



**THE WORKERS' COMPENSATION  
RATING AND INSPECTION BUREAU OF MASSACHUSETTS**

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November 17, 1995

**CIRCULAR LETTER NO. 1731**

*To All Members and Subscribers of the Bureau:*

**REVISED EXCESS LOSS FACTORS AND  
EXCESS LOSS AND ALLOCATED EXPENSE FACTORS**

**REVISED EXPECTED LOSS SIZE RANGES  
FOR ENTRY INTO THE TABLE OF INSURANCE CHARGES**

**STATE AND HAZARD GROUP DIFFERENTIALS**

***EFFECTIVE JANUARY 1, 1996***

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The Division of Insurance has approved the following attached Retrospective Rating Plan items to become effective 12:01 A.M., January 1, 1996, applicable to new and renewal policies:

REVISED EXCESS LOSS FACTORS - *Exhibit 1*

REVISED EXCESS LOSS AND ALLOCATED FACTORS - *Exhibit 2*

REVISED EXPECTED LOSS SIZE RANGES  
FOR ENTRY INTO THE TABLE OF INSURANCE CHARGES - *Exhibit 3*

STATE AND HAZARD GROUP DIFFERENTIALS - *Exhibit 4*  
EXPLANATION - *Exhibit 4A*

Reprinted manual pages will be printed in due course.

NORMAN R. FONTAINE  
Vice President of Industry Affairs

NRF/pw/2325  
Attachments

**MASSACHUSETTS WORKERS' COMPENSATION**

**EXCESS LOSS FACTORS**

**Effective January 1, 1996**

Accident Limit (\$000)	Hazard Group I	Hazard Group II	Hazard Group III	Hazard Group IV
25	.483	.481	.553	.586
30	.454	.452	.530	.566
35	.427	.425	.508	.546
40	.402	.401	.488	.528
50	.357	.357	.450	.495
75	.267	.270	.370	.422
100	.198	.209	.306	.362
125	.147	.163	.255	.313
150	.112	.130	.214	.272
175	.087	.105	.182	.238
200	.070	.087	.156	.210
250	.050	.063	.118	.165
300	.039	.049	.094	.134
500	.024	.029	.053	.075
1000	.014	.017	.031	.043
2000	.006	.008	.017	.025
3000	.004	.005	.011	.016
4000	.002	.003	.007	.012
5000	.002	.002	.006	.009

**MASSACHUSETTS WORKERS' COMPENSATION**

**ALAE OPTION - EXCESS LOSS AND ALLOCATED EXPENSE FACTORS**

**Effective January 1, 1996**

Accident Limit (\$000)	Hazard Group I	Hazard Group II	Hazard Group III	Hazard Group IV
25	.515	.513	.587	.621
30	.485	.483	.563	.600
35	.458	.456	.541	.580
40	.432	.430	.520	.562
50	.385	.385	.482	.528
75	.292	.295	.399	.453
100	.220	.230	.333	.392
125	.165	.182	.280	.341
150	.126	.146	.236	.298
175	.099	.118	.202	.262
200	.080	.098	.174	.231
250	.056	.071	.132	.183
300	.044	.055	.105	.149
500	.027	.032	.058	.083
1000	.015	.019	.034	.047
2000	.007	.009	.019	.027
3000	.004	.006	.012	.018
4000	.003	.004	.008	.013
5000	.002	.003	.006	.010

Massachusetts Workers' Compensation  
Expected Loss Ranges for Entry into the Table of Insurance Charges

