disability experience is also shown.

The tables include (1) annual claim rates, (2) average claim durations in months, and (3) annual claim costs. The annual claim rates and annual claim costs for total disability are simply a sum of the separate accident and sickness annual claim rates and annual claim costs, and consequently, reflect experience on many different combinations of accident and sickness benefits. Annual claim rates (or frequencies) have been calculated by dividing the amounts of monthly indemnity on approved claims by the corresponding exposures. The exposures are based on the amounts of monthly indemnity exposed. Annual claim costs, per \$1 of monthly income benefit, have been calculated by dividing the aggregate benefits incurred on claims by the corresponding exposures. Durations of claims in months have been calculated by dividing the annual claim costs by the annual claim rates.

1. VOLUME OF DATA

For the calendar-year period 1966-67, the Committee has compiled an aggregate exposure of 2,150,000 policy years during which 107,000 claims were incurred. The companies that contributed to the study are shown in Table 1, together with the volume of each company's data for each of the calendar years studied, measured by the number of claims reported.

Table 2 shows the distribution of the number of claims reported by type of coverage, sex, occupation group, and elimination period. Number of claims has been used as the basis for measuring the volume of data, since it is a good measure of the reliability of the statistical results. The

TABLE 1
CONTRIBUTING COMPANIES AND NUMBER OF CLAIMS

COMPANY	YEAR OF EXPERIENCE		1966-67 COMBINED
	1966	1967	
Prudential.....	12,167	12,290	24,457
Metropolitan.....		14,378	14,378
Monarch.....	11,314		11,314
Pacific Mutual.....	5,147	4,761	9,908
Business Men's Assurance.....	4,518	4,230	8,748
Mutual of New York.....	4,091	4,092	8,183
Loyal Protective.....	3,221	3,007	6,228
John Hancock.....	2,946	3,227	6,173
New York Life.....	2,773	3,149	5,922
Lincoln National.....	1,919	1,937	3,856
Continental Assurance.....	907	987	1,894
Union Mutual.....	1,755		1,755
Connecticut General.....	1,104		1,104
Equitable.....	1,042		1,042
Guardian.....	972		972
Standard of Oregon.....	287	261	548
Provident Mutual.....	257	276	533
Total.....	54,420	52,595	107,015

TABLE 2
NUMBER OF CLAIMS BY TYPE OF COVERAGE,
SEX, OCCUPATION GROUP,
AND ELIMINATION PERIOD
1966-67 EXPERIENCE COMBINED

ELIMINATION PERIOD (DAYS)	ACCIDENT				SICKNESS			
	Male		Female		Male		Female	
	Occ. Group I	Occ. Group II	Occ. Group I	Occ. Group II	Occ. Group I	Occ. Group II	Occ. Group I	Occ. Group II
	0.....	11,722*	21,235*	887*	202	7,050*	2,352*	867*	77
3.....	208	514	201	18	1,206	1,650	934	95
7.....	1,455*	3,518*	408*	137	13,436*	22,423*	2,939*	718
14.....	665*	1,009*	64*	10	2,644*	1,854*	375*	32
21.....	0	0	0	0	5	0	0	3
30.....	575*	555*	70*	8	2,764*	1,246*	377*	21
60.....	25	3	2	0	97	18	13	0
90.....	34	21	1	0	198	66	8	0
Total....	14,684	26,855	1,633	375	27,400	29,609	5,513	946

* Subsequent tables and discussions are based only on data indicated.

analysis of the experience has been confined to those occupation groups and elimination periods where there is a significant amount of data. They are indicated by an asterisk in Table 2. In certain of the cells studied, virtually all the experience has been contributed by only one or two companies. The coverages for which a reasonable amount of data was contributed by all companies are the 0 and 7-day accident and the 0, 7, 14, and 30-day sickness coverages. In interpreting results obtained from a small amount of data, caution should be exercised, and, in comparing current trends with those of the previous study, it must be kept in mind that the proportion of the total experience for each company is different in the current and previous studies.

2. DISABILITY EXPERIENCE

Tables 3, 4, and 5, respectively, give a summary of the accident, sickness, and total disability experience compiled in this report. Each table shows the three elements of disability—annual claim rate, duration of claim in months, and annual claim cost—by the four variables studied—sex, occupation group, elimination period, and attained age. In order to give some idea of the credibility of the experience, the number of claims is shown.

Accident Disability (Table 3)

Table 3 shows accident disability data for four elimination periods. Comments, however, are restricted to data for a 0-day elimination period because other data are rather limited or largely contributed by one company.

The significant points of interest brought out by this table follow:

Male I and Male II.—Annual claim rates decrease with age, whereas claim durations generally increase by age. The combined effect of these decreasing claim rates and increasing durations produces annual claim costs which are about 20 per cent higher below age 40 than those above age 40.

Ratios of Male II to Male I annual claim rates decrease with age, from 210 per cent at ages 20–29 to 173 per cent at ages 60–69. Male II annual claim costs increase from 197 per cent of Male I annual claim costs at ages 20–29 to 231 per cent at ages 40–49 and then decrease to 206 per cent at ages 60–69.

Female I.—Annual claim rates are relatively level by age. Annual claim costs increase up to age 40 and thereafter remain level. Claim durations for ages 30 and above are relatively level and about twice the duration at ages 20–29.

