



**NOT YET REVIEWED AND ACCEPTED BY THE COMMITTEES AND GOVERNING BOARD.**

**ACTUARIAL & CLASSIFICATION AND RATING COMMITTEES -  
RECORD OF JOINT MEETING**

A meeting of the Actuarial and Classification & Rating Committees of the Delaware Compensation Rating Bureau, Inc. was held in the Hagley Room of The Doubletree Hotel, 700 King Street, Wilmington, Delaware on Tuesday, August 7, 2007 at 10 a.m.

The following members were present:

Actuarial Committee

Not Represented	American Home Assurance Company
Not Represented	Continental Casualty Company
Mr. A. Becker	Harleysville Mutual Insurance Company
Mr. D. Lawson	Liberty Mutual Insurance Company*
Mr. K. Brady	PMA Insurance Company
Mr. B. Clancy	Travelers Property & Casualty Company*

Classification and Rating Committee

Ms. E. O'Hara	American Home Assurance Company**
Mr. S. Reaser	Anguard Insurance Company
Mr. D. Soja	Hartford Accident & Indemnity Company
Mr. D. Lawson	Liberty Mutual Insurance Company*
Not Represented	New Castle County Chamber of Commerce
Mr. R. Prybutok	National Federation of Independent Business**
Mr. W. Carney	PMA Insurance Company
Mr. B. Clancy	Travelers Property & Casualty Company*

Mr. T. Wisecarver	Chair - Ex Officio
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Also present were:

Mr. J. Potts	Duane, Morris LLP
Mr. J. Neidermyer	INS Consultants, Inc.
Mr. R. Edmunds	PMA Insurance Company
Ms. F. Barton	Bureau Staff
Ms. D. Belfus	Bureau Staff
Mr. B. Decker	Bureau Staff
Mr. M. Doyle	Bureau Staff
Mr. P. Yoon	Bureau Staff

\* Member of both committees

\*\* Present for Part of Meeting

The Antitrust Preamble was read at the beginning of the meeting for the benefit of all participants. Participants gave brief self-introductions.

The Committee discussion then moved to a review of staff work supporting the December 1, 2007 Residual Market Rate and Voluntary Market Loss Cost Filing. Staff encouraged interactive questions and comments as the meeting progressed. The more substantive elements of dialogue precipitated during the meeting in that regard are set forth as inserted “Question,” “Comment” and/or “Answer” exchanges in the description of the meeting proceedings following below.

#### **ITEM (1) REVIEW OF THE PROPOSED DECEMBER 1, 2007 RESIDUAL MARKET RATE AND VOLUNTARY MARKET LOSS COST FILING**

Participants had been provided in advance of the meeting with electronic agenda materials providing supporting information, analysis and results of Bureau staff’s preparation of a residual market rate and voluntary market loss cost filing effective December 1, 2007. The Committee heard summary descriptions of those materials organized in topical groups as shown following. Questions posed during the meeting, with staff responses given and participant discussion ensuing, are set forth in the chronology of the presentation below.

##### **Minimum and Maximum Corporate Officer Payrolls**

A staff memorandum dated June 11, 2007 and proposed Manual language revisions updating the current limitations on payrolls reported by corporate officers for premium determination purposes was referenced. That memorandum was part of the second mailing of agenda materials for the meeting. With the proposed revisions, staff noted that these parameters continued to be maintained in conformance with prevailing wage levels.

##### **Overall Indicated Changes in Collectible and Manual Rating Values**

###### **Exhibit 12**

Exhibit 12 was reviewed. Estimates of historical ultimate on-level policy year loss and loss-adjustment expense ratios (Lines (1a) through (1e)) and ultimate on-level policy year loss and loss -adjustment expense ratios trended to the mid-point of the prospective rating period (Lines (2a) through (2e)) were noted as having been evaluated, subject to a schedule of loss limitations by policy year reflecting the expectation that loss size would increase over time as wages, benefits and prices were subject to both ongoing economic inflation and changes in utilization. Staff outlined considerations that had led to the adoption of a limited-loss analysis for purposes of the December 1, 2004 filing proposal, adaptations of loss limitation procedures applied in the December 1, 2005 and December 1, 2006 filings and the proposals currently under discussion.

An excess loss factor (Line 3(a)) was included in the analysis to account for the effects of the limitations applied in the Bureau’s loss development and trend analyses. Comparison of the trended loss and loss-adjustment expense ratio to a permissible loss and loss-adjustment expense ratio based on econometric analysis (Lines (4a) and (5), respectively) produced an indicated overall average change in residual market rate level prior to effects of the July 1, 2008 benefit change. Adjustment for the estimated effects of the July 1, 2008 benefit change (Line (7)) resulted in the indicated change in residual market rates (Line (8)).

The proposed change in voluntary market loss costs (Line (9)) was derived from the indicated change in residual market rates by adjusting the latter indication for the effects of changes in the permissible loss ratio, including loss-adjustment expense and loss-based assessments.

Staff pointed out the proposed overall changes in residual market rates (20.02 percent decrease) and voluntary market loss costs (16.35 percent decrease).

Staff noted the proposed filing's accounting for effects of the Experience Rating Plan in the determination of proposed changes in manual rating values, as presented on Exhibit 12. This analysis started with the collectible premium ratios underlying presently-approved rating values (Line 10). The Bureau had then measured the collectible premium ratios that the Experience Rating Plan was expected to produce during the proposed rating period (Line 11). Using the relationships between these current and estimated future collectible premium ratios (Line 12), staff had derived indicated changes in manual residual market rates (Line 13). Indicated changes in manual voluntary market loss costs (Line 17) had been derived by also accounting for the nominal impact of changes in the offset to voluntary market rating values for continuation of the approved surcharge program in the Delaware Insurance Plan (Lines 15 and 16).

**Question:** Staff was asked whether agenda materials showed support for the values appearing on line 9 of Exhibit 12.

**Answer:** Attendees were informed that both the current and proposed entries on line 9 of Exhibit 12 were shown and/or could be derived from detail shown in Exhibit 11.

### **Loss Development**

Exhibits 1 (Limited Loss), 1a, 1b, 2 (Limited Loss), 2a (Limited Loss), 2b and 7

Staff described the content of each of the referenced exhibits from the meeting agenda materials. Highlights from those descriptions are set forth below.

