

## ON INDETERMINATE CLAIM RESERVE TABLES FOR COMPENSATION

BY

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In workmen's compensation insurance there arises the problem of setting up reserves for future compensation payments in individual cases of disability before it is known whether the disabled workers will recover, suffer permanent partial or total disability, or die from the injuries. These reserves should reflect the ultimate cost of indemnity as correctly as possible for several reasons: it is requisite to the sound financial and underwriting management of the carriers that they do so; when reported as incurred losses to the rate making organizations they affect the manual rates, and, similarly, when reported under the experience rating plans they affect the departures from manual rates assigned to qualifying risks.

The method of calculating reserves for indeterminate compensable disabilities to which the data of this paper pertain is one which has been suggested for use in reporting incurred losses for experience rating. It applies to only those cases of compensable injury wherein the disability is continuing and the conditions have not progressed to a sufficiently permanent status so that the facts indicate particular reserves rather than average values, or the cases become closed. The theory of the method is that a reasonable reserve for a case which remains open with disability continuing for any length of time and with its ultimate disposition unknown may be found in the average value of the cases which were similarly indeterminate the same length of time or longer in a mature experience of sufficient volume. The *Ætna Life Insurance Company* first undertook the analysis of its compensation experience here presented when the Actuarial Committee of the New York Compensation Insurance Rating Board considered the subject in 1927 and has since amplified the study to include policy years 1923 to 1929.

The experience rating plan was operating to produce a deficit of collected premiums from premiums at manual rates instead of the debits and credits balancing each other, and the question was raised whether this did not result primarily from an under-

estimate of outstanding losses which in turn might be laid in part to competitive pressure. At the same time the losses in Schedule Z, the manual rate making material, tended to be underestimated and a particular cause for this was the reopening later of cases considered closed at the time of reporting. Reserves calculated by the proposed method should take care of the factor of reopened cases and be adequate in total under reasonably stable conditions; the mechanical character of the plan is also in its favor.

The method contemplates the construction of a reserve table or set of reserve tables from which the reserve for any indeterminate disability case may be obtained by entering the tables with the attained or experienced indeterminate duration of that case. The simplicity of the plan depends upon the degree that variations from such factors as state act, i.e., differences in the duration of compensation provided for the same injuries, industry, nature of injury, etc., need be recognized. Differences in weekly wages and in the percentage thereof taken as compensation can be eliminated at once by expressing the loss cost in weeks of duration rather than in dollars.

The compilations presented herewith show the effect of some of these factors in a limited experience. Indeterminate reserve tables are also presented but should be looked upon as exhibits showing to some extent the features and a form of such tables rather than as finished tables. For this reason no graduation has been made although there are obvious inconsistencies at the longer attained durations. The tables contain only cases indeterminate over 26 weeks.

Several considerations directed the choice of 26 weeks as the lower limit. In experience rating, there are at least 26 weeks between the most recent accident in the data used and the rating date. The number of cases to be tabulated would be many times greater if the shorter durations were taken as a comparison of columns (3) and (4) of Table V, line "Number of Cases," shows, although some, but relatively few, of the cases are determinate at the beginning. If the reserve tables should be considered for other purposes than experience rating average values, similar values for durations less than 26 weeks could be supplied from the American Accident Table and other sources. At the time this investigation was begun the National Council on

Compensation Insurance had recent accident data from the former system of loss reports on the individual case basis.

In *Proceedings*, Volume II, page 200, Mr. J. H. Woodward gave an indeterminate reserve table for New York made up from rather *a priori* considerations, as was necessary then (1915), with values from the first week to the assumed merging into permanent total at 104 weeks. Reference to this table will give an idea of the relativity of values below 26 weeks to those above. The figures under the heading "Reserve per \$1.00 of Weekly Compensation" are exactly comparable to "Average Total Durations" in the present paper. An example of a duration table derived from an accident table is found in *Proceedings*, Volume I, page 99, in a paper by Mr. Miles M. Dawson. This table does not take into account contingencies other than the expectation of temporary total disability, but at the shorter durations other contingencies have relatively little effect on the averages.

#### METHOD OF COMPILATION

The data required for this study were transcribed to special cards from the Company's individual accident analysis cards as far as possible; however, in many instances the claim files were consulted. This was necessary for most cases which passed into permanent disability because the change of status codings on the analysis cards follow the official awards generally, whereas the actual changes of status may long precede the official awards. There is in this respect considerable difference between states as both the terms of the Acts and the machinery and policy of administration have an influence. When the same limitations are imposed on temporary total and permanent total disability, as is the case in a number of states, there is never any need for the administrators of compensation to classify the disability at all, but only to continue total disability awards, and the status code (the Statistical Plan calls it "Kind of Award Code"), does not change. In such states all long term temporary total files must be consulted. The same difficulty arises in attempting to discriminate temporary partial from permanent partial.