Female I annual claim costs are less than those for Male I at ages under 40; at ages 40 and over, Female I annual claim costs are about 133 per cent of Male I annual claim costs.

TABLE 3

ACCIDENT DISABILITY LOSS-OF-TIME EXPERIENCE, 1966-67, LIMITED TO FIRST YEAR OF BENEFIT PERIOD

ATTAINED AGE	MALE OCC. GROUP I				MALE OCC. GROUP II				FEMALE OCC. GROUP I				RATIOS TO MALE OCC. GROUP I					
													Male Occ. Group II			Female Occ. Group I		
	No. Claims	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*	No. Claims	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*	No. Claims	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*
0-Day Elimination Period																		
20-29	713	.051	1 20	.061	3,035	.107	1 12	120	89	.041	83	.034	210%	93%	197%	80%	69%	56%
30-39	2,077	.045	1 22	.055	6,175	.097	1 27	123	101	.032	1 50	.048	216	104	224	71	123	87
40-49	3,192	.038	1 18	.045	6,491	.076	1 37	104	250	.038	1 63	.062	200	116	231	100	138	138
50-59	3,478	.036	1 25	.045	4,472	.066	1 52	100	324	.041	1 46	.060	183	122	222	114	117	133
60-69	2,262	.033	1 45	.048	1,062	.057	1 74	099	123	.037	1 62	.060	173	120	206	112	112	125
7-Day Elimination Period																		
20-29	128	.030	1 40	.042	435	.069	1 48	102	26	.017	1 41	.024	230%	106%	243%	57%	101%	57%
30-39	335	.027	1 37	.037	903	.060	1 68	101	57	.021	1 29	.027	222	123	273	78	94	73
40-49	494	.028	1 39	.039	1,080	.050	1 70	085	135	.024	1 71	.041	179	122	218	86	123	105
50-59	409	.027	1 67	.045	915	.047	1 83	086	180	.034	1 85	.063	174	110	191	126	111	140
60-69	89	.021	1 71	.036	185	.045	2 00	090	10	.036	1 72	.062	214	117	250	171	101	172
14-Day Elimination Period																		
20-29	51	.012	1 75	.021	130	.035	1 77	062	10	.013	1 38	.018	292%	101%	295%	108%	79%	86%
30-39	170	.012	1 67	.020	300	.035	1 91	067	10	.015	2 47	.037	292	114	335	125	148	185
40-49	242	.014	1 79	.025	356	.040	2 00	080	12	.009	3 00	.027	286	112	320	64	168	108
50-59	171	.020	1 45	.029	196	.037	2 27	084	29	.028	2 00	.056	185	157	290	140	138	193
60-69	31	.015	2 07	.031	27	.043	1 95	084	3	.017	1 76	.030	287	94	271	113	85	97
30-Day Elimination Period																		
20-29	40	.004	2 50	.010	86	.014	3 14	044	5	.003	1 33	.004	350%	126%	440%	75%	53%	40%
30-39	172	.003	2 00	.006	180	.013	2 77	036	17	.007	1 29	.030	433	139	600	233	215	500
40-49	209	.004	2 50	.010	172	.012	2 42	029	19	.006	1 67	.010	500	97	290	150	67	100
50-59	131	.006	2 50	.015	105	.017	3 00	051	28	.013	4 15	.054	283	120	340	217	166	360
60-69	23	.008	2 38	.019	12	.016	3 44	055	1	.009	1 22	.011	200	145	289	113	51	58

* Per \$1 of monthly income benefit.

Sickness Disability (Table 4)

Table 4 shows sickness disability data for four elimination periods. Comments, however, are based primarily on data for the 7-day elimination period because other data are rather limited or largely contributed by one company.

Male I and Male II.—Annual claim rates, claim durations, and annual claim costs increase with age. For the 7-day elimination period, ratios of Male II to Male I annual claim rates decrease slightly with age, from about 122 per cent at ages 20-49 to 111 per cent at ages 60-69. Male II annual claim costs decrease from 147 per cent of Male I annual claim costs at ages 20-29 to 127 per cent at ages 60-69.

Female I.—Ratios of Female I to Male I annual claim rates generally decrease with age from 192 per cent at ages 30-39 to 104 per cent at ages 60-69. Claim duration ratios decrease with age except for an increase from ages 20-29 to 30-39. At ages under 50, Female I annual claim costs are generally at least twice as high as those for Male I. At ages 50-59, Female I annual claim costs are 115 per cent of Male I annual claim costs.

Total Disability (Table 5)

Total disability annual claim rates and annual claim costs as derived in this study are the sum of the annual claim rates and annual claim costs for accident disability and sickness disability. Since sickness disability annual claim rates and annual claim costs are generally much higher than corresponding rates and costs for accident disability, total disability annual claim rates and annual claim costs tend to follow the pattern of those for sickness disability. A graphic comparison of Male I, Male II, and Female I total disability annual claim costs is shown in Chart I. Male II annual claim costs are higher than Male I annual claim costs for the four elimination periods at all ages. Female I annual claim costs generally lie between Male I and Male II annual claim costs at ages 20-29, increase to become greater than Male II at ages 30-49, and decrease to a point very close to Male I costs at ages 60-69.

