IOWA COMMERCIAL PACKAGE POLICY REVISED PACKAGE MODIFICATION FACTOR REVISION FILED AND APPROVED; EXCEL WORKBOOK NEWLY INCLUDED

KEY MESSAGE

Revised Commercial Package Policy package modification factors for an overall statewide change of **-1.6%** have been filed and are approved.

BACKGROUND

In circular LI-ML-2018-044, we provided you with information about the Commercial Package Policy modification factor experience review.

ISO ACTION

We filed ML-2018-RLA1, which presents a review of Commercial Package Policy modification factors experience. Refer to the attachment(s) for complete details.

INSURANCE DEPARTMENT ACTION

The Insurance Department has approved this revision as filed.

EFFECTIVE DATE

The ISO revision is subject to the following rule of application:

These changes are applicable to all policies written on or after **June 1, 2019**.

COMPANY ACTION

If you have authorized us to file on your behalf and decide:

- To use our revision and effective date, you are not required to file anything with the Insurance Department.

- To use our revision with a different effective date, to use our revision with modification, or to not use our revision, you must make an appropriate submission with the Insurance Department.

For guidance on submission requirements, consult the ISO State Filing Handbook.

In all correspondence with the Insurance Department on this revision, you should refer to ISO Filing Designation Number ML-2018-RLA1, NOT this circular number. Communications with the regulator concerning a filing affecting multiple lines of business (i.e., CL, PL, AL filing designation) should specify the line(s) of business that you are addressing.

RATING SOFTWARE IMPACT

No new attributes are being introduced with this revision.

POLICYHOLDER NOTIFICATION

If you decide to implement this revision, you should check all applicable laws for the state(s) to which this revision applies, to determine whether or not a specific policyholder notice requirement may apply. Please note that circular LI-CL-2018-044 contains the ISO Guide To Renewals With Changed Conditions For Commercial Lines, which is available only as a guide to assist participating companies in complying with various conditional renewal statutes or regulations, for the major commercial lines of insurance serviced by ISO. The information in the Guide does not necessarily reflect all requirements or exceptions that may apply, and it is not intended as a substitute for your review of all applicable statutes and regulations concerning policyholder notification.

REVISION DISTRIBUTION

We will issue a Notice to Manualholders with an edition date of 6-19 (or the earliest possible subsequent date), along with any new and/or revised manual pages.

REFERENCE(S)

- LI-CL-2018-044 (11/27/2018) Revised Lead Time Requirements Listing
- LI-ML-2018-044 (10/30/2018) Commercial Package Policy Experience Reviewed By Staff

ATTACHMENT(S)

- Filing ML-2018-RLA1
- 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.

COPYRIGHT EXPLANATION

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 revision 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

If you have any questions concerning:

- The actuarial content of this circular, please contact:

Rachel DeLuco
Actuarial Operations
201-469-3883
Rachel.DeLuco@verisk.com
propertyactuarial@verisk.com

- The non-actuarial content of this circular, please contact:

Carissa Albino
Production Operations, Compliance and Product Services
201-469-2585
Carissa.Albino@verisk.com
propertyactuarial@verisk.com

- Other issues for this circular, please contact Customer Support:

  E-mail: info@verisk.com
  Phone: 800-888-4476

Callers outside the United States, Canada, and the Caribbean may contact us using our global toll-free number (International Access Code + 800 48977489). For information on all ISO products, visit us at www.verisk.com/iso. To keep abreast of the latest Insurance Lines Services updates, view www.verisk.com/ils.

IOWA

ADVISORY PACKAGE MODIFICATION FACTOR REVIEW

COMMERCIAL PACKAGE POLICY

ML-2018-RLA1

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:

Type of Policy	Property	Liability	Prop. & Liab. Total
Motel/Hotel	-1.0%	0.0%	-0.5%
Apartment	0.0%	0.0%	0.0%
Office	-4.9%	-2.0%	-3.6%
Mercantile	-3.5%	1.2%	-2.2%
Institutional	-4.1%	0.0%	-3.7%
Services	-2.0%	0.0%	-1.6%
Indust./Proc.	1.1%	3.1%	1.8%
Contractors	0.0%	0.0%	0.0%
Statewide	-2.6%	0.9%	-1.6%

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.

IOWA

ADVISORY PACKAGE MODIFICATION FACTOR REVIEW

COMMERCIAL PACKAGE POLICY

ML-2018-RLA1

EXECUTIVE SUMMARY

HISTORICAL SOURCE DATA

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

- Basic Group I: five fiscal accident years ending 06/30/17.
- Basic Group II: ten fiscal accident years ending 06/30/17.
- Special Causes of Loss: five fiscal accident years ending 06/30/17.
- 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 06/30/17.
- Manufacturers and Contractors: five fiscal accident years ending 06/30/17.
- Products: three calendar accident years ending 12/31/16.
- Local Products and Completed Operations: three calendar accident years ending 12/31/16.

PRIOR ISO REVISIONS

The latest revisions in this state are:

Filing	ML-16-RLA1	ML-14-RLA1	ML-10-RLA1
Dates			
Implemented	04/01/17	10/01/14	11/01/10
Changes			
Indicated	-0.5%	-3.1%	-2.8%
Filed	-0.4%	-3.1%	-2.8%
Implemented	-0.4%	-3.1%	-2.8%

IOWA

ADVISORY PACKAGE MODIFICATION FACTOR REVIEW

COMMERCIAL PACKAGE POLICY

ML-2018-RLA1

EXECUTIVE SUMMARY

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. Travelers Indemnity Company 2. Cincinnati Insurance Company 3. AMCO (Allied Group) 4. Admiral Insurance Company 5. Tokio Marine Companies 6. QBE Insurance Corporation 7. Westfield Insurance Company 8. Acuity, a Mutual Insurance Company 9. Liberty Mutual Insurance Company 10. Employers Mutual Casualty 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). 41.3%

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.

IOWA

ADVISORY PACKAGE MODIFICATION FACTOR REVIEW

COMMERCIAL PACKAGE POLICY

ML-2018-RLA1

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

TABLE OF CONTENTS

COMMERCIAL PACKAGE POLICY

TABLE OF CONTENTS

SECTION A - SCOPE OF PMF REVISION

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 <u>relative to</u> 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.

IOWA

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	0.99	-1.0%	1.00	1.00	0.0%	-0.5%
APARTMENT (32)	1.00	1.00	0.0%	1.00	1.00	0.0%	0.0%
OFFICE (33)	0.82	0.78	-4.9%	1.00	0.98	-2.0%	-3.6%
MERCANTILE (34)	0.85	0.82	-3.5%	0.81	0.82	1.2%	-2.2%
INSTITUTION (35)	0.73	0.70	-4.1%	1.00	1.00	0.0%	-3.7%
SERVICES (36)	0.98	0.96	-2.0%	1.00	1.00	0.0%	-1.6%
IND/PROC (37)	0.91	0.92	1.1%	0.97	1.00	3.1%	1.8%
CONTRACTORS (38)	1.00	1.00	0.0%	1.00	1.00	0.0%	0.0%
STATEWIDE			-2.6%			0.9%	-1.6%

```
                              IOWA
                            TABLE 2
                  COMMERCIAL PACKAGE POLICY
       CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS(PMF)


MOTEL/HOTEL(31)         (1)        (2)        (3)        (4)        (5)
************          AGGREG-    CURRENT
                     ATE LOSS   IMPLICIT     NET       INDIC.    CAPPED
COVERAGE              COSTS       PMF     INDICATION    PMF        PMF
PROPERTY-
 BASIC GRP I         264,717     0.917      -4.0%      0.880      0.906
 BASIC GRP II        223,605     0.941      -0.1       0.940      0.967
 SP CAUSE/LOSS       127,128     1.334      -5.7       1.258      1.294
*CRIME                   540     0.910       0.0       0.910      0.910
*INL. MAR.             1,878     0.910       0.0       0.910      0.910
*FIDELITY              4,210     1.000       0.0       1.000      1.000
 TOTAL               622,078     1.00       -3.9%      0.961      0.99

LIABILITY-
 OL&T                539,768     1.000       2.7%      1.027      1.000
 TOTAL               539,768     1.00        2.7%      1.027      1.00
 ------------      -----------  --------   -------- --- -------   ------
PROP. & LIAB.      1,161,846                -0.8%
    TOTAL



APARTMENT  (32)        (1)        (2)        (3)        (4)        (5)
************          AGGREG-    CURRENT
                     ATE LOSS   IMPLICIT     NET       INDIC.    CAPPED
COVERAGE              COSTS       PMF     INDICATION    PMF        PMF
PROPERTY-
 BASIC GRP I       2,272,634     0.967      -4.5%      0.923      0.901
 BASIC GRP II      2,828,689     1.015      10.7       1.124      1.096
 SP CAUSE/LOSS       939,062     1.031      -4.5       0.985      0.961
*CRIME                   172     0.910       0.0       0.910      0.910
*INL. MAR.               398     0.910       0.0       0.910      0.910
*FIDELITY                991     1.000       0.0       1.000      1.000
 TOTAL             6,041,946     1.00        2.5%      1.025      1.00

LIABILITY-
 OL&T                676,780     1.000       0.0%      1.000      1.000
 TOTAL               676,780     1.00        0.0%      1.000      1.00
 ------------      -----------  --------   ------- --- -------   ------
PROP. & LIAB.      6,718,726                 2.2%
    TOTAL

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