The cost of each case was expressed in weeks of duration rather than in dollars, lump sum settlements and outstanding losses on open cases being divided by the weekly rate into the equivalent

number of weeks. When reserves set up for fatalities and permanent total and partial cases still outstanding upon a life contingency and present value basis were divided by the weekly total disability benefit, the effect was to carry over the same expectation or probable value and discount into the tabular reserve. Waiting periods were added in states where compensation does not become retroactive over the waiting periods for the longer disabilities. A few cases (9 in New York and 24 in all other states) were still indeterminate disabilities at the time of review. For these, expected indeterminate durations were calculated by approximations based on the indeterminate durations of the others, and the cases were then used as cases of the calculated indeterminate durations rather than the incomplete experienced indeterminate durations. The reserves actually held on these cases were taken as the best indication of the expected total durations. Cases of intermittent disability were included, the durations being taken as the actual disability periods, not the total elapsed time. In order to include cases which became temporary partial after total disability terminated and later passed into some other type of disability or were closed, the indeterminate duration was arbitrarily taken to be the duration that the weekly temporary compensation remained 50% or more of total compensation, and the cost thereafter was divided by the full weekly rate and this figure added to the indeterminate duration to make the total duration. With this exception durations at partial rates were reduced to the number of weeks it would take to pay out the same amounts at the total disability rates.

The method of deriving average durations was to sort the cards by the number of whole weeks of indeterminate duration and then add cumulatively the number of cases and the indeterminate and total durations starting with the cases of longest indeterminate duration, so that the cumulative totals gave at each duration in the interval the number of cases indeterminate at least so long, together with their total indeterminate durations and total durations. Dividing the last two items by the number of cases gave the average expected indeterminate and total durations at weekly intervals of attained indeterminate duration.

It might be held that including all cases in one general table would not give defensible average values and that recognition

should be given to variations produced by some of the following factors or combinations of them :

State Act	Age
Industry	Part of Body
Nature of Injury	Sex

It seems reasonable to assume that differences by industry do not exist independently but can be correlated with the effect of other factors, principally the kind of injuries associated with the work.

In order to test the effects of the factors mentioned, the necessary information was entered on the special cards in addition to the duration data. Since there are only 168 injured females in the experience, no compilation by sex is given. However, the average indeterminate and total durations of these cases are 62 and 129 weeks respectively compared to 56 and 114 weeks of the whole experience. No definite conclusion is warranted.

#### THE COMPILATIONS

The data in these compilations are from one company's experience, policy years 1923-1929.

Table I—Average Durations—Indeterminate Compensable Disabilities—All States.

This table shows the average indeterminate and total durations in weeks, in columns (3) and (4) respectively, of disabilities subsisting as indeterminate (temporary total and temporary partial  $\geq 50\%$ ) at the number of weeks shown in column (1). In column (2) is given the number of cases of which the averages have been calculated. From column (2) a frequency distribution of temporary disability of over 26 weeks in duration can be derived when from each item in column (2) the item next below is subtracted. When there were no cases ending their indeterminate period during the  $k$ th week of disability,  $k-1$  does not appear in column (1). The first such omission is 133 weeks. The ungraduated average durations and number of cases at the omitted periods are the same as in the respective lines next below. This table of data would become an indeterminate reserve table if columns (2) and (3) were disregarded and column (4) were headed "Reserve per \$1.00 of Weekly Compensation." Column

(3) was calculated with the thought that possibly significant relations might be disclosed.

Table II — Average Durations — Indeterminate Compensable Disabilities — New York.

The notes for Table I apply in general to Table II also. Table II presents the data of one state with large exposure. The total durations are appreciably higher for New York than all states combined, Table I. This might be anticipated since the New York Act provides longer periods of compensation than most other Acts for the same injuries. The differences are not of a kind to be accommodated by a flat differential from the general table. The shorter indeterminate durations in New York do not seem to have their explanation in a comparison of the temporary total benefits of the New York Act and others. The difference is probably characteristic and may result from the policy of the Bureau of Workmen's Compensation to make frequent reviews of the status of disabilities.

Table III — Average Durations — New York and All Other States.

From this table a comparison can be made of the average durations at various intervals of attained indeterminate duration of New York and all other states taken together. The influence of state act on the tabular reserves required is indicated. At durations less than 26 weeks the influence would diminish as the large volume of short term cases was introduced into the tables, provided differences in waiting periods were treated consistently.

Tables IV and V — Compilations by Industry Groups.

The groupings follow the schedules of the Manual Classifications Code of the National Council on Compensation Insurance. The groups are:

Manufacturing	Schedules 5-25
Contracting	Schedules 26 and 27
Commercial and Clerical	Schedules 34 and 35
Care, Custody, and Maintenance	Schedule 36
All Other	Schedules 1-4, 28-33, and 37

Table IV shows average durations of indeterminate disabilities in five industry groups at semiannual intervals. The durations are of the same order throughout with the exception of the Care,

Custody, and Maintenance group. This group has less than half the number of cases of the next smallest group shown and the variation is probably a chance one. Table V shows the percentage distribution of the indeterminate cases among the industry groups in columns (4) to (13). The percentage distribution remains remarkably constant throughout the range. The tables seem to indicate that no regard need be given to industry division as concerns indeterminate disability reserves of cases over 26 weeks in duration.