Ratios of Accident Disability to Total Disability (Table 6)

The accident and sickness components of the total disability annual claim rates and annual claim costs are based on data which were contributed in different proportions by the various companies and which came from a wide variety of accident and sickness benefit combinations. This could have a significant effect on the ratios and should be kept in mind in their interpretation. Table 6 is shown, however, so that some idea may be obtained of the relationship of accident disability to total disability rates. Only ratios based on data for 0-day and 7-day elimina-

TABLE 4

SICKNESS DISABILITY LOSS-OF-TIME EXPERIENCE, 1966-67, LIMITED TO FIRST YEAR OF BENEFIT PERIOD

ATTAINED AGE	MALE OCC. GROUP I				MALE OCC. GROUP II				FEMALE OCC. GROUP I				RATIOS TO MALE OCC. GROUP I					
	No. Claims	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*	No. Claims	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*	No. Claims	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*	Male Occ. Group II			Female Occ. Group I		
													Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*
0-Day Elimination Period																		
20-29	14	.121	.60	.072	18	.112	.51	.057	10	.339	.28	.095	93%	85%	79%	280%	47%	132%
30-39	197	.113	.82	.093	195	.141	.81	.114	39	.212	.90	.190	125	99	123	188	110	204
40-49	1,263	.122	1.03	.126	638	.156	1.20	.187	192	.213	1.37	.291	128	117	148	175	133	231
50-59	3,493	.151	1.54	.233	1,057	.179	1.76	.315	402	.197	1.41	.278	119	114	135	130	92	119
60-69	2,173	.175	1.93	.338	444	.175	2.50	.437	224	.225	1.79	.402	100	130	129	129	93	119
7-Day Elimination Period																		
20-29	729	.048	.98	.047	1,668	.058	1.19	.069	246	.082	1.17	.096	121%	121%	147%	171%	119%	204%
30-39	2,254	.053	1.26	.067	4,281	.065	1.40	.091	507	.102	1.73	.176	123	111	136	192	137	263
40-49	4,061	.068	1.66	.113	7,063	.083	1.82	.151	1,107	.122	1.85	.226	122	110	134	179	111	200
50-59	4,702	.099	2.07	.205	7,387	.113	2.34	.264	1,000	.125	1.89	.236	114	113	129	126	91	115
60-69	1,690	.127	2.70	.343	2,024	.141	3.10	.437	79	.132	2.11	.278	111	115	127	104	78	81
14-Day Elimination Period																		
20-29	113	.025	1.48	.037	119	.027	1.70	.046	21	.030	2.07	.062	108%	115%	124%	120%	140%	168%
30-39	460	.027	1.52	.041	395	.040	1.75	.070	73	.079	1.75	.138	148	115	171	293	115	337
40-49	931	.041	1.80	.074	647	.056	1.91	.107	131	.074	2.53	.187	137	106	145	180	141	253
50-59	873	.065	2.45	.159	566	.087	2.70	.235	128	.086	2.05	.176	134	110	148	132	84	111
60-69	267	.094	2.95	.277	127	.132	3.61	.477	22	.079	2.22	.175	140	122	172	84	75	63
30-Day Elimination Period																		
20-29	67	.005	1.80	.009	66	.011	1.36	.015	20	.016	2.50	.040	220%	76%	167%	320%	139%	444%
30-39	477	.008	2.13	.017	277	.018	1.94	.035	88	.034	2.21	.075	225	91	206	425	104	441
40-49	1,009	.016	2.44	.039	454	.029	3.03	.088	152	.031	1.91	.065	181	124	226	213	78	167
50-59	965	.034	2.97	.101	380	.046	3.41	.157	112	.038	3.13	.119	135	115	155	112	105	118
60-69	246	.054	3.96	.214	69	.079	4.81	.380	5	.024	6.3	.015	146	121	178	44	16	7

* Per \$1 of monthly income benefit.

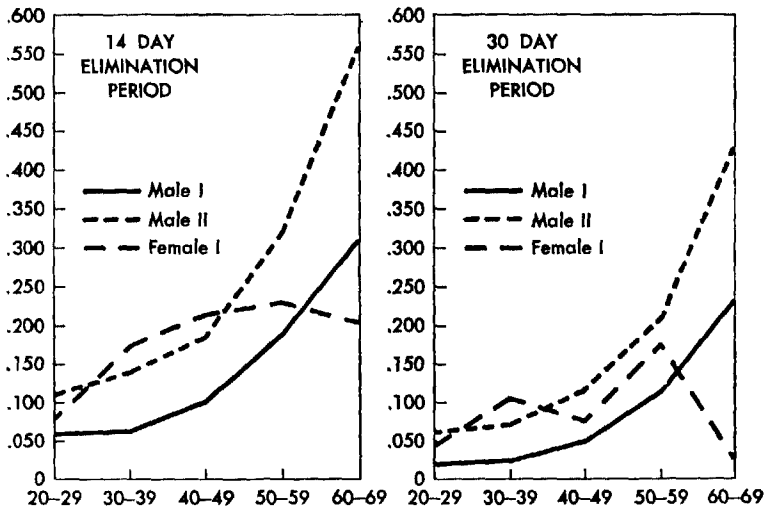
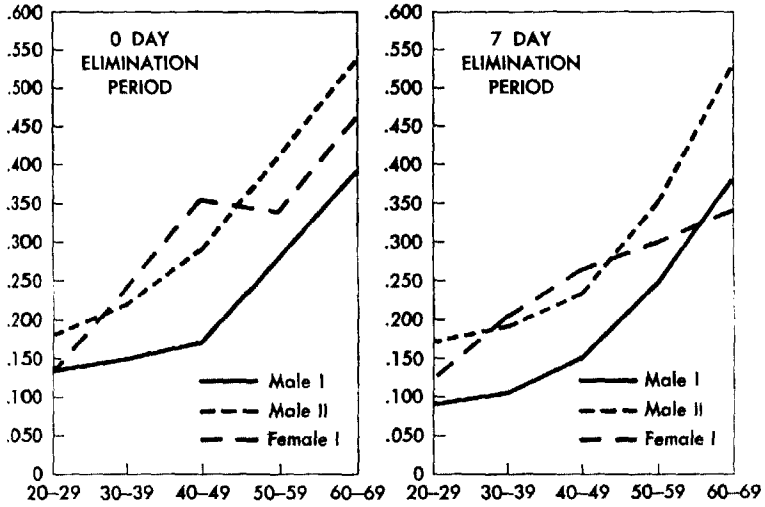
TABLE 5