Exhibit 1 (Limited Loss) (Table I) provided summaries of financial data reported by Bureau members for the calendar years ending December 31, 2002 through 2006, inclusive. Successive calendar year evaluations of premiums, indemnity incurred losses, medical incurred losses, indemnity paid losses and medical paid losses were compared to derive age-to-age development factors or "link ratios" to be used in the Bureau's estimation of ultimate premiums and losses for prior policy years. In making the comparisons producing specific link ratios, data for all carriers with available, and credible data were used, with the result that each calendar-year-end evaluation could show two different amounts; one for purposes of comparison to the prior calendar year end and the other for purposes of comparison to the subsequent calendar year end.

Staff noted that the data in Table I, consistent with previous Bureau filings, excluded data for large deductible coverages. That exclusion was noted as being responsive to the lack of independent sources for loss data gross of large deductible reimbursements and the potential for significant differences in underlying hazard and loss potential inherent in large deductible business, as compared to business insured on a first-dollar basis.

Claims exceeding selected limit values in paid and/or incurred values had been identified using large claim data separately reported by carriers, and the effect of capping such losses at the selected limitations was reflected in the combined paid and/or incurred amounts in Table I. This adjustment process was described as having affected every complete policy year except 1996, 2000, 2001 and 2005 on a paid basis, and every complete policy year on an incurred basis, for at least one evaluation. Exhibit 1a provided background analysis of trend in loss limitations consistent with an excess ratio of 0.0757 (the excess factor applicable for a selected loss limitation of \$1,500,000 in the December 1, 2004 filing, when limited loss analysis was first applied to a Bureau filing) and the series of loss limits applied by policy year in producing Exhibit 1 on a limited basis, consistent with that observed trend. Exhibit 1b showed the reductions to reported loss amounts produced by application of the limits from Exhibit 1a.

Staff provided background for, and an outline of, adjustments made to medical case reserves used as the basis for loss development analysis in the proposed filing. It was noted that the December 1, 2006 filing had included instances in which cumulative medical incurred loss development factors had exceeded cumulative paid loss development factors at several common maturities. Review of the December 1, 2005 filing undertaken upon recognizing this feature of the December 1, 2006 filing showed similar results. The problematic nature of this result (having both larger loss development factors and a higher statistical base for incurred losses than paid losses) was discussed.

Staff work performed in response to these findings was described. Questions addressed at loss development experience had been included in the Bureau's 2007 survey of large carrier groups. Several carrier groups had been given tabulations of their own reported financial data which resulted in medical incurred loss development factors exceeding the counterpart medical paid loss development factors, with those carriers being asked to provide insight into known or possible causes for those indications. Carrier groups whose own data was either very limited in volume or did not produce incurred loss development factors exceeding paid loss development factors were shown aggregate Bureau data and asked to opine on probable or possible causes for those results.

Case reserve strengthening in recent development periods was identified in many responses as causing or contributing to the observed behavior of development factors. No actionable alternatives to this explanation were forthcoming from the survey, or from staff review of the filing data.

Bureau staff researched actuarial literature for possible approaches to this situation, and noted the Berquist-Sherman method published in 1977. Various measures of relative case reserve strength, loss inflation and related metrics were considered, and staff elected to rely on loss development experience underlying the December 1, 2004 filing (the most recent Delaware filing in which cumulative incurred loss development factors had not exceeded comparable paid loss development factors at any maturity or maturities) as a benchmark for expected case reserve increases. Comparison of the average change in medical case reserves in the data from the December 1, 2004 filing with that applicable to this filing showed current medical case reserves increasing at a level higher than that underlying the 2004 filing by a ratio of 1.1014. Successively higher powers of this ratio were used to adjust medical case reserves for evaluations prior to December 31, 2006 before proceeding with the loss development analysis for this filing. Illustrated effects of this adjustment were provided in Exhibit 2b.

**Comment:** A committee member observed that having incurred development factors greater than comparable paid development factors was very rare, and that such a circumstance was practically if not literally a phenomenon limited to Delaware. In this light it was suggested that the escalation in case reserves could be attributed to claim adjustors responding to higher costs in Delaware, driven by factors unique to this jurisdiction, by putting up higher medical case reserves. In the opinion of this member, paid loss data might more properly be adjusted to increase expected development and projected ultimate losses, instead of the reverse adjustments made by staff to case incurred losses. Various attendees opined that adopting such an approach would very significantly change (increase) the filing's indicated change in rating values.

**Answer:** Staff observed that Delaware was one of very few states still without various formal medical cost containment features having been applied to workers compensation, and that to the extent that such system features impacted loss levels and/or development Delaware might be expected to be something of an outlier in comparison to other states. Staff noted that the loss development methods being employed for this filing would, absent some judgmental or other intervention, project additional future case reserve adjustments comparable to those shown in recent history, and expressed the view that such projections were very likely to be overstated. With respect to the paid loss development approach, staff noted that available data tracked payments by policy year for some 20 years, and that those payments should be responsive to various features of the Delaware system at large.

**Comment:** It was noted that the case reserve changes of interest had been entered by adjusters before the recent Delaware law changes were known.

**Answer:** In this filing, the Bureau was purposely not looking at law changes, the implementation of which remained a prospective enterprise. The Bureau's proposed loss development method only responded to the fact that case reserve changes observed within the loss development experience period applicable to this proposal appeared much larger than normal. Staff expressed the concern that if case reserves had been raised by 10% more per year than normal in that experience period the unadjusted method would project similar extraordinary adjustments each year in the future. Staff stressed that it had not reduced December 31, 2006 case reserve or incurred loss values, but had adjusted prior reserves to produce a more typical growth rate for purposes of estimating ultimate losses using actual December 31, 2006 loss reports.

**Question:** An attendee asked whether the Bureau's analysis for this filing showed that losses were either under- or over-reserved.

**Answer:** Staff and other attendees advised that even taking recent case reserve changes into account it was likely that ultimate losses would be higher than current reported incurred losses. Staff presented the expectation that the extent to which case reserves would increase before ultimate losses were known would be less than what would have taken place before the adjustments in question had taken place. It was noted that in terms of actuarial methods, having case loss estimates falling either over or under true ultimate values was not problematic, so long as the direction and extent of the difference was reasonably consistent. Problems arose when the level of case reserve adequacy or inadequacy underwent significant changes. In a reasonably consistent environment, actuarial methods such as those employed by the Bureau could produce appropriate ultimate loss estimates, and in fact if loss payment patterns were sufficiently uniform, such estimates could be made without using any case reserve data whatsoever.

