

ANALYSIS OF THE COST OF 10,307 ACCIDENTS ARISING  
UNDER THE NEW YORK WORKMEN'S  
COMPENSATION LAW.

BY

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Actual statistics relating to the cost of workmen's compensation claims in the United States are up to the present difficult to obtain. For this reason it is thought that some analysis of the 10,307 accidents reported to the New York State Insurance Fund during the year ended June 30, 1915, the first year of the operation of the act, may not be without interest to the members of this Society.

TABLE A.

INCURRED LOSS, JULY 1, 1914, TO JUNE 30, 1915.

*Experience Brought Down to December 31, 1915.*

Accidents Reported.	Kind of Injury.	Incurred Loss.	Average per Accident.
72	I. (a) Death: Dependents (including \$6,970 funeral) . . . . .	\$287,748.88	\$3,997
11	(b) Death: No dependents, funeral only . . . . .	1,004.50	91
. . .	(c) Suspended mortality . . . . .	20,276.19	. . .
5	II. Permanent total disability . . . . .	30,856.34	6,171
224	III. Permanent partial disability—dismemberment . . . . .	118,719.30	530
2	IV. Permanent partial disability—not dismemberment . . . . .	7,912.00	3,956
28	V. (a) Temporary total disability—open cases as of December 31, 1915..	81,029.00	2,894
2,127	(b) Temporary total disability—closed cases as of December 31, 1915..	102,922.22	48
0	VI. Temporary partial disability . . . . .	0	. . .
(1,472)	VII. (a) Medical aid—compensatable cases.	44,874.77	30
4,189	(b) Medical aid—non-compensatable cases . . . . .	28,301.88	7
3,649	VIII. No loss . . . . .	0	. . .
10,307		\$723,645.08	

Table A, appended to this paper, shows an analysis of these accidents according to the character of the injury, giving the total

incurred loss under each head and the average cost per accident. The experience in all cases has been brought down to December 31, 1915. This means that at least six months has elapsed between the date of the last accident and the date of the compilation of the experience.

The first point to be mentioned is that these 10,307 accidents are simply "notices." It has been found impracticable to reduce them to terms of "tabulatable" accidents or to apply any other definition of what constitutes an accident. It will, of course, be recognized that the number of "notices" depends largely upon the practice of the employers whose operations are covered by the insurance policies issued. Large employers with well-organized first aid and accident prevention service are likely to report every accident however trivial, while small employers whose operations are not on a sufficient scale to permit of the systematic organization of accident work are not apt to file notices of accident unless the case appears to be sufficiently serious to make it appear probable that either medical aid or compensation will be payable.

To reduce to terms of "compensatable" accidents there must be subtracted from 10,307 the sum of the 3,649 cases in which there was no loss and the 4,189 cases in which, although medical was paid, there was no compensation—7,838 cases in all—leaving 2,469 "compensatable" accidents where the injury caused either death, dismemberment or disability continuing for more than two weeks from the date of the accident. The calculated incurred loss in these 2,469 cases was \$650,468.43, which gives an average of \$263.45 per compensatable injury, not including the cost of medical aid.

With respect to the several items in Table A, the following comments are submitted: Item I shows that out of 83 deaths which occurred up to December 31, 1915, arising from accidents occurring or or before June 30, 1915, 72 were cases involving dependency with an average present value of \$3,997—almost exactly \$4,000—including the "reasonable funeral expenses not exceeding one hundred dollars" stipulated in subdivision 1 of section 16 of the law. These present values were computed upon the basis of the Survivorship Annuitants' Table of Mortality, the remarriage rate of the Dutch Royal Insurance Institution and  $3\frac{1}{2}$  per cent. interest. An item of \$20,276.19 "suspended mortality" has been added to the incurred loss to provide the additional reserve for deaths which may arise after December 31, 1915, from accidents occurring previous to June 30, 1915.

Five cases valued as permanent total disabilities are provided for under Item II. These cases have in general been reserved for on the basis of a life annuity at the attained age according to the Survivorship Annuitants' Table of Mortality and  $3\frac{1}{2}$  per cent. interest. They represent principally cases of paralysis or spinal injury.

Under Item III is given the data regarding the cases of permanent partial disability arising from dismemberment. The incurred loss in each of these cases is taken as the rate of compensation per week multiplied by the number of weeks' compensation specified in section 15 of the law, the effect of discount for interest and mortality being disregarded for valuation purposes.

Item IV shows that the experience contains only two identified cases of permanent partial disability which does not arise from dismemberment. These figures are further discussed below.

Item V shows that out of 2,155 cases where compensation was awarded for temporary total disability 28 cases remained open on December 31, 1915, in the sense that no evidence was forthcoming on that date that the injured employee had recovered. These cases were valued upon the basis of the reserve values in Table C. This valuation table for open temporary total cases was adopted by the State Insurance Fund after considerable experimental work and is based, after the first thirteen weeks, upon the assumption that an employee who has not recovered after two years from the date of the injury may for valuation purposes be regarded as permanently and totally disabled, and that after the period of thirteen weeks mentioned the value of the liability approaches the total permanent value by equal amounts for equal intervals of time. Since the table has been based upon an average age, it will sometimes happen that when the actual age of the injured employee is taken into account the reserve for permanent total disability will be less than the reserve for temporary total disability. For such cases our rule is to use the reserve for permanent total disability. It is believed that under this method a sufficient reserve is carried on open temporary cases to take care of those cases of permanent disability which may emerge from this class subsequent to the valuation date. In this connection attention may be called to the very great difficulty of distinguishing a case of permanent total disability not due to dismemberment, from a long-term case of temporary disability. It is obviously impossible to follow the terms of the official award in classifying these

cases, for the reason that the law provides that in case of temporary total disability compensation shall be paid to the employee during the continuance thereof, but not in excess of \$3,500. Therefore, it may be, say, five or more years before the Commission is called upon to officially determine whether a given injury will result in permanent total disability, since meanwhile it is merely necessary to continue the case from time to time under awards for temporary disability. Now, it is clear that if statistics as to this matter are to be of real value, they must be based not upon the terms of the official award, but upon the actual facts so far as they may be ascertained to show whether the injury is in all probability a permanent one. This, however, is a difficult matter.