The uniformity here shown would be of some importance if tabular values were used in estimating incurred losses for manual rate making, since in most states separate rate levels are now established for industry groups, and to be consistent a difference in average values would have to be recognized. It does not follow, however, that this uniformity would continue in the average values for disabilities existent at less than 26 weeks. It seems quite reasonable to suppose that the average values at the beginning would differ materially between Manufacturing and Contracting, for instance, because of the different relative frequency of the more serious and the less serious accidents. The reversal of rank between Manufacturing and Contracting from column (3) to the following columns of Table V is evidence of this. It may be inferred that a far larger proportion of the disabilities arising in Manufacturing were temporary disabilities of short duration. On the other hand, there may be some tendency for the type of injury in Manufacturing to advance faster to a relatively serious permanent status and so terminate the temporary total status early.

A comparison of columns (2) and (3) of Table V giving distribution by industry of compensable disabilities reported to the National Council on Compensation Insurance and those reported under the policies of the Company shows that a fairly representative experience is being studied as regards divisions of industry and probably also as regards the distribution by nature of injury, age, and sex. The latest compilation by schedules of the National Council is policy years 1922-1926.

Tables VI and VII — Compilations by Nature of Injury.

Table VI shows average durations of indeterminate disabilities in nature of injury groups at semiannual intervals. Table VII

shows the percentage distribution by nature of injury of the indeterminate disabilities at the same intervals in columns (3) to (12) together with the distribution of all compensable disabilities for one policy year, 1923, in column (2). This is the only year of the experience for which the distribution of all compensable disabilities was available. The last class is labeled "All Other and Not Classified" because on a portion of the special cards used the code for nature of injury was entered from the final outcome of the cases rather than the nature of injury, e.g., amputation or stiffness instead of fracture, bruise, etc., and these cases were placed with the miscellaneous injuries. There were not enough of these to affect the relativity of the durations of the classified injuries, but the percentages of "All Other" would be roughly two-thirds of the percentages given in column (3), Table VII, and following. The column (2) figure is really "All Other."

The differences in duration by nature of injury, while quite marked, do not seem to have a sufficient regularity to make them significant, and the conclusion can be drawn with some confidence that the nature of injury, when considered independently of other factors, particularly the part of body affected, does not make much difference after 26 weeks. This conclusion does not hold for the lower durations, however. A comparison of column (2), Table VII, with the following columns shows the persistency of fractures as compared to other cases and confirms the intuitive impression that the average values for fractures should be larger than for other cases but only at the lower durations.

#### Tables VIII and IX — Compilations by Age of Injured.

Table VIII gives average durations at semiannual intervals of attained indeterminate duration by three age groups: under 35, 35-49, 50 and over. The result is unexpected, the average durations for the older ages being lowest of the three groups except at the first two intervals. In all probability, average values at durations less than 26 weeks would be higher for the older ages than the others. The distribution at the beginning is not available to confirm or disprove this. However, California and Massachusetts give accident statistics by age groups and in each of these states the percentage of the accidents befalling the "50 and over" group is 15% approximately. If the ratio of the number



of the people, fifty and over, suffering accidents to all persons injured is about 15% and 28% of those remaining as indeterminate disability cases at 26 weeks are fifty and over, this indicates that accidents to older people are followed by longer durations of disability on the average. Possibly the explanation for the seeming anomaly is to be found in the type of accident. The proportion of persons over fifty employed in the more hazardous occupations is not so high as of persons under fifty. On the other hand, accidents which would not be serious to others may be quite serious to older people. Accidents resulting in permanent injury after an interval of indeterminate duration would cost less at the older ages because of reduced expectancy of life. It is noted that no appreciable difference in the ratio of indeterminate to total duration between age groups appears, that is, ratio of line (b) to line (c). In a few cases the age was not obtained, therefore the totals of Table VIII do not check. If the evidence of these results were accepted, no difference by age would be practicable above 26 weeks.

#### Compilation by Part of Body.

A compilation by part of body injured, from the experience of policy years 1923-1925, was made in a report to the members of the Actuarial Committee of the New York Compensation Insurance Rating Board some years ago. Like the compilation by nature of injury here shown, the differences, while considerable, were not significant apart from a correlation with other factors. Therefore, no compilation by part of body has been made from the present experience. What results would be found in the compilations by nature of injury and part of body was not particularly predictable. Almost certainly a tendency has been confirmed for differences of origin of the disability and other circumstances to fall away before the one factor of their long continuance. Nevertheless, appreciable differences would be expected between specific injuries, that is, nature of injury correlated with part of body, and the average of all injuries. Skull fractures and spinal fractures are two serious ones. Values for specific injuries are not within the province of this paper but the observed values of these two injuries are given here in the form of Table VI.

	a—No. b—Indet. d. c—Total d.	Attained Indeterminate Duration			
		26 wks.	52 wks.	78 wks.	104 wks.
Fractured Skull . . . . .	a	90	43	29	22
	b	75	119	145	163
	c	202	291	342	391
Fractured Spine . . . . .	a	142	83	47	31
	b	79	108	144	172
	c	198	248	310	349

The wide deviations from Table I values suggest that the reserves for these injuries and possibly some others should not be made from an average table for all cases.

