

RULES – INFORMATION

APRIL 17, 2019

COMMERCIAL MULTIPLE LINE

LI-ML-2019-006

NEW HAMPSHIRE COMMERCIAL PACKAGE POLICY PACKAGE MODIFICATION FACTOR ANALYSIS FURNISHED FOR INFORMATION; EXCEL WORKBOOK NEWLY INCLUDED

KEY MESSAGE

This analysis is provided for your information. We are NOT revising the current package modification factors based on this analysis.

BACKGROUND

In circular [LI-ML-2019-004](#), we provided you with information about the package modification factor review.

ISO ACTION

We are:

- NOT making a submission to the Insurance Department based on this analysis.
- NOT implementing any changes, at this time, to the current package modification factors for this jurisdiction.

COMPANY ACTION

You may wish to evaluate your package modification factor needs. The methods described in the attached analysis are based on the judgments of Insurance Services Office, Inc. You should evaluate and substitute your own judgments and procedures where appropriate, and consider your own loss experience when determining your package modification factor needs.

If you decide to independently file a package modification factor revision, you must comply with the applicable regulatory filing requirements.

REFERENCE(S)

[LI-ML-2019-004](#) (04/03/2019) Commercial Package Policy Experience Reviewed By Staff

ATTACHMENT(S)

- Informational Analysis
- Excel Workbook

FILES AVAILABLE FOR DOWNLOAD

To download all files associated with this circular, including attachments in the full circular PDF and/or any additional files not included in the PDF, search for the circular number on [ISOnet Circulars](#). Then click the Word/Excel link under the Full Circular column on the Search Results screen.

Please note that in some instances, not all files listed in the Attachment(s) block (if applicable) are included in the PDF.

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ACKNOWLEDGMENT OF ACTUARIAL QUALIFICATIONS

The American Academy of Actuaries' "Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States" requires that an actuary issuing a Statement of Actuarial Opinion should include an acknowledgment with the opinion that he/she has met the qualification standards of the AAA. ISO considers this rule document a Statement of Actuarial Opinion; therefore we are including the following acknowledgment:

I, Rimma Maasbach, am an Actuarial Consultant in Actuarial Operations for ISO, and I, Bei Zhou, am an Actuarial Product Director for Commercial Property for ISO. We are jointly responsible for the content of this Statement of Actuarial Opinion. We are both members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

CONTACT INFORMATION

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NEW HAMPSHIRE
ADVISORY PACKAGE MODIFICATION FACTOR REVIEW
COMMERCIAL PACKAGE POLICY
EXECUTIVE SUMMARY

PURPOSE

This document:

- presents a review of advisory Package Modification Factors (PMFs). PMFs are relativity factors used to adjust monoline loss costs as appropriate for multiline risks.
 - provides the analyses used to derive these advisory PMFs.
-

PMF CHANGES

The proposed Commercial Package Policy (CPP) Package Modification Factor changes are:

<u>Type of Policy</u>	<u>Property</u>	<u>Liability</u>	<u>Prop. & Liab. Total</u>
Motel/Hotel	0.0%	0.0%	0.0%
Apartment	0.0%	0.0%	0.0%
Office	0.0%	+1.0%	+0.8%
Mercantile	0.0%	+4.2%	+2.3%
Institutional	0.0%	+1.0%	+0.3%
Services	0.0%	-4.2%	-2.0%
Indust./Proc.	0.0%	0.0%	0.0%
Contractors	<u>0.0%</u>	<u>+6.5%</u>	<u>+5.9%</u>
Statewide	0.0%	+2.7%	+1.5%

INDICATED
VS. CAPPED

Indicated PMF changes are based on standard ISO methodology. Differences between indicated and capped PMF changes are caused by rounding each indicated PMF to the nearest one percent and applying an upper cap of 1.00, where necessary.

NEW HAMPSHIRE
ADVISORY PACKAGE MODIFICATION FACTOR REVIEW
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HISTORICAL
SOURCE DATA

The data used in this review is from ISO reporting companies for:

- Basic Group I: five fiscal accident years ending 03/31/18.
 - Basic Group II: ten fiscal accident years ending 03/31/18.
 - Special Causes of Loss: five fiscal accident years ending 03/31/18.
 - Crime: calendar year ending 06/30/16.
 - Inland Marine: five calendar accident years ending 12/31/16.
 - Fidelity: policy year ending 12/31/15.
 - Owners, Landlords, and Tenants: five fiscal accident years ending 03/31/18.
 - Manufacturers and Contractors: five fiscal accident years ending 03/31/18.
 - Products: three calendar accident years ending 12/31/17.
 - Local Products and Completed Operations: three calendar accident years ending 12/31/17.
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PRIOR ISO
REVISIONS

The latest revisions in this state are:

<u>Filing</u>	ML-15-RLA1	ML-09-RLA1	ML-07-RLA1
<u>Dates</u>			
Implemented	12/01/15	03/01/10	02/01/08
<u>Changes</u>			
Indicated	+1.5%	-1.0%	+1.6%
Filed	+1.2%	-1.8%	+1.6%
Implemented	+1.2%	-1.8%	+1.6%

NEW HAMPSHIRE
ADVISORY PACKAGE MODIFICATION FACTOR REVIEW
COMMERCIAL PACKAGE POLICY
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ADJUSTMENTS
TO REPORTED
EXPERIENCE

Standard actuarial procedures have been used in the reviews underlying the calculation of the PMFs, including adjusting the fire and liability losses to ultimate settlement level and, for all coverages, reflecting all loss adjustment expenses and trend. Specific procedures vary by subline.

TEN LARGEST
GROUPS IN
ISO DATA BASE

Insurers are listed in descending order based on the percent of statewide written premium volume from Annual Statement Page 15 for the year ending 12/31/17 for the Annual Statement Line of Business (ASLOB) indicated.

COMMERCIAL MULTI PERIL (ASLOB 51 & 52)

1. Liberty Mutual Insurance Company
 2. Hanover Insurance Company
 3. Admiral Insurance Company
 4. Vermont Mutual Insurance Company
 5. Travelers Indemnity Company
 6. Tokio Marine Companies
 7. Concord General Mutual Insurance Company
 8. Frankenmuth Mutual Insurance Company
 9. Merchants Mutual Insurance Company
 10. Cincinnati Insurance Company
-

SIZE OF ISO
DATA BASE

The market share of ISO participating insurers as measured by Annual Statement Page 15 written premium for the year ending 12/31/17 is:

Commercial Multi Peril (ASLOB 51 & 52). 68.9%.

ADDITIONAL
SUPPORTING
MATERIAL

Additional supporting material underlying the calculation of the experience review indications used in this PMF analysis may be found in the respective monoline experience review documents for each line.

NEW HAMPSHIRE
ADVISORY PACKAGE MODIFICATION FACTOR REVIEW
COMMERCIAL PACKAGE POLICY
EXECUTIVE SUMMARY

COMPANY DECISION

We encourage each insurer to decide independently whether the judgments made and the procedures or data used by ISO in developing the PMFs contained herein are appropriate for your use. We have included within this document the information upon which ISO relied in order to enable companies to make such independent judgments. The data underlying the enclosed material comes from companies reporting to Insurance Services Office, Inc. Therefore, the ISO experience permits the establishment of a much broader statistical ratemaking base than could be employed by using any individual company's data. A broader data base enhances the validity of ratemaking analysis derived therefrom.

At the same time, however, an individual company may benefit from a comparison of its own experience to the aggregate ISO experience, and may reach valid conclusions with respect to the manner in which its own costs can be expected to differ from ISO's projection based on the aggregate data.

Some calculations included in this document involve areas of ISO staff judgment. Each company should carefully review and evaluate whether the ISO selected PMFs are appropriate for its use.

The material has been developed exclusively by the staff of Insurance Services Office, Inc.

COMMERCIAL PACKAGE POLICY

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COMMERCIAL PACKAGE POLICY

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COMMERCIAL PACKAGE POLICY METHODOLOGY OVERVIEW

OBJECTIVE

A Commercial Package Policy (CPP) is essentially a combination of monoline coverages. CPP pricing employs monoline loss costs modified by Package Modification Factors (PMFs). These factors vary by the eight CPP types of policy and are reviewed annually. Monoline and multiline experience are combined and reviewed via a monoline/multiline relativity analysis. The resulting indicated PMFs represent the loss cost for a CPP relative to that for monoline policies providing the same coverages.

STEP 1: THE RELATIVITY ANALYSES

Each line of insurance develops indicated changes to monoline and multiline aggregate loss costs based on an experience ratio relativity analysis for that coverage. The monoline indication represents the needed change to monoline loss costs. The multiline indication represents the needed change to multiline aggregate loss costs, which is implemented through changes to the PMFs. For this PMF analysis, multiline indications are developed for each line of insurance and Type of Policy. Relativity analyses are explained in Section B.

STEP 2: CALCULATION OF THE PMFs

The procedure described above generates indicated Implicit PMFs (IPMFs) which vary by the various lines of insurance and by type of policy. IPMFs represent what the PMF would be for the CPP risk if only a single coverage were written. For each Type of Policy, IPMFs are weighted by CPP aggregate loss costs to determine the indicated property and liability PMFs. These PMFs may be capped, or rounded to the nearest one percent, and certain component IPMFs appropriately adjusted for this change. These calculations are explained in the remainder of Section A.

NEW HAMPSHIRE

TABLE 1
COMMERCIAL PACKAGE POLICY

SUMMARY OF THIS REVIEW

The display below summarizes the review and shows the capped Package Modification Factors for Property and Liability. For each type of risk, the PMFs are determined to be those factors which when applied to the monoline loss costs produce the appropriate CPP aggregate loss cost level as determined by an analysis of the CPP experience.

TYPE OF POLICY	PROPERTY PMFS			LIABILITY PMFS			PROP. & LIAB. TOTAL
	CURRENT	CAPPED	% CHANGE	CURRENT	CAPPED	% CHANGE	% CHANGE
MOTEL/HOTEL (31)	1.00	1.00	0.0%	1.00	1.00	0.0%	0.0%
APARTMENT (32)	1.00	1.00	0.0%	1.00	1.00	0.0%	0.0%
OFFICE (33)	1.00	1.00	0.0%	0.99	1.00	1.0%	0.8%
MERCANTILE (34)	1.00	1.00	0.0%	0.96	1.00	4.2%	2.3%
INSTITUTION (35)	1.00	1.00	0.0%	0.99	1.00	1.0%	0.3%
SERVICES (36)	1.00	1.00	0.0%	0.96	0.92	-4.2%	-2.0%
IND/PROC (37)	1.00	1.00	0.0%	0.95	0.95	0.0%	0.0%
CONTRACTORS (38)	1.00	1.00	0.0%	0.92	0.98	6.5%	5.9%
STATEWIDE			0.0%			2.7%	1.5%

NEW HAMPSHIRE
TABLE 2
COMMERCIAL PACKAGE POLICY
CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS (PMF)

MOTEL/HOTEL (31) *****	(1) AGGREG- ATE LOSS COSTS	(2) CURRENT IMPLICIT PMF	(3) NET INDICATION	(4) INDIC. PMF	(5) CAPPED PMF
<u>COVERAGE</u>					
PROPERTY-					
BASIC GRP I	215,812	1.098	4.3%	1.145	1.129
BASIC GRP II	38,797	0.588	1.7	0.598	0.589
SP CAUSE/LOSS	107,876	1.037	-0.1	1.036	1.021
*CRIME	2,177	0.875	0.0	0.875	0.875
*INL. MAR.	249	0.838	8.6	0.910	0.910
*FIDELITY	3,493	1.000	0.0	1.000	1.000
<u>TOTAL</u>	<u>368,404</u>	<u>1.00</u>	<u>1.5%</u>	<u>1.015</u>	<u>1.00</u>
LIABILITY-					
OL&T	573,137	1.000	4.5%	1.045	1.000
<u>TOTAL</u>	<u>573,137</u>	<u>1.00</u>	<u>4.5%</u>	<u>1.045</u>	<u>1.00</u>
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	941,541		3.3%		
APARTMENT (32) *****	(1) AGGREG- ATE LOSS COSTS	(2) CURRENT IMPLICIT PMF	(3) NET INDICATION	(4) INDIC. PMF	(5) CAPPED PMF
<u>COVERAGE</u>					
PROPERTY-					
BASIC GRP I	1,241,615	1.042	5.3%	1.097	1.061
BASIC GRP II	121,702	0.500	1.6	0.508	0.500
SP CAUSE/LOSS	562,499	1.119	1.6	1.137	1.099
*CRIME	502	0.875	0.0	0.875	0.875
*INL. MAR.	602	0.838	8.6	0.910	0.910
*FIDELITY	7,271	1.000	0.0	1.000	1.000
<u>TOTAL</u>	<u>1,934,191</u>	<u>1.00</u>	<u>3.3%</u>	<u>1.033</u>	<u>1.00</u>
LIABILITY-					
OL&T	1,167,203	1.000	7.9%	1.079	1.000
<u>TOTAL</u>	<u>1,167,203</u>	<u>1.00</u>	<u>7.9%</u>	<u>1.079</u>	<u>1.00</u>
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PROP. & LIAB. TOTAL	3,101,394		5.0%		

* indicates coverage for which reviews are on a MULTISTATE basis.