**Comment:** It was observed that the Bureau's proposed approach had considered available history, but had imposed adjustments to temper the expected future rate of change to medical case reserves.

**Answer:** Staff agreed, likening the periods of development within which larger-than-usual changes in case reserves had been made to a time series with a short-term spike. The proposed method was intended to return future projections to the more normal slope of that line instead of forecasting additional spikes into the future.

**Question:** An attendee asked whether the Bureau had reduced reported reserve estimates as part of its method.

**Answer:** Staff replied in the negative, noting that the adjustments proposed affected the expected future rate of change to medical case reserves. The analysis supporting the proposed filing had used the most recent medical case reserves intact in making the filing projections.

**Comment:** A committee member stated that paid loss data was inherently slow to respond to, and fully reflect, shifts in cost levels and/or emergence patterns.

**Answer:** Staff explained that the Bureau's payment data measured incremental payments for each policy year individually until it reached a maturity of 20 years, and felt that while payments remained to be made after that point in time the available data should adequately and appropriately reflect a substantial majority of ultimate costs.

**Comment:** An attendee observed that closure rates were down on the most recent diagonal, and interpreted that change to support the expectation of more and/or larger future payments than had been seen in available payment data. In support of this point page 1 of Exhibit 7 was cited, wherein the closure rate for policy year 2000 at 5<sup>th</sup> report (the most recent observation available at that point of maturity) was .9180, and the lowest closure rate seen at 5<sup>th</sup> report on Exhibit 7.

**Answer:** Staff outlined its reading and interpretation of Exhibit 7, noting a change in closure rates occurring between policy years 1998 and 2000 with closure rates appearing relatively stable since that change.

**Comment:** If the observed change in closure rates persists, there are fewer open claims in older years (producing observed payment and reserve data) than will be the case when more recent policy years mature to similar ages in the future.

**Answer:** Staff agreed, while adding that in light of the recent shift in medical case reserves there were also higher case reserves in hand for those claims than had been true at the outset of the observed changes.

**Comment:** Credence should be given to the claims adjusters setting the reserves, as they were responding to system features and claim characteristics that were presented in the claims at hand. Based on the view that such estimates were credible indicators of future costs, a committee member argued that ultimate loss estimates arrived at based on paid losses should be adjusted upwards, rather than decreasing such estimates arrived at using incurred loss data.

**Question:** An attendee inquired as to what incentives might be in place that would influence adjusters to establish either high or low case reserves.

**Answer:** Staff speculated that claims adjusters were motivated to try to accurately peg the future costs of the claims for which they were responsible.

**Comment:** An attendee added that as a carrier, there was no perceived benefit associated with being either under or over reserved.

**Comment:** It was again noted that in some respects consistency was a more important goal in case reserving than was absolute adequacy or accuracy.

**Question:** Staff was asked why this phenomenon might have been more likely to arise in Delaware.

**Comment:** An attendee responded that the case reserves under review were likely established because of adverse expectations about future costs.

**Comment:** Another attendee expected that the recent law changes would address some of those issues and that they might result in different levels of medical inflation than had been seen previously and than those anticipated in the case reserves.

**Answer:** Staff added that the filing under discussion was intentionally applicable to conditions before implementation of the more significant law changes enacted but still under development in 2007, and noted specifically that the medical fee schedule authorized by Senate Bill 1 was yet to be established.

**Comment:** It was observed that the case reserves in question had been set significantly before the Bureau's analysis was performed, and generally reflected claim adjusters' perspectives well before the reforms had even been proposed, let alone enacted.

**Answer:** Staff commented that in its review of actuarial literature and surveys of carriers it had not encountered support for an approach that would adjust paid loss projections upward in response to an observation that case reserves had shown a short-term period of escalation.

**Comment:** It was maintained that despite the observed increases, case reserves weren't actually more adequate than before. The speaker felt that adjusters were responding to what they were seeing in their claims and other similar files. It was asserted that the DCRB method effectively assumed that costs were not really going up, but only that case incurred loss estimates were approaching ultimate levels faster than had previously been the case. The alternative of adjusting paid loss projections upward was seen by this attendee as more realistically recognizing that ultimate loss levels were going up.

**Answer:** Staff observed that with the proposed adjustment applied medical severity trend in this filing was between 7 and 8 percent. In the 2006 filing (which contained effects of cumulative incurred loss development factors higher than paid loss development factors) medical severity trend had been 10 percent. This year, without adjustment, the medical severity trend would have been greater than 10 percent.

**Comment:** The committee member remained concerned that the Bureau's approach was masking and reversing something that was real and that should be fully reflected in the filing indication.

**Answer:** The carrier survey questions addressing this issue at some length had elicited responses of the nature of a specific period of notable case reserve strengthening. Aggregate data suggested that such changes were not ongoing or more likely in the future.

**Question:** Staff was asked to refresh its description of the adjustments it was proposing to the case incurred loss development method for medical benefits.

**Answer:** What had not been done was any reduction in the most recent available statements of medical case reserves. What had been changed was the pattern by which reserves were expected to change from that level going forward. Older evaluations' outstanding medical losses had been increased to get rates of change more typical of long-term expectations, and to mitigate the escalation of incurred loss development factors to levels higher than paid loss development factors. The filing relied on ultimate loss estimates that were the average of paid and incurred loss development methods, so that paid loss experience had been taken into account on a basis equal to the adjusted incurred loss development method.

**Comment:** It was stated that increased case reserves could reflect very long-term expectations (beyond the twenty years of available policy year payout data), and the opinion that paid loss projections were understated was reinforced.

**Answer:** Staff had not previously encountered this interpretation of available data, and was mindful of the extended period of time over which payment data was gathered, the proportional application of development, and the carrier responses to the Bureau's survey questions. Rather than extending the committees' discussion, staff indicated that it would give the comments provided further consideration subsequent to the meeting.

**Comment:** The paid method does not respond to adjusters putting up more reserves for anticipated long-term events. There is a very muted response of paid losses to changes in the loss environment in the Bureau's method.

**Answer:** While incremental changes in paid might be relatively small, the cumulative effect over twenty successive maturities could still be rather significant.

**Question:** Staff was asked whether the issue regarding comparative incurred loss and paid loss development factors had arisen in Pennsylvania.