```
                                 IOWA
                               TABLE 2
                     COMMERCIAL PACKAGE POLICY
       CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS(PMF)
```

OFFICE (33)	(1)	(2)	(3)	(4)	(5)
************		CURRENT			
	AGGREGATE	IMPLICIT	NET	INDIC.	CAPPED
COVERAGE	LOSS COSTS	PMF	INDICATION	PMF	PMF
PROPERTY-					
BASIC GRP I	1,044,277	0.942	-4.2%	0.902	0.906
BASIC GRP II	1,140,547	0.653	-4.9	0.621	0.624
SP CAUSE/LOSS	711,261	1.018	-8.0	0.937	0.941
*CRIME	3,056	0.910	0.0	0.910	0.910
*INL. MAR.	27,240	0.910	0.0	0.910	0.910
*FIDELITY	42,244	1.000	0.0	1.000	1.000
TOTAL	2,968,625	0.82	-5.5%	0.775	0.78
LIABILITY-					
OL&T	2,150,381	1.041	-2.1%	1.019	1.019
M&C	182,241	0.655	3.8	0.680	0.680
TOTAL	2,332,622	1.00	-2.1%	0.979	0.98
PROP. & LIAB. TOTAL	5,301,247		-4.0%		

MERCANTILE (34)	(1)	(2)	(3)	(4)	(5)
************		CURRENT			
	AGGREGATE	IMPLICIT	NET	INDIC.	CAPPED
COVERAGE	LOSS COSTS	PMF	INDICATION	PMF	PMF
PROPERTY-					
BASIC GRP I	3,009,976	0.827	-5.7%	0.780	0.783
BASIC GRP II	3,069,625	0.761	0.2	0.763	0.766
SP CAUSE/LOSS	1,732,221	1.045	-6.1	0.981	0.985
*CRIME	11,752	0.910	0.0	0.910	0.910
*INL. MAR.	720,500	0.910	0.0	0.910	0.910
*FIDELITY	159,958	1.000	0.0	1.000	1.000
TOTAL	8,704,032	0.85	-3.6%	0.819	0.82
LIABILITY-					
OL&T	1,888,600	0.742	3.2%	0.766	0.766
M&C	544,481	1.029	-2.6	1.002	1.002
LOCAL PRODUCT	154,818	0.880	2.5	0.902	0.902
*MULTI PRODUCT	918,600	0.847	1.8	0.863	0.863
TOTAL	3,506,499	0.81	1.8%	0.824	0.82
PROP. & LIAB. TOTAL	12,210,531		-2.1%		

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

```
                              IOWA
                             TABLE 2
                    COMMERCIAL PACKAGE POLICY
       CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS(PMF)
```

INSTITUTION(35)	(1)	(2)	(3)	(4)	(5)
************		CURRENT			
	AGGREGATE	IMPLICIT	NET	INDIC.	CAPPED
COVERAGE	LOSS COSTS	PMF	INDICATION	PMF	PMF
PROPERTY-					
BASIC GRP I	7,495,954	0.810	-17.2%	0.671	0.687
BASIC GRP II	11,516,568	0.730	1.2	0.739	0.756
SP CAUSE/LOSS	3,222,291	0.579	-5.9	0.545	0.558
*CRIME	53,839	0.910	0.0	0.910	0.910
*INL. MAR.	63,533	0.910	0.0	0.910	0.910
*FIDELITY	495,090	1.000	0.0	1.000	1.000
TOTAL	22,847,275	0.73	-5.6%	0.689	0.70
LIABILITY-					
OL&T	2,266,224	1.107	16.9%	1.294	1.120
M&C	313,506	0.564	14.6	0.646	0.559
TOTAL	2,579,730	1.00	15.6%	1.156	1.00
PROP. & LIAB. TOTAL	25,427,005		-3.5%		

SERVICES (36)	(1)	(2)	(3)	(4)	(5)
************		CURRENT			
	AGGREGATE	IMPLICIT	NET	INDIC.	CAPPED
COVERAGE	LOSS COSTS	PMF	INDICATION	PMF	PMF
PROPERTY-					
BASIC GRP I	3,155,087	1.157	-0.8%	1.148	1.155
BASIC GRP II	2,697,102	0.838	-5.0	0.796	0.801
SP CAUSE/LOSS	1,141,217	0.987	-4.8	0.940	0.946
*CRIME	6,456	0.910	0.0	0.910	0.910
*INL. MAR.	51,082	0.910	0.0	0.910	0.910
*FIDELITY	70,041	1.000	0.0	1.000	1.000
TOTAL	7,120,985	0.98	-2.6%	0.955	0.96
LIABILITY-					
OL&T	818,081	0.974	0.9%	0.983	0.975
M&C	923,207	1.040	0.3	1.043	1.035
LOCAL PRODUCT	361,214	1.011	0.5	1.016	1.008
*MULTI PRODUCT	145,718	0.926	-1.3	0.914	0.914
TOTAL	2,248,220	1.00	0.7%	1.007	1.00
PROP. & LIAB. TOTAL	9,369,205		-1.8%		

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

IND/PROC (37)	(1)	(2)	(3)	(4)	(5)
************		CURRENT			
	AGGREGATE	IMPLICIT	NET	INDIC.	CAPPED
COVERAGE	LOSS COSTS	PMF	INDICATION	PMF	PMF
PROPERTY-					
BASIC GRP I	3,471,371	1.207	3.0%	1.243	1.260
BASIC GRP II	1,394,608	0.597	-0.6	0.593	0.601
SP CAUSE/LOSS	787,524	0.738	-5.5	0.697	0.707
*CRIME	1,905	0.910	0.0	0.910	0.910
*INL. MAR.	3,877	0.910	0.0	0.910	0.910
*FIDELITY	57,856	1.000	0.0	1.000	1.000
TOTAL	5,717,141	0.91	0.0%	0.910	0.92
LIABILITY-					
M&C	1,809,744	1.120	1.2	1.133	1.102
LOCAL PRODUCT	80,796	0.847	-1.5	0.834	0.811
*MULTI PRODUCT	884,866	0.852	0.8	0.859	0.859
TOTAL	2,775,406	0.97	5.1%	1.019	1.00
------------	-----------	--------	------ ---	-------	------
PROP. & LIAB. TOTAL	8,492,547		1.6%		

CONTRACTORS(38)	(1)	(2)	(3)	(4)	(5)
************		CURRENT			
	AGGREGATE	IMPLICIT	NET	INDIC.	CAPPED
COVERAGE	LOSS COSTS	PMF	INDICATION	PMF	PMF
PROPERTY-					
BASIC GRP I	784,444	0.867	-2.6%	0.844	0.832
BASIC GRP II	1,202,391	1.098	7.8	1.184	1.166
SP CAUSE/LOSS	468,370	1.009	-5.6	0.952	0.938
*CRIME	1,765	0.910	0.0	0.910	0.910
*INL. MAR.	3,630	0.910	0.0	0.910	0.910
*FIDELITY	52,751	1.000	0.0	1.000	1.000
TOTAL	2,513,351	1.00	1.5%	1.015	1.00
LIABILITY-					
M&C	4,134,331	0.990	1.2	1.002	1.002
LOCAL PRODUCT	4,583,114	1.012	-1.4	0.998	0.998
TOTAL	8,717,445	1.00	0.0%	1.000	1.00
------------	-----------	--------	------ ---	-------	------
PROP. & LIAB. TOTAL	11,230,796		0.3%		

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

```
                              IOWA
                            TABLE 2
                  COMMERCIAL PACKAGE POLICY
        CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS(PMF)
```

STATEWIDE ************	(1)	(2) CURRENT	(3)	(4)	(5)
	AGGREGATE	IMPLICIT	NET	INDIC.	CAPPED
COVERAGE	LOSS COSTS	PMF	INDICATION	PMF	PMF
PROPERTY-					
BASIC GRP I	21,498,460	0.929	-7.3%	0.861	0.869
BASIC GRP II	24,073,135	0.771	1.4	0.782	0.789
SP CAUSE/LOSS	9,129,074	0.786	-5.8	0.741	0.747
*CRIME	79,485	0.910	0.0	0.910	0.910
*INL. MAR.	872,138	0.910	0.0	0.910	0.910
*FIDELITY	883,141	1.000	0.0	1.000	1.000
TOTAL	56,535,433	0.836	-3.5%	0.807	0.814
LIABILITY-					
OL&T	8,339,834	0.957	5.0%	1.005	0.962
M&C	7,907,510	0.983	1.4	0.997	0.984
LOCAL PRODUCT	5,179,942	1.004	-1.2	0.993	0.992
*MULTI PRODUCT	1,949,184	0.855	1.1	0.865	0.865
TOTAL	23,376,470	0.958	3.0%	0.987	0.966
------------	-----------	-------- - ------ ---		-------	------
PROP. & LIAB. TOTAL	79,911,903		-1.6%		

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

IOWA

TABLE 2

COMMERCIAL PACKAGE POLICY

COMBINED PMFs

TYPE OF POLICY	CURRENT COMBINED	INDICATED COMBINED	CAPPED COMBINED
MOTEL/HOTEL(31)	1.00	0.992	0.99
APARTMENT (32)	1.00	1.022	1.00
OFFICE (33)	0.90	0.855	0.86
MERCANTILE (34)	0.83	0.821	0.82
INSTITUTION(35)	0.75	0.725	0.73
SERVICES (36)	0.99	0.967	0.97
IND/PROC (37)	0.94	0.943	0.95
CONTRACTORS(38)	1.00	1.003	1.00

NOTE: Combined PMFs are provided for informational purposes only.

EXPLANATORY NOTES TO TABLE 2

CALCULATION OF REVISED PACKAGE MODIFICATION FACTORS

OBJECTIVE

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.

The types of insured which can be written under a CPP are generally categorized into the following Types of Policy:

. 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

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.

CPP PMF
REVIEW
PROCEDURE

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).

A detailed explanation of the calculation of the revised PMFs follows.

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.

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

TABLE OF CONTENTS

SECTION B - CALCULATION OF PROPOSED CHANGES

IOWA

TABLE 3 - BASIC GROUP I RELATIVITY ANALYSIS

	(1)	(2)	(3)	(4)	(5)
TOP	$ LST SQ FORMULA RELATIVITY	CREDIBILITY Z	Z-WTD. RELATIVITY	BALANCED RELATIVITY	INDICATED CHANGE *
10	1.484	0.096	1.039	1.071	
31	0.788	0.014	0.997	1.028	-4.0%
32	0.917	0.099	0.991	1.023	-4.5%
33	0.902	0.046	0.995	1.026	-4.2%
34	0.860	0.136	0.980	1.010	-5.7%
35	0.588	0.284	0.860	0.887	-17.2%
36	1.220	0.147	1.030	1.062	-0.8%
37	1.545	0.155	1.070	1.103	3.0%
38	1.342	0.039	1.012	1.043	-2.6%

RATING GROUP					
01	1.077	0.157	1.012	1.011	
02	0.926	0.115	0.991	0.990	
03	1.122	0.071	1.008	1.007	
04	1.126	0.322	1.039	1.038	
05	1.486	0.141	1.057	1.056	
06	0.817	0.201	0.960	0.959	
07	1.028	0.276	1.008	1.007	
08	0.910	0.189	0.982	0.981	
09	1.114	0.111	1.012	1.011	
10	1.019	0.038	1.001	1.000	
11	1.162	0.045	1.007	1.006	
13	0.898	0.159	0.983	0.982	
14	0.983	0.187	0.997	0.996	
15	1.195	0.126	1.023	1.022	
17	0.659	0.058	0.976	0.975	
18	0.609	0.045	0.978	0.977	
19	0.693	0.013	0.995	0.994	
20	0.836	0.011	0.998	0.997	
21	0.599	0.158	0.922	0.921	
22	0.664	0.074	0.970	0.969	

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