Three functions of the case reserves were mentioned in the first paragraph. These were the intra-carrier functions, the use in manual rate making and in experience rating. The discussion has been directed to the making of the tables required under a plan of obtaining the case reserves or individual claim reserves from indeterminate reserve tables for cases whereof the probable outcomes are not sufficiently clear to indicate particular reserves. The plan was suggested for use in connection with experience rate making; however in this study certain facts have developed, particularly the frequency distribution of cases when arranged according to their indeterminate durations, which raise doubt as to the feasibility of making the plan obligatory for estimates in experience rating.

When loss estimates appear in a particular risk's experience rating calculation, they should reflect as closely as possible the individual ultimate losses, accepting that the object of experience rating is to recognize the individuality of the risk as a loss producer. If the individual case estimates, as now developed, should reflect the individual ultimate losses better than tabular values, they would be theoretically better for the purpose of experience rating even if they should not reflect ultimate losses in total as well. If a wide difference in goodness of fit did not exist, practical considerations should govern.

A test of the relative fit of the estimates in use and the tabular values derived in this study was made on a limited sample of cases indeterminate at 26, 52, and 104 weeks after the accident.

Deviations were expressed as ratios of the actual cost. It was found that the estimates had smaller average deviations than the tabular values at all three periods but particularly at the 26-week period when the tabular deviation was almost twice as large as the other. The tabular reserves were somewhat better in total. The results of this test are not conclusive but only indicative because of lack of opportunity for more than a limited test; moreover the cases were taken from the material on which the table was based. A reference to Table I would lead to the conclusion that the deviations expressed in ratios of tabular values from actual losses at the shorter periods elapsed from time of accident are very large and that adjusters' estimates should be much better at these points. Between 26 weeks and 52 weeks after the accident 66%,  $[(4051-1377) \div 4051]$ , of the cases in this experience, excepting the few intermittent cases, have become determinate and many of these end as temporary cases without permanent awards. The adjusters can probably estimate the cost of these quite closely as the cases near their terminations.

A practical objection to the plan also hinges upon the high ratio of the cases closed at comparatively short durations. About 50% of the cases open at the time of valuation become determinate between the valuation date and the effective date of the rating and many of these are closed. This situation would probably cause dissatisfaction on the part of the assured with the plan that has at least 114 weeks (taking the Table I figures for illustration) on all cases open at valuation date. Perhaps most questioning of estimates under the present plan concerns the unusual cases, particularly those severe cases in litigation on the question of compensability or third party responsibility which in the end cost very much or nothing for indemnity. A different contingency than probable duration of disability is the source of dispute in these cases.

The tabular plan was proposed for experience rating use to make reserve calculations mechanical in nature with the aim of eliminating the difficulties that attend the use of judgment in rate making. The tabular plan does favor this result, but the considerations above indicate that the accomplishment may be at some sacrifice of the purpose of experience rating and may introduce other difficulties. The question of reserves for medical costs is not affected by the tabular plan as proposed.

It is not intended to discuss possible uses of indeterminate tables beyond an indication of the limitations or possibilities which seem to be presented by the data. An important limitation of the plan, as affecting its simplicity for any purpose considered, would result if it should be found that separate tables would be required by the various carriers made from their own experience because of differences in the practices of their claim departments.

Undoubtedly tables such as those presented can be of use in the claim departments of the carriers, if representative of their own experience and practices, as supplementary evidence in the question of appropriate reserves for various cases. In this connection it is quite possible that the tables may be found more valuable in some intervals of duration than over the whole range of the tables.

TABLE I

AVERAGE DURATIONS—INDETERMINATE COMPENSABLE DISABILITIES  
 Average Indeterminate and Total Durations, Columns (3) and (4),  
 of Disabilities Attaining the Durations in Column (1) as  
 Indeterminate; with their Number, Column (2).