NEW HAMPSHIRE
TABLE 2
COMMERCIAL PACKAGE POLICY
CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS (PMF)

OFFICE (33) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE <u>LOSS COSTS</u>	CURRENT IMPLICIT <u>PMF</u>	NET <u>INDICATION</u>	INDIC. <u>PMF</u>	CAPPED <u>PMF</u>
COVERAGE					
PROPERTY-					
BASIC GRP I	198,134	1.150	3.8%	1.194	1.183
BASIC GRP II	59,880	0.725	1.0	0.732	0.726
SP CAUSE/LOSS	175,999	0.980	-1.4	0.966	0.958
*CRIME	1,605	0.875	0.0	0.875	0.875
*INL. MAR.	9,361	0.838	8.6	0.910	0.910
*FIDELITY	7,114	1.000	0.0	1.000	1.000
TOTAL	452,093	1.00	0.9%	1.009	1.00
LIABILITY-					
OL&T	1,655,866	1.014	3.4%	1.048	1.020
M&C	75,731	0.712	0.5	0.716	0.696
TOTAL	1,731,597	0.99	3.9%	1.028	1.00
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	2,183,690		3.2%		
MERCANTILE (34) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE <u>LOSS COSTS</u>	CURRENT IMPLICIT <u>PMF</u>	NET <u>INDICATION</u>	INDIC. <u>PMF</u>	CAPPED <u>PMF</u>
COVERAGE					
PROPERTY-					
BASIC GRP I	1,152,823	0.976	5.2%	1.027	0.988
BASIC GRP II	385,084	1.046	1.5	1.062	1.022
SP CAUSE/LOSS	733,333	1.048	2.2	1.071	1.031
*CRIME	18,373	0.875	0.0	0.875	0.875
*INL. MAR.	114,919	0.838	8.6	0.910	0.910
*FIDELITY	113,080	1.000	0.0	1.000	1.000
TOTAL	2,517,612	1.00	3.5%	1.035	1.00
LIABILITY-					
OL&T	2,070,704	1.010	2.3%	1.033	1.065
M&C	670,415	0.877	-2.7	0.853	0.879
LOCAL PRODUCT	95,914	1.078	0.1	1.079	1.112
*MULTI PRODUCT	286,244	0.831	2.6	0.853	0.853
TOTAL	3,123,277	0.96	1.4%	0.973	1.00
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PROP. & LIAB. TOTAL	5,640,889		2.3%		

* indicates coverage for which reviews are on a MULTISTATE basis.

NEW HAMPSHIRE
TABLE 2
COMMERCIAL PACKAGE POLICY
CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS (PMF)

INSTITUTION (35) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE	CURRENT	NET	INDIC.	CAPPED
COVERAGE	<u>LOSS COSTS</u>	<u>IMPLICIT</u>	<u>INDICATION</u>	<u>PMF</u>	<u>PMF</u>
PROPERTY-					
BASIC GRP I	857,910	1.108	3.9%	1.151	1.124
BASIC GRP II	373,866	1.038	0.7	1.045	1.021
SP CAUSE/LOSS	574,334	0.872	-0.9	0.864	0.844
*CRIME	5,747	0.875	0.0	0.875	0.875
*INL. MAR.	2,396	0.838	8.6	0.910	0.910
*FIDELITY	66,205	1.000	0.0	1.000	1.000
TOTAL	1,880,458	1.00	2.3%	1.023	1.00
LIABILITY-					
OL&T	712,595	0.992	-3.4%	0.958	1.003
M&C	6,170	0.721	0.1	0.722	0.755
TOTAL	718,765	0.99	-3.5%	0.955	1.00
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	2,599,223		0.7%		

SERVICES (36) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE	CURRENT	NET	INDIC.	CAPPED
COVERAGE	<u>LOSS COSTS</u>	<u>IMPLICIT</u>	<u>INDICATION</u>	<u>PMF</u>	<u>PMF</u>
PROPERTY-					
BASIC GRP I	850,077	0.912	2.9%	0.938	0.938
BASIC GRP II	275,334	0.788	2.0	0.804	0.803
SP CAUSE/LOSS	798,460	1.257	-4.1	1.205	1.204
*CRIME	14,021	0.875	0.0	0.875	0.875
*INL. MAR.	7,579	0.838	8.6	0.910	0.910
*FIDELITY	55,166	1.000	0.0	1.000	1.000
TOTAL	2,000,637	1.00	0.1%	1.001	1.00
LIABILITY-					
OL&T	825,621	1.149	-4.3%	1.100	1.114
M&C	851,689	0.763	-0.9	0.756	0.766
LOCAL PRODUCT	98,088	1.152	1.6	1.170	1.186
*MULTI PRODUCT	24,755	0.941	-2.7	0.915	0.915
TOTAL	1,800,153	0.96	-5.9%	0.903	0.92
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	3,800,790		-2.8%		

* indicates coverage for which reviews are on a MULTISTATE basis.

NEW HAMPSHIRE
TABLE 2
COMMERCIAL PACKAGE POLICY
CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS (PMF)

IND/PROC (37) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE <u>LOSS COSTS</u>	CURRENT IMPLICIT <u>PMF</u>	NET <u>INDICATION</u>	INDIC. <u>PMF</u>	CAPPED <u>PMF</u>
COVERAGE					
PROPERTY-					
BASIC GRP I	1,200,062	1.158	2.6%	1.188	1.178
BASIC GRP II	171,913	0.738	-0.9	0.731	0.725
SP CAUSE/LOSS	361,827	0.786	-5.1	0.746	0.740
*CRIME	2,724	0.875	0.0	0.875	0.875
*INL. MAR.	997	0.838	8.6	0.910	0.910
*FIDELITY	36,540	1.000	0.0	1.000	1.000
TOTAL	1,774,063	1.00	0.8%	1.008	1.00
LIABILITY-					
M&C	897,041	1.010	-3.3	0.977	1.005
LOCAL PRODUCT	15,306	0.909	2.1	0.928	0.955
*MULTI PRODUCT	513,867	0.841	2.7	0.864	0.864
TOTAL	1,426,214	0.95	-2.0%	0.931	0.95
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	3,200,277		-0.4%		
CONTRACTORS (38) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE <u>LOSS COSTS</u>	CURRENT IMPLICIT <u>PMF</u>	NET <u>INDICATION</u>	INDIC. <u>PMF</u>	CAPPED <u>PMF</u>
COVERAGE					
PROPERTY-					
BASIC GRP I	174,884	1.056	3.3%	1.091	1.090
BASIC GRP II	42,772	0.703	0.7	0.708	0.707
SP CAUSE/LOSS	151,488	1.052	-2.8	1.023	1.022
*CRIME	1,554	0.875	0.0	0.875	0.875
*INL. MAR.	589	0.838	8.6	0.910	0.910
*FIDELITY	27,449	1.000	0.0	1.000	1.000
TOTAL	398,736	1.00	0.1%	1.001	1.00
LIABILITY-					
M&C	2,507,041	0.932	5.1	0.980	0.992
LOCAL PRODUCT	1,169,952	0.910	4.8	0.954	0.965
TOTAL	3,676,993	0.92	5.6%	0.971	0.98
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	4,075,729		5.0%		

* indicates coverage for which reviews are on a MULTISTATE basis.

NEW HAMPSHIRE
TABLE 2
COMMERCIAL PACKAGE POLICY
CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS (PMF)

STATEWIDE *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE	CURRENT	NET	INDIC.	CAPPED
COVERAGE	<u>LOSS COSTS</u>	<u>IMPLICIT</u>	<u>INDICATION</u>	<u>PMF</u>	<u>PMF</u>
PROPERTY-		<u>PMF</u>			
BASIC GRP I	5,891,317	1.043	4.0%	1.085	1.062
BASIC GRP II	1,469,348	0.833	1.1	0.842	0.826
SP CAUSE/LOSS	3,465,816	1.024	-1.1	1.013	0.993
*CRIME	46,703	0.875	0.0	0.875	0.875
*INL. MAR.	136,692	0.838	8.6	0.910	0.910
*FIDELITY	316,318	1.000	0.0	1.000	1.000
<u>TOTAL</u>	<u>11,326,194</u>	<u>1.000</u>	<u>2.0%</u>	<u>1.020</u>	<u>1.000</u>
LIABILITY-					
OL&T	7,005,126	1.021	2.3%	1.045	1.036
M&C	5,008,087	0.899	1.5	0.912	0.927
LOCAL PRODUCT	1,379,260	0.934	4.2	0.973	0.987
*MULTI PRODUCT	824,866	0.840	2.5	0.861	0.861
<u>TOTAL</u>	<u>14,217,339</u>	<u>0.953</u>	<u>2.4%</u>	<u>0.976</u>	<u>0.979</u>
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PROP. & LIAB. TOTAL	25,543,533		2.2%		

* indicates coverage for which reviews are on a MULTISTATE basis.

NEW HAMPSHIRE

TABLE 2

COMMERCIAL PACKAGE POLICY

COMBINED PMFs

<u>TYPE OF POLICY</u>	<u>CURRENT COMBINED</u>	<u>INDICATED COMBINED</u>	<u>CAPPED COMBINED</u>
MOTEL/HOTEL (31)	1.00	1.033	1.00
APARTMENT (32)	1.00	1.050	1.00
OFFICE (33)	1.00	1.024	1.00
MERCANTILE (34)	0.98	1.000	1.00
INSTITUTION (35)	1.00	1.004	1.00
SERVICES (36)	0.98	0.953	0.96
IND/PROC (37)	0.98	0.973	0.98
CONTRACTORS (38)	0.93	0.974	0.98

NOTE: Combined PMFs are provided for informational purposes only.

EXPLANATORY NOTES TO TABLE 2

CALCULATION OF REVISED PACKAGE MODIFICATION FACTORS

OBJECTIVE	<p>Commercial package policies were introduced in the 1960's as a convenient tool for both insurer and insured to have the many types of insurance needed by commercial risks packaged under one cover. Thus fire, extended coverage, crime, liability insurance, etc. could be written using a single policy instead of several. Today, virtually any type of monoline coverage can also be purchased as part of a package policy such as the CPP.</p> <p>The types of insured which can be written under a CPP are generally categorized into the following Types of Policy:</p> <ul style="list-style-type: none">. Motels and Hotels (TOP 31). Apartments (TOP 32). Offices (TOP 33). Mercantile Operations (TOP 34). Institutions (TOP 35). Service Operations (TOP 36). Industrial and Processing Operations (TOP 37). Contractors (TOP 38)
PRICING OF POLICIES	<p>Since a CPP is essentially a combination of monoline coverages, CPP pricing employs monoline loss costs modified by PMFs (Package Modification Factors). These factors vary by the categories shown above and are reviewed annually.</p>
CPP PMF REVIEW PROCEDURE	<p>The CPP review of Package Modification Factors, which appears in Table 2 of this document, determines the appropriate PMF loss cost level for each of the eight CPP categories. This is done by combining the indications of the simultaneous reviews of monoline and multiline experience for the various lines (or coverages).</p> <p>A detailed explanation of the calculation of the revised PMFs follows.</p>

EXPLANATORY NOTES TO TABLE 2 (Cont'd)

LINES OF INSURANCE (COVERAGES) INCLUDED

The CPP review reflects the contribution from each significant coverage which can be written on a CPP. Included are:

Property Coverages

- . Basic Group I (BGI) - the predominant property coverage included.
- . Basic Group II (BGII) - both Basic Group I and Basic Group II must be purchased under a CPP contract.
- . Special Causes of Loss (SCL) - typically a type of insurance which is purchased in addition to Basic Group I and Basic Group II in order to provide "all risk" property coverage for the insured.
- . Crime (CRIME) - Crime insurance is a commonly purchased CPP coverage.
- . Inland Marine (INL. MAR.) - A highly specialized line of property insurance, Inland Marine coverages can be purchased as part of a package policy.
- . Fidelity (FIDELITY) - Certain forms of fidelity insurance can be part of the CPP package. Various forms of employee dishonesty coverage are available.

Liability Coverages

- . Owners, Landlords and Tenants (OL&T) Liability - this is the prevalent type of Premises/Operations liability for CPP insureds.
- . Manufacturers and Contractors Liability (M&C) - this is the type of Premises/Operations liability insurance for risks whose liability exposure is more heavily off-premises than on.
- . Products/Completed Operations Liability (PROD) - this type of insurance protects against claims for damages arising from products/completed operations in conjunction with an insured's business. For review purposes, this line of insurance is split into the following two categories:
 - Products: experience for this category is reviewed on a multistate basis.
 - Local Products/ Completed Operations: experience for this category reflects an exposure to loss which is local in nature; therefore, individual state experience is used.

EXPLANATORY NOTES TO TABLE 2 (Cont'd)

THE IMPLICIT PACKAGE MODIFICATION FACTOR

For each applicable coverage listed under each of the eight (8) CPP categories, a "current implicit PMF" is shown in column (2). The definition of this factor follows:

For a given CPP category (e.g., apartments) the published Package Modification Factor (PMF) represents the loss cost for a CPP relative to that for monoline policies providing the same coverages. Thus a property (liability) PMF of .80 represents a 20% lower aggregate loss cost for a CPP than for the comparable monoline policies. This PMF, however, represents the CPP "loss cost" for all property (liability) coverages combined. Based on CPP experience, it has been determined that this CPP "loss cost" can differ significantly if it is determined for each property (liability) coverage individually. The IPMF represents what the PMF would be for that CPP risk if only a single coverage were written. The use of the IPMF in monoline/multiline ratemaking and in the determination of revised CPP Package Modification Factors is significant in that it appropriately identifies how different the component parts of the multiline "loss cost" are.

THE MULTILINE INDICATION

Under the CPP ratemaking procedures, monoline and multiline experience are combined for each coverage. The results of these coverage analyses are indicated changes to monoline loss costs and also indicated CPP aggregate loss cost level changes. The CPP indications by coverage are then incorporated in the CPP PMF review. These indications (shown in column (3)) represent the needed adjustments to the IPMFs (shown in column (2)) described above.

The development of these indications is detailed in Section B.