TOTAL DISABILITY LOSS-OF-TIME EXPERIENCE, 1966-67, LIMITED TO FIRST YEAR OF BENEFIT PERIOD

ATTAINED AGE	MALE OCC. GROUP I				MALE OCC. GROUP II				FEMALE OCC. GROUP I				RATIOS TO MALE OCC. GROUP I					
	No. Claims	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*	No. Claims	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*	No. Claims	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*	Male Occ. Group II			Female Occ. Group I		
													Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*
0-Day Elimination Period																		
20-29	727	.172	.77	.133	3,053	.219	.81	.177	99	.380	.34	.129	127%	105%	133%	221%	44%	97%
30-39	2,274	.158	.94	.148	6,370	.238	1.00	.237	140	.244	.98	.238	151	106	160	154	104	161
40-49	4,455	.160	1.07	.171	7,129	.232	1.25	.291	442	.251	1.41	.353	145	117	170	157	132	206
50-59	6,881	.187	1.49	.278	5,529	.245	1.69	.415	726	.238	1.42	.338	131	113	149	127	95	121
60-69	4,435	.208	1.86	.386	1,506	.232	2.31	.536	347	.262	1.76	.462	112	124	139	126	95	120
7-Day Elimination Period																		
20-29	857	.078	1.14	.089	2,103	.127	1.35	.171	272	.099	1.21	.120	163%	118%	192%	127%	106%	135%
30-39	2,589	.080	1.30	.104	5,184	.125	1.54	.192	564	.123	1.65	.203	156	118	185	154	127	195
40-49	4,555	.096	1.58	.152	8,143	.133	1.77	.236	1,242	.146	1.83	.267	139	112	155	152	116	176
50-59	5,111	.126	1.98	.250	8,302	.160	2.19	.350	1,180	.159	1.88	.299	127	111	140	126	95	120
60-69	1,779	.148	2.56	.379	2,209	.186	2.83	.527	89	.168	2.02	.340	126	111	139	114	79	90
14-Day Elimination Period																		
20-29	164	.037	1.57	.058	249	.062	1.74	.108	31	.043	1.86	.080	168%	111%	186%	116%	118%	138%
30-39	630	.039	1.56	.061	695	.075	1.83	.137	83	.094	1.86	.175	192	117	225	241	119	287
40-49	1,173	.055	1.80	.099	1,003	.096	1.95	.187	143	.083	2.58	.214	175	108	189	151	143	216
50-59	1,044	.085	2.21	.188	762	.124	2.57	.319	157	.114	2.04	.232	146	116	170	134	92	123
60-69	298	.109	2.83	.308	154	.175	3.21	.561	25	.096	2.14	.205	161	113	182	88	76	67
30-Day Elimination Period																		
20-29	107	.009	2.11	.019	152	.025	2.36	.059	25	.019	2.32	.044	278%	112%	311%	211%	110%	232%
30-39	649	.011	2.09	.023	457	.031	2.29	.071	105	.041	2.56	.105	282	110	309	373	122	457
40-49	1,218	.020	2.45	.049	626	.041	2.85	.117	171	.040	1.88	.075	205	116	239	200	77	153
50-59	1,096	.040	2.90	.116	485	.063	3.30	.208	140	.051	3.39	.173	158	114	179	128	117	149
60-69	269	.062	3.76	.233	81	.095	4.58	.435	6	.033	.79	.026	153	122	187	53	21	11

* Per \$1 of monthly income benefit.

CHART I
 TOTAL DISABILITY LOSS-OF-TIME EXPERIENCE,
 1966-67 ANNUAL CLAIM COSTS*
 (Limited to First Year of Benefit Period)



* Per \$1 of monthly income benefit.

tion periods are shown because of the even greater limitations of data for the other elimination periods.

Male I and Male II.—Ratios of accident disability to total disability experience decrease by age. For both Male I and Male II the ratios of annual claim costs for the 0-day elimination period are similar to the ratios for the 7-day elimination period costs. The ratios of accident disability to total disability with respect to annual claim rates and annual claim costs for Male II are approximately 150 per cent of those for Male I.

Female I.—The ratios of accident disability annual claim costs to total disability annual claim costs show a much smaller decrease by age than those for males.