```
                        IOWA

        TABLE 4 - SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS
        _____


                (1)         (2)         (3)         (4)         (5)

              $ LST SQ   CREDIBILITY   Z-WTD.     BALANCED    INDICATED
              FORMULA        Z        RELATIVITY  RELATIVITY  CHANGE *
  TOP         RELATIVITY
  ------------------------------------------------------------------------------

   10          1.596       0.108       1.052       1.055
   31          0.617       0.017       0.992       0.995       -5.7%
   32          1.042       0.104       1.004       1.007       -4.5%
   33          0.651       0.075       0.968       0.971       -8.0%
   34          0.934       0.179       0.988       0.991       -6.1%
   35          0.966       0.289       0.990       0.993       -5.9%
   36          1.007       0.132       1.001       1.004       -4.8%
   37          0.935       0.088       0.994       0.997       -5.5%
   38          0.883       0.058       0.993       0.996       -5.6%




  CATEGORY

   01          1.017       0.703       1.012       1.009
   02          0.421       0.050       0.958       0.955
   03          0.665       0.086       0.966       0.963
   04          0.448       0.112       0.914       0.912
   05          3.635       0.067       1.090       1.088
   06          0.781       0.053       0.987       0.984
   07          1.086       0.015       1.001       0.999
   08          0.850       0.128       0.979       0.977
   09          1.197       0.081       1.015       1.012
   10          0.773       0.018       0.995       0.993
   11          0.393       0.088       0.921       0.919
   12          1.040       0.103       1.004       1.001
   13          0.720       0.059       0.981       0.978
   14          1.191       0.073       1.013       1.010
```

* 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.

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:

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

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

SPECIAL CAUSES OF LOSS:

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

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

COLUMN (1)
(Cont'd)

. TOP_i is the relativity for the ith Type of Policy;

. RG_j is the relativity for the jth Rating Group;

. CAT_j is the relativity for the jth Category;

. W_{ij} is the aggregate loss costs for the ith Type of Policy, jth Rating Group or Category;

. R_{ij} is the experience ratio relativity for the ith Type of Policy, jth 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, <u>using those results</u>, 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)

<u>CREDIBILITY</u>

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.

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:

TOP y indicated = $\dfrac{\text{(TOP y current IPMF)x(TOP y relativity)}}{\text{monoline relativity}}$
      IPMF

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.

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

		(1) ACCIDENT YEAR ENDING 06/30/17 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
TYPE OF POLICY	CATEGORY					
10 MONOLINE	01 APARTMENTS	185,016	919,743	1.003	1.455	1.519
	02 OTHER HABITATIONAL	126,722	684,049	1.574	1.547	1.615
	03 RESTAURANTS & BARS	27,648	181,214	0.124	1.326	1.384
	04 OTHER MERCANTILE RS	474,958	2,380,316	1.638	1.559	1.627
	05 PUBLIC BUILDINGS	39,513	245,191	0.651	1.406	1.468
	06 CHURCHES	9,023	66,314	0.032	1.314	1.372
	07 SCHOOLS	17,037	87,947	0.013	1.311	1.368
	08 OFFICES AND BANKS	226,618	1,104,490	0.515	1.374	1.434
	09 REC. FACILITIES	115,434	612,764	0.367	1.357	1.416
	10 HOTELS AND MOTELS	33,621	135,110	1.007	1.461	1.525
	11 HOSPITALS/NURS H0ME	60,128	280,372	0.204	1.337	1.396
	13 MOTOR VEHICLE RISKS	160,358	863,182	2.178	1.644	1.716
	14 OTHER NON-MANUF.	176,476	907,998	3.297	1.825	1.905
	15 STORAGE	172,612	743,456	0.578	1.389	1.450
	17 FOOD MANUFACTURING	42,232	217,177	1.617	1.554	1.622
	18 WOOD MANUFACTURING	11,830	81,310	0.000	1.309	1.366
	19 WEARING APPAREL	17,823	90,842	0.000	1.309	1.366
	20 CHEM. MANUFACTURING	29,798	146,916	0.000	1.308	1.365
	21 METAL MANUFACTURING	93,952	557,363	6.075	2.254	2.353
	22 OTHER MANUFACTURING	52,019	344,987	0.917	1.446	1.509
	TOTAL*	2,072,818	10,650,741	1.503	1.537	1.604
31 MULTILINE MOTEL/HOTEL	10 HOTELS AND MOTELS	264,717	1,457,248	0.884	0.776	0.810
	TOTAL*	264,717	1,457,248	0.884	0.776	0.810
32 MULTILINE APARTMENT	01 APARTMENTS	1,392,065	6,539,620	1.272	0.957	0.999
	02 OTHER HABITATIONAL	880,569	4,483,264	0.943	0.813	0.849
	TOTAL*	2,272,634	11,022,884	1.145	0.901	0.941
33 MULTILINE OFFICE	08 OFFICES AND BANKS	1,044,277	4,812,482	0.883	0.793	0.828
	TOTAL*	1,044,277	4,812,482	0.883	0.793	0.828
34 MULTILINE MERCANTILE	03 RESTAURANTS & BARS	433,902	2,496,091	1.475	0.943	0.984
	04 OTHER MERCANTILE RS	1,485,096	7,759,759	1.214	0.948	0.990
	08 OFFICES AND BANKS	95,985	429,781	0.049	0.619	0.646
	13 MOTOR VEHICLE RISKS	451,658	2,010,764	1.080	0.829	0.865
	14 OTHER NON-MANUF.	110,303	569,596	2.483	1.069	1.116
	15 STORAGE	433,032	2,483,092	0.864	0.777	0.811
	TOTAL*	3,009,976	15,749,083	1.191	0.899	0.938

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

		(1) ACCIDENT YEAR ENDING 06/30/17 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
TYPE OF POLICY	CATEGORY					
35 MULTILINE	02 OTHER HABITATIONAL	7,487	50,078	0.263	0.667	0.696
INSTITUTIONAL	05 PUBLIC BUILDINGS	1,311,039	6,347,475	1.003	0.847	0.884
	06 CHURCHES	1,642,062	10,000,887	0.165	0.465	0.485
	07 SCHOOLS	2,981,234	15,181,795	0.463	0.585	0.611
	08 OFFICES AND BANKS	145,283	713,589	0.126	0.625	0.652
	09 REC. FACILITIES	231,111	1,257,344	0.391	0.667	0.696
	11 HOSPITALS/NURS H0ME	290,722	1,594,084	0.540	0.697	0.728
	13 MOTOR VEHICLE RISKS	10,294	66,272	0.507	0.706	0.737
	14 OTHER NON-MANUF.	876,722	4,521,697	0.157	0.543	0.567
	TOTAL*	7,495,954	39,733,221	0.450	0.607	0.634
36 MULTILINE	03 RESTAURANTS & BARS	62,316	358,023	0.011	1.029	1.074
SERVICES	04 OTHER MERCANTILE RS	358,415	1,984,554	1.121	1.202	1.255
	08 OFFICES AND BANKS	254,290	1,442,056	0.528	1.043	1.089
	09 REC. FACILITIES	591,607	3,103,571	1.450	1.322	1.380
	13 MOTOR VEHICLE RISKS	895,199	4,642,211	0.796	1.030	1.075
	14 OTHER NON-MANUF.	426,003	2,328,771	0.615	1.025	1.070
	15 STORAGE	374,026	2,276,716	2.588	1.699	1.773
	21 METAL MANUFACTURING	99,606	497,157	0.852	1.167	1.218
	22 OTHER MANUFACTURING	93,625	622,979	8.852	2.763	2.884
	TOTAL*	3,155,087	17,256,038	1.347	1.240	1.294
37 MULTILINE	04 OTHER MERCANTILE RS	911,118	3,660,744	2.310	1.694	1.768
INDUST/PROCESS	08 OFFICES AND BANKS	52,487	320,805	0.421	1.102	1.150
	13 MOTOR VEHICLE RISKS	589	6,483	0.000	1.077	1.124
	14 OTHER NON-MANUF.	109,135	624,194	6.735	2.340	2.443
	15 STORAGE	14,946	271,496	0.471	1.115	1.164
	17 FOOD MANUFACTURING	388,862	2,231,327	0.461	0.977	1.020
	18 WOOD MANUFACTURING	300,201	1,800,312	0.157	0.909	0.949
	19 WEARING APPAREL	70,297	447,438	0.000	1.015	1.059
	20 CHEM. MANUFACTURING	54,570	308,207	1.106	1.217	1.270
	21 METAL MANUFACTURING	1,208,433	6,426,933	0.584	0.884	0.923
	22 OTHER MANUFACTURING	360,733	2,226,511	0.159	0.876	0.914
	TOTAL*	3,471,371	18,324,450	1.129	1.167	1.217

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

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/17 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
38 MULTILINE	04 OTHER MERCANTILE RS	644,003	3,243,706	1.800	1.465	1.529
CONTRACTORS	08 OFFICES AND BANKS	97,597	514,926	0.066	1.018	1.063
	14 OTHER NON-MANUF.	42,844	266,191	0.371	1.099	1.147
	TOTAL*	784,444	4,024,823	1.506	1.389	1.450
TOTAL ALL TOPS*	01 APARTMENTS	1,577,081	7,459,363	1.240	1.015	1.060
	02 OTHER HABITATIONAL	1,014,778	5,217,391	1.017	0.903	0.943
	03 RESTAURANTS & BARS	523,866	3,035,328	1.230	0.973	1.016
	04 OTHER MERCANTILE RS	3,873,590	19,029,079	1.613	1.308	1.365
	05 PUBLIC BUILDINGS	1,350,552	6,592,666	0.993	0.864	0.901
	06 CHURCHES	1,651,085	10,067,201	0.164	0.470	0.490
	07 SCHOOLS	2,998,271	15,269,742	0.460	0.589	0.615
	08 OFFICES AND BANKS	1,916,537	9,338,129	0.639	0.894	0.933
	09 REC. FACILITIES	938,152	4,973,679	1.056	1.165	1.216
	10 HOTELS AND MOTELS	298,338	1,592,358	0.898	0.854	0.891
	11 HOSPITALS/NURS HOME	350,850	1,874,456	0.482	0.806	0.842
	13 MOTOR VEHICLE RISKS	1,518,098	7,588,912	1.024	1.033	1.078
	14 OTHER NON-MANUF.	1,741,483	9,218,447	1.152	0.950	0.992
	15 STORAGE	994,616	5,774,760	1.457	1.235	1.289
	17 FOOD MANUFACTURING	431,094	2,448,504	0.574	1.034	1.079
	18 WOOD MANUFACTURING	312,031	1,881,622	0.151	0.924	0.965
	19 WEARING APPAREL	88,120	538,280	0.000	1.074	1.122
	20 CHEM. MANUFACTURING	84,368	455,123	0.715	1.249	1.304
	21 METAL MANUFACTURING	1,401,991	7,481,453	0.971	0.996	1.040
	22 OTHER MANUFACTURING	506,377	3,194,477	1.844	1.283	1.340
	TOTAL*	23,571,278	123,030,970	0.984	0.958	1.000

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

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

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/17 AGGREGATE LOSS COSTS	(2) 5 – YEAR AGGREGATE LOSS COSTS	(3) 5 – YEAR EXPERIENCE RATIO	(4) RELATIVITY
10 MONOLINE	01 BUILDINGS	634,744	3,176,686	1.561	1.689
	02 RES. APTS. AND COND	16,721	94,783	0.363	0.393
	03 OFFICES	48,175	269,812	1.654	1.790
	04 MERCANTILE – HIGH	66,195	343,590	0.600	0.649
	05 MERCANTILE – MEDIUM	18,236	79,242	0.833	0.902
	06 MERCANTILE – LOW	11,838	60,142	0.622	0.673
	07 MOTELS AND HOTELS	4,998	18,434	0.000	0.000
	08 INSTITUTIONAL – HIG	16,764	82,308	0.049	0.053
	09 INSTITUTIONAL – LOW	13,099	64,503	0.659	0.713
	10 INDUST-PROC – HIGH	6,051	31,314	0.000	0.000
	11 INDUST-PROC – LOW	56,573	232,626	0.158	0.171
	12 SERVICE – HIGH	32,951	169,716	0.117	0.127
	13 SERVICE – LOW	38,205	217,559	0.515	0.557
	14 CONTRACTORS	5,741	20,970	0.835	0.904
	TOTAL*	970,291	4,861,685	1.222	1.323
31 MULTILINE MOTEL/HOTEL	01 BUILDINGS	99,279	483,883	0.584	0.632
	07 MOTELS AND HOTELS	27,849	206,523	0.773	0.837
	TOTAL*	127,128	690,406	0.625	0.676
32 MULTILINE APARTMENT	01 BUILDINGS	799,975	3,961,529	1.006	1.089
	02 RES. APTS. AND COND	139,087	700,791	0.423	0.458
	TOTAL*	939,062	4,662,320	0.920	0.996
33 MULTILINE OFFICE	01 BUILDINGS	466,567	2,112,572	0.640	0.693
	03 OFFICES	235,263	1,081,042	0.345	0.373
	04 MERCANTILE – HIGH	84	84	0.000	0.000
	08 INSTITUTIONAL – HIG	3,287	12,966	0.000	0.000
	11 INDUST-PROC – LOW	0	239	0.000	0.000
	12 SERVICE – HIGH	6,060	14,707	0.000	0.000
	14 CONTRACTORS	0	170	0.000	0.000
	TOTAL*	711,261	3,221,780	0.534	0.578

IOWA

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

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/17 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) RELATIVITY
34 MULTILINE MERCANTILE	01 BUILDINGS	1,139,613	5,450,556	0.894	0.968
	03 OFFICES	4,285	10,617	0.000	0.000
	04 MERCANTILE - HIGH	270,716	1,482,040	0.406	0.439
	05 MERCANTILE - MEDIUM	163,155	976,954	3.324	3.597
	06 MERCANTILE - LOW	138,042	769,382	0.700	0.758
	08 INSTITUTIONAL - HIG	459	731	0.000	0.000
	11 INDUST-PROC - LOW	224	646	0.000	0.000
	12 SERVICE - HIGH	7,383	25,477	0.104	0.113