THE INDICATED PMF

For each CPP category (and for property vs. liability), the indicated PMF is calculated as follows:

Each of the current IPMFs in column (2) is multiplied by the indicated percent change shown in column (3). A weighted average of the indicated IPMFs, using weights based on latest year aggregate loss costs at current ISO loss cost level (column (1) divided by column (2)), yields the indicated PMF at the bottom of column (4).

THE CAPPED PMF

The indicated PMF for each category (and for property vs. liability) shown at the bottom of column (4) is limited to a maximum of 1.00 in arriving at the proposed PMF (bottom of column (5)). All indicated PMFs which are below 1.00 are rounded to the nearest .01 in determining the proposed PMF. To the extent that any indicated PMFs are capped at 1.00, indicated PMFs below this value are adjusted in order to minimize any revenue changes which would result from capping.

In addition to the adjustments just described, the IPMFs (for property and liability) shown in column (4) are subject to minimum and maximum values and adjusted in column (5) so that they average to the proposed PMF shown at the bottom of column (5).

COMMERCIAL PACKAGE POLICY

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NEW HAMPSHIRE

TABLE 3 - BASIC GROUP I RELATIVITY ANALYSIS

	(1)	(2)	(3)	(4)	(5)
	\$ LST SQ FORMULA RELATIVITY	CREDIBILITY Z	Z-WTD. RELATIVITY	BALANCED RELATIVITY	INDICATED CHANGE *
TOP					
10	0.236	0.025	0.965	0.964	
31	1.601	0.012	1.006	1.005	+4.3%
32	1.220	0.078	1.016	1.015	+5.3%
33	1.105	0.011	1.001	1.001	+3.8%
34	1.263	0.063	1.015	1.014	+5.2%
35	1.057	0.041	1.002	1.002	+3.9%
36	0.840	0.044	0.992	0.992	+2.9%
37	0.833	0.057	0.990	0.989	+2.6%
38	0.690	0.011	0.996	0.996	+3.3%
RATING GROUP					
01	0.950	0.149	0.992	0.993	
02	1.163	0.042	1.006	1.007	
03	0.973	0.058	0.998	0.999	
04	1.026	0.112	1.003	1.004	
06	1.066	0.037	1.002	1.003	
07	0.955	0.025	0.999	0.999	
08	0.997	0.063	1.000	1.000	
09	1.025	0.058	1.001	1.002	
10	0.992	0.030	1.000	1.000	
11	0.980	0.008	1.000	1.000	
13	1.295	0.035	1.009	1.010	
14	0.946	0.031	0.998	0.999	
15	0.838	0.026	0.995	0.996	
17	0.809	0.011	0.998	0.998	
18	0.864	0.024	0.996	0.997	
21	1.044	0.057	1.002	1.003	
22	0.940	0.067	0.996	0.996	

* INDICATED CHANGE = (BALANCED RELATIVITY FOR TOP) / (MONOLINE RELATIVITY (TOP 10)) - 1

NEW HAMPSHIRE

TABLE 4 - SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS

	(1)	(2)	(3)	(4)	(5)
	\$ LST SQ FORMULA RELATIVITY	CREDIBILITY Z	Z-WTD. RELATIVITY	BALANCED RELATIVITY	INDICATED CHANGE *
TOP					
10	1.198	0.041	1.007	1.010	
31	1.552	0.014	1.006	1.009	-0.1%
32	1.374	0.073	1.023	1.026	+1.6%
33	0.756	0.024	0.993	0.996	-1.4%
34	1.385	0.090	1.030	1.032	+2.2%
35	0.980	0.069	0.999	1.001	-0.9%
36	0.694	0.093	0.967	0.969	-4.1%
37	0.364	0.045	0.956	0.958	-5.1%
38	0.395	0.022	0.980	0.982	-2.8%
CATEGORY					
01	1.067	0.456	1.030	1.017	
02	0.269	0.076	0.905	0.893	
03	0.560	0.033	0.981	0.968	
04	0.296	0.035	0.958	0.946	
05	0.561	0.033	0.981	0.968	
06	0.484	0.015	0.989	0.976	
07	0.997	0.011	1.000	0.987	
08	1.537	0.040	1.017	1.004	
09	1.529	0.063	1.027	1.014	
10	0.388	0.012	0.989	0.976	
11	1.067	0.048	1.003	0.990	
12	0.965	0.062	0.998	0.985	
13	0.348	0.029	0.970	0.957	
14	1.731	0.031	1.017	1.004	

* INDICATED CHANGE = (BALANCED RELATIVITY FOR TOP) / (MONOLINE RELATIVITY (TOP 10)) - 1

EXPLANATORY NOTES TO TABLES 3 AND 4

BASIC GROUP I AND SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS

OBJECTIVE

The explanations which follow clarify Tables 3 and 4, the Basic Group I Relativity Analysis and the Special Causes of Loss Relativity Analysis, respectively. The purpose of these analyses is to:

- (1) determine monoline classification loss cost level needs for Basic Group I;
- (2) determine monoline category loss cost level needs for Special Causes of Loss;
- (3) determine indicated changes to the eight property CPP Package Modification Factors (PMFs) based on Basic Group I/Special Causes of Loss experience.

COLUMN (1)

LEAST SQUARES FORMULA RELATIVITIES

The Least Squares Formula Relativities are the marginal relativities which result from the application of the simultaneous review procedure to the raw experience (where marginal refers to the relativities for a given rating variable, e.g. type of policy, across all subsets of any other rating variables, i.e. rating group for Basic Group I and category for Special Causes of Loss).

The purpose of such a simultaneous review procedure is to arrive at a set of type of policy relativities (which will serve to price CPP policies relative to monoline policies via the PMF); a set of rating group relativities for Basic Group I; and a set of category relativities for Special Causes of Loss that best represent the experience. This procedure is in contrast to a review of each rating variable's experience separately. Such one-way types of review do not take into account differing percentages of monoline and multiline experience in each rating variable, or differing percentages of a particular rating variable's experience in the monoline and multiline types of policy. The simultaneous relativity procedure accounts for these different distributions in generating relativities for the various rating variables.

EXPLANATORY NOTES TO TABLES 3 AND 4 (Cont'd)

COLUMN (1)
(Cont'd)

The procedure uses an iterative technique to determine a set of marginal relativities by rating variable that is a best fit to the individual cell relativities, with each cell being defined as the cross-section of specific values of each rating variable. The process uses the relativity of the five year experience ratios by rating cell to the overall statewide experience ratio and the latest year aggregate loss costs for each rating cell. (This experience is shown in Table 5 for Basic Group I and Table 6 for Special Causes of Loss). Specifically, the iteration procedure uses the following formulas:

BASIC GROUP I:

$$TOP_i = \frac{\sum_{j=1}^n W_{ij}^2 R_{ij} RG_j}{\sum_{j=1}^n W_{ij}^2 RG_j^2}, \text{ where } 1 \leq i \leq m;$$

$$RG_j = \frac{\sum_{i=1}^m W_{ij}^2 R_{ij} TOP_i}{\sum_{i=1}^m W_{ij}^2 TOP_i^2}, \text{ where } 1 \leq j \leq n;$$

SPECIAL CAUSES OF LOSS:

$$TOP_i = \frac{\sum_{j=1}^n W_{ij}^2 R_{ij} CAT_j}{\sum_{j=1}^n W_{ij}^2 CAT_j^2}, \text{ where } 1 \leq i \leq m;$$

$$CAT_j = \frac{\sum_{i=1}^m W_{ij}^2 R_{ij} TOP_i}{\sum_{i=1}^m W_{ij}^2 TOP_i^2}, \text{ where } 1 \leq j \leq n;$$

EXPLANATORY NOTES TO TABLES 3 AND 4 (Cont'd)

COLUMN (1)
(Cont'd)

- TOP_i is the relativity for the i th Type of Policy;
- RG_j is the relativity for the j th Rating Group;
- CAT_j is the relativity for the j th Category;
- W_{ij} is the aggregate loss costs for the i th Type of Policy, j th Rating Group or Category;
- R_{ij} is the experience ratio relativity for the i th Type of Policy, j th Rating Group or Category;
- m is the number of Types of Policy in the analysis;
- n is the number of Rating Groups or Categories in the analysis.

The procedure determines m Type of Policy relativities using the above formulas. Then, using those results, a set of n Rating Group or Category relativities are determined. These steps form an iterative process which continues until there is no appreciable difference in results from one iteration to the next.

COLUMN (2)

CREDIBILITY

The credibility of the experience for each rating variable is determined from the formula:

$$Z = \frac{P}{P + K}$$

where P is the 5-year adjusted aggregate loss costs for a given rating variable, and K is a constant value. For Basic Group I, K equals an aggregate loss cost volume of \$40,000,000 for rating group and \$100,000,000 for type of policy. For Special Causes of Loss, K equals an aggregate loss cost volume of \$15,000,000.

EXPLANATORY NOTES TO TABLES 3 AND 4 (Cont'd)

COLUMN (3)

CREDIBILITY-WEIGHTED RELATIVITIES

Credibility-weighted relativities are calculated based on the formula

$$W = R^Z$$

where Z is the credibility, R is the least squares formula relativity and W is the credibility-weighted relativity for a given rating variable.

This formula implicitly assigns the complement of credibility to a relativity of unity.

COLUMN (4)

BALANCED RELATIVITIES

The credibility-weighted relativities are balanced to assure that the average relativity across all rating variables remains at unity.

MULTILINE
CONSIDERATIONS

The type of policy (TOP) relativities are used to generate multiline indications which apply to the current Implicit Package Modification Factors (IPMFs). The indicated IPMFs are calculated as follows:

$$\text{TOP y indicated IPMF} = \frac{(\text{TOP y current IPMF}) \times (\text{TOP y relativity})}{\text{monoline relativity}}$$

EXPLANATORY NOTES TO TABLES 3 AND 4 (Cont'd)

MULTILINE
CONSIDERATIONS
(Cont'd)

For each CPP Type of Policy the indicated IPMF is subject to a minimum value of 0.50 and a maximum value of 1.50. If an indicated IPMF falls outside one of those limits, it is capped at that amount, the aggregate loss costs for that Type of Policy are adjusted to the capped IPMF level, and the entire relativity review as described above is re-performed to take this into account. If an IPMF has been capped it is so noted at the bottom of Table 3 and Table 4.

Loss cost changes for each TOP are calculated as described on Tables 3 and 4.

Entire State (New Hampshire)

NEW HAMPSHIRE
BASIC GROUP I RELATIVITY ANALYSIS
TABLE 5 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
10 MONOLINE	01 APARTMENTS	36,862	127,011	0.140	0.192	0.194
	02 OTHER HABITATIONAL	23,603	125,181	0.972	0.461	0.465
	03 RESTAURANTS & BARS	13,771	80,838	0.145	0.197	0.199
	04 OTHER MERCANTILE RS	76,732	500,686	0.291	0.258	0.260
	06 CHURCHES	2,893	14,684	0.000	0.174	0.176
	07 SCHOOLS	14,800	64,199	0.076	0.180	0.182
	08 OFFICES AND BANKS	38,907	198,761	0.065	0.158	0.159
	09 REC. FACILITIES	96,962	338,955	0.282	0.248	0.250
	10 HOTELS AND MOTELS	9,910	42,712	0.000	0.166	0.168
	11 HOSPITALS/NURS HOME	7,532	33,652	0.599	0.302	0.305
	13 MOTOR VEHICLE RISKS	18,171	125,087	0.109	0.182	0.184
	14 OTHER NON-MANUF.	38,782	209,736	0.106	0.173	0.175
	15 STORAGE	24,077	138,457	0.000	0.144	0.145
	17 FOOD MANUFACTURING	461	1,496	0.000	0.178	0.180
	18 WOOD MANUFACTURING	22,125	119,134	0.000	0.148	0.149
	21 METAL MANUFACTURING	20,653	149,739	0.049	0.159	0.160
	22 OTHER MANUFACTURING	57,801	275,349	0.286	0.248	0.250
	TOTAL*	504,042	2,545,677	0.221	0.223	0.225
31 MULTILINE	10 HOTELS AND MOTELS	215,812	1,210,564	3.186	1.580	1.594
MOTEL/HOTEL	TOTAL*	215,812	1,210,564	3.186	1.580	1.594
32 MULTILINE	01 APARTMENTS	972,121	6,853,301	0.993	1.153	1.163
APARTMENT	02 OTHER HABITATIONAL	269,494	1,603,663	2.247	1.411	1.424
	TOTAL*	1,241,615	8,456,964	1.265	1.209	1.220
33 MULTILINE	08 OFFICES AND BANKS	198,134	1,119,855	0.588	1.096	1.106
OFFICE	TOTAL*	198,134	1,119,855	0.588	1.096	1.106
34 MULTILINE	03 RESTAURANTS & BARS	329,987	2,209,935	1.247	1.219	1.230
MERCANTILE	04 OTHER MERCANTILE RS	587,173	3,204,976	1.580	1.292	1.304
	08 OFFICES AND BANKS	30,851	135,135	0.076	1.020	1.029
	13 MOTOR VEHICLE RISKS	67,328	398,891	3.340	1.581	1.595
	14 OTHER NON-MANUF.	21,955	108,846	0.555	1.101	1.111
	15 STORAGE	115,529	610,424	0.316	1.053	1.063
	TOTAL*	1,152,823	6,668,207	1.401	1.253	1.264

Entire State (New Hampshire)