**Answer:** The reply was that it had not. Without adjustment, Pennsylvania incurred loss development factors remained lower than comparable paid loss development factors.

**Comment:** It was suggested that staff look at the incurred to paid ratio to determine whether that might be understated.

**Answer:** Staff perceived that point to be part of the preceding discussion and confirmed that it would review pertinent metrics before proceeding.

**Question:** A query arose as to how many “large” claims were in the Delaware filing data.

**Answer:** Staff provided the following counts of limited claims by policy year for this filing’s analysis:

2005 - 1 claim, 2004 – 4 claims, 2003 – 1 claim, 2002 – 4 claims, 2001 – 2 claims and 2000 – 7 claims. It was noted that policy year 2000 and policy year 2005 were at different maturity levels and that such differences had to be taken into account in viewing numbers of large or limited claims.

**Question:** An attendee asked when the Bureau had begun limiting losses in its filing analyses.

**Answer:** The December 1, 2004 filing was the first time a limited loss approach had been applied in Delaware.

**Question:** Staff was asked how many claims had been limited in this filing’s data altogether.

**Answer:** A total of 234 claims were limited to some extent, with some of the claims involved dating prior to policy year 1986.

**Question:** A committee member asked whether entire large claims had been removed from the data or only the amounts in excess of the selected limits.

**Answer:** The procedure removed only losses above the applicable limits. Attendees were also reminded that the secondary capping procedure originally applied as part of this method had been eliminated with the 2006 filing.

Exhibit 2 (Limited Loss) presented premium and loss development experience from Table I (including the application of the adjustments described above), supplemented by age-to-age factors taken from calendar evaluations of financial data predating those included in Table I. This data had been used to review development patterns and ultimately derive estimates of prior policy year premiums, losses and loss ratios. Staff described procedures used to develop estimates of ultimate premiums stated at a constant (current) rate level on Page 2.1 of this exhibit. Pages 2.2 through 2.13 presented the derivation of estimates of ultimate indemnity loss and loss-adjustment expense ratios for prior policy years.

Indemnity age-to-age paid loss development factors, incurred loss development factors and paid-to-incurred development factors were shown on Page 2.2. Factors for the most recent four development periods were based on the limited loss data from Table I (Limited Loss). Factors for previous development periods were taken from prior Bureau filings and were shown on a limited basis with the exception of calendar year 1999 development, which was presented on an unlimited basis.



In application of each loss development method, the Bureau had sought to smooth the observed age-to-age link ratios in a variety of ways. Methods applied in this endeavor included the use of multi-year averages (generally the most recent four years) as the basis for selecting age-to-age factors and the fitting of mathematical curves through the observed average actual ratios. A broad variety of curve forms had been tested for this purpose. Curves that had given among the best, and generally consistent, results in this fitting process had been selected for use in support of the proposed filing. The selected curve forms used to smooth observed indemnity loss development age-to-age factors in the proposed filing were described as follows:

Indemnity Incurred Development Factors:

$$y = a + b \cdot \log(x)^2 + c/x$$

In the above expression, “y” represents the variable to be estimated, and “x” is an index of the maturity of the observed and/or projected stages of policy year development for which the variable values were observed. The terms “a,” “b,” and “c” are constants derived using the curve-fitting procedures and are established to obtain the best possible fit of the selected curve to the observed actual data.

Better results were obtained by subtracting unity (1.000) from the observed indemnity paid loss development factors before using the above curve form. The estimated or smoothed “y” values were then added to unity to derive smoothed indemnity paid loss development factors.

Indemnity Paid Development Factors:

$$y = a + b/x + c/(x^2) + d/(x^3) + e/(x^4)$$

In the above expression, “y” represents the variable to be estimated and “x” is an index of the maturity for the observed and/or projected stages of policy year development at which the values of “y” were observed. The terms “a,” “b,” “c,” “d,” and “e” are constants derived using the curve-fitting procedures and are established to obtain the best possible fit of the selected curve to the observed actual data.

Better results were obtained by subtracting unity (1.000) from the observed indemnity paid loss development factors before using the above curve form. The estimated or smoothed “y” values were then added to unity to derive smoothed indemnity paid loss development factors.

Indemnity Paid-to-Incurred Development Factors:

The most recent actual four-year average paid-to-incurred age-to-age factor was selected for this transition. In this year’s analysis, as had been the case for the December 1, 2004 and subsequent filings, loss development approaches converting to a case-incurred basis at varying points in development were not used.

Page 2.3 showed selected incremental development factors, cumulative development factors computed by successive multiplication of the incremental factors, and factors to bring indemnity losses on-level (benefit change factors) by policy year and to add loss-adjustment expense to loss.

Page 2.4 presented indemnity limited paid and incurred losses by policy year, projected ultimate losses using both paid-loss development, case-incurred loss development and an average of those two separate approaches, and adjusted ultimate loss and loss adjustment expense obtained by applying benefit on-level factors and loss adjustment expense factors to projected ultimate losses.

Page 2.5 showed ultimate limited indemnity loss ratios resulting from the work on pages 2.1 through 2.4, and the calculation of limited severity ratios from ultimate limited loss ratios using an index of claim frequencies per unit of on-level expected losses derived from unit statistical data. Claim frequency trend factors for selected policy years to December 1, 2008, based on a review of unit statistical data, were also shown on this page. Staff noted that additional detail concerning the Bureau's analysis of claim frequencies would be discussed in the context of trend analysis later in the meeting.

Page 2.6 showed fitted limited severity ratios for indemnity loss using linear models applied over various numbers of policy years. Severity ratios consistent with paid-loss development, case-incurred loss development, and an average of these two approaches were presented separately.

Page 2.7 showed trended limited severity ratios for indemnity loss based on various combinations of development approach and number of policy year points used as the basis for trending, all using a linear trend model. Trend factors derived from these trended loss ratios were shown for each of the most recent four policy years for each of the previously-mentioned loss development approaches.

Pages 2.8 and 2.9 were described as being alternatives to Pages 2.6 and 2.7, using an exponential model rather than the linear model previously discussed.

Page 2.10 showed indicated loss ratio trend factors derived by combining linear severity trend factors with the claim frequency trend factors from Page 6.

Page 2.11 showed indicated loss ratio trend factors derived by combining exponential severity trend factors with the claim frequency trend factors from Page 6.

Page 2.12 showed trended limited loss ratios based on the linear loss ratio trend factors from Page 2.10.