All States—Policy Years 1923-1929

Attained Indeter- minate Duration	No. of Cases	AVERAGE DURATION		Attained Indeter- minate Duration	No. of Cases	AVERAGE DURATION	
		Indeter- minate	Total			Indeter- minate	Total
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
				65 wks	928	115 wks	212 wks
26 wks	4051	56 wks	114 wks	66	907	116	214
27	3885	58	117	67	880	118	216
28	3693	59	120	68	856	119	218
29	3519	61	122	69	840	120	220
30	3322	63	125	70	815	122	222
31	3153	64	128	71	792	123	225
32	2989	66	132	72	775	124	227
33	2857	68	134	73	757	126	230
34	2741	69	136	74	735	127	232
35	2625	71	139	75	716	128	234
36	2512	72	142	76	698	130	236
37	2408	74	145	77	674	132	239
38	2309	75	147	78	654	133	241
39	2210	77	149	79	635	135	244
40	2128	78	152	80	612	137	248
41	2055	80	154	81	602	138	249
42	1971	81	157	82	584	140	253
43	1902	83	160	83	566	142	255
44	1820	85	163	84	550	143	258
45	1754	86	166	85	543	144	259
46	1696	87	168	86	533	145	262
47	1646	89	170	87	520	147	264
48	1588	90	172	88	513	147	265
49	1521	92	175	89	497	149	269
50	1467	94	177	90	486	151	272
51	1418	95	180	91	474	152	274
52	1377	96	182	92	462	154	277
53	1334	98	184	93	449	156	281
54	1292	99	186	94	442	157	283
55	1263	100	188	95	433	158	285
56	1219	102	190	96	424	159	287
57	1174	104	193	97	413	161	289
58	1148	105	195	98	401	163	289
59	1106	106	198	99	394	164	290
60	1076	108	199	100	388	165	289
61	1040	109	202	101	378	167	293
62	1001	111	206	102	369	168	296
63	975	113	209	103	365	169	297
64	948	114	211	104	358	170	299

TABLE I—(Continued)  
AVERAGE DURATIONS—INDETERMINATE COMPENSABLE DISABILITIES

All States

Attained Indeterminate Duration	No. of Cases	AVERAGE DURATION		Attained Indeterminate Duration	No. of Cases	AVERAGE DURATION	
		Indeterminate	Total			Indeterminate	Total
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
105 wks	349	172 wks	300 wks	146 wks	193	211 wks	351 wks
106	342	173	302	147	192	212	352
107	338	174	304	148	190	212	351
108	333	175	305	149	186	214	354
109	323	177	308	150	183	215	356
110	317	178	309	151	177	217	356
111	314	179	310	152	174	218	357
112	305	181	310	153	171	219	355
113	302	182	311	154	170	220	355
114	297	183	313	155	169	220	357
115	293	184	313	156	165	222	356
116	291	184	313	157	162	223	359
117	287	185	315	158	160	224	360
118	286	185	316	160	158	225	363
119	284	186	316	161	154	226	366
120	282	186	316	163	150	228	369
121	279	187	317	164	149	228	368
122	272	189	319	165	145	230	362
123	268	190	321	166	143	231	363
124	265	190	321	167	140	232	366
125	262	191	322	169	137	234	369
126	255	193	322	171	135	235	371
127	253	194	322	172	133	236	373
128	249	195	323	173	132	236	374
129	246	195	324	174	131	237	374
130	238	198	328	175	130	237	374
131	237	198	329	176	129	238	374
132	231	200	333	177	126	239	375
134	229	200	334	178	125	240	377
135	227	201	335	179	124	240	378
136	224	202	338	180	119	243	382
137	220	203	337	182	118	243	384
138	218	203	338	184	117	244	385
139	214	205	340	185	116	244	386
140	212	205	341	186	114	245	387
141	208	207	342	187	113	246	388
142	202	208	347	188	112	246	390
143	200	209	349	190	111	247	392
144	196	210	349	191	109	248	394
145	194	211	351	192	108	248	390

TABLE I—(Continued)

## AVERAGE DURATIONS—INDETERMINATE COMPENSABLE DISABILITIES

All States

Attained Indeterminate Duration	No. of Cases	AVERAGE DURATION		Attained Indeterminate Duration	No. of Cases	AVERAGE DURATION	
		Indeterminate	Total			Indeterminate	Total
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
193 wks	107	249 wks	392 wks	250 wks	46	290 wks	435 wks
194	106	249	393	251	41	295	456
195	104	251	392	252	39	297	466
196	102	252	393	254	38	298	467
197	99	253	389	257	37	300	465
198	98	254	390	259	35	302	474
199	96	255	392	260	33	305	460
200	95	256	391	267	31	307	464
201	93	257	376	268	30	309	455
202	92	257	377	269	28	312	464
203	88	260	380	272	27	313	471
204	87	260	378	273	26	315	479
209	86	261	379	275	25	316	482
211	85	262	380	277	22	322	507
212	84	262	380	279	21	324	511
213	83	263	380	280	19	329	529
214	82	264	381	281	18	332	538
216	80	265	383	289	17	334	552
217	78	266	387	295	16	337	568
218	76	267	390	299	15	340	586
219	72	270	396	300	14	343	554
223	71	271	398	310	13	346	510
224	70	271	400	312	12	349	516
225	69	272	402	313	10	357	469
226	68	273	402	323	9	361	480
227	67	273	403	328	8	366	494
228	65	275	405	334	7	371	487
229	64	276	407	343	6	378	495
230	62	277	412	352	5	384	497
231	61	278	406	375	4	392	496
234	59	279	412	390	3	398	521
235	58	280	414	400	2	402	573
236	57	281	416	402	1	402	500
237	56	282	419				
238	54	283	424				
240	52	285	425				
245	51	286	425				
246	50	287	428				
247	49	288	431				
248	48	288	431				

TABLE II

## AVERAGE DURATIONS—INDETERMINATE COMPENSABLE DISABILITIES

Average Indeterminate and Total Durations, Columns (3) and (4), of Disabilities Attaining the Durations in Column (1) as Indeterminate; with their Number, Column (2).