NEW HAMPSHIRE
BASIC GROUP I RELATIVITY ANALYSIS
TABLE 5 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
35 MULTILINE INSTITUTIONAL	02 OTHER HABITATIONAL	4,648	15,107	0.000	1.009	1.018
	06 CHURCHES	264,512	1,539,615	0.744	1.122	1.132
	07 SCHOOLS	188,980	967,931	0.082	1.005	1.014
	08 OFFICES AND BANKS	117,705	470,822	0.782	1.137	1.147
	09 REC. FACILITIES	153,045	731,007	0.011	0.997	1.006
	11 HOSPITALS/NURS HOME	69,661	277,062	0.158	1.031	1.040
	13 MOTOR VEHICLE RISKS	510	2,671	0.000	1.010	1.019
	14 OTHER NON-MANUF.	58,849	259,862	1.277	1.223	1.234
	TOTAL*	857,910	4,264,077	0.457	1.075	1.085
36 MULTILINE SERVICES	03 RESTAURANTS & BARS	54,679	191,217	2.206	1.014	1.023
	04 OTHER MERCANTILE RS	78,283	460,729	0.074	0.682	0.688
	08 OFFICES AND BANKS	93,513	521,417	0.042	0.675	0.681
	09 REC. FACILITIES	241,357	1,399,012	1.277	0.898	0.906
	13 MOTOR VEHICLE RISKS	180,545	939,902	2.373	1.092	1.102
	14 OTHER NON-MANUF.	101,059	533,965	0.205	0.702	0.708
	15 STORAGE	48,582	292,531	0.216	0.710	0.716
	21 METAL MANUFACTURING	14,404	65,273	0.182	0.711	0.717
	22 OTHER MANUFACTURING	37,655	223,889	0.154	0.702	0.708
	TOTAL*	850,077	4,627,935	1.067	0.856	0.864
37 MULTILINE INDUST/PROCESS	04 OTHER MERCANTILE RS	22,510	113,264	0.009	0.684	0.690
	08 OFFICES AND BANKS	7,946	36,106	0.000	0.685	0.691
	13 MOTOR VEHICLE RISKS	811	5,056	0.000	0.687	0.693
	14 OTHER NON-MANUF.	12,513	58,104	0.076	0.696	0.702
	15 STORAGE	2,726	9,856	0.000	0.686	0.692
	17 FOOD MANUFACTURING	92,771	431,283	0.000	0.671	0.677
	18 WOOD MANUFACTURING	172,931	875,178	0.338	0.717	0.724
	21 METAL MANUFACTURING	400,869	2,206,609	1.077	0.866	0.874
	22 OTHER MANUFACTURING	486,985	2,363,461	0.711	0.780	0.787
	TOTAL*	1,200,062	6,098,917	0.698	0.787	0.795
38 MULTILINE CONTRACTORS	04 OTHER MERCANTILE RS	120,534	777,374	0.155	0.686	0.692
	08 OFFICES AND BANKS	36,637	224,404	1.324	0.881	0.889
	14 OTHER NON-MANUF.	17,713	113,248	0.000	0.683	0.689
	TOTAL*	174,884	1,115,026	0.384	0.727	0.733

Entire State (New Hampshire)

NEW HAMPSHIRE
 BASIC GROUP I RELATIVITY ANALYSIS
 TABLE 5 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
TOTAL ALL TOPS*	01 APARTMENTS	1,008,983	6,980,312	0.962	1.118	1.128
	02 OTHER HABITATIONAL	297,745	1,743,951	2.111	1.330	1.341
	03 RESTAURANTS & BARS	398,437	2,481,990	1.341	1.155	1.166
	04 OTHER MERCANTILE RS	885,232	5,057,029	1.101	1.050	1.060
	06 CHURCHES	267,405	1,554,299	0.736	1.112	1.122
	07 SCHOOLS	203,780	1,032,130	0.082	0.945	0.954
	08 OFFICES AND BANKS	523,693	2,706,500	0.508	0.935	0.943
	09 REC. FACILITIES	491,364	2,468,974	0.686	0.801	0.808
	10 HOTELS AND MOTELS	225,722	1,253,276	3.046	1.518	1.532
	11 HOSPITALS/NURS HOME	77,193	310,714	0.201	0.960	0.969
	13 MOTOR VEHICLE RISKS	267,365	1,471,607	2.451	1.152	1.162
	14 OTHER NON-MANUF.	250,871	1,283,761	0.451	0.775	0.783
	15 STORAGE	190,914	1,051,268	0.246	0.846	0.854
	17 FOOD MANUFACTURING	93,232	432,779	0.000	0.669	0.675
	18 WOOD MANUFACTURING	195,056	994,312	0.300	0.652	0.658
	21 METAL MANUFACTURING	435,926	2,421,621	0.999	0.827	0.835
	22 OTHER MANUFACTURING	582,441	2,862,699	0.633	0.722	0.729
	TOTAL*	6,395,359	36,107,222	0.986	0.991	1.000

* TOTALS IN COLUMNS (3), (4) & (5) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

NEW HAMPSHIRE

SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS
TABLE 6 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) RELATIVITY
10 MONOLINE	01 BUILDINGS	227,367	1,076,236	1.337	1.378
	02 RES. APTS. AND COND	3,801	16,187	0.000	0.000
	03 OFFICES	22,676	112,421	0.537	0.554
	04 MERCANTILE - HIGH	19,317	112,772	0.684	0.705
	05 MERCANTILE - MEDIUM	7,441	41,592	0.000	0.000
	06 MERCANTILE - LOW	2,478	21,495	0.000	0.000
	07 MOTELS AND HOTELS	3,566	18,206	0.000	0.000
	08 INSTITUTIONAL - HIG	10,984	52,487	0.518	0.534
	09 INSTITUTIONAL - LOW	12,665	60,839	0.000	0.000
	10 INDUST-PROC - HIGH	935	12,220	0.000	0.000
	11 INDUST-PROC - LOW	16,844	73,967	0.000	0.000
	12 SERVICE - HIGH	9,140	47,786	0.928	0.957
	13 SERVICE - LOW	7,938	49,148	2.014	2.076
	14 CONTRACTORS	1,796	8,224	0.000	0.000
	TOTAL*	346,948	1,703,580	1.036	1.068
31 MULTILINE	01 BUILDINGS	75,874	416,032	1.702	1.755
MOTEL/HOTEL	07 MOTELS AND HOTELS	32,002	147,343	1.604	1.654
	TOTAL*	107,876	563,375	1.673	1.725
32 MULTILINE	01 BUILDINGS	346,566	1,912,829	1.509	1.556
APARTMENT	02 RES. APTS. AND COND	215,933	1,224,758	0.381	0.393
	TOTAL*	562,499	3,137,587	1.076	1.109
33 MULTILINE	01 BUILDINGS	111,822	586,071	0.828	0.854
OFFICE	03 OFFICES	59,696	380,724	0.472	0.487
	04 MERCANTILE - HIGH	15	32	0.000	0.000
	08 INSTITUTIONAL - HIG	4,466	23,007	0.000	0.000
	12 SERVICE - HIGH	0	22	0.000	0.000
	TOTAL*	175,999	989,856	0.686	0.707

NEW HAMPSHIRE

SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS
TABLE 6 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) RELATIVITY
34 MULTILINE MERCANTILE	01 BUILDINGS	547,870	2,773,776	1.521	1.568
	03 OFFICES	1,448	2,693	0.000	0.000
	04 MERCANTILE - HIGH	66,253	419,284	0.398	0.410
	05 MERCANTILE - MEDIUM	68,863	474,667	0.807	0.832
	06 MERCANTILE - LOW	41,804	201,973	0.691	0.712
	08 INSTITUTIONAL - HIG	256	467	0.000	0.000
	11 INDUST-PROC - LOW	234	936	0.000	0.000
	12 SERVICE - HIGH	312	6,568	0.000	0.000
	13 SERVICE - LOW	558	54,908	1.185	1.222
	14 CONTRACTORS	5,735	18,151	0.000	0.000
	TOTAL*	733,333	3,953,423	1.288	1.328
35 MULTILINE INSTITUTIONAL	01 BUILDINGS	324,272	1,632,090	1.062	1.095
	03 OFFICES	3	47	0.000	0.000
	08 INSTITUTIONAL - HIG	100,913	502,226	1.578	1.627
	09 INSTITUTIONAL - LOW	147,989	830,384	1.575	1.624
	12 SERVICE - HIGH	50	284	0.000	0.000
	13 SERVICE - LOW	197	404	0.000	0.000
	14 CONTRACTORS	910	4,464	0.000	0.000
	TOTAL*	574,334	2,969,899	1.283	1.323
36 MULTILINE SERVICES	01 BUILDINGS	515,369	2,661,961	0.765	0.789
	03 OFFICES	1,329	5,664	0.000	0.000
	04 MERCANTILE - HIGH	1,734	7,317	0.000	0.000
	05 MERCANTILE - MEDIUM	546	2,629	0.000	0.000
	06 MERCANTILE - LOW	971	3,931	0.000	0.000
	08 INSTITUTIONAL - HIG	9,337	52,331	0.000	0.000
	09 INSTITUTIONAL - LOW	21,427	112,049	0.000	0.000
	11 INDUST-PROC - LOW	48	911	0.000	0.000
	12 SERVICE - HIGH	173,086	932,081	0.690	0.711
	13 SERVICE - LOW	71,994	335,410	0.215	0.222
	14 CONTRACTORS	2,619	11,065	0.000	0.000
	TOTAL*	798,460	4,125,349	0.663	0.684
37 MULTILINE INDUST/PROC	01 BUILDINGS	209,120	1,032,367	0.372	0.384
	10 INDUST-PROC - HIGH	30,240	166,048	0.147	0.152
	11 INDUST-PROC - LOW	122,342	682,218	0.482	0.497
	12 SERVICE - HIGH	125	723	0.000	0.000
	13 SERVICE - LOW	0	61	0.000	0.000
	TOTAL*	361,827	1,881,417	0.390	0.402

NEW HAMPSHIRE

SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS
TABLE 6 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) RELATIVITY
38 MULTILINE CONTRACTORS	01 BUILDINGS	77,907	459,581	0.348	0.359
	03 OFFICES	2,648	6,919	0.000	0.000
	06 MERCANTILE - LOW	218	1,151	0.000	0.000
	08 INSTITUTIONAL - HIG	327	875	0.000	0.000
	12 SERVICE - HIGH	14	56	0.000	0.000
	13 SERVICE - LOW	181	220	0.000	0.000
	14 CONTRACTORS	70,193	436,055	0.770	0.794
	TOTAL*	151,488	904,857	0.536	0.553
TOTAL ALL TOPS*	01 BUILDINGS	2,436,167	12,550,943	1.119	1.154
	02 RES. APTS. AND COND	219,734	1,240,945	0.374	0.386
	03 OFFICES	87,800	508,468	0.460	0.474
	04 MERCANTILE - HIGH	87,319	539,405	0.453	0.467
	05 MERCANTILE - MEDIUM	76,850	518,888	0.723	0.745
	06 MERCANTILE - LOW	45,471	228,550	0.635	0.655
	07 MOTELS AND HOTELS	35,568	165,549	1.443	1.488
	08 INSTITUTIONAL - HIG	126,283	631,393	1.306	1.346
	09 INSTITUTIONAL - LOW	182,081	1,003,272	1.280	1.320
	10 INDUST-PROC - HIGH	31,175	178,268	0.143	0.147
	11 INDUST-PROC - LOW	139,468	758,032	0.423	0.436
	12 SERVICE - HIGH	182,727	987,520	0.700	0.722
	13 SERVICE - LOW	80,868	440,151	0.397	0.409
	14 CONTRACTORS	81,253	477,959	0.665	0.686
	TOTAL*	3,812,764	20,229,343	0.970	1.000

* TOTALS IN COLUMNS (3) & (4) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

EXPLANATORY NOTES TO TABLES 5 AND 6

BASIC GROUP I/SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

INTRODUCTION The experience used in the relativity analysis and displayed in Tables 5 and 6 is the latest five years of accident year data as reported under the Commercial Statistical Plan. As in the overall review, loss costs have been adjusted to current ISO loss cost and prospective amount of insurance levels (with multiline aggregate loss costs adjusted additionally by the current implicit package modification factors). Incurred losses are adjusted to prospective cost levels, and are further adjusted by the Basic Group I large loss procedure and the Special Causes of Loss excess procedure. Losses have also been developed to their ultimate settlement value by application of loss development factors.

COLUMN (1) AGGREGATE LOSS COSTS

The latest year adjusted aggregate loss costs (adjusted as described above) are used as weights both in the calculation of any totals shown in this table and in the iterative formulae used in the simultaneous review procedure.

COLUMN (2) 5 - YEAR AGGREGATE LOSS COSTS

The combined five-year adjusted aggregate loss costs (adjusted as described above) are used to calculate the experience ratios in column (3).

COLUMN (3) FIVE-YEAR EXPERIENCE RATIOS

These are the ratio of the combined five-year adjusted incurred losses (adjusted as described above) to the combined five-year adjusted aggregate loss costs as shown in Column (2). Any totals which are shown are weighted averages using the adjusted aggregate loss costs in Column (1).

COLUMN (4) CREDIBILITY (Z) WEIGHTED EXPERIENCE RATIO

A credibility procedure is applied to the initial experience ratios in column (3) on a cell-by-cell basis prior to the simultaneous review procedure. The credibility values are calculated using an empirical Bayesian credibility procedure. In the following discussion, cell refers to an individual combination of TOP, rating group or category, and territory (where applicable).

EXPLANATORY NOTES TO TABLES 5 AND 6 (Cont'd)

COLUMN (4) (Cont'd)

The important concept underlying empirical Bayesian credibility is that the credibility should depend both on the overall variation of the group of which the cell is a member, in addition to the variation of the yearly experience ratios for each cell. Therefore, if a cell's data is itself very stable then we would assign a relatively high credibility value, and vice versa.