Page 2.13 showed trended limited loss ratios based on the exponential loss ratio trend factors from Page 2.11. The four-year average trended loss ratio, based on a five-point exponential model applied to limited loss ratios consistent with the average of paid-loss and case-incurred loss development approaches, was highlighted with a border on this page, indicating that this was the basis for the discussion proposal's rate level change indication.

Pages 2.14 through 2.25 provided analysis of medical loss in the same fashion and organization as described previously for indemnity loss (Pages 2.2 through 2.13). Staff reminded attendees about the adjustments applied to medical case reserves in deriving the loss development database for this filing. Medical loss development factors had been subject to the same complement of smoothing techniques as had been used for indemnity loss, for much the same reasons. The curve forms used to accomplish smoothing of four-year average medical loss development factors were as follow:

Medical Incurred Development Factors:

$$y = a \cdot x^3 + b \cdot x^2 + c \cdot x + d$$

In the above expression, "y" represents the variable to be estimated, and "x" is an index of the maturity for the observed and/or projected stages of policy year development for which the variable values were observed. The terms "a," "b," "c," and "d" are constants derived using the curve-fitting procedures and are established to obtain the best possible fit of the selected curve to the observed actual data.

Better results were obtained by subtracting unity (1.000) from the observed indemnity paid loss development factors before using the above curve form. The estimated or smoothed "y" values were then added to unity to derive smoothed indemnity paid loss development factors.

Medical Paid Development Factors:

$$y = a + b/x + c/(x^2) + d/(x^3) + e/(x^4)$$

In the above expression, “y” represents the variable to be estimated, and “x” is an index of the maturity for the observed and/or projected stages of policy year development for which the variable values were observed. The terms “a,” “b,” “c,” “d,” and “e” are constants derived using the curve-fitting procedures and are established to obtain the best possible fit of the selected curve to the observed actual data.

Better results were obtained by subtracting unity (1.000) from the observed indemnity paid loss development factors before using the above curve form. The estimated or smoothed “y” values were then added to unity to derive smoothed indemnity paid loss development factors.

Medical Paid-to-Incurred Development Factors:

The most recent actual four-year average paid-to-incurred age-to-age factor was selected for this transition. In this year’s analysis, as had been the case for the December 1, 2004 and subsequent filings, loss development approaches converting to a case-incurred basis at varying points in development were not used.

On page 2.25, the four-year average trended loss ratio, based on a five-point exponential model applied to limited loss ratios consistent with the average of paid-loss and case-incurred loss development approaches, was highlighted with a border on this page, indicating that this was the basis for the discussion proposal’s rate level change indication.

Page 2.26 showed indicated annual limited severity trends, based on both linear and exponential models, applied to each of the three loss development methods previously discussed.

Page 2.27 showed indicated annual limited loss ratio trends based on both linear and exponential models in the same format as used on Page 2.26 for limited severity trends.

**Question:** An attendee asked how the Delaware trend compared to what had been recently selected for use in Pennsylvania.

**Answer:** Staff noted that such a comparison would involve one state without substantive reforms to another state with cost containment tools well established, so that the comparison of interest had not been made.

Exhibit 2a provided graphical comparisons of the results of the limited loss development approaches used in the preparation of the filing, separately for indemnity and medical losses.

Exhibit 2b provided additional graphs demonstrating the effect of the medical case reserve adjustments applied in preparing this filing. Page 1 of this exhibit showed ultimate on-level medical loss ratios derived using incurred loss development and paid loss development methods, and the average of those approaches all without making adjustments to medical case reserves. In addition, page 1 showed the average of an incurred loss development and paid loss development approaches including the medical case reserve adjustments proposed for use with this filing. Page 2 of this exhibit showed ultimate on-level medical loss ratios derived using incurred loss development and paid loss development methods, and the average of those approaches reflecting the Bureau’s proposed adjustments to medical case reserves. In addition, page 2 showed the average of an incurred loss development and paid loss development approaches without application of the medical case reserve adjustments proposed for use with this filing.

**Question:** Staff was asked whether the ratios presented were on current level.

**Answer:** Attendees were told that all ratios presented were on the current residual market rate level.

Staff reviewed pertinent portions of Exhibit 7 with the participants. Based on available unit statistical data, Exhibit 7 showed claim closure rates, claim frequencies per million dollars of payroll, and ratios of paid losses to case-incurred loss and to estimates of ultimate-incurred loss. Payout ratios were shown on both limited and unlimited bases.

Staff noted that the financial data valuations at 12-months maturity were not used in producing ultimate estimates for proposed filings in Delaware.

Average claim cost statistics were shown for open indemnity claims, closed indemnity claims and all indemnity claims. These pages exhibited considerable volatility, due in substantial part to the limited amount of experience data available in Delaware.

Staff advised participants that, based on the collective information presented in the exhibits described above, the Bureau had selected ultimate loss estimates based on the average of a case-incurred loss development method and a paid-loss development method applied over as long a development period as possible, converting to a case-incurred approach for the remaining development to ultimate.

**Question:** Noting the Exhibit 7 reported claim frequency per million dollars of payroll, a question was asked as to whether the payrolls used in that calculation had been put on a current or consistent level.

**Answer:** The answer was in the negative, but that the payrolls used in deriving statistics for Exhibit 7 claim frequency were reported payrolls.

### **Trend**

#### **Exhibits 2 (Limited Loss), 3 (Limited Loss), 5, 6 (Limited Loss) and 23**

Staff referred to the cited exhibits as they pertained to the trend provisions included in the proposed filing. Key observations made are summarized below.

Portions of Exhibit 2 pertinent to trend analysis and presented in the discussion of loss development were noted.

Exhibit 3 showed various measures of the goodness-of-fit obtained by applying linear and exponential trend models to varying numbers of policy year limited severity ratio points from the loss development approaches considered in preparing the proposed filing. R-squared statistics were derived for each such trend model application (Page 3.1). Successive pages developed fitted values for linear and exponential models (Pages 3.2 through 3.5), followed by “residuals” (the result of subtracting fitted values from the actual observed values for policy year severity ratios) on Pages 3.6 through 3.9.

Exhibit 6 applied the tested trend methods to project policy year limited severity ratios for which subsequent estimates were available based on the Bureau’s loss development analyses. This exercise tested the comparative ability of such methods to predict subsequent severity ratios.

Page 6.1 showed indemnity severity ratios by policy year for each loss development approach.

