

**TRANSACTIONS OF SOCIETY OF ACTUARIES
1955 REPORTS**

**REPORT OF THE COMMITTEE ON GROUP
INSURANCE MORTALITY**

GROUP LIFE INSURANCE

THIS report adds the experience by number of lives for the calendar years 1951 through 1954 under group term life insurance policies to that previously reported in the 1951 report of the Committee. Trusteeship and association cases insuring employees of member employers of the trusteeship or association, and union cases, whether or not insurance depends on continued employment, are excluded.

Data are included only with respect to policies containing one of the three common disability provisions described briefly below:

- (i) The Waiver of Premium Disability clause, in general, provides for waiver of premium upon receipt of proof of total disability of at least 9 months duration, occurring before age 60. Proof of continued total disability is required annually thereafter.
- (ii) The Extended Death Benefit clause provides for payment of the full face amount, in general, upon death occurring within one year after termination of employment and prior to age 65 (or 60) if the employee was disabled at the time of termination of employment and continued disabled until death.
- (iii) The Total and Permanent Disability clause provides, upon an employee's disability prior to age 60, for payment of the face amount of insurance, in some instances in one sum, in others in installments over a short period, usually 60 months.

The experience under the Total and Permanent Disability clause should be interpreted cautiously since companies have not generally offered these benefits for many years. The data in this report are based largely on the somewhat select group of older policies under which the clause was retained.

In Table 1 the data are shown for each disability provision by calendar year in comparison with the Commissioners 1941 Standard Ordinary Mortality Table as the basis of expected claims. After an upward fluctuation in the experience on the Waiver of Premium and Extended Death Benefit clauses during 1952, the downward trend was resumed during 1953 and 1954.

In Table 2, the aggregate data for the five most recent calendar years (1950 through 1954) appear for each disability clause tabulated by five year age groups. In the case of the Waiver of Premium clause, it should

TABLE 1
RATED AND NONRATED INDUSTRIES COMBINED

Year	Years Exposed	Total Claims*	Ratio A/E†	Accident Claims	Disability Claims*
Waiver of Premium					
1946	1,585,198	10,452	60.6%	833	548
1947	1,837,869	11,615	60.0	970	559
1948	2,328,059	14,724	60.5	1,217	770
1949	2,476,751	15,283	58.4	1,191	885
1950	2,552,163	15,605	57.5	1,205	1,059
1951	2,319,197	14,256	56.7	1,201	612
1952	2,571,877	16,508	58.7	1,353	835
1953	2,914,784	17,986	56.8	1,535	943
1954	3,081,399	18,864	55.4	1,518	1,007
Total	21,667,297	135,293	58.0%	11,023	7,218
Extended Death Benefit					
1946	1,385,788	10,555	65.1%	901	
1947	2,569,819	20,118	67.6	1,899	
1948	3,017,791	22,546	65.3	1,960	
1949	2,828,326	21,046	63.3	1,580	
1950	2,648,727	19,091	60.9	1,441	
1951	2,366,677	16,438	58.9	1,224	
1952	2,298,704	16,873	60.7	1,223	
1953	2,284,411	16,287	59.1	1,230	
1954	2,155,781	14,667	56.4	1,128	
Total	21,556,024	157,621	62.0%	12,586	
Total and Permanent Disability					
1946	2,440,388	19,553	71.8%	1,284	2,687
1947	3,512,520	28,074	71.9	2,008	3,607
1948	3,912,756	30,415	70.0	1,994	3,689
1949	4,056,131	31,180	68.8	1,897	4,042
1950	3,824,623	28,665	66.1	1,774	3,679
1951	2,925,855	21,687	64.4	1,402	2,144
1952	3,103,840	22,256	62.4	1,467	2,116
1953	3,244,485	23,040	62.0	1,504	2,191
1954	3,175,704	22,917	61.7	1,406	2,291
Total	30,196,302	227,787	66.3%	14,736	26,446
Grand Total	73,419,623	520,701	62.7%	38,345	33,664

* 75% of Disability Claims on Waiver of Premium.

† Expected Claims on CSO Table.