	13 SERVICE - LOW	3,323	11,909	0.000	0.000
	14 CONTRACTORS	5,021	21,100	0.308	0.333
	TOTAL*	1,732,221	8,749,412	1.022	1.106
35 MULTILINE INSTITUTIONAL	01 BUILDINGS	2,590,152	12,962,916	0.933	1.010
	03 OFFICES	3,336	8,403	0.184	0.199
	08 INSTITUTIONAL - HIG	388,051	2,059,405	0.785	0.850
	09 INSTITUTIONAL - LOW	239,028	1,230,947	1.105	1.196
	12 SERVICE - HIGH	658	2,792	0.000	0.000
	13 SERVICE - LOW	338	1,367	0.000	0.000
	14 CONTRACTORS	728	4,826	0.000	0.000
	TOTAL*	3,222,291	16,270,656	0.927	1.003
36 MULTILINE SERVICES	01 BUILDINGS	715,530	3,735,229	0.966	1.045
	03 OFFICES	2,010	8,090	0.000	0.000
	04 MERCANTILE - HIGH	4,820	20,106	0.803	0.869
	05 MERCANTILE - MEDIUM	3,139	14,291	0.094	0.102
	06 MERCANTILE - LOW	1,390	5,607	0.000	0.000
	08 INSTITUTIONAL - HIG	11,894	54,928	0.000	0.000
	09 INSTITUTIONAL - LOW	5,910	25,045	0.000	0.000
	10 INDUST-PROC - HIGH	143	1,629	0.000	0.000
	11 INDUST-PROC - LOW	2,571	7,999	0.000	0.000
	12 SERVICE - HIGH	272,778	1,495,035	1.029	1.114
	13 SERVICE - LOW	118,152	707,608	0.784	0.848
	14 CONTRACTORS	2,880	10,920	0.479	0.518
	TOTAL*	1,141,217	6,086,487	0.938	1.015

IOWA

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

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/17 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) RELATIVITY
37 MULTILINE	01 BUILDINGS	500,518	2,393,684	0.899	0.973
INDUST/PROC	03 OFFICES	1,799	9,741	0.000	0.000
	04 MERCANTILE - HIGH	7,238	26,094	0.000	0.000
	05 MERCANTILE - MEDIUM	13	370	0.000	0.000
	10 INDUST-PROC - HIGH	41,247	240,758	0.729	0.789
	11 INDUST-PROC - LOW	235,079	1,200,756	0.392	0.424
	12 SERVICE - HIGH	330	1,955	0.000	0.000
	13 SERVICE - LOW	1,045	5,408	0.000	0.000
	14 CONTRACTORS	255	2,206	0.000	0.000
	TOTAL*	787,524	3,880,972	0.727	0.787
38 MULTILINE	01 BUILDINGS	251,304	1,294,672	0.851	0.921
CONTRACTORS	03 OFFICES	4,613	19,073	1.859	2.012
	04 MERCANTILE - HIGH	5,038	22,250	0.165	0.179
	05 MERCANTILE - MEDIUM	99	187	0.000	0.000
	06 MERCANTILE - LOW	154	757	0.000	0.000
	08 INSTITUTIONAL - HIG	48	136	0.000	0.000
	11 INDUST-PROC - LOW	95	499	0.000	0.000
	12 SERVICE - HIGH	1,435	3,464	0.000	0.000
	13 SERVICE - LOW	105	278	0.000	0.000
	14 CONTRACTORS	205,479	1,116,038	1.001	1.083
	TOTAL*	468,370	2,457,354	0.916	0.991
TOTAL ALL TOPS*	01 BUILDINGS	7,197,682	35,571,727	0.965	1.044
	02 RES. APTS. AND COND	155,808	795,574	0.417	0.451
	03 OFFICES	299,481	1,406,778	0.568	0.615
	04 MERCANTILE - HIGH	354,091	1,894,164	0.436	0.472
	05 MERCANTILE - MEDIUM	184,642	1,071,044	3.021	3.269
	06 MERCANTILE - LOW	151,424	835,888	0.687	0.744
	07 MOTELS AND HOTELS	32,847	224,957	0.655	0.709
	08 INSTITUTIONAL - HIG	420,503	2,210,474	0.726	0.786
	09 INSTITUTIONAL - LOW	258,037	1,320,495	1.057	1.144
	10 INDUST-PROC - HIGH	47,441	273,701	0.634	0.686
	11 INDUST-PROC - LOW	294,542	1,442,765	0.343	0.371
	12 SERVICE - HIGH	321,595	1,713,146	0.887	0.960
	13 SERVICE - LOW	161,168	944,129	0.697	0.754
	14 CONTRACTORS	220,104	1,176,230	0.970	1.050
	TOTAL*	10,099,365	50,881,072	0.924	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).

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.

TABLE 7 - BASIC GROUP II RELATIVITY ANALYSIS

	(1) ACCIDENT YEAR ENDING 03/31/17 AGGR. LOSS COSTS AT CURRENT IMPLICIT PMF	(2) ACCIDENT YEARS 2008-2017 EXPER. RATIO AT CURRENT PMF	(3) FORMULA RELATIVITY (2)/ 1.135	(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	2,590,234	1.156	0.966	0.348	0.988	0.988	0.9874	
MULTILINE	24,073,135	1.201	1.003	0.843	1.002	1.002	1.0016	
	----------------	-------	------	------	------	------	--------	
COVERAGE	26,663,369	1.197	0.999			1.0006 B	1.0002	
MULTILINE TOP								
31 MOTEL/HOTEL	223,605	0.925	0.773	0.054	0.987	0.987	0.9864	-0.1%
32 APARTMENT	2,828,689	1.505	1.257	0.368	1.094	1.094	1.0933	10.7%
33 OFFICE	1,140,547	0.814	0.680	0.185	0.940	0.940	0.9394	-4.9%
34 MERCANTILE	3,069,625	1.168	0.976	0.411	0.990	0.990	0.9894	0.2%
35 INSTITUTIONAL	11,516,568	1.198	1.001	0.722	1.000	1.000	0.9994	1.2%
36 SERVICES	2,697,102	1.010	0.844	0.384	0.939	0.939	0.9384	-5.0%
37 INDUST/PROCESS	1,394,608	1.104	0.922	0.225	0.982	0.982	0.9814	-0.6%
38 CONTRACTORS	1,202,391	1.560	1.303	0.217	1.065	1.065	1.0644	7.8%
	----------------	-------	------	------	------	------	--------	
	24,073,135	1.201 B	1.003		1.002 B	1.002 B	1.0016 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) * (1.002/1.002)
F - (7) = (6) / 1.0006
G - (8) = (NORMALIZED RELATIVITY FOR TOP)/(NORMALIZED MONOLINE RELATIVITY (TOP 10)) - 1

<u>EXPLANATORY NOTES TO TABLE 7</u>

<u>BASIC GROUP II RELATIVITY ANALYSIS</u>

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.

COLUMN (1)

<u>AGGREGATE LOSS COSTS</u>

The latest accident 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)

<u>10 - YEAR EXPERIENCE RATIO</u>

These experience ratios are the ratio of the combined ten year CSP adjusted incurred losses (adjusted to current deductible and prospective cost levels including loss development, 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.

COLUMN (3)

<u>FORMULA RELATIVITY</u>

The formula relativities are the ratios of the ten year experience ratios for the type of policy (either monoline vs. multiline or individual multiline programs) to the average ten year 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.

COLUMN (3)
(Cont'd)

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 the 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.

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.

TABLE 8

COMMERCIAL I.M. RELATIVITY ANALYSIS

(1) TOP	(2) BALANCED RELATIVITY	(3) CURRENT IPMF	(4) INDICATED IPMF*	(5) SELECTED IPMF
10	1.000	0.910	0.910	0.910
3X & 7X	1.000			

CLASSIFICATION

150	0.923
191	1.100
192	0.785
220	0.789
221	0.755
234	1.202
235	1.088
240	0.789
241	0.715
327	0.757
328	0.932
340	0.646
341	0.757
342	0.751
343	0.767
403	0.640
451	0.946
452	0.778
453	0.811
454	0.713
460	0.479
482	0.889
510	0.662
514	0.631
530	0.628
534	0.757

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

IOWA

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	1.353
	191	5,446,492	15,816,054	1.032	1.213
	192	862,002	2,760,886	0.627	0.737
	220	5,112	87,903	5.716	6.717
	221	1,491	2,853	1.199	1.409
	234	5,224,155	20,144,072	0.600	0.705
	235	8,439,000	24,407,283	0.761	0.894
	240	928,183	3,685,254	0.656	0.771
	241	15,553	114,739	0.053	0.062
	327	18,917	91,546	0.000	0.000
	328	2,319,887	11,908,665	0.792	0.931
	340	40,688	87,993	0.000	0.000
	341	0	0	0.000	0.000
	342	19,188	65,375	0.555	0.652
	343	589	3,417	343.665	578.925
	403	1,600,852	5,771,545	0.345	0.405
	451	3,309,677	12,953,836	0.855	1.005
	452	34,702	137,467	1.628	1.913
	453	45,575	212,456	3.203	3.764
	454	164,836	745,300	0.734	0.863
	460	790,198	3,687,530	0.415	0.488
	482	839,364	2,841,134	0.986	1.159
	510	3,252	39,977	0.020	0.024
	514	446,469	1,612,361	0.339	0.398
	530	504,434	2,697,004	0.489	0.575
	534	0	0	0.000	0.000
	TOTAL#	31,372,249	111,772,746	0.785	0.922

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	720,095	3,333,227	0.795	0.934
3X & 7X	191	603,595	2,704,067	0.774	0.910
	192	202,803	783,492	0.826	0.971
	220	6,439	28,512	1.526	1.793
	221	5,606	27,010	0.258	0.303
	234	12,669,443	52,530,286	1.162	1.365
	235	478,171	2,380,353	2.879	3.383
	240	11,651	60,061	1.983	2.330
	241	5,028	15,371	0.019	0.022
	327	2,942	18,862	0.000	0.000
	328	396	2,751	168.726	198.268
	340	32,828	132,609	0.016	0.019
	341	0	0	0.000	0.000
	342	6,082	30,546	0.000	0.000
	343	2,369	7,996	0.000	0.000
	403	479,869	2,417,275	0.739	0.868
	451	95,342	438,635	0.360	0.423
	452	38,096	206,651	0.535	0.629
	453	34,375	104,958	0.147	0.173
	454	228,162	984,183	0.274	0.322
	460	3,613,811	15,118,089	0.318	0.374
	482	127,496	760,961	0.693	0.814
	510	23,290	121,842	0.000	0.000
	514	63,169	300,866	0.073	0.086
	530	1,129,574	4,779,992	0.414	0.486
	534	0	0	0.000	0.000
	TOTAL#	20,580,632	87,288,595	0.952	1.119

REFLECTS CURRENT IPMF OF   0.910.

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
TOTAL ALL TOPS#	150	1,031,728	5,231,323	0.903	1.061
	191	6,050,087	18,520,121	1.006	1.182
	192	1,064,805	3,544,378	0.665	0.781
	220	11,551	116,415	3.380	3.972
	221	7,097	29,863	0.456	0.536
	234	17,893,598	72,674,358	0.998	1.173
	235	8,917,171	26,787,636	0.875	1.028
	240	939,834	3,745,315	0.672	0.790
	241	20,581	130,110	0.045	0.053
	327	21,859	110,408	0.000	0.000
	328	2,320,283	11,911,416	0.821	0.965
	340	73,516	220,602	0.007	0.008
	341	0	0	0.000	0.000
	342	25,270	95,921	0.421	0.495
	343	2,958	11,413	267.552	314.397
	403	2,080,721	8,188,820	0.436	0.512
	451	3,405,019	13,392,471	0.841	0.988
	452	72,798	344,118	1.056	1.241
	453	79,950	317,414	1.889	2.220
	454	392,998	1,729,483	0.467	0.549
	460	4,404,009	18,805,619	0.335	0.394
	482	966,860	3,602,095	0.947	1.113
	510	26,542	161,819	0.002	0.002
	514	509,638	1,913,227	0.306	0.360
	530	1,634,008	7,476,996	0.437	0.514
	534	0	0	0.000	0.000
	TOTAL#	51,952,881	199,061,341	0.851	1.000

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

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
                             IOWA
                 OWNERS, LANDLORDS AND TENANTS
               BASIC LIMIT RELATIVE CHANGE ANALYSIS
               ------------------------------------

                (1)         (2)         (3)         (4)         (5)
              BAILEY
              FORMULA   CREDIBILITY   Z-WTD     BALANCED     INDICATED
    TOP      RELATIV.        Z      RELATIV.   RELATIV.      CHANGE *

    10        0.816      0.144       0.971       0.964

    31        0.969      0.082       0.997       0.990         2.7%
    32        0.746      0.100       0.971       0.964         0.0%
    33        0.726      0.156       0.951       0.944        -2.1%
    34        1.015      0.159       1.002       0.995         3.2%

    35        1.619      0.263       1.135       1.127        16.9%
    36        0.836      0.110       0.981       0.973         0.9%



  CLASS
  GROUP
    01        2.176      0.069       1.055       1.056
    02        0.769      0.101       0.974       0.975
    03        0.499      0.093       0.937       0.938

    04        1.385      0.030       1.010       1.011
    05        0.631      0.028       0.987       0.988
    06        0.598      0.044       0.978       0.978

    07        0.870      0.082       0.989       0.989
    08        0.765      0.035       0.991       0.991
    09        0.591      0.094       0.952       0.953

    10        1.101      0.256       1.025       1.026
    11        1.547      0.112       1.050       1.051
    12        0.922      0.197       0.984       0.985

    13        1.863      0.066       1.042       1.043
    16        0.746      0.055       0.984       0.985



                (1)         (2)         (3)         (4)
              BAILEY
              FORMULA   CREDIBILITY   Z-WTD     BALANCED
  TERRITORY  RELATIV.        Z      RELATIV.   RELATIV.
      1       0.972      0.110       0.997       0.995
      2       1.006      0.396       1.002       1.000


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