Page 6.2 showed trended limited indemnity severity ratios using various numbers of policy years applying a linear trend model.

Page 6.3 showed differences between linear-trended and actual policy year limited indemnity severity ratios.

Page 6.4 showed trended limited-indemnity severity ratios using various numbers of policy years applying an exponential trend model.

Page 6.5 showed differences between exponential-trended and actual policy year limited-indemnity severity ratios.

Pages 6.6 through 6.10 presented results for limited medical severity ratios in the same sequence and format as had been discussed for indemnity losses above.

After consideration of the collective information discussed above, staff had selected an annual severity ratio trend of approximately +1.7 percent for use in projecting for indemnity loss ratios and had selected an annual severity ratio trend of approximately +7.5 percent for use in projecting medical loss ratios. Each of these trends was based on results of applying a five-point exponential trend model to severity ratios taken from the average of the paid-loss and case-incurred loss development approaches.

Claim frequency data based on unit statistical plan reports was presented in Exhibit 23. Staff described the exposure base used in this analysis as being on-level expected losses and noted that this measure included wage level changes, exposure growth and shifts in employment between different kinds of businesses. Consistent with the severity trend approach described above, the Bureau had derived a historical indemnity claim frequency trend by application of an exponential trend model through observed indemnity claim frequencies over the five most recent available policy years, resulting in an annual frequency trend of -7.0 percent. The Bureau had then applied the indicated severity and claim frequency trend rates in combination to indemnity and medical loss ratios for each of the most recent four policy years and had selected the average of the resulting trended loss ratios for purposes of the proposed filing.

**Question:** Staff was asked for its insights as to why claim frequency was declining.

**Answer:** The Bureau's impression was that many different factors had contributed to changes in claim frequency. Reasons cited included prevailing insurance prices and trends in the late 1980's and 1990's, workplace changes not specifically or primarily focused on accident prevention such as automation, just-in-time inventories, etc., formal (often mandated) incentives to employers to participate in formal safety initiatives, and enactment of anti-fraud provisions. Recent experience has shown the improvement in claim frequency to be more prominent for small claims than large. This latter result was identified as a reason for increasing claim severity.

**Comment:** An attendee observed that the economy now involved more service and less construction or manufacturing jobs.

**Answer:** Staff asserted that by computing claim frequency per amount of on-level expected losses this factor was being fully and fairly taken into account.

**Comment:** An example of technological change in the workplace was given in which years ago many people were carrying boxes of paper comprised of data being exchanged between trading partners. Today the preponderance of data reporting was conducted electronically, resulting in a lower exposure to injuries arising from lifting or carrying those boxes.

**Question:** Staff was asked whether it had analyzed claim frequency by industry group.

**Answer:** Staff noted that this kind of review had been done previously but not for the current filing. Staff had the expectation that rates of change in claim frequency would not be significantly different between industry groups.

**Comment:** An attendee stated that the Bureau's expectation was consistent with what the National Council on Compensation Insurance, Inc. (NCCI) had found in its research of claim frequency.

Exhibit 5 presented a time series of limited loss ratios points indexed to Policy Year 1993 based on the selected trends and models described. Fitted points and projected future results were superimposed on Exhibit 5 as dashed lines through and extending beyond the policy year loss ratios from which they had been derived.

**Question:** Staff was asked to confirm that the claim frequency statistic under discussion was measured using expected losses.

**Answer:** Staff confirmed that on-level expected losses were used as the denominator in computing claim frequencies underlying the filing's selected frequency trend.

#### **Unlimited Loss Exhibits Presented for Purposes of Comparison**

Exhibits 1 (Unlimited Loss), 2 (Unlimited Loss), 2a (Unlimited Loss), 2b (Unlimited Loss), 3 (Unlimited Loss) and 6 (Unlimited Loss)

Staff noted that Table I and selected exhibits pertaining to loss development and trend had been provided to the Committees on an unlimited basis, as well as on a limited basis. But for the additional step of adjusting medical case reserves for purposes of loss development analysis, this methodology was consistent with the supporting information from filings prior to December 1, 2004, and thus provided some perspective regarding the effects of the application of analysis on a limited basis for the current proposal.

#### **Expenses and Benefit On-Level Factor**

Exhibits 8, 9, 10 and 11

Staff reviewed these exhibits to summarize the measurement and estimation of expense provisions incorporated into the proposed filing.

Exhibit 8 showed historical experience used to measure the following expense components:

- Commission and Brokerage
- Other Acquisition
- General Expense
- Loss Adjustment Expense
- Premium Discount
- Uncollectible Premium

The first four items noted above were reviewed over the three calendar years, 2003, 2004 and 2005. The three-year average ratio of commission and brokerage expense to standard earned premium at Bureau rate level, including large deductible business on a net basis and excluding expense constant income, was used for that expense component of the proposed filing. Other acquisition and general expenses were determined based on the three-year average ratio of those respective expenses to standard earned premium at Bureau rate level, including large deductible business on a gross basis and excluding expense constant income. The relationship between loss-adjustment expense and loss was derived based on the three-year average ratio of loss-adjustment expense to incurred losses, including large deductible on a gross basis. The premium discount provision in the proposed filing was based on size-of-risk distribution for Schedule Y carriers in Manual Year 2004, the most recent available year from unit statistical data.

Exhibit 8 also showed the allocation of the provisions for residual market expense constant income attributed to various expense components. The residual market expense constant proposal of \$270 was based on the currently-approved value of \$260 and recognition of the effects of wage inflation since approval of the current value.

Staff described the basis for a proposed change in premium discount table for this filing, with it having come to light that the discount table in use in Delaware was inconsistent with most other jurisdictions across the country. The new table would give lower premium discounts, and would thus require a lower expense provision for such discounts.

**Question:** Staff was asked to clarify how the new premium discount table affected the proposed rates.

**Answer:** Staff noted that overall the change in tables and the revised expense provision for premium discount offset each other. Small accounts in the residual market would pay lower rates after this change, while larger ones would also pay lower rates but would receive a lower premium discount. Some of the employers eligible for premium discounts would see lower net premiums while others would see higher net premiums, with the larger risks more likely to see increases.

Exhibit 10 derived a provision in the proposed rates and loss costs to offset the impact of expected adjustment in benefit minimums and maximums effective July 1, 2008. As comparable prior effects of revisions in benefit schedules had been removed from the policy year loss ratios derived in loss development analysis and used to select trend provisions for the proposed filing, a separate explicit provision for the prospective change was needed.