The empirical Bayesian credibility formula for individual cell credibility is $Z = ((C-3)/C) (P/(P+K)) + (3/C)$. P equals the cell's five-year adjusted aggregate loss costs and C equals the number of unique combinations of rating variables (Territory, TOP and Rating Group/Category) within a class group. The K value is estimated from the underlying data using the empirical Bayes method and varies by TOP group and by territory where applicable. The three TOP groups used in this analysis are: Monoline (TOP 10), Premises (TOP's 31-35), and Operations (TOP's 36-38). The 3/C term corrects for the statistical bias associated with the credibility process. The minimum credibility that is possible is 3/C.

The calculated credibility (Z) is then applied to the five-year experience ratio with the complement of credibility applied to the credibility-weighted average of the individual experience ratios of the group, where group refers to the specified TOP/territory group. In a non-territory state, K values would be determined for the three TOP groups on an entire state basis.

COLUMN (5)

WEIGHTED RELATIVITIES

The relativities are the ratios of the five-year credibility-weighted experience ratios shown in column (4) to the average five-year credibility-weighted experience ratio for all TOP's, rating groups and territories (where applicable) combined. These relativities represent how much better or worse than average the experience for a given cell is. They are used along with the aggregate loss costs in column (1) as input for the simultaneous review procedure.

NEW HAMPSHIRE

TABLE 7 - BASIC GROUP II RELATIVITY ANALYSIS

	(1) ACCIDENT YR ENDING 03/31/18	(2) ACCIDENT YRS 2009-2018 NON-HURR. EXPER. RATIO AT CURRENT PMF	(3) FORMULA RELATIVITY (2) / 0.676	(4) CREDI- BILITY Z C	(5) Z WEIGHTED RELA- TIVITY D	(6) BALANCED FORMULA RELA- TIVITY E	(7) NORMALIZED FORMULA RELA- TIVITY F	(8) INDICATED CHANGE G
MONOLINE	253,258	0.598	0.885	0.054	0.993	0.993	0.9906	
MULTILINE	1,469,348	0.689	1.019	0.271	1.004	1.004	1.0014	
COVERAGE	1,722,606	0.676	0.999			1.0024 B	0.9998	
MULTILINE TOP								
31 MOTEL/HOTEL	38,797	1.279	1.892	0.008	1.006	1.010	1.0076	+1.7%
32 APARTMENT	121,702	0.809	1.197	0.029	1.005	1.009	1.0066	+1.6%
33 OFFICE	59,880	0.663	0.981	0.017	0.999	1.003	1.0006	+1.0%
34 MERCANTILE	385,084	0.716	1.059	0.088	1.004	1.008	1.0056	+1.5%
35 INSTITUTIONAL	373,866	0.652	0.964	0.089	0.996	1.000	0.9976	+0.7%
36 SERVICES	275,334	0.785	1.161	0.059	1.009	1.013	1.0106	+2.0%
37 INDUST/PROCESS	171,913	0.387	0.572	0.045	0.980	0.984	0.9816	-0.9%
38 CONTRACTORS	42,772	0.524	0.775	0.012	0.996	1.000	0.9976	+0.7%
	1,469,348	0.689 B	1.019		1.000 B	1.004 B	1.0014 B	

B - AVERAGE WEIGHTED BY COLUMN (1)

C - CREDIBILITY = $P / (P+K)$ WHERE P REPRESENTS THE TOTAL 10 YEAR ADJUSTED LOSS COSTS AND K = 45,000,000

D - (5) = (3) * (4) + (0.999 * [1.000 - (4)])

E - (6) = (5) * (1.004/1.000)

F - (7) = (6) / 1.0024

G - (8) = (NORMALIZED RELATIVITY FOR TOP) / (NORMALIZED MONOLINE RELATIVITY (TOP 10)) - 1

EXPLANATORY NOTES TO TABLE 7

BASIC GROUP II RELATIVITY ANALYSIS

OBJECTIVE

The explanations which follow clarify Table 7, the Basic Group II (BG II) relativity analysis. The purpose of this analysis is to:

- (1) determine the monoline loss cost level need:
- (2) determine indicated changes to the eight property Commercial Package Policy (CPP) Package Modification Factors (PMFs) based on Basic Group II experience.

The BG II relativity analysis is based on non-hurricane loss experience only, as it is assumed that type of policy relativities are the same for both non-hurricane and hurricane perils. The resulting relativities apply to the total (hurricane plus non-hurricane) BG II loss costs.

COLUMN (1)

AGGREGATE LOSS COSTS

The latest fiscal year adjusted aggregate loss costs (adjusted in the same manner as in the overall review, i.e. to current manual loss cost and prospective amount of insurance levels, with multiline aggregate loss costs further adjusted to current IPMF level) are used as weights in the calculation of any totals shown in this table.

COLUMN (2)

10 - YEAR NON-HURRICANE EXPERIENCE RATIO

These experience ratios are the ratio of the combined ten year CSP adjusted incurred non-hurricane losses (adjusted to current deductible and prospective cost levels and also adjusted to reflect the BGII excess loss procedure) to the combined ten year CSP adjusted aggregate loss costs. Any totals which are shown are weighted averages using the aggregate loss costs in Column (1). When a dash is displayed in the column, it indicates that the indicated IPMF which resulted from this procedure was capped. The procedure which follows when capping occurs is described below.

EXPLANATORY NOTES TO TABLE 7 (Cont'd)

COLUMN (3)

FORMULA RELATIVITY

The formula relativities are the ratios of the ten year non-hurricane experience ratios for the type of policy (either monoline vs. multiline or individual multiline programs) to the average ten year non-hurricane experience ratio for monoline and multiline combined. These relativities represent how much better or worse than average the experience for a given type of policy is. Again, any totals which are shown are weighted averages and the display of a dash indicates that the resulting IPMF was capped. Unlike the BGI and SCL relativity analyses, the BGII analysis does not employ a simultaneous review procedure since a one way review is involved. That is, the overall loss cost change is only distributed across type of policy; no other rating variables are considered.

COLUMN (4)

CREDIBILITY

The credibility of the experience for each type of policy is determined from the formula:

$$Z = \frac{P}{P + K}$$

where P is the ten year adjusted aggregate loss costs for a given type of policy, and K is a constant loss cost volume of \$45,000,000.

COLUMN (5)

Z - WEIGHTED RELATIVITY

The weighted relativity is a weighted average of the individual TOP formula relativity and overall (coverage) formula relativity using credibility and its complement as the respective weights. Therefore, to the extent that the indication for a type of policy is not fully credible, the complement of credibility is assigned to the statewide coverage level change.

EXPLANATORY NOTES TO TABLE 7 (Cont'd)

COLUMN (6)

BALANCED FORMULA RELATIVITY

The individual multiline weighted relativities are balanced to the multiline weighted relativity level by applying a factor equal to the overall multiline relativity (i.e. the weighted relativity for all multiline combined which is shown on the top of the exhibit directly under the corresponding monoline relativity) divided by the average multiline relativity (i.e. the weighted average of the individual multiline weighted relativities which is shown on the bottom of the exhibit). When the indicated IPMF for a type of policy is capped, the balanced relativity is set equal to the product of the capped IPMF and the monoline balanced formula relativity, divided by the current IPMF.

COLUMN (7)

NORMALIZED FORMULA RELATIVITY

The normalized relativity is equal to the balanced formula relativity divided by the average monoline/multiline combined relativity. This balances the average monoline/multiline relativity to unity.

COLUMN (8)

INDICATED LOSS COST CHANGES

The indicated multiline (by TOP) changes are calculated by taking the ratio of the TOP relativity (Column 7) to the monoline relativity.

For each type of policy the indicated IPMF is subject to a minimum value of 0.50 and a maximum value of 1.50. If an indicated IPMF falls outside one of those limits, it is capped at that amount, the aggregate loss costs for that type of policy are adjusted to the capped IPMF level, and the entire relativity review as described above is redone to take this into account. If an IPMF has been capped it is so noted in footnote A.

CRIME AND FIDELITY

The reviews for Burglary and Theft and for Fidelity are done on a multistate basis, combining both multiline and monoline experience. However, unlike other coverages included in a Commercial Package Policy, there is no simultaneous review procedure for either Burglary and Theft or for Fidelity in which separate loss cost level changes can be determined for multiline and monoline experience. In the absence of a simultaneous review procedure, we are unable to determine Type of Policy relativities with which to price CPP policies relative to monoline policies and therefore have assumed a multiline change of 0.0% and thus no change to the historic Crime or Fidelity IPMFs.

NEW HAMPSHIRE

TABLE 8

COMMERCIAL I.M. RELATIVITY ANALYSIS

(1)	(2)	(3)	(4)	(5)
<u>TOP</u>	<u>BALANCED</u>	<u>CURRENT</u>	<u>INDICATED</u>	<u>SELECTED</u>
<u>10</u>	<u>RELATIVITY</u>	<u>IPMF</u>	<u>IPMF*</u>	<u>IPMF</u>
10	1.000	0.838	0.910	0.910
3X & 7X	1.086			

CLASSIFICATION

150	0.921
191	1.082
192	0.768
220	0.768
221	0.733
234	1.231
235	1.066
240	0.766
241	0.691
327	0.735
328	0.908
340	0.625
341	0.735
342	0.729
343	0.745
403	0.628
451	0.924
452	0.757
453	0.790
454	0.698
460	0.487
482	0.874
510	0.642
514	0.608
530	0.626
534	0.735

*COLUMN (4) = COLUMN (3) * (TOP 3X & 7X COLUMN (2) / TOP 10 COLUMN (2))

NEW HAMPSHIRE

COMMERCIAL INLAND MARINE RELATIVITY ANALYSIS
TABLE 9 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	RATING GROUP	(1) 2016 AGGREGATE LOSS COSTS	(2) 2012 - 2016 AGGREGATE LOSS COSTS	(3) FIVE-YEAR EXP RATIO	(4) RELATIVITY
MONOLINE 10	150	311,633	1,898,096	1.151	1.309
	191	5,446,492	15,816,054	1.032	1.174
	192	862,002	2,760,886	0.627	0.713
	220	5,112	87,903	5.716	6.503
	221	1,491	2,853	1.199	1.364
	234	5,224,155	20,144,072	0.600	0.683
	235	8,439,000	24,407,283	0.761	0.866
	240	928,183	3,685,254	0.656	0.746
	241	15,553	114,739	0.053	0.060
	327	18,917	91,546	0.000	0.000
	328	2,319,887	11,908,665	0.792	0.901
	340	40,688	87,993	0.000	0.000
	341	0	0	0.000	0.000
	342	19,188	65,375	0.555	0.631
	343	589	3,417	343.665	528.629
	403	1,600,852	5,771,545	0.345	0.392
	451	3,309,677	12,953,836	0.855	0.973
	452	34,702	137,467	1.628	1.852
	453	45,575	212,456	3.203	3.644
	454	164,836	745,300	0.734	0.835
	460	790,198	3,687,530	0.415	0.472
	482	839,364	2,841,134	0.986	1.122
	510	3,252	39,977	0.020	0.023
	514	446,469	1,612,361	0.339	0.386
	530	504,434	2,697,004	0.489	0.556
	534	0	0	0.000	0.000
	TOTAL#	31,372,249	111,772,746	0.785	0.893

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COMMERCIAL INLAND MARINE RELATIVITY ANALYSIS
TABLE 9 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	RATING GROUP	(1) 2016 AGGREGATE LOSS COSTS	(2) 2012 - 2016 AGGREGATE LOSS COSTS	(3) FIVE-YEAR EXP RATIO	(4) RELATIVITY
MULTILINE ##	150	663,120	3,069,499	0.863	0.982
3X & 7X	191	555,838	2,490,119	0.841	0.957
	192	186,757	721,501	0.897	1.020
	220	5,930	26,256	1.657	1.885
	221	5,162	24,873	0.280	0.319
	234	11,667,026	48,374,044	1.262	1.436
	235	440,338	2,192,018	3.126	3.556
	240	10,729	55,309	2.153	2.449
	241	4,630	14,155	0.021	0.024
	327	2,709	17,369	0.000	0.000
	328	365	2,533	183.247	208.472
	340	30,231	122,117	0.017	0.019
	341	0	0	0.000	0.000
	342	5,600	28,129	0.000	0.000
	343	2,181	7,364	0.000	0.000
	403	441,902	2,226,018	0.803	0.914
	451	87,798	403,929	0.391	0.445
	452	35,082	190,301	0.581	0.661
	453	31,655	96,653	0.160	0.182
	454	210,110	906,314	0.297	0.338
	460	3,327,883	13,921,933	0.345	0.392
	482	117,409	700,753	0.753	0.857
	510	21,447	112,201	0.000	0.000
	514	58,171	277,061	0.079	0.090
	530	1,040,201	4,401,795	0.450	0.512
	534	0	0	0.000	0.000
	TOTAL#	18,952,274	80,382,244	1.034	1.176

REFLECTS CURRENT IPMF OF 0.838.