```
                      TABLE 11
                       IOWA
            MANUFACTURERS AND CONTRACTORS
          BASIC LIMIT RELATIVE CHANGE ANALYSIS
          -------------------------------------


            (1)          (2)          (3)          (4)          (5)
          BAILEY
          FORMULA    CREDIBILITY    Z-WTD       BALANCED     INDICATED
  TOP     RELATIV.        Z        RELATIV.     RELATIV.     CHANGE *

  10       0.949        0.189        0.990        0.991

  33       1.992        0.041        1.029        1.029         3.8%
  34       0.604        0.073        0.964        0.965        -2.6%
  35       2.577        0.134        1.135        1.136        14.6%
  36       0.943        0.122        0.993        0.994         0.3%

  37       1.030        0.078        1.002        1.003         1.2%
  38       1.008        0.228        1.002        1.003         1.2%



 CLASS
 GROUP
  30       0.719        0.085        0.972        0.961
  31       1.156        0.150        1.022        1.010
  32       1.214        0.260        1.052        1.040

  33       0.921        0.101        0.992        0.980
  34       0.981        0.110        0.998        0.987
  35       0.552        0.018        0.989        0.978

  36       0.684        0.073        0.973        0.962
  37       0.409        0.039        0.966        0.955
  38       1.006        0.086        1.000        0.989
```

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

```
                              TABLE 12
                               IOWA
                   OWNERS, LANDLORDS AND TENANTS
                   BASIC LIMIT RELATIVE CHANGE ANALYSIS
                   ------------------------------------

            SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS


      TERRITORY     ALL

                                        (1)            (2)          (3)       (4)        (5)         (6)
                                   FISCAL A.Y.E.   FISCAL A.Y.E.
                                   06/30/2017 AGGREGATE  2013 - 2017  FIVE YEAR
                                   LOSS COSTS AT   AGG LOSS COST  EXPERIENCE            NUMBER OF   BAL CELL
      TYPE OF POLICY               CLASS GROUP     CURRENT LEVEL   CURRENT LEVEL  RATIO   RELATIV.  OCCURRENCES  RELATIV.