New York—Policy Years 1923-1929

Attained Indeterminate Duration	No. of Cases	AVERAGE DURATION		Attained Indeterminate Duration	No. of Cases	AVERAGE DURATION	
		Indeterminate	Total			Indeterminate	Total
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
26 wks	1179	52 wks	120 wks	60 wks	255	105 wks	227 wks
27	1118	53	123	61	247	106	231
28	1062	54	126	62	236	108	237
29	998	56	129	63	226	110	242
				64	222	111	244
30	929	58	132	65	218	112	244
31	871	60	136	66	213	113	248
32	825	62	140	67	208	114	250
33	784	63	142	68	197	117	255
34	744	65	144	69	192	118	259
35	710	66	147	70	187	119	263
36	675	68	150	71	186	120	264
37	645	69	152	72	181	121	268
38	605	71	156	73	178	122	271
39	582	73	158	74	172	123	276
40	556	74	161	75	166	125	280
41	535	75	163	76	160	127	284
42	500	78	168	77	153	129	291
43	480	79	172	78	148	131	290
44	460	81	175	79	146	132	292
45	439	83	179	80	137	135	300
46	422	84	183	81	135	136	302
47	410	85	185	82	129	139	310
48	395	87	188	83	127	140	313
49	375	89	192	84	124	141	318
50	357	91	196	85	121	142	320
51	348	92	198	86	117	144	327
52	338	93	202	87	115	145	331
53	326	94	204	88	114	146	333
54	316	96	207	89	110	148	340
55	306	97	211	90	108	149	345
56	296	98	214	91	106	150	346
57	282	100	219	93	102	152	354
58	274	102	221	95	101	153	356
59	265	103	223	96	98	155	361



TABLE II—(Continued)  
AVERAGE DURATIONS—INDETERMINATE COMPENSABLE DISABILITIES

## New York

Attained Indeterminate Duration	No. of Cases	AVERAGE DURATION		Attained Indeterminate Duration	No. of Cases	AVERAGE DURATION	
		Indeterminate	Total			Indeterminate	Total
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
97 wks	94	157 wks	364 wks	164 wks	33	214 wks	454 wks
98	90	160	361	166	32	216	427
99	88	161	365	171	30	219	443
101	85	163	369	173	29	221	452
103	83	165	375	179	28	223	457
104	81	166	381	184	25	228	472
105	79	168	375	185	24	230	483
107	77	170	381	188	23	232	482
108	74	172	389	190	22	234	495
109	72	174	393	191	21	236	506
111	71	175	397	192	20	238	490
116	69	177	400	193	19	240	503
118	68	177	403	194	18	243	519
119	67	178	403	200	16	249	524
121	66	179	404	203	15	252	474
125	64	181	410	213	14	255	472
129	63	182	398	214	13	259	483
131	62	183	401	217	12	262	502
134	60	184	409	218	11	266	528
136	59	185	413	229	9	277	574
137	57	187	408	231	8	283	615
138	56	188	413	259	7	290	664
140	55	189	417	277	6	296	603
142	53	191	422	289	5	299	638
143	51	193	433	295	4	302	725
144	50	194	425	299	3	304	866
145	49	195	430	300	2	306	782
146	48	196	434	310	1	311	434
147	47	197	438				
148	45	199	439				
150	44	200	445				
152	41	204	437				
155	40	205	424				
160	38	207	430				
161*	35	211	444				

TABLE III  
 AVERAGE DURATIONS—NEW YORK AND ALL OTHER STATES  
 Comparison of Average Durations at Monthly and Other Intervals  
 of Attained Indeterminate Duration  
 Policy Years 1923-1929

Attained Indeterminate Duration	NUMBER OF CASES		AVERAGE INDETERMINATE DURATION		AVERAGE TOTAL DURATION	
	New York	All Other	New York	All Other	New York	All Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)
26 wks	1179	2872	52 wks	58 wks	120 wks	112 wks
30	929	2393	58	64	132	123
34	744	1997	65	71	144	134
39	582	1628	73	79	158	146
43	480	1422	79	84	172	156
47	410	1236	85	90	185	165
52	338	1039	93	98	202	175
56	296	923	98	103	214	183
60	255	821	105	109	227	191
65	218	710	112	116	244	201
69	192	648	118	121	259	208
73	178	579	122	127	271	217
78	148	506	131	134	290	226
86	117	416	144	145	327	243
95	101	332	153	159	356	263
104	81	277	166	171	381	276
112	69	236	177	182	400	284
121	66	213	179	189	404	290
130	62	176	183	203	401	302
143	51	149	193	215	433	320
156	38	127	207	226	430	334
169	30	107	219	238	443	348
182	25	93	228	247	472	360
195	16	88	249	251	524	368
208	14	72	255	262	472	360
234	7	52	290	278	664	378
260	6	27	296	307	603	428
286	5	12	299	349	638	516
312	..	12	..	349	..	516
338	..	6	..	378	..	495
364	..	4	..	392	..	496
390	..	3	..	395	..	521