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COMMERCIAL INLAND MARINE RELATIVITY ANALYSIS
TABLE 9 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

<u>TYPE OF POLICY</u>	<u>RATING</u>	(1)	(2)	(3)	(4)
	<u>GROUP</u>	<u>2016 AGGREGATE</u>	<u>2012 - 2016</u>	<u>FIVE-YEAR</u>	
		<u>LOSS COSTS</u>	<u>AGGREGATE LOSS COSTS</u>	<u>EXP RATIO</u>	<u>RELATIVITY</u>
TOTAL ALL TOPS#	150	974,753	4,967,595	0.955	1.086
	191	6,002,330	18,306,173	1.014	1.154
	192	1,048,759	3,482,387	0.675	0.768
	220	11,042	114,159	3.536	4.023
	221	6,653	27,726	0.486	0.553
	234	16,891,181	68,518,116	1.057	1.203
	235	8,879,338	26,599,301	0.878	0.999
	240	938,912	3,740,563	0.673	0.766
	241	20,183	128,894	0.046	0.052
	327	21,626	108,915	0.000	0.000
	328	2,320,252	11,911,198	0.821	0.934
	340	70,919	210,110	0.007	0.008
	341	0	0	0.000	0.000
	342	24,788	93,504	0.430	0.489
	343	2,770	10,781	285.711	325.041
	403	2,042,754	7,997,563	0.444	0.505
	451	3,397,475	13,357,765	0.843	0.959
	452	69,784	327,768	1.102	1.254
	453	77,230	309,109	1.956	2.225
	454	374,946	1,651,614	0.489	0.556
	460	4,118,081	17,609,463	0.358	0.407
	482	956,773	3,541,887	0.957	1.089
	510	24,699	152,178	0.003	0.003
	514	504,640	1,889,422	0.309	0.352
	530	1,544,635	7,098,799	0.463	0.527
	534	0	0	0.000	0.000
	TOTAL#	50,324,523	192,154,990	0.879	1.000

TOTAL IN COLUMN (3) IS AN AVERAGE USING COLUMN (1) AS WEIGHTS.

EXPLANATORY NOTES TO TABLES 8 AND 9

COMMERCIAL INLAND MARINE RELATIVITY ANALYSIS

EXPERIENCE BASE

The Commercial Inland Marine IPMF review presented in the attached exhibits is based on a review of the latest available five years of monoline and multiline experience through accident year 2016 for all companies reporting data to Insurance Services Office under the Inland Marine Module of the Commercial Statistical Plan (CSP) and the Intermediate Level of the Commercial Minimum Statistical Plan (CMSP).

ADJUSTMENT OF DATA

Aggregate loss costs for each year in the review period have been adjusted to the levels which would have been earned had the current loss costs applied throughout the experience period. Reported premiums are adjusted to current level on an individual policy basis by applying a factor equal to all loss cost level changes that have been implemented subsequent to the policy being written. These adjusted premiums are then converted to a loss cost at current level. In order to eliminate the impact of company deviations from the manual level and individual risk modifications which were in effect at the time the policy was written, aggregate loss costs are further adjusted based on reported Rate Modification and Rate Departure Factors/Loss Cost Multipliers. Multiline aggregate loss costs are further adjusted to the level of the current Implicit Package Modification Factor (IPMF). Incurred losses are loaded for all loss adjustment expenses by applying a factor of 1.105.

RELATIVITY ANALYSIS

For Inland Marine coverage, a multistate IPMF level is determined via a two-way relativity analysis similar to the analysis used in Basic Group I. The experience for all reviewed classes is used to form class group relativities. These relativities for monoline and multiline (all programs combined) are determined through an iterative procedure. The ratio of the multiline relativity to the monoline relativity is multiplied by the current IPMF to yield the indicated IPMF. The indicated IPMF is subject to a minimum value of 0.500 and a maximum value of 1.500. If an indicated IPMF falls outside one of those limits, it is capped at that amount, the premiums for that Type of Policy (i.e., TOP 10 versus TOP 3X) are adjusted to the capped IPMF level, and the entire relativity review is performed again to take this into account.

TABLE 10
NEW HAMPSHIRE
OWNERS, LANDLORDS AND TENANTS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

TOP	(1) BAILEY FORMULA RELATIV.	(2) CREDIBILITY Z	(3) Z-WTD RELATIV.	(4) BALANCED RELATIV.	(5) INDICATED CHANGE *
10	0.869	0.126	0.982	0.983	
31	1.399	0.079	1.027	1.027	+4.5%
32	1.914	0.091	1.061	1.061	+7.9%
33	1.159	0.105	1.016	1.016	+3.4%
34	1.046	0.131	1.006	1.006	+2.3%
35	0.506	0.075	0.950	0.950	-3.4%
36	0.402	0.067	0.941	0.941	-4.3%
CLASS GROUP					
01	1.096	0.058	1.005	1.015	
02	0.683	0.096	0.964	0.974	
03	0.716	0.055	0.982	0.991	
04	1.975	0.021	1.014	1.024	
05	0.288	0.016	0.980	0.990	
06	0.817	0.032	0.994	1.003	
07	0.780	0.064	0.984	0.994	
08	7.482	0.024	1.049	1.060	
09	1.024	0.098	1.002	1.012	
10	2.281	0.073	1.062	1.073	
11	0.732	0.082	0.975	0.984	
12	0.917	0.154	0.987	0.997	
13	4.043	0.034	1.049	1.059	
16	1.161	0.007	1.001	1.011	

* INDICATED CHANGE = (BALANCED RELATIVITY FOR TOP)/(MONOLINE RELATIVITY (TOP 10)) - 1

TABLE 11
NEW HAMPSHIRE
MANUFACTURERS AND CONTRACTORS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

TOP	(1) BAILEY FORMULA RELATIV.	(2) CREDIBILITY Z	(3) Z-WTD RELATIV.	(4) BALANCED RELATIV.	(5) INDICATED CHANGE *
10	0.995	0.120	0.999	0.990	
33	1.269	0.018	1.004	0.995	+0.5%
34	0.542	0.047	0.972	0.963	-2.7%
35	0.000	0.000	1.000	0.991	+0.1%
36	0.884	0.077	0.991	0.981	-0.9%
37	0.471	0.046	0.966	0.957	-3.3%
38	1.367	0.156	1.050	1.040	+5.1%
CLASS GROUP					
30	0.506	0.061	0.959	0.958	
31	1.353	0.109	1.034	1.032	
32	1.080	0.141	1.011	1.010	
33	0.995	0.053	1.000	0.998	
34	1.094	0.079	1.007	1.006	
35	1.187	0.012	1.002	1.001	
36	1.077	0.041	1.003	1.002	
37	0.626	0.019	0.991	0.990	
38	0.674	0.050	0.980	0.979	

* INDICATED CHANGE = (BALANCED RELATIVITY FOR TOP) / (MONOLINE RELATIVITY (TOP 10)) - 1

TABLE 12
NEW HAMPSHIRE
OWNERS, LANDLORDS AND TENANTS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1) FISCAL A.Y.E. 03/31/2018 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) FISCAL A.Y.E. 2014 - 2018 AGG LOSS COST CURRENT LEVEL	(3) FIVE YEAR EXPERIENCE RATIO	(4) RELATIV.	(5) NUMBER OF OCCURRENCES	(6) BAL CELL RELATIV.
10 MONOLINE	01 FOOD&BEV. (RETAIL)	\$35,659	\$152,920	1.621	1.608	8	0.998
	02 RESTAURANTS	93,155	399,532	1.059	1.050	19	0.957
	03 STORES	39,978	214,612	0.894	0.887	8	0.974
	04 VENDING & RENTAL	3,091	20,220	0.000	0.000	0	1.007
	05 FOOD & BEV. DIST.	75,515	352,151	0.278	0.276	3	0.973
	06 NON-FOOD&BEV.DIST	24,614	185,181	0.448	0.444	11	0.986
	07 CLUBS,AMSMT&SPRTS	186,778	822,507	0.808	0.802	25	0.977
	08 HEALTH CARE FACIL	6,399	19,855	0.000	0.000	0	1.042
	09 HOTELS AND MOTELS	232,511	962,662	0.965	0.958	59	0.995
	10 SCHLS & CHURCHES	55,147	308,892	3.859	3.829	18	1.054
	11 APARTMENTS	104,387	551,496	0.266	0.264	21	0.967
	12 BUILDINGS&OFFICES	575,646	2,546,459	0.617	0.612	104	0.979
	13 MISC. PREMISES	12,434	78,759	1.815	1.801	11	1.041
	TOTAL *	\$1,445,314	\$6,615,246	0.843		287	
31 MULT MOTEL/HOTEL	09 HOTELS AND MOTELS	\$353,352	\$1,551,754	1.444	1.433	115	1.040
	TOTAL *	\$353,352	\$1,551,754	1.444		115	
32 MULT APARTMENT	11 APARTMENTS	\$450,114	\$2,025,860	1.498	1.487	102	1.045
	12 BUILDINGS&OFFICES	269,493	984,591	1.624	1.611	50	1.057
	TOTAL *	\$719,607	\$3,010,451	1.545		152	
33 MULT OFFICE	12 BUILDINGS&OFFICES	\$1,018,047	\$4,938,859	1.084	1.076	199	1.012
	13 MISC. PREMISES	2,832	27,356	0.000	0.000	0	1.076
	TOTAL *	\$1,020,879	\$4,966,215	1.081		199	
34 MULT MERCANTILE	01 FOOD&BEV. (RETAIL)	\$168,286	\$825,188	1.016	1.008	54	1.022
	02 RESTAURANTS	745,733	3,432,286	0.663	0.658	147	0.980
	03 STORES	139,022	593,215	0.712	0.706	38	0.998
	04 VENDING & RENTAL	4,841	10,616	0.000	0.000	0	1.031
	05 FOOD & BEV. DIST.	7,530	78,844	0.048	0.048	2	0.996
	06 NON-FOOD&BEV.DIST	58,297	289,157	0.974	0.967	8	1.010
	12 BUILDINGS&OFFICES	152,927	908,654	1.477	1.465	61	1.003
	TOTAL *	\$1,276,636	\$6,137,960	0.820		310	

TABLE 12
NEW HAMPSHIRE
OWNERS, LANDLORDS AND TENANTS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

		(1)	(2)	(3)	(4)	(5)	(6)
		FISCAL A.Y.E.	FISCAL A.Y.E.	FIVE YEAR			
		03/31/2018 AGGREGATE	2014 - 2018	EXPERIENCE		NUMBER OF	BAL CELL
TYPE OF POLICY	CLASS GROUP	LOSS COSTS AT	AGG LOSS COST	RATIO	RELATIV.	OCCURRENCES	RELATIV.
		CURRENT LEVEL	CURRENT LEVEL				
35 MULT INSTITUT.	07 CLUBS, AMSMT&SPRTS	\$97,238	\$345,898	0.293	0.291	10	0.945
	08 HEALTH CARE FACIL	53,384	259,112	4.601	4.564	11	1.007
	10 SCHLS & CHURCHES	285,393	1,386,793	0.878	0.871	80	1.019
	12 BUILDINGS&OFFICES	3,229	18,036	15.798	15.673	1	0.947
	13 MISC. PREMISES	71	71	0.000	0.000	0	1.006
	16 GOVT SUBDIVISIONS	16	3,856	0.592	0.587	1	0.961
	TOTAL *	\$439,331	\$2,013,766	1.310		103	
36 MULT SERVICES	03 STORES	\$51,077	\$211,179	0.199	0.197	10	0.933
	04 VENDING & RENTAL	33,762	160,924	1.258	1.248	8	0.964
	07 CLUBS, AMSMT&SPRTS	263,235	1,051,097	0.266	0.264	39	0.935
	08 HEALTH CARE FACIL	47	256	0.000	0.000	0	0.997
	09 HOTELS AND MOTELS	49,261	256,861	0.089	0.088	2	0.953
	10 SCHLS & CHURCHES	23,157	110,429	0.000	0.000	0	1.009
	12 BUILDINGS&OFFICES	54,870	273,991	0.465	0.461	13	0.938
	13 MISC. PREMISES	33,605	161,397	2.680	2.658	10	0.997
	TOTAL *	\$509,014	\$2,226,134	0.477		82	
TOTAL ALL TOP	01 FOOD&BEV. (RETAIL)	\$203,945	\$978,108	1.122		62	
	02 RESTAURANTS	838,888	3,831,818	0.707		166	
	03 STORES	230,077	1,019,006	0.629		56	
	04 VENDING & RENTAL	41,694	191,760	1.018		8	
	05 FOOD & BEV. DIST.	83,045	430,995	0.257		5	
	06 NON-FOOD&BEV.DIST	82,911	474,338	0.818		19	
	07 CLUBS, AMSMT&SPRTS	547,251	2,219,502	0.456		74	
	08 HEALTH CARE FACIL	59,830	279,223	4.105		11	
	09 HOTELS AND MOTELS	635,124	2,771,277	1.164		176	
	10 SCHLS & CHURCHES	363,697	1,806,114	1.274		98	
	11 APARTMENTS	554,501	2,577,356	1.267		123	
	12 BUILDINGS&OFFICES	2,074,212	9,670,590	1.060		428	
	13 MISC. PREMISES	48,942	267,583	2.301		21	
	16 GOVT SUBDIVISIONS	16	3,856	0.592		1	
	TOTAL *	\$5,764,133	\$26,521,526	1.008		1,248	