TABLE 2
CALENDAR YEARS 1950-1954

CENTRAL AGE	WAIVER OF PREMIUM					EXTENDED DEATH BENEFIT				TOTAL AND PERMANENT DISABILITY				
	Years Exposed	Total Claims*	Ratio A/E†	Acc. Deaths	Dis. Claims*	Years Exposed	Total Claims	Ratio A/E†	Acc. Deaths	Years Exposed	Total Claims	Ratio A/E†	Acc. Deaths	Dis. Claims
Rated Industries														
18	16,979	29	75	25	.....	13,362	31	102	23	14,056	21	66	18	1
23	74,371	107	55	77	5	61,361	100	62	80	72,948	93	48	51	7
28	116,239	185	50	95	17	105,461	157	47	106	124,087	190	48	92	26
33	121,408	224	46	95	19	119,634	188	39	103	139,654	240	43	81	30
38	108,961	305	53	102	26	127,060	334	50	105	132,482	362	51	92	50
43	93,413	400	59	76	32	128,408	541	58	102	112,782	545	66	96	77
48	74,637	539	70	86	43	131,587	952	70	102	95,622	756	77	47	148
53	58,351	684	78	43	48	127,018	1,416	75	107	84,255	1,124	89	64	272
58	49,568	838	77	48	126	116,190	2,053	80	66	71,321	1,610	102	49	528
18-58	713,927	3,311	65	647	316	930,081	5,772	68	794	847,207	4,941	76	590	1,139
63	36,463	811	67	38	.....	96,672	2,538	80	91	54,729	1,363	76	34	.....
68	20,159	690	69	26	.....	58,028	2,411	84	59	35,183	1,335	76	34	.....
73	7,812	381	65	13	.....	24,286	1,590	87	34	18,757	1,080	77	23	.....
78	2,480	220	77	6	.....	10,802	1,008	82	18	8,905	822	81	15	.....
83	765	87	65	2	.....	3,963	542	78	11	3,338	483	83	12	.....
88	150	37	93	0	.....	1,093	238	82	10	924	196	80	4	.....
93	23	6	.....	0	.....	187	62	81	2	120	43	88	2	.....
98	3	0	.....	0	.....	7	5	.....	.....	15	7	.....	0	.....
63-98	67,855	2,232	68	85	.....	195,038	8,394	82	225	121,971	5,329	78	124	.....
Total	781,782	5,543	66	732	316	1,125,119	14,166	76	1,019	969,178	10,270	77	714	1,139
Nonrated Industries														
18	414,887	399	42	250	21	323,565	312	42	208	549,215	504	40	288	49
23	1,209,224	1,359	43	676	117	984,821	959	37	522	1,618,199	1,650	39	738	253
28	1,685,433	1,903	36	687	221	1,353,817	1,440	33	647	2,058,690	2,383	36	863	388
33	1,738,581	2,466	35	732	247	1,391,245	1,737	31	548	2,029,578	2,903	36	747	511
38	1,709,234	3,571	39	656	317	1,402,680	2,655	36	534	1,985,855	4,178	40	697	710
43	1,568,194	5,567	49	640	425	1,314,225	4,333	45	535	1,838,265	6,729	50	682	1,057
48	1,327,195	7,939	58	592	594	1,151,924	6,237	52	488	1,582,838	9,771	60	581	1,539
53	1,061,666	10,043	63	482	839	953,422	8,418	59	442	1,266,022	13,285	70	559	2,377
58	845,107	12,649	68	455	1,359	760,373	10,622	63	396	990,750	17,573	80	486	4,398
18-58	11,559,521	45,896	54	5,170	4,140	9,636,072	36,713	50	4,320	13,919,412	58,976	58	5,641	11,282

* 75% of Disability Claims on Waiver of Premium.

† Expected Claims on CSO Table; A/E in percent.

TABLE 2—Continued

CENTRAL AGE	WAIVER OF PREMIUM					EXTENDED DEATH BENEFIT				TOTAL AND PERMANENT DISABILITY				
	Years Exposed	Total Claims*	Ratio A/E†	Acc. Deaths	Dis. Claims*	Years Exposed	Total Claims	Ratio A/E†	Acc. Deaths	Years Exposed	Total Claims	Ratio A/E†	Acc. Deaths	Dis. Claims
<i>Nonrated Industries—Continued</i>														
63.....	597,717	12,170	62	407	.....	529,876	11,552	66	344	698,629	14,805	64	440	.....
68.....	317,181	9,306	59	240	.....	281,766	9,158	65	247	388,850	13,068	68	321	.....
73.....	125,926	5,683	60	144	.....	120,584	5,970	66	165	183,762	9,558	69	191	.....
78.....	43,237	2,919	59	74	.....	45,127	3,518	68	88	78,823	6,599	73	126	.....
83.....	11,534	1,257	62	32	.....	13,067	1,650	72	41	27,961	3,634	74	86	.....
88.....	2,254	379	63	9	.....	2,378	516	81	18	6,792	1,317	73	27	.....
93.....	239	55	56	3	.....	296	101	84	4	1,029	311	74	7	.....
98.....	29	11	40	1	.....	15	12	83	0	71	27	40	0	.....
63-98.....	1,098,117	31,780	60	910	.....	993,109	32,477	67	907	1,385,917	49,319	68	1,198	.....
Total.....	12,657,638	77,676	56	6,080	4,140	10,629,181	69,190	57	5,227	15,305,329	108,295	62	6,839	11,282
<i>Rated and Nonrated Industries Combined</i>														
18.....	431,866	428	43	275	21	336,927	343	45	231	563,271	525	41	306	50
23.....	1,283,595	1,466	43	753	122	1,046,182	1,059	38	602	1,691,147	1,743	39	789	260
28.....	1,801,672	2,088	36	782	238	1,459,278	1,597	34	753	2,182,777	2,573	37	955	414
33.....	1,859,989	2,690	36	827	266	1,510,879	1,925	32	651	2,169,232	3,143	36	828	541
38.....	1,818,195	3,876	40	758	343	1,529,740	2,989	37	639	2,118,337	4,540	40	789	760
43.....	1,661,607	5,967	49	716	457	1,442,633	4,874	46	637	1,951,047	7,274	51	778	1,134
48.....	1,401,832	8,478	59	678	637	1,283,511	7,189	54	590	1,678,460	10,527	61	628	1,687
53.....	1,120,017	10,727	64	525	887	1,080,440	9,834	61	549	1,350,277	14,409	71	623	2,649
58.....	894,675	13,487	68	503	1,485	876,563	12,675	66	462	1,062,071	19,183	82	535	4,926
18-58.....	12,273,448	49,207	54	5,817	4,456	10,566,153	42,485	52	5,114	14,766,619	63,917	59	6,231	12,421
63.....	634,180	12,981	62	445	.....	626,548	14,090	68	435	753,358	16,168	65	474	.....
68.....	337,340	9,996	60	266	.....	339,794	11,569	69	306	424,033	14,403	68	355	.....
73.....	133,738	6,064	60	157	.....	144,870	7,560	69	199	202,519	10,638	70	214	.....
78.....	45,717	3,139	60	80	.....	55,929	4,526	71	106	87,728	7,421	74	141	.....
83.....	12,299	1,344	63	34	.....	17,030	2,192	74	52	31,299	4,117	75	98	.....
88.....	2,404	416	65	9	.....	3,471	754	81	28	7,716	1,513	74	31	.....
93.....	262	61	57	3	.....	483	163	83	6	1,149	354	76	9	.....
98.....	32	11	36	1	.....	22	17	81	0	86	34	41	0	.....
63-98.....	1,165,972	34,012	61	995	.....	1,188,147	40,871	69	1,132	1,507,888	54,648	69	1,322	.....
Total.....	13,439,420	83,219	57	6,812	4,456	11,754,300	83,356	59	6,246	16,274,507	118,565	63	7,553	12,421

be kept in mind that the actual disability claims shown represent three-fourths of the approved claims. The data are shown separately for rated and nonrated industries as well as for both combined. The separation of the data between rated and nonrated industries is the same as was used for the 1951 Reports. The rated category comprises industry codes 10-23, 40, 42, 44, 61, 64, 110, 113, 115, 134, 220, 320-323, 331, 334 and 338-340.