TABLE 6
RATIOS OF ACCIDENT DISABILITY TO TOTAL DISABILITY
LOSS-OF-TIME EXPERIENCE
IN FIRST YEAR OF BENEFIT PERIOD
1966-67

ATTAINED AGE	0-DAY ELIMINATION PERIOD			7-DAY ELIMINATION PERIOD		
	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost
Male I						
20-29.....	30%	156%	46%	39%	123%	47%
30-39.....	29	130	37	34	105	36
40-49.....	24	110	26	29	88	26
50-59.....	19	84	16	21	84	18
60-69.....	16	78	12	14	67	10
Male II						
20-29.....	49%	138%	68%	54%	110%	60%
30-39.....	41	127	52	48	109	53
40-49.....	33	110	36	38	96	36
50-59.....	27	90	24	29	84	25
60-69.....	25	75	19	24	71	17
Female I						
20-29.....	11%	244%	26%	17%	117%	20%
30-39.....	13	153	20	17	78	13
40-49.....	15	116	18	16	93	15
50-59.....	17	103	18	21	98	21
60-69.....	14	92	13	21	85	18

3. ANNUAL CLAIM COSTS BY DURATION SINCE DISABLEMENT

Table 7 shows annual claim costs by duration, measured from the date of disablement, for 0-day accident and 7-day sickness coverages. Corresponding tabular values from the 1964 Commissioners Disability Table are also shown for durations beyond the seventh day of disablement. The tabular values which are shown for accident disability for the first seven days of disablement were developed to be consistent with values in the 1964 Commissioners Disability Table for the eighth and subsequent days of disablement.

In the comparison of crude annual claim costs with corresponding values from the 1964 Commissioners Table, a special situation exists at ages 60-69. Tabular values according to the Commissioners Table have been taken at the central age of each age group, so the tabular value shown for age group 60-69 is the one that applies at age 65. However, because many disability policies terminate at age 65, the average age for this group is probably closer to age 63; consequently, the comparable Commissioners' values should be somewhat lower than the values shown in Table 7.

It is also important to note that the Commissioners Table was intended to be a minimum reserve standard for policies providing loss-of-time benefits for disability due to accident or sickness. It was developed to provide net valuation premiums rather than the type of net premiums which would be considered desirable in preparing gross premium rates.

Male I 0-day accident annual claim costs for days 1-7, 8-14, 15-21, and 22-30 are generally slightly less than corresponding costs from the Commissioners Table. At ages below 40, Male I annual claim costs for days 31-365 are higher than those in the Commissioners Table; at higher ages, Commissioners' costs are considerably higher than Male I costs. Male II 0-day accident costs are much higher than corresponding Commissioners' costs.

Except at days 31-365, Male I and Male II accident annual claim costs and corresponding 1964 Commissioners' costs decrease with advancing age. At days 31-365, Male I annual claim costs decrease at ages below 50, Male II annual claim costs are relatively level, and 1964 Commissioners' annual claim costs increase with advancing age.

Male I 7-day sickness annual claim costs are equal to or less than corresponding Commissioners' costs, especially at the higher ages. Male II 7-day sickness annual claim costs are close to corresponding Commissioners' costs for days 8-14, 15-21, and 22-30. At days 31-372, Male II annual claim costs for ages below 60 exceed corresponding Commissioners' costs.

TABLE 7
 DISABILITY LOSS-OF-TIME EXPERIENCE, 1966-67
 ANNUAL CLAIM COSTS* BY DURATION MEASURED
 FROM DATE OF DISABLEMENT

ATTAINED AGE	DURATION SINCE DISABLEMENT (DAYS)																	
	1-7			8-14			15-21			22-30			31-365†			Total		
	Male I	Male II	1964 Comm.‡	Male I	Male II	1964 Comm.	Male I	Male II	1964 Comm.	Male I	Male II	1964 Comm.	Male I	Male II	1964 Comm.	Male I	Male II	1964 Comm.
Accident Disability 0-Day Elimination Period																		
20-29 .....	.011	.023	.015	.008	.017	.010	.006	.012	.007	.006	.012	.006	.030	.056	.023	.061	.120	.061
30-39 .....	.010	.021	.013	.008	.016	.009	.006	.012	.007	.005	.012	.006	.026	.062	.024	.055	.123	.059
40-49 .....	.008	.017	.011	.007	.013	.009	.005	.010	.007	.005	.010	.006	.020	.054	.030	.045	.104	.063
50-59 .....	.008	.015	.009	.006	.012	.007	.005	.010	.006	.005	.009	.006	.021	.054	.039	.045	.100	.067
60-69 .....	.007	.013	.008	.006	.011	.007	.005	.009	.006	.005	.009	.006	.025	.057	.062	.048	.099	.089
Sickness Disability 7-Day Elimination Period																		
20-29 .....				.011	.013	.011	.008	.010	.008	.007	.010	.007	.021	.036	.025	.047	.069	.051
30-39 .....				.012	.015	.016	.010	.012	.011	.010	.012	.010	.035	.052	.040	.067	.091	.077
40-49 .....				.015	.019	.021	.013	.016	.016	.013	.017	.016	.072	.099	.075	.113	.151	.128
50-59 .....				.022	.026	.030	.020	.022	.024	.021	.024	.024	.142	.192	.157	.205	.264	.236
60-69 .....				.029	.032	.040	.026	.030	.034	.029	.033	.037	.259	.342	.375	.343	.437	.486
Total of 0-Day Accident and 7-Day Sickness																		
20-29 .....	.011	.023	.015	.019	.030	.021	.014	.022	.015	.013	.022	.013	.051	.092	.048	.108	.189	.112
30-39 .....	.010	.021	.013	.020	.031	.025	.016	.024	.018	.015	.024	.016	.061	.114	.064	.122	.214	.136
40-49 .....	.008	.017	.011	.022	.032	.030	.018	.026	.023	.018	.027	.022	.092	.153	.105	.158	.255	.191
50-59 .....	.008	.015	.009	.028	.038	.037	.025	.032	.030	.026	.033	.030	.163	.246	.196	.250	.364	.303
60-69 .....	.007	.013	.008	.035	.043	.047	.031	.039	.040	.034	.042	.043	.284	.399	.437	.391	.536	.575