Effective January 1, 1996

<u>Expected Loss Group</u>	<u>Expected Loss Range</u>			<u>Expected Loss Group</u>	<u>Expected Loss Range</u>		
99	0	-	46	51	85,522	-	92,100
98	47	-	110	50	92,101	-	99,181
97	111	-	206	49	99,182	-	106,809
96	207	-	335	48	106,810	-	115,032
95	336	-	495	47	115,033	-	123,912
94	496	-	692	46	123,913	-	133,498
93	693	-	911	45	133,499	-	143,873
92	912	-	1,178	44	143,874	-	155,101
91	1,179	-	1,475	43	155,102	-	167,271
90	1,476	-	1,810	42	167,272	-	180,485
89	1,811	-	2,184	41	180,486	-	194,841
88	2,185	-	2,607	40	194,842	-	210,468
87	2,608	-	3,067	39	210,469	-	227,507
86	3,068	-	3,580	38	227,508	-	246,785
85	3,581	-	4,142	37	246,786	-	283,076
84	4,143	-	4,748	36	283,077	-	325,233
83	4,749	-	5,417	35	325,234	-	374,326
82	5,418	-	6,141	34	374,327	-	431,669
81	6,142	-	6,921	33	431,670	-	498,861
80	6,922	-	7,773	32	498,862	-	577,847
79	7,774	-	8,690	31	577,848	-	671,049
78	8,691	-	9,681	30	671,050	-	781,446
77	9,682	-	10,747	29	781,447	-	912,772
76	10,748	-	11,891	28	912,773	-	1,069,714
75	11,892	-	13,130	27	1,069,715	-	1,258,177
74	13,131	-	14,452	26	1,258,178	-	1,485,737
73	14,453	-	15,878	25	1,485,738	-	1,762,082
72	15,879	-	17,406	24	1,762,083	-	2,099,838
71	17,407	-	19,042	23	2,099,839	-	2,515,497
70	19,043	-	20,802	22	2,515,498	-	3,030,945
69	20,803	-	22,679	21	3,030,946	-	3,675,490
68	22,680	-	24,696	20	3,675,491	-	4,488,912
67	24,697	-	26,849	19	4,488,913	-	5,525,974
66	26,850	-	29,162	18	5,525,975	-	6,863,311
65	29,163	-	31,635	17	6,863,312	-	8,609,855
64	31,636	-	34,280	16	8,609,856	-	10,923,744
63	34,281	-	37,114	15	10,923,745	-	14,039,278
62	37,115	-	40,149	14	14,039,279	-	18,312,631
61	40,150	-	43,404	13	18,312,632	-	24,300,443
60	43,405	-	46,884	12	24,300,444	-	32,901,239
59	46,885	-	50,612	11	32,901,240	-	45,622,243
58	50,613	-	54,610	10	45,622,244	-	65,106,001
57	54,611	-	58,894	9	65,106,002	-	96,243,920
56	58,895	-	63,490	8	96,243,921	-	148,702,022
55	63,491	-	68,426	7	148,702,023	-	243,230,605
54	68,427	-	73,720	6	243,230,606	-	429,365,314
53	73,721	-	79,406	5	429,365,315	-	and over
52	79,407	-	85,521				

Massachusetts Workers' Compensation  
State and Hazard Group Severity Differentials

Effective January 1, 1996

Hazard Group	(1) Indicated Massachusetts Hazard Group <u>Differential</u>	(2) Balanced Countrywide Hazard Group <u>Differential</u>	(3) Selected Hazard Group <u>Differential</u>	(4) <b>Massachusetts State and Hazard Group <u>Differential</u></b>
I	1.187	1.234	1.21	<b>1.379</b>
II	1.242	1.134	1.18	<b>1.345</b>
III	0.764	0.846	0.80	<b>0.912</b>
IV	0.753	0.687	0.72	<b>0.821</b>
Overall	1.000	1.000	1.00	

Notes:

- (1) From Page 2.
- (2) From Page 2.
- (3) Differentials are selected so that the reciprocals, weighted by Massachusetts claim counts by Hazard Group, balance to unity.
- (4) = (Countrywide Overall Avg Claim Cost/Mass. Overall Avg Claim Cost) \* (3)  
 = 1.140 \* (3).  
 Overall Average Claim Costs from Page 2.