The data for the nonrated industries shown in Table 2 were used to compute, separately for death and disability claims, the ratios of actual

TABLE 3
NONRATED INDUSTRIES
1950-1954 CRUDE QUINQUENNIAL DEATH AND DISABILITY RATES

CENTRAL AGE	WAIVER OF PREMIUM		EXTENDED DEATH BENEFIT	TOTAL AND PERMANENT DISABILITY	
	Death	Disability*	Death	Death	Disability
18	.00091	.000051	.00096	.00083	.000089
23	.00103	.000097	.00097	.00086	.000156
28	.00100	.000131	.00106	.00097	.000188
33	.00128	.000142	.00125	.00118	.000252
38	.00190	.000185	.00189	.00175	.000358
43	.00328	.000271	.00330	.00309	.000575
48	.00553	.000448	.00541	.00520	.000972
53	.00867	.000790	.00883	.00862	.001878
58	.01336	.001608	.01397	.01330	.004439
63	.02036		.02180	.02119	
68	.02934		.03250	.03361	
73	.04513		.04951	.05201	
78	.06751		.07796	.08372	
83	.10898		.12627	.12997	
88	.16815		.21699	.19390	
93	.23013		.34122	.30224	
98	.37931		.80000	.38028	

* 75% of Disability Claims on Waiver of Premium.

claims to exposed to risk for each five year age group. These crude death and disability rates, which appear in Table 3 for each disability clause, are used with the adjustment described below as the standard of comparison for the analysis of the variation in experience by industry code set forth in Table 4.

Table 4 contains the experience observed for the calendar years 1946 through 1954. In order to secure the maximum exposure by industry in view of the small amount of data for some classes, the full nine years' experience has been used rather than the experience of 1950 through 1954 only. The expected death and disability claims were obtained by applying

TABLE 4
CALENDAR YEARS 1946-1954

INDUSTRY CODE	INDUSTRY	WAIVER OF PREMIUM				EXTENDED DEATH BENEFIT			TOTAL AND PERMANENT DISABILITY				ALL CLAUSES COMBINED				
		Years Exposed	Death		Disability*		Years Exposed	Death		Years Exposed	Death		Disability		A-E† Per M	Acc. Deaths	
			No.	A/E†	No.	A/E†		No.	A/E†		No.	A/E†	No.	Per M		No.	Per M
	<i>Agriculture</i>																
1	Florists and Nurserymen	27,224	203	97	7	76	19,887	122	82	12,465	135	85	12	94	-1.0	40	0.7
2	Fruit Growing	5,998	28	73	1	.....	40,600	266	86	4,412	43	87	9	.....	-1.2	25	0.5
3	Stock Ranging and Ranching	2,462	13	83	1	.....	1,484	4	49	1,515	8	62	2	.....	-2.1	4	0.7
4	General Farming and All Other Agriculture	41,487	276	80	3	21	7,607	59	94	13,164	104	84	3	20	-1.9	43	0.7
	Total	77,171	520	86	12	46	69,578	451	85	31,556	290	84	26	75	-1.4	112	0.6
	<i>Mining</i>																
10	Coal—Bit. (Surface)	20,698	148	117	7	97	5,282	46	119	6,207	46	107	5	.....	+1.0	52	1.6
11	Coal—Bit. (Underground)	73,871	680	122	54	205	78,118	609	116	20,117	226	119	68	360	+1.9	283	1.6
12	Coal—Anthracite	21,481	220	142	26	295	31,981	451	135	2,736	25	91	5	.....	+3.5	63	1.1
13	Iron (Surface)	1,881	7	67	0	.....	1,912	16	119	24,460	285	119	26	89	+1.4	39	1.4
14	Iron (Underground)	3,772	31	145	3	.....	45,477	493	124	2,164	28	109	0	.....	+2.1	84	1.6
15	Copper (Surface)	29,942	267	135	23	221	211,669	3,367	138	26,073	320	135	38	126	+4.1	330	1.2
16	Copper (Underground)	4,796	38	116	7	.....	41,415	273	129	14,429	117	113	35	250	+1.8	92	1.5
17	Lead and Zinc (Surface)	198	2	.....	0	.....	4,289	36	140	142	0	.....	0	.....	+2.1	6	1.3
18	Lead and Zinc (Underground)	27,563	213	106	12	113	21,575	148	113	3,087	44	154	8	.....	+1.0	75	1.4
19	Other Metals (Surface Only)	1,180	10	156	0	.....	1,538	10	128	13,853	104	134	4	31	+1.4	19	1.1
20	Other Metals (Incl. Surface and Underground)	26,485	184	132	26	292	18,847	132	134	15,505	117	141	21	171	+2.3	114	1.9
21	Salt Production	3,222	30	115	1	.....	4,182	26	88	24,397	270	110	34	139	+1.1	27	0.8
22	Minerals (Clay, Shale, Talc, Phosphate, Feldspar, etc.)	21,585	121	105	5	74	16,449	143	132	49,723	457	138	50	124	+2.0	115	1.3
23	Quarries (Slate, Stone and Marble)	32,736	259	105	15	132	28,976	292	122	38,962	406	120	54	145	+1.5	113	1.1
	Total	269,410	2,210	120	179	187	511,710	6,042	131	241,855	2,445	124	348	148	+2.4	1,412	1.4
	<i>Oil</i>																
30	Mineral Oil Prod., Refining and Distribution	379,004	2,270	113	108	88	1,459,361	9,435	106	840,170	6,028	102	1,239	156	+0.5	1,770	0.7
	<i>Construction</i>																
40	Steel (Incl. Steel Bridges)	11,938	91	141	2	53	14,995	114	134	44,833	374	104	42	105	+1.0	74	1.0
41	Wood, Brick and Stone	87,309	504	103	27	95	23,922	193	106	15,460	145	116	5	32	+0.3	98	0.8
42	Shipbuilding (Iron and Steel)	94,229	834	123	58	168	39,515	432	130	28,503	189	107	22	82	+1.8	119	0.7
43	Shipbuilding (Wood)	5,184	30	89	0	.....	6,189	51	94	768	14	128	3	.....	-0.3	11	0.9
44	Roads (Incl. Sewers, Bridges, etc.)	43,094	318	117	18	118	65,459	590	124	15,546	191	113	12	67	+1.5	124	1.0
	Total	241,754	1,777	115	105	125	150,080	1,380	122	105,110	913	108	84	83	+1.1	426	0.9