TABLE IV

AVERAGE DURATIONS—INDETERMINATE COMPENSABLE DISABILITIES  
BY INDUSTRYAverage Indeterminate and Total Durations, lines (b) and (c), at Semiannual Intervals  
of Attained Indeterminate Duration; with the Number of Cases, line (a).

All States—Policy Years 1923-1929

Industry	a—No. b—Indet. d. c—Total d.	INDETERMINATE DISABILITIES WITH ATTAINED DURATION OF									
		26 wks	52 wks	78 wks	104 wks	130 wks	156 wks	182 wks	208 wks	234 wks	260 wks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Manufacturing	a	942	306	152	80	54	42	27	21	15	7
	b	56	98	133	172	201	217	247	260	276	313
	c	116	183	236	291	331	359	376	398	433	565
Contracting	a	1516	520	241	131	85	53	36	27	20	12
	b	56	95	131	166	192	222	246	263	279	298
	c	117	185	244	305	326	336	369	338	366	360
Commercial and Clerical	a	563	198	94	56	42	29	23	16	10	5
	b	59	100	140	177	199	223	237	256	277	307
	c	111	175	229	264	287	330	336	336	355	420
Care, Custody, and Maintenance	a	229	81	43	23	15	9	7	4	2	2
	b	57	97	127	164	189	219	236	266	305	305
	c	118	205	266	388	464	589	697	623	734	734
All Other	a	801	272	124	68	42	32	25	18	12	7
	b	56	96	135	172	207	226	243	263	283	306
	c	109	172	239	298	320	344	370	401	456	477
All Industries	a	4051	1377	654	358	238	165	118	86	59	33
	b	56	96	133	170	198	222	243	261	279	305
	c	114	182	241	299	328	356	384	379	412	460

TABLE V

PERCENTAGE DISTRIBUTION OF COMPENSABLE DISABILITIES  
By INDUSTRY

Column (2) National Council—Policy Years 1922-1926—All Disabilities  
Column (3) *Ætna* Life Insurance Co.—Policy Years 1923-1929—All Disabilities  
Columns (4)-(13) *Ætna* Indeterminate Disabilities at Semiannual Intervals

All States

Industry	National Council	<i>Ætna</i> Life Ins. Co.	<i>ÆTNA</i> INDETERMINATE DISABILITIES WITH ATTAINED DURATION OF									
			26 wks	52 wks	78 wks	104 wks	130 wks	156 wks	182 wks	208 wks	234 wks	260 wks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Manufacturing	44.3%	33.1%	23.2%	22.2%	23.2%	22.3%	22.7%	25.4%	22.9%	24.4%	25.4%	21.2%
Contracting	21.8	25.5	37.4	37.7	36.9	36.7	35.7	32.1	30.5	31.4	33.9	36.3
Commercial and Clerical	14.7	16.9	13.9	14.4	14.4	15.6	17.6	17.6	19.5	18.6	17.0	15.2
Care, Custody, and Maintenance	4.1	5.8	5.7	5.9	6.6	6.4	6.3	5.5	5.9	4.7	3.4	6.1
All Other	15.1	18.7	19.8	19.8	19.0	19.0	17.7	19.4	21.2	20.9	20.3	21.2
Number of Cases	1,775,397	157,398	4,051	1,377	654	358	238	165	118	86	59	33

TABLE VI

AVERAGE DURATIONS—INDETERMINATE COMPENSABLE DISABILITIES  
BY NATURE OF INJURY

Average Indeterminate and Total Durations, lines (b) and (c), at Semiannual Intervals  
of Attained Indeterminate Duration; with the Number of Cases, line (a).