Exhibit 9 provided detail of the application of an internal rate-of-return analysis to the proposed filing. Expense provisions for commission and brokerage, other acquisition, general expense, premium and other taxes, premium-based assessments and premium discount were based on Bureau analysis as described above, budgetary provisions or the most recent available assessment levels. Premium collection and loss-payout patterns were also provided from Bureau analysis.

The Bureau inputs were combined with an economic consultant's analysis of the following inputs and parameters to construct a cash flow model appropriate for the business of underwriting workers compensation business in Delaware:

- Pre-Tax Return on Assets
- Investment Income Tax Rate
- Post-Tax Return on Assets
- Reserve-to-Surplus Ratio
- Cost of Capital

The internal rate-of-return model thus constructed was provided in detail within Exhibit 9. Key outputs derived from Exhibit 9 for use in the proposed filing were:

- Permissible loss ratio, including loss-adjustment expense and loss-based assessments – 76.27 percent
- Profit and contingencies – minus 3.76 percent

Staff noted that the profit and contingencies provision proposed in the filing was very comparable to the provision in currently-approved rates (minus 3.94 percent).

Exhibit 11 provided side-by-side comparison of the expense structure underlying current approved residual market rates and proposed rates. Staff observed that overall expense costs reported by its members were lower than those incorporated in the last Delaware filing (26.24 percent, as compared to 29.49 percent last year) and that the most notable differences were the provisions for Premium Discount (down to 8.89 percent compared to 11.05 percent for the December 1, 2006 filing), the Workers Compensation Fund (down to 2.00 percent from a level of 3.00 percent in current rates), Other Acquisition (down from 2.81 percent last year to 2.57 percent) and General Expenses (down from 3.35 percent last year to 3.06 percent).

### **Delaware Insurance Plan**

#### **Exhibit 19**

Several features of the Delaware Insurance Plan (DIP), the residual market for workers compensation insurance in Delaware, were reviewed based on materials offered in this exhibit. These included the following:

- Comparative loss ratios in the DIP by policy size over a five-year period
- Comparative loss ratios in the DIP by policy year over a five-year period
- Market share in the DIP
- Effects of the approved surcharge program on risks insured in the DIP
- A residual market subsidy multiplier to be included in retrospective rating plan tax multipliers

**Question:** Staff was asked how long the surcharge program had been in place in Delaware.

**Answer:** Staff could not recall a specific date, but knew that the program had been in place since the early to mid 1990's.

**Question:** An attendee observed that the middle column of page 19.2 showed a residual market loss ratio of 142.3. Staff was asked what the target for that loss ratio was in the proposed filing, with the suggestion made that it might be approximately 103 given the proposed negative profit and contingency provision of between 3 and 4 percent.

**Answer:** Staff noted some differences between the data shown on Exhibit 19 and the support for the overall rating value changes, including the fact that Exhibit 19 showed a pure loss ratio, and that the Exhibit 19 premiums were not thought to be shown on level. Discussion included the fact that the on level factors were quite significant (for policy year 2004, for example, this factor was seen as 1.54). It was further noted that in the filing, per regulatory preference, residual market rates were based on statewide, not residual market, loss experience.



**Question:** Staff was asked whether, in light of the presentation on Exhibit 19, the residual market loss ratio might rise to 160 or 170 next year if the filing was approved. Further discussion ensued focused on comparisons of various parts of Exhibits 19 and 12. Staff advised attendees that it would provide further information about the respective content and interpretation of those exhibits subsequent to the meeting.

### **Experience Rating**

#### **Exhibits 13, 20 and 21**

Staff noted that efforts to design and test a demonstrably improved Experience Rating Plan for use in Delaware remained ongoing.

The interpretation of Exhibit 13 was described for the participants in the contexts of determining whether credit or debit ratings were appropriate and the extent to which credibility was and should be assigned to individual risk experience.

Exhibit 20 was discussed as the means of deriving anticipated collectible premium ratios for use in Exhibit 12. It was noted that three-year average collectible premium ratios had been used for this purpose. Exhibit 20 also illustrated the computation of expected loss rate factors to adjust proposed residual market rates back to appropriate expected loss factors for use in the Experience Rating Plan and the determination of selected parameters for Experience Rating Plan credibility.

Staff referred briefly to Exhibit 21, which set forth the credibility table proposed for use in the Experience Rating Plan over the proposed rate period.

### **Delaware Construction Classification Premium Adjustment Program**

#### **Exhibit 14**

The history and purpose of this rating program were briefly described using Exhibit 14. Staff reviewed the analytical exhibits reflecting the extent to which employers in the respective-eligible classifications had participated in the program and the magnitude of premium credits granted to such employers. Proposed adjustments in offsets for DCCPAP credits by classification were noted.

The adjustment of the table of qualifying wages for recent wage inflation was reviewed for the participants. Staff noted that the proposed effective date for revisions to the DCCPAP was June 1, 2008.

### **Workplace Safety Program and Merit Rating**

#### **Exhibit 29**

The background of the Workplace Safety Program was reviewed, noting 1999 changes expanding the eligibility for the program, instituting an overall offset to manual rating values to fund operation of the program and implementation of a Merit Rating Program for small employers.

Page 29.1 showed recent historical experience for participation in the Workplace Safety Program and derived an indicated offset to manual rates based thereon. Page 29.2 showed anticipated distributions of merit-rated risks between credits, no adjustments and debits and combined the indicated offset for net merit rating credits with that for the Workplace Safety Program. The combined indication was for a 2.93 percent adjustment to manual rating values.

**Question:** An attendee asked whether the Bureau assumed the same mix or weights for adjustments pertaining to merit rating and workplace safety credits in the future filing as were reflected on Exhibit 29.

**Answer:** The answer was affirmative. Staff further noted that an ongoing study of the Workplace Safety Program was resident on the Bureau's website and that such work was updated on a regular basis.

### **Rating Values Based on Size-of-Loss Analyses**

#### **Exhibits 16, 17A, 17B, 17C, 17D, 18 and 32**

Staff noted that changes being undertaken by the National Council on Compensation Insurance, Inc. were under review with the purpose of determining changes that might be appropriate for Delaware filings. This filing was continuing previous procedures, but development work to establish and evaluate various alternatives was also in progress.