* Per \$1 of monthly income benefit.

† Days 31-372 for 7-day sickness coverage.

‡ These values were developed to be consistent with values in the 1964 Commissioners Disability Table for the eighth and subsequent days of disablement.

The combined accident plus sickness disability experience shows that the Commissioners' costs are between Male I and Male II costs, except at ages 60-69. The Commissioners' costs should be used as a standard of comparison against the unweighted average of Male I and Male II costs. Except for ages 60-69, the unweighted average costs are somewhat higher than the Commissioners' costs.

4. TRENDS IN EXPERIENCE

Tables 8, 9, and 10 show the accident experience with a 0-day elimination period, the sickness experience with a 7-day elimination period, and the total of these two for the four calendar year periods 1960-61, 1962-63, 1964-65, and 1966-67, as well as the unweighted average of these four periods which reflects the experience for 1960-67.

Annual Claim Rates (Table 8)

In general, the 1966-67 claim rates are lower than the rates for any of the other three calendar year periods, except at ages 20-29.

Claim Durations in Months (Table 9)

The claim durations are generally higher in the current study than they are for any of the other three calendar-year periods.

Annual Claim Costs per \$1 of Monthly Income Benefit (Table 10)

Annual claim costs for the current experience are very similar to the experience for the previous study and the experience for the entire period 1960-67, except that the costs are higher at the lower ages as a result of the higher accident experience.

B. EXPERIENCE IN SECOND YEAR OF BENEFIT PERIOD

Thirteen companies contributed to this part of the study. The study is based on the experience during the second year of the benefit period with respect to claims incurred during 1965 and 1966. The previous study, which was the first study of the experience during the second year of the benefit period, appeared in the *1967 Reports* (p. 73). Experience on policies having maximum benefit periods of less than two years is omitted. Annual claim rates were calculated by dividing the amounts of monthly indemnity on claims which continued for twelve months from the end of the elimination period by the corresponding exposures. Contributions to the accident portion of the study were limited to experience under policies with a 0-day accident elimination period, and contributions to the sickness portion were limited to experience under policies with a 7-day sickness elimination period. This study is confined to male experience,

TABLE 8

ACCIDENT AND SICKNESS EXPERIENCE IN FIRST YEAR OF BENEFIT PERIOD
 ELIMINATION PERIOD OF 0 DAY FOR ACCIDENT AND 7 DAY FOR SICKNESS
 EXPERIENCE DURING 1960-61, 1962-63, 1964-65, 1966-67, AND 1960-67
 ANNUAL CLAIM RATE

ATTAINED AGE	MALE OCC. GROUP I					MALE OCC. GROUP II					FEMALE OCC. GROUP I				
	1960-61	1962-63	1964-65	1966-67	1960-67	1960-61	1962-63	1964-65	1966-67	1960-67	1960-61	1962-63	1964-65	1966-67	1960-67
0-Day Accident															
20-29 . . . . .	.048	.058	.057	.051	.054	.101	.112	.123	.107	.111	.037	.039	.035	.041	.038
30-39 . . . . .	.044	.048	.050	.045	.047	.087	.097	.101	.097	.096	.034	.045	.039	.032	.038
40-49 . . . . .	.045	.044	.044	.038	.043	.085	.086	.085	.076	.083	.044	.045	.045	.038	.043
50-59 . . . . .	.041	.041	.040	.036	.040	.075	.080	.075	.066	.074	.053	.060	.043	.041	.049
60-69 . . . . .	.041	.040	.037	.033	.038	.075	.072	.062	.057	.067	.051	.073	.057	.037	.055
7-Day Sickness															
20-29 . . . . .	.048	.031	.045	.048	.043	.047	.056	.050	.058	.053	.070	.073	.082	.082	.077
30-39 . . . . .	.063	.059	.058	.053	.058	.067	.073	.067	.065	.068	.107	.110	.114	.102	.108
40-49 . . . . .	.083	.080	.073	.068	.076	.089	.092	.084	.083	.087	.130	.132	.127	.122	.128
50-59 . . . . .	.113	.116	.105	.099	.108	.127	.123	.116	.113	.120	.149	.150	.124	.125	.137
60-69 . . . . .	.127	.126	.126	.127	.127	.157	.158	.146	.141	.151	. . . . .	.162	.119	.132	.138
Total of 0-Day Accident and 7-Day Sickness															
20-29 . . . . .	.096	.089	.102	.099	.097	.148	.168	.173	.165	.164	.107	.112	.117	.123	.115
30-39 . . . . .	.107	.107	.108	.098	.105	.154	.170	.168	.162	.164	.141	.155	.153	.134	.146
40-49 . . . . .	.128	.124	.117	.106	.119	.174	.178	.169	.159	.170	.174	.177	.172	.160	.171
50-59 . . . . .	.154	.157	.145	.135	.148	.202	.203	.191	.179	.194	.202	.210	.167	.166	.186
60-69 . . . . .	.168	.166	.163	.160	.165	.232	.230	.208	.198	.218	. . . . .	.235	.176	.169	.193