TABLE B.

INCURRED LOSS, EXCLUDING POLICIES NOT COVERING MEDICAL, JULY 1, 1914, TO JUNE 30, 1915.

*Experience Brought Down to December 31, 1915.*

Accidents Reported.	Kind of Injury.	Incurred Loss.	% of Total Loss.
40	I. (a) Death: Dependents (including \$3,922 funeral) . . . . .	\$152,834.88	37.3
7	(b) Death: No dependents, funeral only . . . . .	609.50	
...	(c) Suspended mortality . . . . .	10,818.19	
3	II. Permanent total disability . . . . .	14,041.34	3.2
152	III. Permanent partial disability—dismemberment . . . . .	74,334.30	16.8
2	IV. Permanent partial disability—not dismemberment . . . . .	7,912.00	1.8
16	V. (a) Temporary total disability—open cases as of December 31, 1915 . . . . .	38,409.00	24.3
1,409	(b) Temporary total disability—closed cases as of December 31, 1915 . . . . .	69,269.22	
0	VI. Temporary partial disability . . . . .	0	—
(1,472)	VII. (a) Medical aid—compensatable cases . . . . .	44,874.77	16.6
4,189	(b) Medical aid—non-compensatable cases . . . . .	28,301.88	
867	VIII. No loss . . . . .	0	—
6,685		\$441,405.08	100.0

The average value of the 2,155 temporary cases, both open and closed, was \$85.36. The closed cases include cases where no award had been made or where compensation awarded was outstanding and unpaid December 31, 1915, provided the employee had recovered on that date.

In Table *B* is given an analysis of the 6,685 notices which arose under policies by the provisions of which the cost of medical is borne by the Fund and *not* by the employer. This table permits

TABLE C.  
RESERVE VALUES FOR TEMPORARY TOTAL DISABILITY.

Weeks Elapsed Since Accident.	Reserve per \$1.00 of Weekly Compensation.	Weeks Elapsed Since Accident.	Reserve per \$1.00 of Weekly Compensation.	Weeks Elapsed Since Accident.	Reserve per \$1.00 of Weekly Compensation.
1	\$ 2	36	\$280	71	\$630
2	4	37	290	72	640
3	6	38	300	73	650
4	8	39	310	74	660
5	10	40	320	75	670
6	12	41	330	76	680
7	15	42	340	77	690
8	19	43	350	78	700
9	23	44	360	79	710
10	28	45	370	80	720
11	34	46	380	81	730
12	42	47	390	82	740
13	50	48	400	83	750
14	60	49	410	84	760
15	70	50	420	85	770
16	80	51	430	86	780
17	90	52	440	87	790
18	100	53	450	88	800
19	110	54	460	89	810
20	120	55	470	90	820
21	130	56	480	91	830
22	140	57	490	92	840
23	150	58	500	93	850
24	160	59	510	94	860
25	170	60	520	95	870
26	180	61	530	96	880
27	190	62	540	97	890
28	200	63	550	98	900
29	210	64	560	99	910
30	220	65	570	100	920
31	230	66	580	101	930
32	240	67	590	102	940
33	250	68	600	103	950
34	260	69	610	104	960
35	270	70	620		

an estimate to be made of the relative proportion of total compensation payable, which is represented by each of the several classes of benefit provided in the act. Thus the cost of the death benefit

is 37.3 per cent. of the cost of the total, the cost of temporary total disability, 24.3 per cent., of dismemberment, 16.8 per cent., of medical, 16.6 per cent. The accuracy of these percentages depends largely, of course, upon the accuracy of the reserve computations. An exact determination of the problem on the basis of actual results would require many years of completed experience.

It will be of interest to compare the foregoing experience with Doctor Rubinow's "Standard Accident Table." This may conveniently be accomplished by reducing both tables to terms of "compensatable" accidents as follows:

	Rubinow's Table.		State Fund Experience.	
	Actual.	Per 1,000 "Compensatable" Accidents.	Actual.	Per 1,000 "Compensatable" Accidents.
Fatal cases.....	932	24.1	83	33.6
Dismemberments.....	2,323	60.0	24	90.7
Permanent total disability.....	110	2.8	5	2.0
Permanent partial disability other than dismemberment.....	2,442	63.0	2	0.8
Temporary total disability two weeks or over.....	32,049	850.1	2,155	872.9
	38,756	1,000.0	2,469	1,000.0

The almost total absence in the New York figures of permanent partial disabilities other than dismemberment appears to be due in part to differences in the administration of the law as compared with the practice in European countries whose experience formed the basis of Doctor Rubinow's table. Disabilities of this character are often compensated by a lump sum and it seems probable that they may frequently find their way into the statistics as temporary total cases. The greater number of fatal and dismemberment cases in the State Fund Experience is possibly due in part to a greater preponderance of hazardous classifications in the exposures.