These exhibits dealt with the following subjects:

- Small Deductible Loss Elimination Ratios and Premium Credits (Exhibit 16)
- Excess Loss Pure Premium Factors (Exhibit 17A)
- Excess Loss Pure Premium Factors Including Allocated Loss Adjustment Expense (Exhibit 17B)
- Excess Loss Premium Factors (Exhibit 17C)
- Excess Loss Premium Factors Including Allocated Loss Adjustment Expense (Exhibit 17D)
- State and Hazard Group Relativities (Exhibit 18)
- NCCI Item Filing B-1403 – 2006 Update to Retrospective Rating Plan Parameters (Exhibit 32)

**Question:** Staff was asked how frequently small deductible plans were actually applied for Delaware coverage.

**Answer:** Staff did not have current data available but recalled that the number of such policies had been very small, on the order of magnitude of 50 policies, some time ago.

**Comment:** An attendee recalled discussion at the previous year's committee meeting about what the mandatory offer provision meant in terms of practical options for employers and carriers.

**Answer:** Staff shared that recollection, and advised that its current understanding was that if a carrier determined that it wished to write a particular risk it must be prepared to do so on either a guaranteed cost or small deductible basis at the option of the insured.

**Question:** A further question was posed concerning whether carriers could limit the choice of deductible level or if that was at the sole discretion of the insured.

**Answer:** Staff believed that all of the deductible amounts shown in the Manual were required to be offered and the insured could choose any of those deductible provisions.

**Question:** Staff was asked whether financial security was considered.

**Answer:** Staff believed that financial security could be considered in determining whether or not to offer insurance to a risk, but not as a secondary factor in controlling or withholding a desired small deductible provision in an employer's policy.

Staff outlined the processes and procedures applied in the derivation of the indicated factors, including reference to procedures and parameters provided for the Bureau's use by the NCCI. Within these exhibits, a general outline of approach was provided, and then key differences in the analysis between these exhibits were pointed out to participants. The implications of NCCI's item filing concerning expected loss size ranges were described to attendees.

**Question:** Staff was asked if the Bureau planned to expand its number of Hazard Groups.

**Answer:** Staff indicated its awareness that NCCI was doing this. Delaware could not adopt NCCI's program per se since Delaware used a substantially different classification plan than did NCCI. Staff was looking into this issue, and reminded the Committees that some shifting between existing Hazard Groups had been done in a recent filing to increase the volume of exposure in Hazard Groups I and IV. Staff asked for attendees' perspectives with regard to such an undertaking.

**Comment:** One committee member thought that there was merit in differentiating between employers using more than four Hazard Groups.

**Answer:** Staff noted that it understood that at least on an interim basis there was a desire to be able to map from the new set of seven Hazard Groups into four for carrier systems' sake.

**Comment:** An attendee observed that because so many classes fell into Hazard Groups II and III further differentiation was likely to be beneficial.

**Comment:** Another attendee stated that more movement into Hazard Groups I and IV might be appropriate.

**Answer:** Staff expressed a willingness to continue to look into expanding the number of Hazard Groups recognized in Delaware. In addition, the Bureau reported that it was considering changes to its Excess Loss Factor approach by testing various concepts for that purpose in Pennsylvania before attempting to apply such modifications in Delaware.

### **Retrospective Rating**

#### **Exhibits 24 and 25**

Exhibit 24 was described as providing indicated loss development factors proposed to be available for use on an optional basis. Specified factors were shown for no loss limitation and applicable to the expected loss portion of premium. In addition, a general procedure to derive loss development factors appropriate for use with various loss limitations was included in Exhibit 24.

Exhibit 25 presented the derivation of a retrospective rating plan tax multiplier, including the use of the Delaware Insurance Plan subsidy previously noted and shown on Exhibit 19.

### **Classification Relativities**

#### **Exhibits 15, 22a, 22b, 22c, 27, 28, Class Book, 30, 31a and 31b**

Exhibit 15 described the formulae and procedures used for analysis of classification experience in the proposed filing. Staff commented on a secondary capping procedure intended to avoid large fluctuations about the average changes in rating values from year-to-year. This procedure, while applied in the proposed filing, did not result in the capping of any additional classifications.

**Question:** A question was presented asking whether, in the Delaware classification relativity procedures, the Delaware exposure mix was used when looking at Pennsylvania relativities.

**Answer:** This question was answered in the affirmative.

**Question:** Staff was asked how a reader of the filing could know which classes were reviewed and which were non-reviewed.

**Answer:** Staff noted an indicator of non-reviewed status appearing on Exhibit 31.

Exhibits 22a, 22b and 22c each provided unit statistical data by manual year and industry group over the most recent available five years. These tabulations were used in the derivation of certain factors applicable to determining classification-specific rating values. Exhibit 22a showed losses including loss-adjustment expenses trended and developed to an ultimate basis, Exhibit 22b showed losses including loss-adjustment expenses developed to an ultimate basis but not trended, and Exhibit 22c showed reported losses without loss-adjustment expenses.

Exhibit 28 provided parameters derived for and applied in the execution of the prescribed procedures for derivation of classification rating values. The Class Book presented detailed five-year histories of experience by classification and showed calculation of indicated rating values based on Delaware experience alone. Staff noted that a separate procedure applied to those Delaware classifications where available experience warranted less than five percent credibility for non-serious losses and that the application of those special procedures was not reflected in the Class Book pages.

Four of the referenced exhibits were noted as providing various summaries of the results of the Bureau's derivation of proposed classification rating values. Exhibit 27 showed proposed residual market rates, voluntary market loss costs and expected loss rates by classification number. Exhibit 30 was a histogram showing the incidence of indicated and proposed changes in residual market rates by percentage range. Exhibits 31a and 31b showed current, indicated and proposed residual market rates before DCCPAP and applicable surcharges for the Workplace Safety Program and merit rating plan. These exhibits also showed percentage changes in proposed rates before the DCCPAP, Workplace Safety Program and Merit Rating Plan surcharges and final proposed residual market rates (including surcharges). Exhibit 31a was shown sorted by classification code number. Exhibit 31b was shown sorted in ascending sequence by proposed percentage change.

**Question:** An attendee inquired whether there were any capped classes for this filing in Delaware.

**Answer:** Staff replied that there were no capped classes in this filing.

There being no further business for the Committee to conduct, the meeting was adjourned.

Respectfully submitted,

Timothy L. Wisecarver  
Chair - Ex Officio