* 75% of Disability Claims on Waiver of Premium.

† Expected Claims calculated and adjusted as described in text; A/E in percent.

TABLE 4—Continued

INDUSTRY CODE	INDUSTRY	WAIVER OF PREMIUM					EXTENDED DEATH BENEFIT			TOTAL AND PERMANENT DISABILITY					ALL CLAUSES COMBINED		
		Years Exposed	Death		Disability*		Years Exposed	Death		Years Exposed	Death		Disability		A-E† Per M	Acc. Deaths	
			No.	A/E†	No.	A/E†		No.	A/E†		No.	A/E†	No.	A/E†		No.	Per M
<i>Iron and Steel and Other Metal Industries (except Lead)</i>																	
60	Steel Works (with or without Rolling Mills)	538,893	4,608	122	335	178	806,848	6,423	124	378,212	3,161	123	393	115	+1.7	1,583	0.9
61	Steel and Iron Foundries	338,433	2,658	121	140	122	167,479	1,599	119	240,961	2,163	118	226	97	+1.4	557	0.7
62	Steel Rolling	46,430	239	91	36	234	14,135	104	141	44,882	416	129	21	48	+0.9	66	0.6
63	Tube, Rod and Pipe Mills	53,985	386	123	17	103	193,966	1,420	117	103,772	856	105	66	66	+0.8	266	0.8
64	Malleable Iron Works	56,581	505	123	28	139	52,637	374	107	66,929	638	110	50	78	+1.0	145	0.8
65	Wire Drawing and Wire Products	118,221	801	116	50	134	108,599	595	101	155,794	1,429	110	128	88	+0.6	188	0.5
66	Smelting (Electric Process) and Refining	27,176	143	99	8	94	88,259	454	94	48,236	504	137	52	110	+0.7	145	0.9
67	Other Smelting and Refining	133,862	585	101	42	101	16,178†	129	120	189,280	1,129	105	453	339	+1.2	269	0.8
68	Nonferrous Metal Foundries	48,990	361	119	15	91	28,718	241	120	112,121	670	99	83	84	+0.4	116	0.6
	Total.....	1,362,571	10,286	119	671	146	1,476,819	11,339	119	1,340,187	10,966	115	1,472	121	+1.3	3,335	0.8
<i>Metal Products</i>																	
79	Airplane Mfg.	379,071	1,405	102	131	129	205,624	723	80	723,599	2,448	84	443	86	-0.5	633	0.5
80	Automobiles and Agriculture Implements	348,882	2,009	108	204	176	1,187,549	8,944	107	1,164,742	6,925	108	999	99	+0.5	1,555	0.6
81	Car and Railroad Shops	140,875	1,181	112	69	137	45,882	476	124	25,603	390	127	30	112	+1.5	161	0.8
82	Sheet Metal Products (Stamping and Pressing)	334,459	2,087	109	85	80	239,966	1,537	104	357,830	2,521	105	203	67	+0.2	465	0.5
83	Steel Fabrication (Excluding Erecting)	118,977	799	110	47	118	50,383	331	90	86,400	735	114	89	109	+0.6	177	0.7
84	Drop Forging	41,315	286	114	14	106	37,914	300	119	65,194	499	111	36	56	+0.7	103	0.7
85	Heavy Machinery and Other Metal Products	920,340	6,150	104	306	99	814,357	6,551	107	1,093,334	8,682	106	668	67	+0.3	1,468	0.5
86	Light Metal Prod. and Mach. (Tools, Hardware, Instruments of Precision, etc.)	2,992,483	16,283	99	953	102	1,584,233	9,968	99	3,693,144	21,943	102	2,160	71	-0.1	3,354	0.4
88	Boiler Making (Heavy Tanks, etc.)	123,942	698	110	23	63	49,465	330	105	62,375	558	99	59	99	+0.2	144	0.6
89	Mfg. Radio, Television, Electronic Equipment	162,534	459	85	34	86	111,946	393	85	237,686	749	87	131	90	-0.5	148	0.3
	Total.....	5,562,878	31,357	102	1,866	107	4,327,319	29,553	101	7,509,907	45,450	103	4,818	77	+0.1	8,208	0.5
<i>Lead Industry</i>																	
100	Mfg. White and Red Lead—Foundry Work and Mfg. Lead Supplies Incl. Batteries	5,497	19	73	1	.....	40,742	377	133	70,821	489	106	64	101	+1.0	68	0.6
<i>Chemical and Allied Industries</i>																	
110	Fertilizer Production	25,641	220	127	9	98	43,116	310	119	23,348	277	95	53	212	+1.2	89	1.0
111	Paint and Varnish Factories	66,834	504	117	17	75	57,936	429	110	131,793	1,007	109	117	104	+0.7	135	0.5
112	Aniline Dyes (Coal Tar)	1,903	9	87	0	.....	9,656	75	120	9,719	80	113	13	155	+1.1	11	0.5
113	Explosives	52,020	235	104	24	156	41,301	189	93	395,843	2,241	98	356	114	+0.0	282	0.6
114	Soap, Tallow and Glue	36,165	208	102	1	8	70,312	531	97	77,293	529	106	72	116	+0.1	73	0.4
115	Heavy Acids (Sulphuric, Nitric, Hydrofluoric, etc.)	7,617	44	109	4	.....	1,458	13	148	21,833	194	132	28	139	+2.1	26	0.8
116	Light Acids (Acetic, Citric, etc.)	11,299	51	98	2	69	2,741	28	117	2,176	16	98	0	.....	+0.0	4	0.2
117	General Chemical Mfg.	555,371	3,129	105	322	177	290,374	1,760	99	594,454	3,085	106	617	141	+0.4	986	0.7
	Total.....	756,850	4,400	107	379	154	516,894	3,135	102	1,256,459	7,429	104	1,256	128	+0.4	1,606	0.6