All States—Policy Years 1923-1929

Nature of Injury	a—No. b—Indet. d. c—Total d.	INDETERMINATE DISABILITIES WITH ATTAINED DURATION OF									
		26 wks	52 wks	78 wks	104 wks	130 wks	156 wks	182 wks	208 wks	234 wks	260 wks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Fractures	a	1777	627	313	180	114	75	55	44	29	17
	b	58	99	135	168	198	226	248	260	281	303
	c	122	192	251	299	325	344	371	350	380	410
Dislocations	a	80	29	12	3	2	2	1	1	..	..
	b	51	81	108	173	205	205	232	232	..	..
	c	102	154	191	312	217	217	232	232	..	..
Cuts, Lacerations, and Punctures	a	347	95	35	19	14	11	9	6	4	3
	b	51	92	143	189	215	235	250	277	304	326
	c	105	163	220	278	312	350	387	343	403	458
Bruises, Contusions, and Abrasions	a	665	227	107	65	45	36	29	20	15	10
	b	58	102	145	182	212	230	245	269	286	304
	c	109	183	252	314	364	402	435	471	502	499
Sprains and Strains	a	529	195	102	56	36	23	14	6	5	2
	b	58	97	127	157	179	195	219	252	260	288
	c	106	176	230	302	357	398	394	440	462	703
Burns and Scalds	a	118	44	19	7	6	3	3	2	1	..
	b	54	86	119	173	183	221	221	231	236	..
	c	112	167	182	231	237	307	307	337	271	..
All Other and Not Classified	a	535	160	66	28	21	15	7	7	5	1
	b	51	87	122	169	188	206	250	250	261	311
	c	114	166	223	291	263	275	305	305	308	434
All Kinds	a	4051	1377	654	358	238	165	118	86	59	33
	b	56	96	133	170	198	222	243	261	279	305
	c	114	182	241	299	328	356	384	379	412	460

TABLE VII

PERCENTAGE DISTRIBUTION OF COMPENSABLE DISABILITIES  
BY NATURE OF INJURY

Column (2)—Policy Year 1923—All Disabilities  
Columns (3)-(12) Indeterminate Disabilities, Policy Years 1923-1929

All States

Kind of Injury	All Compensable Disabilities	INDETERMINATE DISABILITIES WITH ATTAINED DURATION OF									
		26 wks	52 wks	78 wks	104 wks	130 wks	156 wks	182 wks	208 wks	234 wks	260 wks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Fractures	15.6%	43.8%	45.6%	47.8%	50.3%	47.9%	45.4%	46.6%	51.2%	49.1%	51.5%
Dislocations	1.3	2.0	2.1	1.8	.8	.8	1.3	.8	1.2	..	..
Cuts, Lacerations, and Punctures	24.5	8.6	6.9	5.4	5.3	5.9	6.7	7.6	6.9	6.8	9.1
Bruises, Contusions, and Abrasions	26.0	16.4	16.5	16.4	18.2	18.9	21.8	24.6	23.3	25.4	30.3
Sprains and Strains	15.7	13.1	14.1	15.6	15.6	15.1	13.9	11.9	6.9	8.5	6.1
Burns and Scalds	4.5	2.9	3.2	2.9	2.0	2.5	1.8	2.5	2.3	1.7	..
All Other and Not Classified	12.4	13.2	11.6	10.1	7.8	8.9	9.1	6.0	8.2	8.5	3.0
Number of Cases	21,985	4,051	1,377	654	358	238	165	118	86	59	33

**TABLE VIII**  
**AVERAGE DURATIONS—INDETERMINATE COMPENSABLE DISABILITIES**  
**BY AGE OF INJURED**  
 Average Indeterminate and Total Durations, lines (b) and (c), at Semi-annual Intervals  
 of Attained Indeterminate Duration; with the Number of Cases, line (a).  
 All States—Policy Years 1923-1929

Age Group	a—No. b—Indet. d. c—Total d.	INDETERMINATE DISABILITIES WITH ATTAINED DURATION OF									
		26 wks	52 wks	78 wks	104 wks	130 wks	156 wks	182 wks	208 wks	234 wks	260 wks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Under 35	a	1327	427	203	121	80	54	34	24	13	11
	b	55	97	135	167	194	219	249	270	311	320
	c	109	179	236	293	338	376	397	382	455	471
35-49	a	1379	487	245	135	89	65	46	34	27	14
	b	58	99	135	172	201	223	246	263	275	301
	c	122	190	256	314	344	360	409	402	432	491
50 and over	a	1068	388	183	94	63	43	35	25	17	7
	b	57	95	132	171	197	222	235	252	265	293
	c	120	186	235	290	299	330	348	356	365	407
All Ages	a	4051	1377	654	358	238	165	118	86	59	33
	b	56	96	133	170	198	222	243	261	279	305
	c	114	182	241	299	328	356	384	379	412	460

**TABLE IX**  
**PERCENTAGE DISTRIBUTION OF INDETERMINATE COMPENSABLE DISABILITIES**  
**BY AGE OF INJURED**  
 Indeterminate Disabilities at Semiannual Intervals of Attained Duration  
 All States—Policy Years 1923-1929

Age Group	INDETERMINATE DISABILITIES WITH ATTAINED DURATION OF									
	26 wks	52 wks	78 wks	104 wks	130 wks	156 wks	182 wks	208 wks	234 wks	260 wks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Under 35	35.2%	32.8%	32.2%	34.6%	34.5%	49.4%	29.6%	28.9%	22.8%	34.4%
35-49	36.5	37.4	38.8	38.5	38.4	40.1	40.0	41.0	47.4	43.7
50 and over	28.3	29.8	29.0	26.9	27.1	26.5	30.4	30.1	29.8	21.9