10 MONOLINE              01 FOOD&BEV.(RETAIL)        $55,411       $241,871      0.958                  21
                         02 RESTAURANTS              120,705        633,105      0.645                  40
                         03 STORES                    37,514        205,081      0.300                  15
                         04 VENDING & RENTAL           7,430         36,344      0.443                   1
                         05 FOOD & BEV. DIST.         10,290        156,624      0.000                   0
                         06 NON-FOOD&BEV.DIST         30,017        155,785      0.454                   3
                         07 CLUBS,AMSMT&SPRTS        104,545        557,200      1.337                  34
                         08 HEALTH CARE FACIL         10,819         51,585      2.092                   3
                         09 HOTELS AND MOTELS        106,639        471,824      0.578                  40
                         10 SCHLS & CHURCHES         135,064        707,422      0.593                  24
                         11 APARTMENTS               131,011        595,862      1.224                  57
                         12 BUILDINGS&OFFICES        473,527      2,168,354      0.798                 124
                         13 MISC. PREMISES            29,824        153,071      2.249                  13
                         16 GOVT SUBDIVISIONS            146            849      0.000                   0
                            TOTAL *                $1,252,942     $6,134,977     0.853                 375

31 MULT MOTEL/HOTEL      09 HOTELS AND MOTELS       $366,441     $2,124,746     0.590                 122
                            TOTAL *                 $366,441     $2,124,746     0.590                 122

32 MULT APARTMENT        11 APARTMENTS              $398,300     $1,918,222     1.211                 170
                         12 BUILDINGS&OFFICES         61,157        270,948      0.555                  11
                            TOTAL *                 $459,457     $2,189,170     1.124                 181

33 MULT OFFICE           12 BUILDINGS&OFFICES      $1,442,202    $7,055,822     0.706                 441
                         13 MISC. PREMISES            17,663         75,869      0.000                   0
                            TOTAL *                $1,459,865     $7,131,691     0.697                 441

34 MULT MERCANTILE       01 FOOD&BEV.(RETAIL)        $88,585       $348,807      2.817                  65
                         02 RESTAURANTS              433,524      2,245,122      0.803                 145
                         03 STORES                   328,538      1,681,356      0.489                 126
                         04 VENDING & RENTAL           1,914          8,704      0.000                   0
                         05 FOOD & BEV. DIST.         45,113        269,722      0.778                  15
                         06 NON-FOOD&BEV.DIST        177,508      1,052,425      0.631                  32
                         12 BUILDINGS&OFFICES        206,963      1,126,859      0.764                  74
                            TOTAL *                $1,282,145     $6,732,995     0.830                 457
```

TERRITORY   ALL

		(1) FISCAL A.Y.E. 06/30/2017 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) FISCAL 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.
TYPE OF POLICY	**CLASS GROUP**						
35 MULT INSTITUT.	07 CLUBS,AMSMT&SPRTS	$16,491	$80,943	0.805		17	
	08 HEALTH CARE FACIL	100,097	527,284	1.126		20	
	10 SCHLS & CHURCHES	1,349,119	7,234,006	1.874		1,158	
	12 BUILDINGS&OFFICES	3,678	17,854	0.000		0	
	13 MISC. PREMISES	4,627	66,709	0.000		0	
	16 GOVT SUBDIVISIONS	64,497	366,201	1.249		55	
	TOTAL *	$1,538,509	$8,292,997	1.778		1,250	
36 MULT SERVICES	03 STORES	$56,314	$266,880	0.703		17	
	04 VENDING & RENTAL	20,860	101,656	1.582		16	
	07 CLUBS,AMSMT&SPRTS	294,336	1,413,086	0.572		72	
	08 HEALTH CARE FACIL	1,393	4,699	0.000		0	
	09 HOTELS AND MOTELS	17,414	118,559	0.000		0	
	10 SCHLS & CHURCHES	317	1,817	0.000		0	
	12 BUILDINGS&OFFICES	74,059	452,406	1.074		49	
	13 MISC. PREMISES	90,691	488,387	1.803		67	
	TOTAL *	$555,384	$2,847,490	0.871		221	
TOTAL ALL TOP	01 FOOD&BEV.(RETAIL)	$143,996	$590,678	2.102		86	
	02 RESTAURANTS	554,229	2,878,227	0.769		185	
	03 STORES	422,366	2,153,317	0.500		158	
	04 VENDING & RENTAL	30,204	146,704	1.202		17	
	05 FOOD & BEV. DIST.	55,403	426,346	0.634		15	
	06 NON-FOOD&BEV.DIST	207,525	1,208,210	0.606		35	
	07 CLUBS,AMSMT&SPRTS	415,372	2,051,229	0.774		123	
	08 HEALTH CARE FACIL	112,309	583,568	1.205		23	
	09 HOTELS AND MOTELS	490,494	2,715,129	0.566		162	
	10 SCHLS & CHURCHES	1,484,500	7,943,245	1.757		1,182	
	11 APARTMENTS	529,311	2,514,084	1.214		227	
	12 BUILDINGS&OFFICES	2,261,586	11,092,243	0.737		699	
	13 MISC. PREMISES	142,805	784,036	1.614		80	
	16 GOVT SUBDIVISIONS	64,643	367,050	1.246		55	
	TOTAL *	$6,914,743	$35,454,066	1.027		3,047	

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

```
                                         TABLE 13
                                          IOWA
                              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.
                                  06/30/2017 AGGREGATE 2013 - 2017   FIVE YEAR
                                    LOSS COSTS AT    AGG LOSS COST   EXPERIENCE            NUMBER OF    BAL CELL
     TYPE OF POLICY        CLASS GROUP   CURRENT LEVEL CURRENT LEVEL  RATIO    RELATIV.   OCCURRENCES   RELATIV.
```

TYPE OF POLICY	CLASS GROUP	(1) 06/30/2017 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) 2013 – 2017 AGG LOSS COST CURRENT LEVEL	(3) FIVE YEAR EXPERIENCE RATIO	(4) RELATIV.	(5) NUMBER OF OCCURRENCES	(6) BAL CELL RELATIV.
10 MONOLINE	30 SERVICE	$107,412	$352,504	0.545	0.512	22	0.952
	31 LIGHT CONTRACTING	181,798	894,935	1.438	1.352	130	1.001
	32 MEDIUM CONTRCTING	1,116,926	4,834,425	1.185	1.114	305	1.030
	33 HEAVY CONTRACTING	369,004	1,568,706	1.007	0.947	40	0.971
	34 DEALER OR DISTRIB	383,280	2,064,299	0.926	0.870	55	0.977
	35 LGT. MANUFACTURER	45,265	131,040	0.279	0.262	1	0.969
	36 MED. MANUFACTURER	437,800	2,132,808	0.867	0.815	43	0.953
	37 HVY. MANUFACTURER	163,897	459,770	0.106	0.099	4	0.946
	38 MISC. OPERATION	117,812	551,507	0.977	0.919	49	0.980
	TOTAL *	$2,923,194	$12,989,994	0.990		649	
33 MULT OFFICE	31 LIGHT CONTRACTING	$32,807	$178,566	1.092	1.026	17	1.040
	32 MEDIUM CONTRCTING	1,339	13,882	0.000	0.000	0	1.070
	33 HEAVY CONTRACTING	19,663	96,417	0.724	0.681	1	1.009
	38 MISC. OPERATION	69,912	300,404	3.164	2.974	13	1.018
	TOTAL *	$123,721	$589,269	2.192		31	
34 MULT MERCANTILE	30 SERVICE	$6,958	$37,980	0.335	0.315	3	0.927
	32 MEDIUM CONTRCTING	44,391	244,906	0.149	0.140	6	1.003
	34 DEALER OR DISTRIB	306,181	1,817,223	0.713	0.670	75	0.952
	38 MISC. OPERATION	12,111	69,945	0.939	0.883	13	0.954
	TOTAL *	$369,641	$2,170,054	0.645		97	
35 MULT INSTITUT.	31 LIGHT CONTRACTING	$10,729	$47,675	2.309	2.171	6	1.148
	32 MEDIUM CONTRCTING	202,106	976,105	3.372	3.170	322	1.181
	TOTAL *	$212,835	$1,023,780	3.318		328	
36 MULT SERVICES	30 SERVICE	$21,166	$111,826	1.577	1.483	19	0.955
	31 LIGHT CONTRACTING	55,608	267,404	1.050	0.987	34	1.004
	32 MEDIUM CONTRCTING	64,901	294,608	0.073	0.068	6	1.033
	33 HEAVY CONTRACTING	78,023	581,153	1.126	1.058	58	0.974
	34 DEALER OR DISTRIB	156,785	773,903	0.947	0.890	85	0.980
	36 MED. MANUFACTURER	26,923	107,073	3.519	3.308	10	0.955
	38 MISC. OPERATION	223,347	983,017	0.900	0.846	57	0.983
	TOTAL *	$626,753	$3,118,984	1.003		269	

		(1) FISCAL A.Y.E. 06/30/2017 AGGREGATE LOSS COSTS AT	(2) FISCAL A.Y.E. 2013 - 2017 AGG LOSS COST	(3) FIVE YEAR EXPERIENCE	(4) 	(5) NUMBER OF	(6) BAL CELL
TYPE OF POLICY	CLASS GROUP	CURRENT LEVEL	CURRENT LEVEL	RATIO	RELATIV.	OCCURRENCES	RELATIV.
37 MULT INDUST/PROC.	31 LIGHT CONTRACTING	$95	$560	0.000	0.000	0	1.013
	32 MEDIUM CONTRCTING	110,643	630,884	2.400	2.256	26	1.043
	33 HEAVY CONTRACTING	28,299	159,394	0.393	0.369	7	0.983
	34 DEALER OR DISTRIB	4,432	16,427	2.166	2.036	3	0.989
	35 LGT. MANUFACTURER	14,477	87,260	1.476	1.387	5	0.981
	36 MED. MANUFACTURER	427,979	2,417,902	0.390	0.367	45	0.964
	37 HVY. MANUFACTURER	627,524	3,032,194	0.528	0.496	24	0.958
	38 MISC. OPERATION	15,162	78,194	0.111	0.104	2	0.992
	TOTAL *	$1,228,611	$6,422,815	0.657		112	
38 MULT CONTRACTORS	30 SERVICE	$306,979	$1,534,821	0.778	0.731	87	0.964
	31 LIGHT CONTRACTING	439,876	2,053,411	1.264	1.189	219	1.013
	32 MEDIUM CONTRCTING	1,444,098	6,897,152	1.317	1.238	554	1.042
	33 HEAVY CONTRACTING	580,816	2,543,561	0.983	0.924	81	0.983
	38 MISC. OPERATION	34,973	242,828	0.161	0.151	2	0.992
	TOTAL *	$2,806,742	$13,271,773	1.166		943	
TOTAL ALL TOP	30 SERVICE	$442,515	$2,037,131	0.753		131	
	31 LIGHT CONTRACTING	720,913	3,442,551	1.299		406	
	32 MEDIUM CONTRCTING	2,984,404	13,891,962	1.402		1,219	
	33 HEAVY CONTRACTING	1,075,805	4,949,231	0.981		187	
	34 DEALER OR DISTRIB	850,678	4,671,852	0.860		218	
	35 LGT. MANUFACTURER	59,742	218,300	0.569		6	
	36 MED. MANUFACTURER	892,702	4,657,783	0.718		98	
	37 HVY. MANUFACTURER	791,421	3,491,964	0.440		28	
	38 MISC. OPERATION	473,317	2,225,895	1.175		136	
	TOTAL *	$8,291,497	$39,586,669	1.064		2,429	

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