* 75% of Disability Claims on Waiver of Premium.

† Expected Claims calculated and adjusted as described in text; A/E in percent.

TABLE 4—Continued

INDUSTRY CODE	INDUSTRY	WAIVER OF PREMIUM					EXTENDED DEATH BENEFIT			TOTAL AND PERMANENT DISABILITY				ALL CLAUSES COMBINED			
		Years Exposed	Death		Disability*		Years Exposed	Death		Years Exposed	Death		Disability		A-E† Per M	Acc. Deaths	
			No.	A/E†	No.	A/E†		No.	A/E†		No.	A/E†	No.	A/E†		No.	Per M
	<i>Clay, Glass, and Stone</i>																
129	Brick, Tile, Terra Cotta and Pottery—Glazed	15,666	108	104	4	74	2,343	22	129	26,647	144	84	13	62	-0.6	21	0.5
130	Brick, Tile, Terra Cotta and Pottery—Other	138,579	905	108	37	81	121,181	960	114	100,646	761	102	61	68	+0.4	290	0.8
131	Glass Factories (Excl. Polished Plate Glass)	134,244	659	79	39	95	59,202	395	93	447,495	2,434	100	526	164	-0.0	281	0.4
132	Polished Plate Glass	12,984	88	104	7	171	3,461	28	75	23,518	178	118	13	67	+0.5	32	0.8
133	Lime, Cement and Gypsum	57,693	393	109	6	31	104,121	915	107	90,119	805	106	65	71	+0.4	255	1.0
134	Marble and Stone Yards	10,668	66	103	3	81	2,978	17	113	4,713	44	113	14	298	+1.0	18	1.0
	Total	369,834	2,219	97	96	80	293,286	2,337	107	693,138	4,366	101	692	126	+0.2	897	0.7
	<i>Clothing Industries</i>																
160	Hat Factories (Felt)	36,479	299	94	16	117	11,177	71	76	61,072	639	99	22	37	-0.8	45	0.4
161	Furriers	7,513	59	106	5	.....	3,409	16	67	3,980	74	128	2	.....	+0.8	5	0.3
162	All Other Clothing	493,332	1,937	74	84	55	310,531	1,169	69	184,302	1,009	78	155	98	-1.6	285	0.3
	Total	537,324	2,295	77	105	62	325,117	1,256	69	249,354	1,722	86	179	80	-1.5	335	0.3
	<i>Food and Kindred Industries</i>																
180	Dairy Products	141,421	690	93	25	56	252,946	1,502	90	517,088	3,026	98	395	88	-0.4	353	0.4
181	Flour and Grain Mills and Elevators	63,100	441	105	18	83	30,252	216	90	158,645	1,122	98	160	109	-0.1	177	0.7
182	Canneries (Fish)	6,716	61	112	4	.....	5,568	90	114	3,692	25	68	0	.....	+0.2	7	0.4
183	Canneries (Meat, Fruit and Vegetables)	65,306	409	85	13	55	55,103	329	83	100,358	682	96	88	98	-0.8	105	0.5
184	Slaughter and Packing Houses and Stock Yards	97,583	658	112	24	73	63,386	388	108	653,935	4,960	113	1,049	179	+1.4	534	0.7
185	Sugar Factories and Refineries	11,559	127	105	2	43	78,415	655	97	58,094	660	115	42	71	+0.3	109	0.7
186	Mfg. and Bottling Bev.	48,045	215	107	13	100	43,567	247	122	102,562	449	98	63	93	+0.2	96	0.5
187	Cereals, Prepared Food and All Other Foods	367,321	1,883	97	103	91	298,786	1,677	92	876,135	5,376	98	854	117	-0.1	651	0.4
191	Beer and Other Malt Bev.—Mfg. and Bottling	178,018	1,577	129	70	104	103,525	956	119	42,881	312	115	14	38	+1.6	167	0.5
192	Wines—Mfg. and Bottling	4,717	38	112	1	.....	4,167	33	110	.....	.....	.....	.....	.....	+0.8	8	0.9
193	Distilled Liquors—Mfg. and Bottling	47,290	300	119	11	72	63,374	395	116	6,737	56	144	4	.....	+1.0	71	0.6
194	Wholesale Dealers in Alcoholic Beverages	27,841	190	126	4	44	11,900	79	128	3,153	16	92	0	.....	+1.1	21	0.5
195	Retail Dealers in Alcoholic Beverages	981	7	.....	0	.....	86	1	.....	.....	.....	.....	.....	.....	+3.2	1	0.9
	Total	1,059,898	6,596	106	288	82	1,011,075	6,568	98	2,523,280	16,684	103	2,669	123	+0.3	2,300	0.5
	<i>Leather Industries (Excl. Artificial Leather)</i>																
200	Heavy Leather Goods	24,276	210	103	11	128	15,471	124	92	34,744	307	106	16	49	-0.0	32	0.4
201	Shoes and Other Light Leather Goods	269,784	1,401	87	85	95	448,339	2,370	87	101,660	737	89	57	60	-0.8	295	0.4
202	Tanneries	68,750	641	114	25	98	59,532	587	106	63,680	706	107	86	135	+0.9	128	0.7
	Total	362,810	2,252	95	121	98	523,342	3,081	90	200,084	1,750	98	159	84	-0.5	455	0.4