TABLE 9

ACCIDENT AND SICKNESS EXPERIENCE IN FIRST YEAR OF BENEFIT PERIOD
 ELIMINATION PERIOD OF 0 DAY FOR ACCIDENT AND 7 DAY FOR SICKNESS
 EXPERIENCE DURING 1960-61, 1962-63, 1964-65, 1966-67, AND 1960-67
 CLAIM DURATION IN MONTHS

ATTAINED AGE	MALE Occ. GROUP I					MALE Occ. GROUP II					FEMALE Occ. GROUP I				
	1960-61	1962-63	1964-65	1966-67	1960-67	1960-61	1962-63	1964-65	1966-67	1960-67	1960-61	1962-63	1964-65	1966-67	1960-67
	0-Day Accident														
20-29.....	.81	.93	1.02	1.20	.99	.93	.94	.98	1.12	.99	.73	.87	1.03	.83	.87
30-39.....	.84	.92	1.08	1.22	1.02	.99	1.08	1.14	1.27	1.12	.82	1.09	.97	1.50	1.10
40-49.....	.93	.98	1.14	1.18	1.06	1.09	1.21	1.28	1.37	1.24	.93	1.18	1.38	1.63	1.28
50-59.....	1.00	1.05	1.18	1.25	1.12	1.28	1.31	1.31	1.52	1.36	1.42	1.18	1.60	1.46	1.42
60-69.....	1.24	1.25	1.35	1.45	1.32	1.61	1.42	1.63	1.74	1.60	1.31	1.40	1.53	1.62	1.47
	7-Day Sickness*														
20-29.....	1.00	1.06	1.07	.98	1.03	1.26	1.09	1.12	1.19	1.17	1.23	1.04	1.12	1.17	1.14
30-39.....	1.10	1.29	1.31	1.26	1.24	1.28	1.33	1.39	1.40	1.35	1.31	2.03	1.68	1.73	1.69
40-49.....	1.45	1.68	1.62	1.66	1.60	1.61	1.68	1.79	1.82	1.73	1.52	1.64	1.80	1.85	1.70
50-59.....	1.93	2.03	2.02	2.07	2.01	2.09	2.10	2.22	2.34	2.19	1.56	1.69	1.79	1.89	1.73
60-69.....	2.45	2.50	2.55	2.70	2.55	2.73	3.04	2.98	3.10	2.96	.....	2.39	2.20	2.11	2.23
	Total of 0-Day Accident and 7-Day Sickness*														
20-29.....	.91	.98	1.04	1.09	1.00	1.03	.99	1.02	1.15	1.04	1.06	.98	1.09	1.06	1.05
30-39.....	.99	1.12	1.20	1.24	1.14	1.12	1.19	1.24	1.32	1.21	1.19	1.75	1.50	1.67	1.53
40-49.....	1.27	1.43	1.43	1.49	1.39	1.36	1.46	1.53	1.60	1.49	1.37	1.53	1.69	1.80	1.59
50-59.....	1.68	1.77	1.79	1.85	1.77	1.79	1.79	1.86	2.03	1.86	1.52	1.55	1.74	1.78	1.64
60-69.....	2.15	2.20	2.28	2.44	2.26	2.37	2.53	2.58	2.71	2.53	.....	2.08	1.98	2.00	2.01

* Table 10 divided by Table 8.

TABLE 10

ACCIDENT AND SICKNESS EXPERIENCE IN FIRST YEAR OF BENEFIT PERIOD
 ELIMINATION PERIOD OF 0 DAY FOR ACCIDENT AND 7 DAY FOR SICKNESS
 EXPERIENCE DURING 1960-61, 1962-63, 1964-65, 1966-67, AND 1960-67
 ANNUAL CLAIM COSTS PER \$1 OF MONTHLY INCOME BENEFIT