```
                              TABLE 14
                               IOWA
                             PRODUCTS
                  BASIC LIMIT RELATIVE CHANGE ANALYSIS
                  -----------------------------------


             (1)          (2)          (3)          (4)          (5)
            BAILEY
           FORMULA    CREDIBILITY     Z-WTD      BALANCED     INDICATED
    TOP    RELATIV.        Z        RELATIV.     RELATIV.     CHANGE *

     10     0.908        0.385        0.964        0.961

     34     1.062        0.394        1.024        1.021        + 6.2%
     36     0.945        0.198        0.989        0.986        + 2.6%
     37     1.036        0.541        1.019        1.017        + 5.8%




   CLASS
   GROUP
     3      0.939        0.535        0.967        0.971
     4      1.062        0.425        1.026        1.029
     5      1.158        0.132        1.020        1.023

     6      0.984        0.341        0.995        0.998
     7      0.957        0.186        0.992        0.995
```

* 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: 0.959
                          TOP 36: 0.962
                          TOP 37: 0.953

```
                                TABLE 15
                               MULTISTATE
                                PRODUCTS
                      BASIC LIMIT RELATIVE CHANGE ANALYSIS
                    ---------------------------------------------
                    SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS


                                         (1)             (2)         (3)       (4)       (5)        (6)
                                     CALENDAR A.Y.E.  CALENDAR A.Y.E.
                                     12/31/2016 AGGREGATE 2012 - 2016  FIVE  YEAR
                                     LOSS COSTS AT   AGG LOSS COST  EXPERIENCE          NUMBER OF   BAL CELL
         TYPE OF POLICY        CLASS GROUP     CURRENT LEVEL   CURRENT LEVEL    RATIO   RELATIV.  OCCURRENCES  RELATIV.

10 MONOLINE               03 MAN,DLR,DSTFD/DRG    $21,602,530     $83,447,793   0.852    0.787      1,581      0.933
                          04 DLR,DST-NOTFD/DRG      9,679,270      41,811,675   1.278    1.182        666      0.990
                          05 MAN.NTFD/DRG(LOW)      1,692,267       7,299,063   0.767    0.709         64      0.984
                          06 MAN.NTFD/DRG(MED)     10,333,678      44,740,395   0.937    0.867        509      0.960
                          07 MAN.NTFD/DRG(HGH)      2,805,495      12,365,722   1.011    0.935        148      0.957
                              TOTAL *             $46,113,240    $189,664,648   0.967               2,968

34 MULT MERCANTILE        03 MAN,DLR,DSTFD/DRG     $5,884,889     $28,782,063   1.470    1.359        936      0.991
                          04 DLR,DST-NOTFD/DRG     32,124,091     153,045,789   1.148    1.061      2,174      1.051
                          06 MAN.NTFD/DRG(MED)         15,743          64,180   0.000    0.000          0      1.019
                              TOTAL *             $38,024,723    $181,892,032   1.197               3,110

36 MULT SERVICES          04 DLR,DST-NOTFD/DRG     $3,789,140     $17,974,549   1.089    1.007        780      1.016
                          06 MAN.NTFD/DRG(MED)         60,544         302,132   0.755    0.698          8      0.985
                              TOTAL *              $3,849,684     $18,276,681   1.084                 788

37 MULT INDUST/PROC.      03 MAN,DLR,DSTFD/DRG    $18,758,762     $92,830,487   1.011    0.935      3,210      0.987
                          05 MAN.NTFD/DRG(LOW)      3,999,375      22,161,197   1.454    1.345        287      1.040
                          06 MAN.NTFD/DRG(MED)     30,062,799     137,041,119   1.114    1.030      1,814      1.015
                          07 MAN.NTFD/DRG(HGH)      8,087,615      39,304,471   1.047    0.968        549      1.012
                              TOTAL *             $60,908,551    $291,337,274   1.096               5,860


 TOTAL ALL    TOP         03 MAN,DLR,DSTFD/DRG    $46,246,181    $205,060,343   0.995               5,727
                          04 DLR,DST-NOTFD/DRG     45,592,501     212,832,013   1.171               3,620
                          05 MAN.NTFD/DRG(LOW)      5,691,642      29,460,260   1.250                 351
                          06 MAN.NTFD/DRG(MED)     40,472,764     182,147,826   1.068               2,331
                          07 MAN.NTFD/DRG(HGH)     10,893,110      51,670,193   1.038                 697
                              TOTAL  *           $148,896,198    $681,170,635   1.082              12,726




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

```
                                  TABLE 16
                                   IOWA
                       LOCAL PRODUCTS/COMPLETED OPERATIONS
                       BASIC LIMIT RELATIVE CHANGE ANALYSIS
                       ------------------------------------


                   (1)          (2)         (3)          (4)          (5)
                  BAILEY
                  FORMULA     CREDIBILITY   Z-WTD      BALANCED      INDICATED
          TOP     RELATIV.        Z        RELATIV.    RELATIV.      CHANGE *

          10       1.007       0.764       1.005        1.004

          34       1.052       0.588       1.030        1.029         2.5
          36       1.019       0.533       1.010        1.009         0.5
          37       0.934       0.146       0.990        0.989        -1.5
          38       0.991       1.000       0.991        0.990        -1.4




       CLASS
       GROUP
          1        0.852       0.596       0.909        0.903
          2        1.029       0.508       1.015        1.008
         11        1.067       0.341       1.022        1.015

         12        1.022       1.000       1.022        1.015
         13        0.802       0.282       0.940        0.933




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

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

                  (1)           (2)           (3)           (4)
                BAILEY
                FORMULA      CREDIBILITY      Z-WTD       BALANCED
        STATE   RELATIV          Z           RELATIV      RELATIV.
                1.324         0.399          1.119         1.116
                1.182         0.648          1.114         1.111
                1.139         0.606          1.082         1.079
                1.138         0.577          1.078         1.075
                1.449         0.200          1.077         1.074
                1.178         0.429          1.073         1.070
                1.279         0.243          1.062         1.059
                1.106         0.442          1.045         1.043
                1.134         0.344          1.044         1.041
                1.097         0.371          1.035         1.032
                1.093         0.381          1.034         1.032
                1.132         0.256          1.032         1.029
                1.211         0.162          1.031         1.029
                1.122         0.206          1.024         1.021
                1.042         0.508          1.021         1.018
                1.131         0.166          1.021         1.018
                1.046         0.224          1.010         1.007
                1.036         0.251          1.009         1.006
        Iowa    1.009         0.291          1.003         1.000
                1.009         0.228          1.002         0.999
                1.001         0.274          1.000         0.998
                0.971         0.150          0.996         0.993
                0.983         0.474          0.992         0.989
                0.962         0.229          0.991         0.988
                0.975         0.363          0.991         0.988
                0.970         0.333          0.990         0.987
                0.957         0.247          0.989         0.987
                0.890         0.104          0.988         0.985
                0.966         0.347          0.988         0.985
                0.971         0.428          0.988         0.985
                0.955         0.336          0.985         0.982
                0.943         0.307          0.982         0.980
                0.951         0.462          0.977         0.975
                0.775         0.097          0.976         0.973
                0.841         0.161          0.973         0.970
                0.926         0.385          0.971         0.968
                0.938         0.512          0.968         0.965
                0.882         0.281          0.965         0.963
                0.904         0.382          0.962         0.960
                0.835         0.230          0.959         0.957
                0.749         0.166          0.953         0.951
                0.527         0.076          0.952         0.950
                0.760         0.206          0.945         0.943
                0.841         0.337          0.943         0.941
                0.702         0.168          0.942         0.940
                0.682         0.164          0.939         0.937
                0.475         0.085          0.939         0.936
                0.853         0.407          0.937         0.935
                0.708         0.188          0.937         0.935
                0.812         0.350          0.930         0.927
                0.791         0.594          0.870         0.868
                0.714         0.502          0.844         0.842
```