TABLE 4—Continued

INDUSTRY CODE	INDUSTRY	WAIVER OF PREMIUM				EXTENDED DEATH BENEFIT			TOTAL AND PERMANENT DISABILITY				ALL CLAUSES COMBINED				
		Years Exposed	Death		Disability*		Years Exposed	Death		Years Exposed	Death		Disability		A-E† Per M	Acc. Deaths	
			No.	A/E†	No.	A/E†		No.	A/E†		No.	A/E†	No.	Per M			
220	<i>Lumber and Furniture</i>																
	Woodsmen and Loggers	20,329	129	95	4	56	20,776	118	77	2,407	30	91	4	-1.1	55	1.3	
221	Lumber Yds. and Saw and Planing Mills	293,769	1,993	101	84	84	196,799	1,481	97	181,710	1,565	97	199	-0.1	634	0.9	
222	Furniture and Woodworking (Carriages and Musical Instruments)	406,379	2,657	97	113	84	388,664	2,789	99	517,437	2,659	100	238	-0.2	628	0.6	
	Total	720,477	4,779	98	201	83	606,239	4,388	97	501,554	4,254	99	441	-0.2	1,317	0.7	
	<i>Paper and Pulp Manufacturing</i>																
240	Paper and Ground Wood Pulp Mills	268,506	1,775	106	100	112	224,175	1,508	101	707,233	4,819	101	891	+0.4	819	0.7	
241	Sulphide Soda Pulp Mills	5,839	28	128	2	2	2,385	18	105	41,825	447	95	33	-0.4	35	0.7	
242	Paper Boxes	142,075	778	103	23	53	122,512	728	104	230,204	1,305	102	160	+0.1	251	0.5	
243	All Other Paper Mfg.	208,644	1,194	98	60	91	165,393	1,205	101	366,065	2,166	95	287	-0.2	370	0.5	
	Total	625,064	3,775	103	185	93	514,465	3,459	101	1,345,327	8,737	99	1,371	+0.1	1,475	0.6	
260	<i>Printing</i>																
	Printing, Bookbinding and Publishing	506,743	3,397	107	112	68	391,322	3,063	101	974,990	7,826	104	542	+0.1	713	0.4	
	<i>Textile Industries</i>																
270	Bleaching, Dyeing, Printing and Finishing	121,242	818	102	44	105	107,448	649	95	65,206	624	111	36	+0.1	136	0.5	
271	Hemp, Jute, Rope and Cordage	58,727	489	114	10	49	42,508	284	89	151,022	1,176	108	197	+0.6	117	0.5	
272	All Other Textiles (Wool, Silk, etc.)	1,532,084	8,233	87	509	98	1,180,543	6,104	87	954,602	5,604	92	918	-0.7	1,346	0.4	
	Total	1,712,053	9,540	89	563	97	1,330,499	7,037	88	1,170,830	7,404	96	1,151	-0.6	1,599	0.4	
	<i>Miscellaneous Industries</i>																
289	Plastic Products	110,303	513	100	17	54	35,596	164	94	11,486	72	104	2	-0.2	54	0.3	
290	Artificial Leather (Using Pyroxylin)	4,883	40	134	4	2	7,215	73	150	56	0	0	0	+3.0	4	0.3	
291	Cigars and Tobacco	142,785	763	105	142	321	72,546	510	99	179,941	971	104	548	+1.4	176	0.4	
292	Elec. Cables and Supplies (Not Falling under Industry Code No. 100)	311,204	1,021	90	112	145	153,354	890	114	305,942	2,271	105	201	+0.1	330	0.4	
293	Rubber	588,546	3,113	107	185	100	134,641	637	94	441,716	2,702	94	309	-0.1	543	0.5	
294	Brooms and Brushes	22,351	112	94	4	59	5,563	45	105	34,541	223	93	30	-0.4	33	0.5	
295	Buttons (Excluding Metal, Rubber and Composition)	4,762	28	86	1	1	7,313	54	94	2,201	16	70	0	-1.3	7	0.5	
296	Celluloid and Celluloid Articles (Pyroxylin Composition)	8,384	67	116	0	0	1,666	21	156	14,553	56	98	5	+0.3	11	0.4	
297	Drugs (Sundries, Incl. Perfumes, Chewing Gum, etc.)	134,918	656	96	52	133	169,388	982	96	271,206	1,456	92	202	-0.3	180	0.3	
298	Cotton Seed Oil and Other Vegetable Oil Production	14,326	129	126	4	75	39,714	259	91	7,743	74	103	5	-0.0	50	0.8	
299	Ice (Mfg., Harvesting and Distributing)	14,200	147	130	5	91	7,390	75	119	22,929	318	122	35	+2.5	32	0.7	
300	Miscellaneous Mfg. and Processing	318,955	2,032	110	64	61	319,358	1,969	99	223,096	1,625	107	186	+0.3	496	0.6	
	Total	1,675,617	8,621	104	590	117	953,744	5,679	100	1,515,410	9,784	100	1,523	+0.2	1,916	0.5	

* 75% of Disability Claims on Waiver of Premium.

† Expected Claims calculated and adjusted as described in text; A/E in percent.