ATTAINED AGE	MALE OCC. GROUP I					MALE OCC. GROUP II					FEMALE OCC. GROUP I				
	1960-61	1962-63	1964-65	1966-67	1960-67	1960-61	1962-63	1964-65	1966-67	1960-67	1960-61	1962-63	1964-65	1966-67	1960-67
0-Day Accident															
20-29.....	.039	.054	.058	.061	.053	.094	.105	.121	.120	.110	.027	.034	.036	.034	.033
30-39.....	.037	.044	.054	.055	.048	.086	.105	.115	.123	.107	.028	.049	.038	.048	.041
40-49.....	.042	.043	.049	.045	.045	.093	.104	.109	.104	.103	.041	.053	.062	.062	.055
50-59.....	.041	.043	.047	.045	.044	.096	.105	.098	.100	.100	.075	.071	.069	.060	.069
60-69.....	.051	.050	.050	.048	.050	.121	.102	.101	.099	.106	.067	.102	.087	.060	.079
7-Day Sickness															
20-29.....	.048	.033	.048	.047	.044	.059	.061	.056	.069	.061	.086	.076	.092	.096	.088
30-39.....	.069	.076	.076	.067	.072	.086	.097	.093	.091	.092	.140	.223	.191	.176	.183
40-49.....	.120	.134	.118	.113	.121	.143	.155	.150	.151	.150	.197	.217	.229	.226	.217
50-59.....	.218	.235	.212	.205	.218	.266	.258	.257	.264	.261	.232	.254	.222	.236	.236
60-69.....	.311	.315	.321	.343	.323	.429	.480	.435	.437	.445	.....	.387	.262	.278	.309
Total of 0-Day Accident and 7-Day Sickness															
20-29.....	.087	.087	.106	.108	.097	.153	.166	.177	.189	.171	.113	.110	.128	.130	.121
30-39.....	.106	.120	.130	.122	.120	.172	.202	.208	.214	.199	.168	.272	.229	.224	.224
40-49.....	.162	.177	.167	.158	.166	.236	.259	.259	.255	.253	.238	.270	.291	.288	.272
50-59.....	.259	.278	.259	.250	.262	.362	.363	.355	.364	.361	.307	.325	.291	.296	.305
60-69.....	.362	.365	.371	.391	.373	.550	.582	.536	.536	.551	.....	.489	.349	.338	.388

for which there were 818 claims incurred. There were only 37 female claims, all in Occupational Group I, which were insufficient to provide any significant data. Using Male I results as the expected, the ratio of actual to expected claims costs for these females on an over-all basis was 126 per cent.

In this study 54 per cent of the experience was contributed by one company, while 83 per cent of the experience studied was contributed by four companies. Because of the sparsity of data, second-year annual claim rates and annual claim costs developed from these data may prove to be unreliable.

TABLE 11
DISABILITY LOSS-OF-TIME EXPERIENCE IN
SECOND YEAR OF BENEFIT PERIOD
FOR CLAIMS INCURRED DURING 1965-66

ATTAINED AGE	MALE OCC. GROUP I				MALE OCC. GROUP II				1964 COMM. ANNUAL CLAIM COST*
	No. Claims	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*	No. Claims	Annual Claim Rate	Claim Duration (Months)	Annual Claim Cost*	
0-Day Accident									
20-29.....	9	.00100	11.6	.0116	34	.00090	7.2	.0065	.0034
30-39.....	30	.00083	10.1	.0084	67	.00113	8.5	.0096	.0040
40-49.....	22	.00036	8.3	.0030	86	.00113	9.3	.0105	.0069
50-59.....	7	.00019	6.3	.0012	63	.00122	8.1	.0099	.0141
60-64.....	6	.00024	7.9	.0019	27	.00178	9.8	.0175	.0255
7-Day Sickness									
20-29.....	3	.00050	7.0	.0035	12	.00073	9.7	.0071	.0036
30-39.....	17	.00051	9.8	.0050	30	.00084	9.8	.0082	.0066
40-49.....	41	.00122	8.9	.0109	100	.00264	9.1	.0241	.0169
50-59.....	69	.00360	10.0	.0361	127	.00650	10.1	.0656	.0573
60-64.....	31	.00672	10.7	.0722	37	.01077	9.1	.0983	.1393
Total of 0-Day Accident and 7-Day Sickness									
20-29.....	12	.00150	10.0	.0151	46	.00163	8.3	.0136	.0070
30-39.....	47	.00134	10.0	.0134	97	.00197	9.0	.0178	.0106
40-49.....	63	.00158	8.8	.0139	186	.00377	9.2	.0346	.0238
50-59.....	76	.00379	9.8	.0373	190	.00772	9.8	.0755	.0714
60-64.....	37	.00696	10.6	.0741	64	.01255	9.2	.1158	.1648

* Per \$1 of monthly income benefit.

Table 11 shows second-year Male I and Male II experience for 0-day accident, 7-day sickness, and the combined 0-day accident and 7-day sickness coverages. Corresponding annual claim costs from the 1964 Commissioners Disability Table are also shown. The Commissioners Table provides a useful basis of comparison with second-year costs even though it was developed to provide valuation net premiums and not to provide net premiums which would be considered desirable in preparing gross premiums.

As was true in the previous study, annual claim rates and annual claim costs for Male I 0-day accident experience decrease by age, with a slight increase from ages 50-59 to 60-64, but the decrease by age is steeper than that shown in the previous study. Male II 0-day accident annual claim rates are relatively level up to age 59. Male I and Male II 0-day accident claim costs are generally higher than those in the previous study, mainly because of the increase in claim frequency rather than the increase in average claim duration.

Male I and Male II 7-day sickness annual claim rates and annual claim costs for the second year of the benefit period are somewhat level below age 40 and then increase rather steeply by age. Unlike the results of the previous study, Male II annual claim costs are higher than Male I annual claim costs at all ages because of a substantial decrease in the frequency of claims for Male I and quite an increase for Male II. Claim durations for the 7-day sickness coverage are generally longer than those in the previous study.

For the combined 0-day accident and 7-day sickness coverage, the Male I and II claims costs up to age 40 are higher than the Commissioners' claim costs. For ages 40-59 the Male I costs are lower and the Male II costs are higher than the Commissioners' claim costs.