## Massachusetts Workers' Compensation

Hazard Group Differentials -- Massachusetts Experience

Hazard Group	(1)	(2)
	Massachusetts Average <u>Claim Cost</u>	Indicated Massachusetts Hazard Group <u>Differential</u>
I	18,588	1.187
II	17,765	1.242
III	28,865	0.764
IV	29,282	0.753
Overall	22,063	1.000

Hazard Group Differentials -- Countrywide Experience adjusted to Massachusetts Basis

Hazard Group	(3)	(4)	(5)	(6)
	Countrywide Average <u>Claim Cost</u>	Indicated Countrywide Hazard Group <u>Differential</u>	Massachusetts <u>Claim Count</u>	Balanced Countrywide Hazard Group <u>Differential</u>
I	19,713	1.276	2,260	1.234
II	21,459	1.172	85,301	1.134
III	28,746	0.875	53,142	0.846
IV	35,435	0.710	1,809	0.687
Overall	25,157	1.000	142,511	1.000

## Notes:

(2) = [(1) Overall] / (1)

(4) = [(3) Overall] / (3)

(6) Hazard Groups I-IV: = (4) \* {sum of [(5)/(4)] / [(5) Overall]}

Overall: = {sum of [(5)/(6)] / [(5) Overall]}

## **STATE AND HAZARD GROUP SEVERITY DIFFERENTIALS**

### **FOR USE IN RETROSPECTIVE RATING**

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#### **Purpose:**

The differentials were developed to account for differences in severity due to state and hazard group variations. They are used to adjust the manner in which expected losses are determined for entry into the Table of Insurance Charges.

#### **Background:**

The Table of Insurance Charges (Table M) is the source of charges and savings used in determining the insurance charge portion of the Basic Premium.

Decreasing variance in actual losses relative to average expected losses leads to decreasing insurance charges. Conversely, greater variation in actual losses relative to expected losses leads to increasing insurance charges. The process underlying Table M is this variation in loss ratios. For a small employer, it is usually a matter of having a loss, often of a value considerably more than the expected losses, or not having a loss at all. The large employer can expect several losses of differing sizes, and the actual total will be closer to the expected total. This large number of expected claims reduces the variation of the loss ratio distribution.

The prior procedure measured the variation in the employer's losses by the expected loss size of the employer. The problem is that a given expected loss size does not determine a unique expected number of claims, nor, as a result, a unique loss distribution. For example, an employer in a state with high benefits will have on average fewer claims than an employer of the same expected loss size in a state with lower benefits. The first employer, who has greater expected loss severity, would have greater loss ratio variance.

Retrospective rating should recognize any significant difference between the two like-sized employers by giving larger insurance charges to the employer who expects more variation in losses.

In addition to differences by state in the average size of claims, there is a difference by hazard group. Classifications are grouped by hazard because some

classes normally produce less serious injuries, while others, with higher hazard, are expected to have more serious injuries. This grouping is already a part of the Retrospective Rating Plan. It is currently used for computation of Excess Loss Factors, the fixed charges for limiting ratable claims to some selected maximum size. It is appropriate to recognize this difference of claim severity in the insurance charge.

When benefit levels were maintained at a relatively low level in most states, there was more uniformity and the variations in average claim size by state and hazard group were smaller. With expanded benefit levels, a more refined approach is warranted.

**Application of Differentials:**

The state and hazard group severity differentials are multiplied by the expected losses for the purpose of entry into the Table of Insurance Charges (Table M). The unadjusted expected losses are used for all subsequent calculations.

**Impact in Massachusetts:**

The average cost for Massachusetts is somewhat lower than countrywide. Therefore, the average differential is more than unity. Therefore, the expected losses used to enter Table M will on average be more, leading to smaller insurance charges and smaller insurance savings. This makes sense, since the same sized risk in terms of expected losses will have more claims on average in Massachusetts than countrywide. This leads to less variability for the Massachusetts risk than the countrywide risk with the same expected losses.

The effect on an individual retrospectively rated insured would depend on the selected minimum and maximum premiums. Also it would depend on the Hazard Group and the mix of states in which insurance was purchased.

**Impact by Hazard Group:**

As expected, the more hazardous risks (Hazard Groups III and IV) will have higher insurance charges while the less hazardous risks (Hazard Groups I and II) will have lower insurance charges.