TABLE 4—Continued

INDUS- TRY CODE	INDUSTRY	WAIVER OF PREMIUM				EXTENDED DEATH BENEFIT			TOTAL AND PERMANENT DISABILITY				ALL CLAUSES COMBINED				
		Years Exposed	Death		Disability*		Years Exposed	Death		Years Exposed	Death		Disability		A-E† Per M	Acc. Deaths	
			No.	A/E†	No.	A/E†		No.	A/E†		No.	A/E†	No.	A/E†		No.	Per M
	<i>Transportation and Public Service</i>																
310	City Employees (Incl. More Than One Class)	203,960	2,062	111	163	192	102,476	1,129	119	158,339	1,659	112	217	137	+1.5	367	0.8
320	Elec. and Street Railways (Population of City 500,000 or More)	7,671	114	142	5	.....	183,163	2,243	129	225,418	3,519	123	459	186	+3.4	229	0.6
321	Elec. and Street Railways (Population of City 250,000 to 500,000)	720	3	.....	0	.....	27,551	446	126	35,741	442	97	96	251	+2.2	51	0.8
322	Elec. and Street Railways (Smaller Towns and Interurban)	10,188	135	136	0	.....	12,101	139	114	71,357	912	116	90	130	+2.1	66	0.7
323	Airplane Trans.	210,197	490	112	52	135	84,488	170	92	276,593	789	128	73	58	+0.3	446	0.8
325	Auto Sales and Service Stations	281,528	1,270	105	49	57	218,397	1,243	106	92,263	512	101	53	64	+0.1	328	0.6
326	Taxicabs and Buses	241,873	1,763	127	67	78	97,375	767	122	206,347	1,170	119	218	145	+1.4	247	0.5
327	Trucks, Transfer, etc.	227,625	1,139	122	46	68	168,019	1,024	125	96,816	591	127	56	74	+1.0	384	0.8
330	Water Trans. (Vessels Other Than River)	20,460	231	151	11	139	23,089	152	121	35,433	309	119	25	76	+1.9	49	0.6
331	Water Trans. (Harbor and Dock Vessels on Rivers)	21,562	235	142	5	60	15,800	155	105	25,298	282	123	20	77	+1.9	86	1.4
334	Steam Railroads	25,571	444	136	15	118	1,224,088	19,370	120	122,338	2,498	116	432	268	+2.9	1,310	1.0
335	Express Companies	5,471	36	152	0	.....	286,821	1,746	102	30,475	163	98	5	21	+0.1	144	0.4
336	Telegraph	143,811	792	98	153	279	924	3	.....	31,196	196	106	67	232	+0.7	47	0.3
337	Telephone	16,908	54	66	2	41	96,343	317	76	126,788	462	78	97	106	-1.1	75	0.3
338	Subway and Elevated	153	3	.....	0	.....	20,339	292	135	11,560	146	133	30	192	+4.0	25	0.8
339	Police	5,970	76	166	1	.....	16,442	163	142	21,315	202	145	63	333	+4.2	41	0.9
340	Firemen	1,525	8	65	2	.....	4,205	74	146	11,693	168	150	19	158	+4.8	19	1.1
341	Gas Works	32,893	229	115	13	125	45,528	302	98	203,363	2,020	108	174	90	+0.6	166	0.6
342	Electric Light and Power	174,615	1,137	115	41	71	438,568	4,029	113	1,449,991	13,033	108	1,672	120	+0.9	1,536	0.7
350	Miscellaneous Trans. and Public Service	38,249	221	108	9	76	16,705	128	99	13,963	133	102	18	122	+0.2	53	0.8
	Total	1,670,950	10,442	116	634	117	3,082,422	33,892	117	3,246,287	29,206	112	3,884	131	+1.3	5,669	0.7
	<i>Clerical and Professional</i>																
360	Clerical (Banks, Insurance, and Other Office Forces)	1,181,127	6,238	92	376	96	1,361,822	8,606	96	2,729,530	16,014	89	1,656	74	-0.7	1,559	0.3
361	Medical (Nurses, Sanitaria, Hospitals, etc.)	82,413	481	84	22	76	99,287	639	76	80,174	469	77	84	104	-1.7	99	0.4
362	Theatrical	96,118	659	117	33	104	139,293	1,184	111	213,433	1,839	116	278	127	+1.2	189	0.4
363	Conference of Methodist Ministers and Similar Organizations	107,983	624	78	9	22	42,587	493	87	61,797	666	78	44	66	-2.3	82	0.4
	Total	1,467,641	8,002	92	440	90	1,642,989	10,922	96	3,084,934	18,988	90	2,062	79	-0.6	1,929	0.3

TABLE 4—Continued

INDUSTRY CODE	INDUSTRY	WAIVER OF PREMIUM						EXTENDED DEATH BENEFIT			TOTAL AND PERMANENT DISABILITY						ALL CLAUSES COMBINED		
		Years Exposed	Death		Disability*		Years Exposed	Death		Years Exposed	Death		Disability		A-E† Per M	Acc. Deaths			
			No.	A/E†	No.	A/E†		No.	A/E†		No.	A/E†	No.	A/E†		No.	Per M		
370	<i>Trade and Service</i>	503,127	2,669	93	111	67	442,593	2,913	96	458,473	3,672	100	310	72	-0.3	583	0.4		
371	Wholesale Merchants and Dealers	1,096,949	5,740	81	273	74	1,394,121	7,338	82	2,459,163	9,489	81	1,879	106	-1.1	1,472	0.3		
372	Retail Merchants and Dealers	60,227	410	117	12	59	34,054	297	109	55,243	549	109	45	79	+0.7	79	0.5		
373	Warehouses and Cold Storage Plants	282,879	2,260	106	83	77	259,989	2,234	105	176,462	1,593	100	104	54	+0.1	308	0.4		
374	Hotels and Restaurants	103,483	471	85	16	48	82,161	453	82	61,195	417	82	66	102	-1.2	75	0.3		
375	Laundries (Incl. Dry Cleaning)	27,390	180	108	3	32	16,762	174	114	13,885	161	116	9	60	+0.8	42	0.7		
376	Coal Delivery	35,450	358	98	25	151	39,282	349	92	31,829	394	95	40	90	-0.5	58	0.5		
	Operation and Maintenance of Office and Apartment Buildings	118,633	800	112	23	58	28,176	249	117	25,728	175	85	9	35	+0.3	128	0.7		
380	Miscellaneous Trade and Service	75,613	432	87	16	58	31,883	220	108	13,071	160	113	4	31	-0.4	58	0.5		
390	Miscellaneous not otherwise classified																		
	Total	2,303,751	13,320	90	562	71	2,329,021	14,227	89	3,295,049	16,610	88	2,466	94	-0.7	2,803	0.4		
	Grand Total	21,667,297	128,077	101	7,218	102	21,556,024	157,621	104	30,196,302	201,341	101	26,446	10.3	+0.1	38,345	0.5		