* Sorted by balanced relative change

TABLE 17
IOWA
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. 12/31/2016 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) CALENDAR A.Y.E. 2012 – 2016 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	$9,675	$45,291	0.914	0.952	8	0.906
	02 RET.STRS-NTFD/DRG	16,918	76,052	1.531	1.594	7	1.012
	11 COMP. OPS. (LOW)	47,296	201,672	0.446	0.464	5	1.020
	12 COMP. OPS. (MED)	873,829	3,548,528	1.017	1.059	73	1.019
	13 COMP. OPS. (HGH)	99,682	351,066	0.605	0.630	6	0.937
	TOTAL *	$1,047,400	$4,222,609	0.959		99	
34 MULT MERCANTILE	01 RET.STRS-FOOD/DRG	$29,835	$156,742	0.304	0.317	16	0.929
	02 RET.STRS-NTFD/DRG	52,748	240,516	0.356	0.370	5	1.037
	12 COMP. OPS. (MED)	6,959	32,324	0.000	0.000	0	1.045
	TOTAL *	$89,542	$429,582	0.311		21	
36 MULT SERVICES	01 RET.STRS-FOOD/DRG	$7,396	$34,599	3.204	3.336	2	0.911
	02 RET.STRS-NTFD/DRG	107,978	488,328	1.545	1.609	60	1.017
	11 COMP. OPS. (LOW)	49,534	196,914	2.071	2.156	21	1.024
	12 COMP. OPS. (MED)	32,215	238,900	1.179	1.227	12	1.024
	13 COMP. OPS. (HGH)	11,792	60,967	1.759	1.832	8	0.941
	TOTAL *	$208,915	$1,019,708	1.684		103	
37 MULT INDUST/PROC.	01 RET.STRS-FOOD/DRG	$7	$24	0.000	0.000	0	0.893
	11 COMP. OPS. (LOW)	405	1,813	0.000	0.000	0	1.004
	12 COMP. OPS. (MED)	46,318	259,196	1.542	1.606	6	1.004
	13 COMP. OPS. (HGH)	0	38	0.000	0.000	0	0.923
	TOTAL *	$46,730	$261,071	1.528		6	
38 MULT CONTRACTORS	11 COMP. OPS. (LOW)	$130,182	$586,772	0.690	0.719	9	1.005
	12 COMP. OPS. (MED)	2,281,087	10,416,106	0.801	0.834	202	1.005
	13 COMP. OPS. (HGH)	239,462	1,105,572	2.291	2.386	28	0.923
	TOTAL *	$2,650,731	$12,108,450	0.930		239	
TOTAL ALL TOP	01 RET.STRS-FOOD/DRG	$46,913	$236,656	0.887		26	
	02 RET.STRS-NTFD/DRG	177,644	804,896	1.191		72	
	11 COMP. OPS. (LOW)	227,417	987,171	0.939		35	
	12 COMP. OPS. (MED)	3,240,408	14,495,054	0.872		293	
	13 COMP. OPS. (HGH)	350,936	1,517,643	1.795		42	
	TOTAL *	$4,043,318	$18,041,420	0.970		468	

* 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
```

		(1)	(2)	(3)	(4)	(5)	(6)
		CALENDAR A.Y.E.	CALENDAR A.Y.E.				
		12/31/2016 AGGREGATE	2012 - 2016	FIVE YEAR		NUMBER OF	BAL CELL
		LOSS COSTS AT	AGG LOSS COST	EXPERIENCE		NUMBER OF	BAL CELL
TYPE OF POLICY	CLASS GROUP	CURRENT LEVEL	CURRENT LEVEL	RATIO	RELATIV.	OCCURRENCES	RELATIV.
10 MONOLINE	01 RET.STRS-FOOD/DRG	$3,182,470	$12,836,961	0.802		767	
	02 RET.STRS-NTFD/DRG	2,924,031	13,338,270	1.084		529	
	11 COMP. OPS. (LOW)	4,590,082	20,152,490	1.003		479	
	12 COMP. OPS. (MED)	89,807,887	402,728,315	1.020		6,697	
	13 COMP. OPS. (HGH)	9,315,286	47,098,800	0.569		288	
	TOTAL *	$109,819,756	$496,154,836	0.977		8,760	
34 MULT MERCANTILE	01 RET.STRS-FOOD/DRG	$11,237,823	$48,248,320	0.852		4,326	
	02 RET.STRS-NTFD/DRG	6,276,333	28,286,473	0.989		731	
	12 COMP. OPS. (MED)	2,175,660	11,035,192	1.187		135	
	TOTAL *	$19,689,816	$87,569,985	0.932		5,192	
36 MULT SERVICES	01 RET.STRS-FOOD/DRG	$987,041	$4,702,276	0.977		241	
	02 RET.STRS-NTFD/DRG	12,282,390	51,445,436	0.994		2,617	
	11 COMP. OPS. (LOW)	3,800,013	17,251,395	1.019		578	
	12 COMP. OPS. (MED)	4,607,097	22,619,676	0.874		739	
	13 COMP. OPS. (HGH)	1,134,525	6,178,738	1.015		99	
	TOTAL *	$22,811,066	$102,197,521	0.974		4,274	
37 MULT INDUST/PROC.	01 RET.STRS-FOOD/DRG	$21,424	$92,620	4.539		1	
	11 COMP. OPS. (LOW)	149,163	688,925	0.443		17	
	12 COMP. OPS. (MED)	4,495,367	21,801,280	0.926		305	
	13 COMP. OPS. (HGH)	51,766	453,230	0.413		1	
	TOTAL *	$4,717,720	$23,036,055	0.921		324	
38 MULT CONTRACTORS	11 COMP. OPS. (LOW)	$9,456,335	$43,962,865	1.026		677	
	12 COMP. OPS. (MED)	171,965,665	815,820,275	0.958		13,853	
	13 COMP. OPS. (HGH)	17,646,239	82,295,884	0.866		809	
	TOTAL *	$199,068,239	$942,079,024	0.953		15,339	
TOTAL ALL TOP	01 RET.STRS-FOOD/DRG	$15,428,758	$65,880,177	0.854		5,335	
	02 RET.STRS-NTFD/DRG	21,482,754	93,070,179	1.005		3,877	
	11 COMP. OPS. (LOW)	17,995,593	82,055,675	1.014		1,751	
	12 COMP. OPS. (MED)	273,051,676	1,274,004,738	0.978		21,729	
	13 COMP. OPS. (HGH)	28,147,816	136,026,652	0.773		1,197	
	TOTAL *	$356,106,597	$1,651,037,421	0.960		33,889	

```
 * 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. ALCCL 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 and territory (if applicable) relativities will serve to derive the relationship of the various classification and territories 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:

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

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:

$$TOP_i = \frac{\sum_j \sum_k W_{ijk} r_{ijk}}{\sum_j \sum_k W_{ijk} CG_j TER_k} \qquad \text{where } 1 \le i \le m$$

$$CG_j = \frac{\sum_i \sum_k W_{ijk} r_{ijk}}{\sum_i \sum_k W_{ijk} TOP_i TER_k} \qquad \text{where } 1 \le j \le n$$

$$TER_k = \frac{\sum_i \sum_j W_{ijk} r_{ijk}}{\sum_i \sum_j W_{ijk} TOP_i CG_j} \qquad \text{where } 1 \le k \le p$$

TOP_i is the relative change for the ith type of policy;

CG_j is the relative change for the jth class group;

TER_k is the relative change for the kth territory;

W_{ijk} is the aggregate loss costs at current level for the ith

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

r_{ijk} is the relative change for the ith type of policy,

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

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 territories in the analysis;

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

For Manufacturers and Contractors, and Products:

$$TOP_i = \frac{\sum_j W_{ij} r_{ij}}{\sum_j W_{ij} CG_j} \qquad \text{where } 1 \leq i \leq m$$

$$CG_j = \frac{\sum_i W_{ij} r_{ij}}{\sum_i W_{ij} TOP_i} \qquad \text{where } 1 \leq j \leq n$$

TOP_i is the relative change for the ith type of policy;

CG_j is the relative change for the jth class group;

W_{ij} is the aggregate loss costs at current level for the ith

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

r_{ij} is the relative change for the ith 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;

For Local Products/Completed Operations:

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

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

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

TOP_i is the relative change for the ith type of policy;

CG_j is the relative change for the jth class group;

ST_k is the relative change for the kth state;

W_{ijk} is the aggregate loss costs at current level for the ith

   type of policy, jth class group and kth state;

r_{ijk} is the relative change for the ith type of policy,

   jth class group and kth 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;

ITERATIVE
PROCEDURE
(Cont'd)

For example, for Owners, Landlords and Tenants, the procedure starts by inserting the actual relativities for type of policy and class group into the third formula to get a territory relativity. This result is then used with the class group relativity in the first formula to get a new type of policy relativity, which in turn is substituted along with the territory relativity into the second formula to get a new class group relativity. 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 $Z = \sqrt{P/18,000}$ for Owners, Landlords and Tenants, $Z = \sqrt{P/18,000}$ for Manufacturers and Contractors and $Z = \sqrt{P/20,000}$ 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 $Z = \sqrt{P/15,000}$ for type of policy and class group, and $Z = \sqrt{P/5,500}$ for state(in this case, P is the 5 year occurrence total for a given state). Credibility-weighted relativities are then calculated as follows:

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

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

R is the class group, territory, 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 and the class group, territory (if applicable) and state relativities which result from the aforementioned procedures are then used to generate indicated monoline classification loss cost changes. The multiline relativities are 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.

COMMERCIAL PACKAGE POLICY

TABLE OF CONTENTS

SECTION C - REVISED CLM DIVISION NINE

PACKAGE MODIFICATION FACTORS

Package Modification Assignment (PMA)	Premium From CLM Division			
	Two	Three, Four, Five, Eight Property	Four, Six Liability	All Other Divisions
Apartment House	.90	1.00	1.00	1.00
Contractors	.90	1.00	1.00	1.00
Industrial & Processing	.90	.92	1.00	1.00
Institutional	.90	.70	1.00	1.00
Mercantile	.90	.82	.82	1.00
Motel/Hotel	.90	.99	1.00	1.00
Office	.90	.78	.98	1.00
Service	.90	.96	1.00	1.00

Table 1. Package Modification Factors