* TOTALS IN COLUMN (3) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

TABLE 13
NEW HAMPSHIRE
MANUFACTURERS AND CONTRACTORS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1) FISCAL A.Y.E. 03/31/2018 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) FISCAL A.Y.E. 2014 - 2018 AGG LOSS COST CURRENT LEVEL	(3) FIVE YEAR EXPERIENCE RATIO	(4) RELATIV.	(5) NUMBER OF OCCURRENCES	(6) BAL CELL RELATIV.
10 MONOLINE	30 SERVICE	\$327,918	\$1,573,155	0.158	0.187	12	0.949
	31 LIGHT CONTRACTING	60,439	406,147	1.376	1.628	28	1.022
	32 MEDIUM CONTRCTING	482,087	3,155,986	1.014	1.199	166	1.000
	33 HEAVY CONTRACTING	184,230	808,237	1.321	1.562	17	0.989
	34 DEALER OR DISTRIB	48,497	379,189	0.957	1.132	15	0.996
	35 LGT. MANUFACTURER	45,041	74,633	0.000	0.000	0	0.991
	36 MED. MANUFACTURER	71,469	459,185	1.001	1.184	6	0.992
	37 HVY. MANUFACTURER	52,153	161,697	0.211	0.250	2	0.980
	38 MISC. OPERATION	129,322	629,224	0.463	0.547	17	0.970
	TOTAL *	\$1,401,156	\$7,647,453	0.754		263	
33 MULT OFFICE	31 LIGHT CONTRACTING	\$12,873	\$85,986	0.018	0.021	1	1.027
	32 MEDIUM CONTRCTING	1,635	5,657	0.000	0.000	0	1.005
	33 HEAVY CONTRACTING	14,324	64,457	0.000	0.000	0	0.993
	38 MISC. OPERATION	17,858	101,505	2.720	3.216	5	0.974
	TOTAL *	\$46,690	\$257,605	1.045		6	
34 MULT MERCANTILE	30 SERVICE	\$19,101	\$107,668	0.004	0.005	0	0.922
	32 MEDIUM CONTRCTING	8,357	28,459	0.090	0.106	1	0.972
	34 DEALER OR DISTRIB	378,504	1,298,691	0.518	0.613	36	0.968
	38 MISC. OPERATION	7,364	32,619	0.505	0.597	3	0.943
	TOTAL *	\$413,326	\$1,467,437	0.486		40	
35 MULT INSTITUT.	31 LIGHT CONTRACTING	\$918	\$7,680	0.000	0.000	0	1.023
	32 MEDIUM CONTRCTING	2,886	22,733	0.000	0.000	0	1.000
	TOTAL *	\$3,804	\$30,413	0.000		0	
36 MULT SERVICES	30 SERVICE	\$11,460	\$67,082	1.725	2.040	10	0.940
	31 LIGHT CONTRACTING	36,686	337,336	0.297	0.351	10	1.013
	32 MEDIUM CONTRCTING	24,490	86,982	0.186	0.220	2	0.991
	33 HEAVY CONTRACTING	9,695	96,050	2.478	2.930	2	0.980
	34 DEALER OR DISTRIB	210,429	880,809	0.787	0.930	62	0.987
	36 MED. MANUFACTURER	2,520	10,840	15.571	18.415	1	0.983
	38 MISC. OPERATION	229,806	831,282	0.410	0.485	20	0.961
	TOTAL *	\$525,086	\$2,310,381	0.682		107	

TABLE 13
NEW HAMPSHIRE
MANUFACTURERS AND CONTRACTORS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

		(1)	(2)	(3)	(4)	(5)	(6)
		FISCAL A.Y.E.	FISCAL A.Y.E.	FIVE YEAR			
		03/31/2018 AGGREGATE	2014 - 2018	EXPERIENCE			
TYPE OF POLICY	CLASS GROUP	LOSS COSTS AT	AGG LOSS COST	RATIO	RELATIV.	NUMBER OF	BAL CELL
		CURRENT LEVEL	CURRENT LEVEL			OCCURRENCES	RELATIV.
37 MULT INDUST/PROC.	31 LIGHT CONTRACTING	\$1,799	\$4,722	2.576	3.047	3	0.988
	32 MEDIUM CONTRCTING	16,229	122,399	0.294	0.347	3	0.966
	33 HEAVY CONTRACTING	42,620	208,924	0.000	0.000	0	0.956
	34 DEALER OR DISTRIB	4,035	15,735	0.033	0.039	0	0.963
	35 LGT. MANUFACTURER	33,111	134,604	1.831	2.165	3	0.958
	36 MED. MANUFACTURER	307,177	1,375,395	0.286	0.338	24	0.959
	37 HVY. MANUFACTURER	142,046	661,877	0.365	0.432	5	0.947
	38 MISC. OPERATION	6,029	34,492	0.199	0.235	1	0.937
	TOTAL *	\$553,046	\$2,558,148	0.382		39	
38 MULT CONTRACTORS	30 SERVICE	\$175,517	\$924,870	1.022	1.208	45	0.997
	31 LIGHT CONTRACTING	437,498	2,142,844	1.625	1.922	173	1.074
	32 MEDIUM CONTRCTING	626,937	3,597,659	1.204	1.424	188	1.050
	33 HEAVY CONTRACTING	303,658	1,550,448	0.907	1.072	33	1.039
	38 MISC. OPERATION	2,038	12,618	0.000	0.000	0	1.019
	TOTAL *	\$1,545,648	\$8,228,439	1.243		439	
TOTAL ALL TOP	30 SERVICE	\$533,996	\$2,672,775	0.470		67	
	31 LIGHT CONTRACTING	550,213	2,984,715	1.472		215	
	32 MEDIUM CONTRCTING	1,162,621	7,019,875	1.079		360	
	33 HEAVY CONTRACTING	554,527	2,728,116	0.979		52	
	34 DEALER OR DISTRIB	641,465	2,574,424	0.636		113	
	35 LGT. MANUFACTURER	78,152	209,237	0.776		3	
	36 MED. MANUFACTURER	381,166	1,845,420	0.521		31	
	37 HVY. MANUFACTURER	194,199	823,574	0.324		7	
	38 MISC. OPERATION	392,417	1,641,740	0.529		46	
	TOTAL *	\$4,488,756	\$22,499,876	0.846		894	

* TOTALS IN COLUMN (3) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

TABLE 14
NEW HAMPSHIRE
PRODUCTS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

	(1) BAILEY FORMULA RELATIV.	(2) CREDIBILITY Z	(3) Z-WTD RELATIV.	(4) BALANCED RELATIV.	(5) INDICATED CHANGE *
TOP					
10	0.988	0.372	0.995	0.996	
34	1.036	0.371	1.013	1.014	+ 1.8%
36	1.005	0.187	1.001	1.002	+ 0.6%
37	0.988	0.507	0.994	0.994	- 0.2%
CLASS					
GROUP					
3	0.924	0.500	0.961	0.965	
4	1.048	0.406	1.019	1.024	
5	1.107	0.132	1.014	1.018	
6	1.007	0.320	1.002	1.006	
7	1.006	0.182	1.001	1.005	

* INDICATED CHANGE =
(BALANCED RELATIVITY FOR TOP) / (BALANCED MONOLINE (TOP 10) RELATIVITY) - 1

NOTE: THE INDICATED CHANGES BY TOP WERE FURTHER ADJUSTED BY THE FOLLOWING
DIFFERENTIALS:
TOP 34: 1.008
TOP 36: 0.967
TOP 37: 1.029

TABLE 15
MULTISTATE
PRODUCTS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1) CALENDAR A.Y.E. 12/31/2017 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) CALENDAR A.Y.E. 2013 - 2017 AGG LOSS COST CURRENT LEVEL	(3) FIVE YEAR EXPERIENCE RATIO	(4) RELATIV.	(5) NUMBER OF OCCURRENCES	(6) BAL CELL RELATIV.
10 MONOLINE	03 MAN,DLR,DSTFD/DRG	\$18,227,491	\$79,500,211	0.856	0.869	1,461	0.961
	04 DLR,DST-NOTFD/DRG	9,616,743	42,155,667	1.119	1.136	640	1.019
	05 MAN.NTFD/DRG (LOW)	1,605,615	6,748,634	1.039	1.055	84	1.014
	06 MAN.NTFD/DRG (MED)	9,640,686	42,498,903	0.958	0.972	466	1.002
	07 MAN.NTFD/DRG (HGH)	2,568,561	11,286,663	1.018	1.033	129	1.001
	TOTAL *	\$41,659,096	\$182,190,078	0.957		2,780	
34 MULT MERCANTILE	03 MAN,DLR,DSTFD/DRG	\$5,166,155	\$25,851,441	1.131	1.148	791	0.979
	04 DLR,DST-NOTFD/DRG	29,011,611	140,165,685	1.037	1.052	1,972	1.038
	06 MAN.NTFD/DRG (MED)	7,625	57,567	0.000	0.000	0	1.020
	TOTAL *	\$34,185,391	\$166,074,693	1.051		2,763	
36 MULT SERVICES	04 DLR,DST-NOTFD/DRG	\$3,197,904	\$14,609,890	1.041	1.057	699	1.025
	06 MAN.NTFD/DRG (MED)	54,898	258,512	0.781	0.793	1	1.008
	TOTAL *	\$3,252,802	\$14,868,402	1.037		700	
37 MULT INDUST/PROC.	03 MAN,DLR,DSTFD/DRG	\$16,474,514	\$81,117,947	0.888	0.901	2,761	0.960
	05 MAN.NTFD/DRG (LOW)	4,070,679	20,897,437	1.092	1.108	269	1.012
	06 MAN.NTFD/DRG (MED)	28,248,516	131,744,418	0.987	1.002	1,582	1.001
	07 MAN.NTFD/DRG (HGH)	7,346,721	36,933,393	0.965	0.980	537	1.000
	TOTAL *	\$56,140,430	\$270,693,195	0.963		5,149	
TOTAL ALL TOP	03 MAN,DLR,DSTFD/DRG	\$39,868,160	\$186,469,599	0.905		5,013	
	04 DLR,DST-NOTFD/DRG	41,826,258	196,931,242	1.056		3,311	
	05 MAN.NTFD/DRG (LOW)	5,676,294	27,646,071	1.077		353	
	06 MAN.NTFD/DRG (MED)	37,951,725	174,559,400	0.979		2,049	
	07 MAN.NTFD/DRG (HGH)	9,915,282	48,220,056	0.979		666	
	TOTAL *	\$135,237,719	\$633,826,368	0.985		11,392	

* TOTALS IN COLUMN (3) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

TABLE 16
NEW HAMPSHIRE
LOCAL PRODUCTS/COMPLETED OPERATIONS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

	(1) BAILEY FORMULA RELATIV.	(2) CREDIBILITY Z	(3) Z-WTD RELATIV.	(4) BALANCED RELATIV.	(5) INDICATED CHANGE *
TOP					
10	0.969	0.752	0.977	0.973	
34	0.959	0.541	0.978	0.974	+ 0.1%
36	0.986	0.516	0.993	0.989	+ 1.6%
37	0.972	0.138	0.996	0.993	+ 2.1%
38	1.025	0.962	1.024	1.020	+ 4.8%
CLASS GROUP					
1	0.918	0.550	0.954	0.948	
2	1.037	0.495	1.018	1.012	
11	1.095	0.352	1.032	1.026	
12	1.016	1.000	1.016	1.010	
13	0.785	0.266	0.938	0.932	

* INDICATED CHANGE =
(BALANCED RELATIVITY FOR TOP) / (BALANCED MONOLINE (TOP 10) RELATIVITY) - 1

TABLE 16C
MULTISTATE
LOCAL PRODUCTS/COMPLETED OPERATIONS
BASIC LIMIT RELATIVE CHANGE ANALYSIS *

STATE	(1) BAILEY FORMULA RELATIV	(2) CREDIBILITY Z	(3) Z-WTD RELATIV	(4) BALANCED RELATIV.
	1.418	0.386	1.144	1.144
	1.202	0.623	1.122	1.121
	1.425	0.229	1.085	1.084
	1.144	0.427	1.059	1.059
New Hampshire	1.413	0.160	1.057	1.057
	1.437	0.153	1.057	1.057
	1.197	0.263	1.049	1.048
	1.096	0.505	1.048	1.047
	1.135	0.345	1.045	1.044
	1.122	0.368	1.043	1.043
	1.191	0.231	1.041	1.041
	1.128	0.326	1.040	1.040
	1.173	0.239	1.039	1.039
	1.148	0.224	1.031	1.031
	1.059	0.435	1.025	1.025
	1.052	0.453	1.023	1.023
	1.257	0.100	1.023	1.023
	1.083	0.227	1.018	1.018
	1.101	0.187	1.018	1.018
	1.090	0.192	1.017	1.016
	1.045	0.369	1.016	1.016
	1.037	0.307	1.011	1.011
	1.019	0.449	1.008	1.008
	1.027	0.143	1.004	1.003
	1.002	0.494	1.001	1.000
	1.002	0.131	1.000	1.000
	0.994	0.097	0.999	0.999
	0.992	0.402	0.997	0.997
	0.989	0.377	0.996	0.995
	0.975	0.190	0.995	0.995
	0.965	0.458	0.984	0.983
	0.924	0.241	0.981	0.981
	0.933	0.349	0.976	0.976
	0.895	0.260	0.972	0.971
	0.892	0.285	0.968	0.968
	0.788	0.160	0.963	0.962
	0.693	0.104	0.963	0.962
	0.889	0.364	0.958	0.958
	0.759	0.154	0.958	0.958
	0.843	0.288	0.952	0.952
	0.720	0.158	0.949	0.949
	0.765	0.195	0.949	0.949
	0.906	0.547	0.948	0.947
	0.793	0.238	0.946	0.946
	0.512	0.084	0.945	0.945
	0.639	0.136	0.941	0.941
	0.813	0.308	0.938	0.938
	0.889	0.581	0.934	0.933
	0.846	0.470	0.924	0.924
	0.756	0.321	0.914	0.914
	0.602	0.179	0.913	0.913
	0.804	0.575	0.882	0.882

* Sorted by balanced relative change.