*75% of Disability Claims on Waiver of Premium.

† Expected Claims calculated and adjusted as described in text; A/E in percent.

TABLE 5
1950-1954 EXPERIENCE UNDER NONRATED POLICIES
WITH FEWER THAN 50 LIVES AT ISSUE

CENTRAL AGE	WAIVER OF PREMIUM					EXTENDED DEATH BENEFIT			TOTAL AND PERMANENT DISABILITY					ALL CLAUSES		
	Years Exposed	Death		Disability*		Years Exposed	Death		Years Exposed	Death		Disability		A-E† Per M	Acc. Deaths	
		No.	A/E†	No.	A/E†		No.	A/E†		No.	A/E†	No.	A/E†		No.	Per M
18.....	17,199	14	89	1	111	8,185	12	152	2,582	1	48	0	.....	+ 0.0	17	0.6
23.....	48,809	50	99	3	64	24,801	24	100	5,666	4	82	2	.....	+ 0.0	37	0.5
28.....	70,404	71	101	8	87	34,707	30	82	6,174	8	133	1	.....	- 0.1	42	0.4
33.....	73,311	79	84	5	48	36,597	54	118	6,131	6	83	2	.....	- 0.1	39	0.3
38.....	72,474	159	115	11	82	36,122	84	123	6,278	8	73	2	.....	+ 0.3	58	0.5
43.....	68,034	267	120	10	54	33,772	105	94	6,362	23	117	7	.....	+ 0.3	57	0.5
48.....	58,939	317	97	16	61	28,852	143	92	5,667	31	105	8	.....	+ 0.3	46	0.5
53.....	46,748	426	105	18	49	22,709	231	115	4,718	47	115	3	.....	+ 0.4	41	0.6
58.....	35,844	519	108	32	56	17,468	232	95	4,011	65	122	7	.....	+ 0.1	36	0.6
18-58.....	491,762	1,902	106	104	58	243,213	915	102	47,589	193	111	32	76	+ 0.1	373	0.5
63.....	24,694	513	102	.....	.....	11,995	236	90	3,300	72	103	.....	.....	- 0.3	25	0.6
68.....	15,060	396	90	.....	.....	6,480	187	89	2,205	67	90	.....	.....	- 3.2	18	0.8
73.....	5,410	238	97	.....	.....	2,569	115	90	1,001	41	79	.....	.....	- 3.3	8	0.9
78.....	1,902	103	80	.....	.....	899	63	90	410	33	96	.....	.....	- 10.5	3	0.9
83.....	391	31	73	.....	.....	226	22	77	109	10	70	.....	.....	- 30.7	0	0.0
88.....	75	6	.....	.....	.....	19	2	.....	22	6	.....	.....	.....	- 60.3	1	8.6
93.....	8	0	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	- 122.2	0	0.0
98.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
63-98.....	47,540	1,287	94	.....	.....	22,189	626	89	7,047	229	92	.....	.....	- 2.4	55	0.7
Total.....	539,302	3,189	100	104	58	265,402	1,541	96	54,636	422	100	32	76	- 0.1	428	0.5

* 75% of Disability Claims on Waiver of Premium.

† Expected Claims calculated from Table 3; A/E in percent.

the ratios of Table 3 (experience of 1950–1954) to the exposed to risk by industry code for each five year age group. Since any ratios developed from these expected claim figures would be affected by the substantial year-to-year improvement in mortality, the expected death claims and the expected disability claims for the nine years' experience were adjusted separately for each disability clause so that expected claims would equal actual claims for all nonrated industries combined. The adjustment factor was taken as the ratio for all nonrated industries combined for the full nine years' experience of actual claims to those expected according to the rates shown in Table 3. The same adjustment factors were used for both the rated and nonrated industry categories. Variation in actual to expected ratios from the normal may therefore be measured against the standard of 100%.

In addition to the various ratios of actual to expected claims, Table 4 shows for each industry code the excess of total actual claims, death and disability combined, over the expected claims per 1,000 of exposed for the three disability clauses combined. The number of accidental death claims and the number per 1,000 of exposed to risk are also shown.

In viewing the separate death and disability experience for a given industry, it should be kept in mind that the experience is influenced by employer and insurance company practices in permitting the continuance of insurance on disabled lives and that, accordingly, for some purposes the combined death and disability experience may be more significant.

The nonrated experience, for calendar years 1950–1954, under the cases with fewer than 50 lives at issue that remain in that class is set forth in Table 5. Since the experience for calendar years 1950–1954 was sufficiently large, it was unnecessary to include the earlier years' experience as was done in Table 4. Expected claims are based on Table 3 which relates to the corresponding period.

The following companies contributed experience to this study: Aetna Life Insurance Company, Connecticut General Life Insurance Company, Continental Assurance Company, Equitable Life Assurance Society, John Hancock Mutual Life Insurance Company, Metropolitan Life Insurance Company, Occidental Life Insurance Company of California, Prudential Insurance Company of America, Sun Life Assurance Company of Canada, and The Travelers Insurance Company.