TABLE 17
NEW HAMPSHIRE
LOCAL PRODUCTS/COMPLETED OPERATIONS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1) CALENDAR A.Y.E. 12/31/2017 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) CALENDAR A.Y.E. 2013 - 2017 AGG LOSS COST CURRENT LEVEL	(3) FIVE YEAR EXPERIENCE RATIO	(4) RELATIV.	(5) NUMBER OF OCCURRENCES	(6) BAL CELL RELATIV.
10 MONOLINE	01 RET. STRS-FOOD/DRG	\$2,349	\$10,784	0.000	0.000	0	0.975
	02 RET. STRS-NTFD/DRG	2,857	18,493	0.000	0.000	0	1.041
	11 COMP. OPS. (LOW)	4,293	73,913	0.000	0.000	0	1.055
	12 COMP. OPS. (MED)	170,304	1,271,996	0.164	0.152	9	1.039
	13 COMP. OPS. (HGH)	15,523	133,909	0.010	0.009	1	0.958
	TOTAL *	\$195,326	\$1,509,095	0.144		10	
34 MULT MERCANTILE	01 RET. STRS-FOOD/DRG	\$27,047	\$115,662	1.375	1.268	11	0.976
	02 RET. STRS-NTFD/DRG	19,548	78,733	3.169	2.923	4	1.042
	12 COMP. OPS. (MED)	9,528	51,133	1.283	1.183	1	1.040
	TOTAL *	\$56,123	\$245,528	1.984		16	
36 MULT SERVICES	01 RET. STRS-FOOD/DRG	\$3,897	\$18,005	4.775	4.405	4	0.991
	02 RET. STRS-NTFD/DRG	37,591	200,211	1.777	1.640	17	1.058
	11 COMP. OPS. (LOW)	5,601	47,002	0.306	0.282	3	1.072
	12 COMP. OPS. (MED)	2,945	32,986	0.001	0.001	0	1.055
	13 COMP. OPS. (HGH)	7,361	37,767	0.000	0.000	0	0.974
	TOTAL *	\$57,395	\$335,971	1.518		24	
37 MULT INDUST/PROC.	11 COMP. OPS. (LOW)	\$617	\$1,593	0.000	0.000	0	1.076
	12 COMP. OPS. (MED)	8,339	55,642	3.367	3.106	3	1.059
	TOTAL *	\$8,956	\$57,235	3.135		3	
38 MULT CONTRACTORS	11 COMP. OPS. (LOW)	\$18,403	\$112,164	1.277	1.178	4	1.106
	12 COMP. OPS. (MED)	625,376	2,965,242	2.009	1.854	83	1.089
	13 COMP. OPS. (HGH)	40,804	170,811	0.366	0.338	1	1.005
	TOTAL *	\$684,583	\$3,248,217	1.892		88	
TOTAL ALL TOP	01 RET. STRS-FOOD/DRG	\$33,293	\$144,451	1.676		15	
	02 RET. STRS-NTFD/DRG	59,996	297,437	2.146		21	
	11 COMP. OPS. (LOW)	28,914	234,672	0.872		7	
	12 COMP. OPS. (MED)	816,492	4,376,999	1.623		96	
	13 COMP. OPS. (HGH)	63,688	342,487	0.237		2	
	TOTAL *	\$1,002,383	\$5,396,046	1.546		141	

* TOTALS IN COLUMN (3) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

TABLE 18
MULTISTATE
LOCAL PRODUCTS/COMPLETED OPERATIONS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1) CALENDAR A.Y.E. 12/31/2017 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) CALENDAR A.Y.E. 2013 - 2017 AGG LOSS COST CURRENT LEVEL	(3) FIVE YEAR EXPERIENCE RATIO	(4) RELATIV.	(5) NUMBER OF OCCURRENCES	(6) BAL CELL RELATIV.
10 MONOLINE	01 RET. STRS-FOOD/DRG	\$2,570,942	\$11,000,189	0.978		762	
	02 RET. STRS-NTFD/DRG	2,629,603	11,663,817	1.219		494	
	11 COMP. OPS. (LOW)	4,024,036	18,069,271	1.329		705	
	12 COMP. OPS. (MED)	82,107,926	364,826,722	1.080		6,242	
	13 COMP. OPS. (HGH)	7,801,373	39,341,081	0.703		282	
	TOTAL *	\$99,133,880	\$444,901,080	1.062		8,485	
34 MULT MERCANTILE	01 RET. STRS-FOOD/DRG	\$8,002,266	\$37,342,335	0.940		3,591	
	02 RET. STRS-NTFD/DRG	5,186,195	23,434,483	1.012		665	
	12 COMP. OPS. (MED)	2,043,786	10,139,349	1.186		140	
	TOTAL *	\$15,232,247	\$70,916,167	0.997		4,396	
36 MULT SERVICES	01 RET. STRS-FOOD/DRG	\$729,961	\$3,439,653	1.065		197	
	02 RET. STRS-NTFD/DRG	12,256,900	48,452,562	1.088		2,518	
	11 COMP. OPS. (LOW)	3,094,937	14,012,389	1.111		510	
	12 COMP. OPS. (MED)	4,447,208	21,021,492	0.941		694	
	13 COMP. OPS. (HGH)	989,332	5,061,195	1.199		87	
	TOTAL *	\$21,518,338	\$91,987,291	1.065		4,006	
37 MULT INDUST/PROC.	01 RET. STRS-FOOD/DRG	\$26,867	\$90,627	2.388		1	
	11 COMP. OPS. (LOW)	114,535	530,208	1.229		19	
	12 COMP. OPS. (MED)	3,550,014	17,334,430	1.039		268	
	13 COMP. OPS. (HGH)	40,532	307,938	0.580		0	
	TOTAL *	\$3,731,948	\$18,263,203	1.050		288	
38 MULT CONTRACTORS	11 COMP. OPS. (LOW)	\$8,122,432	\$37,446,153	1.157		634	
	12 COMP. OPS. (MED)	143,209,202	677,397,379	1.125		12,565	
	13 COMP. OPS. (HGH)	14,631,915	67,788,410	0.919		693	
	TOTAL *	\$165,963,549	\$782,631,942	1.108		13,892	
TOTAL ALL TOP	01 RET. STRS-FOOD/DRG	\$11,330,036	\$51,872,804	0.960		4,551	
	02 RET. STRS-NTFD/DRG	20,072,698	83,550,862	1.086		3,677	
	11 COMP. OPS. (LOW)	15,355,940	70,058,021	1.193		1,868	
	12 COMP. OPS. (MED)	235,358,136	1,090,719,372	1.105		19,909	
	13 COMP. OPS. (HGH)	23,463,152	112,498,624	0.858		1,062	
	TOTAL *	\$305,579,962	\$1,408,699,683	1.084		31,067	

* TOTALS IN COLUMN (3) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

EXPLANATORY NOTES TO GENERAL LIABILITY
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

OBJECTIVES

The objectives of this procedure are to:

- 1) determine monoline loss cost level needs for the appropriate rating variables;
- 2) determine indicated changes to the eight liability Commercial Package Policy (CPP) Package Modification Factors (PMFs) based on Premises/Operations and Products/Completed Operations data.

EXPERIENCE
BASE

The experience used in this relativity analysis is the latest five (5) years of accident year data, as reported under the Commercial Statistical Plan with aggregate loss costs adjusted to current loss cost level (multiline aggregate loss costs adjusted additionally by the current Implicit Package Modification Factors). Losses have been trended and developed in the Relativity Analysis. ALCCCL have been trended.

SIMULTANEOUS
DETERMINATION
OF RATING
VARIABLE
RELATIVITIES

Once the aggregate loss costs at current level and incurred losses used in the analysis have been appropriately adjusted, the 5-year experience ratios are calculated for each combination of the appropriate rating variables. From these ratios, relativities to the statewide 5-year experience ratio are calculated. These relativities are then used in a minimum bias iterative review procedure, which simultaneously determines the relativities for each rating variable.

The purpose of a simultaneous review procedure is to arrive at a set of relativities for each rating variable that best represent the experience. For example, the type of policy relativities will serve to derive the relationship of CPP policies relative to monoline policies, via the PMF, while the class group relativities will serve to derive the relationship of the various classifications relative to one another. An iterative technique is used to derive relativities for each rating variable. This procedure is in contrast to a one-way type of review, wherein relativities for each rating variable would each be reviewed separately.

Such one-way types of review do not take into account differing percentages of experience of each rating variable within the other rating variables. The simultaneous review procedure accounts for these different distributions in generating relativities for each rating variable.

RATING
VARIABLES
USED

For Premises/Operations and Products/Completed Operations, the rating variables used in the relativity analysis are as follows:

Owners, Landlords and Tenants -	type of policy and class group
Manufacturers and Contractors -	type of policy and class group
Products -	type of policy and class group
Local Products/Completed Operations-	type of policy, state and class group

EXPLANATORY NOTES TO GENERAL LIABILITY
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

ITERATIVE
PROCEDURE

The iterative technique referred to in the previous paragraph solves for a set of relativities for each rating variable based on the experience for the cells; that is, based on the experience ratio and latest year adjusted aggregate loss cost volume for each combination of rating variables relative to the experience ratio and adjusted aggregate loss cost volume for all combinations of rating variables combined. Specifically, the iterative procedure uses the following formulas:

For Owners, Landlords and Tenants:

$$TOP_i = \frac{\sum_j W_{ij} r_{ij}}{\sum_j W_{ij} CG_j} \quad \text{where } 1 \leq i \leq m$$
$$CG_j = \frac{\sum_i W_{ij} r_{ij}}{\sum_i W_{ij} TOP_i} \quad \text{where } 1 \leq j \leq n$$

TOP_i is the relative change for the i^{th} type of policy;

CG_j is the relative change for the j^{th} class group;

W_{ij} is the aggregate loss costs at current level for the i^{th}

type of policy and j^{th} class group;

r_{ij} is the relative change for the i^{th} type of policy

and j^{th} class group;

m is the number of types of policy in the analysis;

n is the number of class groups in the analysis;

EXPLANATORY NOTES TO GENERAL LIABILITY
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

For Manufacturers and Contractors, and Products:

$$TOP_i = \frac{\sum_j W_{ij} r_{ij}}{\sum_j W_{ij} CG_j} \quad \text{where } 1 \leq i \leq m$$
$$CG_j = \frac{\sum_i W_{ij} r_{ij}}{\sum_i W_{ij} TOP_i} \quad \text{where } 1 \leq j \leq n$$

TOP_i is the relative change for the i^{th} type of policy;

CG_j is the relative change for the j^{th} class group;

W_{ij} is the aggregate loss costs at current level for the i^{th}

type of policy and j^{th} class group;

r_{ij} is the relative change for the i^{th} type of policy

and j^{th} class group;

m is the number of types of policy in the analysis;

n is the number of class groups in the analysis;

EXPLANATORY NOTES TO GENERAL LIABILITY
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

For Local Products/Completed Operations:

$$TOP_i = \frac{\sum_j \sum_k W_{ijk} r_{ijk}}{\sum_j \sum_k W_{ijk} CG_j ST_k} \quad \text{where } 1 \leq i \leq m$$

$$CG_j = \frac{\sum_i \sum_k W_{ijk} r_{ijk}}{\sum_i \sum_k W_{ijk} TOP_i ST_k} \quad \text{where } 1 \leq j \leq n$$

$$ST_k = \frac{\sum_i \sum_j W_{ijk} r_{ijk}}{\sum_i \sum_j W_{ijk} TOP_i CG_j} \quad \text{where } 1 \leq k \leq p$$

TOP_i is the relative change for the i^{th} type of policy;

CG_j is the relative change for the j^{th} class group;

ST_k is the relative change for the k^{th} state;

W_{ijk} is the aggregate loss costs at current level for the i^{th}

type of policy, j^{th} class group and k^{th} state;

r_{ijk} is the relative change for the i^{th} type of policy,

j^{th} class group and k^{th} state;

m is the number of types of policy in the analysis;

n is the number of class groups in the analysis;

p is the number of states in the analysis;

EXPLANATORY NOTES TO GENERAL LIABILITY
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

ITERATIVE
PROCEDURE
(Cont'd)

For example, for Owners, Landlords and Tenants, the procedure starts by inserting the actual relativities for type of policy into the second formula to get a class group relativity. The resultant class group relativities then produce a new set of type of policy relativities. The process continues on in that fashion until there is no appreciable difference from one iteration to the next.

APPLICATION OF
CREDIBILITY

Consideration is then given to the credibility of the experience for each rating variable. The credibility of each of these categories is based on the formula

$$Z = \sqrt{P/18,000} \text{ for Owners, Landlords and Tenants, } Z = \sqrt{P/18,000} \text{ for}$$

$$\text{Manufacturers and Contractors and } Z = \sqrt{P/20,000} \text{ for Products, where P}$$

is the 5 year occurrence total for a given class group, territory or type of policy. For Local Products/Completed Operations, separate formulas are used to calculate the credibility of the experience for each type of policy and class group versus the credibility of the experience for each state, namely Z

$$= \sqrt{P/15,000} \text{ for type of policy and class group, and } Z = \sqrt{P/5,500} \text{ for}$$

state(in this case, P is the 5 year occurrence total for a given state).

Credibility-weighted relativities are then calculated as follows:

$$W = R^Z \quad \text{where:}$$

Z is the class group, state or type of policy credibility;

R is the class group, state or type of policy relativity;

W is the credibility-weighted relativity.

The resulting credibility-weighted relativities are then balanced to assure that the average relativity remains at unity.

EXPLANATORY NOTES TO GENERAL LIABILITY
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

MULTILINE
CONSIDERATIONS

The monoline relativities, the class group and state relativities which result from the aforementioned procedures are then used to generate indicated monoline classification loss cost changes. The multiline relativities, the class group and state relativities which result from the aforementioned procedures are then used to generate multiline indications that apply to the current Implicit Package Modification Factors. The indicated IPMFs are calculated as follows:

$$\text{TOP y indicated IPMF} = \frac{(\text{TOP y current IPMF}) \times (\text{TOP y relativity})}{(\text{monoline relativity})}$$

For each CPP Type of Policy the indicated IPMF is subject to a minimum value of 0.50 and a maximum value of 1.50. If an indicated IPMF falls outside one of those limits, it is capped at that amount, the aggregate loss costs for that Type of Policy are adjusted to the capped IPMF level, and the entire relativity review as described above is re-performed to take this into account.
