

DELAWARE COMPENSATION RATING BUREAU, INC.  
RATE AND LOSS COST FORMULAE

The experience used for classification relativities for the December 1, 2016 revision will include all available risks. It is proposed that catastrophes be limited in accordance with the procedure previously employed in other DCRB filings. The experience period will be five (5) years for all classifications regardless of whether a classification might meet the full credibility requirements with less than five years of data. Credibility will be based on reported payrolls for classifications using payroll as the exposure base. For non-payroll classifications, expected losses will be used as the basis for credibility. Thus, two credibility tables will be prepared for use in the December 1, 2016 filing. The values for these respective tables will be established such that the credibility assigned to a payroll-based classification having the same portion of total statewide expected losses and payrolls attributable to its experience using each table would be equal. All occupational disease losses will be included in the exhibit of classification experience, with the total amount of such losses by type of injury being shown on a separate line on the classification rate worksheets.

The larger classifications are subject to standard procedures as described below. However, circumstances will sometimes require that some classifications' rating procedure be modified to recognize situations where the normal rating process would not be appropriate. Such classifications, and the manner in which their rates or loss costs have been derived, are separately identified within the filing material.

The calculation of assigned risk classification rates will be made in accordance with the following procedure:

- (1) Determine the pure premiums underlying present Manual Residual Market Rates by category (serious, non-serious, medical only and total) for each classification.
- (2) Adjust the present pure premiums by category (serious, non-serious, medical-only and total) to the December 1, 2016 on-rate-level to obtain present on-rate-level pure premiums.
- (3) Determine Expected Losses (serious, non-serious, medical-only and total) for each classification by multiplying the exposures from the experience period by the pure premiums underlying present Manual Rates.
- (4) Determine the indicated pure premiums (serious, non-serious, medical-only and total) from the exposures and losses from the experience period.
- (5) Test the indicated total pure premiums by multiplying the exposures of the latest three years for each classification and obtaining the total Actual Losses for all classifications combined.
- (6) Calculate Expected Losses by multiplying the present pure premiums by the exposures from the last three years for each classification and by the overall average rate change.
- (7) Obtain correction factors by category of loss (serious, non-serious and medical-only) by dividing the Expected Losses derived in (6) by the Actual Losses derived in (5).
- (8) Multiply the indicated (pre-test) pure premiums from (4) times the correction factors derived in (7) to obtain indicated (post-test) pure premiums.

RATE AND LOSS COST FORMULAE (continued)

- (9) Determine “formula” pure premiums from (2) and (8) above for each type of loss (serious, non-serious and medical-only), with credibility for each category of loss corresponding to either the amount of reported payroll (for all classifications in which payroll is the exposure base) or to the amount of Expected Losses (for all “non-payroll” classifications). Credibility weights will be taken from exhibits appearing in the Class Book. The complement of credibility is in each case to be assigned to the present on December 1, 2016 level pure premiums for each category of loss.
- (10) Select proposed total pure premiums for each classification, using the middle value from the total pure premiums derived in (2), (8) and (9) above. If the proposed pure premium selected on this basis is different from the formula pure premium derived in (9) above, partial pure premiums are to be allocated between categories (serious, non-serious and medical-only) in the same proportion as the partial pure premiums comprising the formula pure premium.
- (11) Test the proposed total pure premiums selected in (10) by multiplying by the exposures of the three latest years for each classification and obtaining the total Expected Losses for all classifications combined.
- (12) Obtain a correction factor by dividing the Expected Losses derived in (6) above by the Expected Losses derived in (11) above.
- (13) Calculate the “composite pure premium multipliers” for each industry group as the product of the following items:
  - (a) The pure premium correction factor determined in (12) above.
  - (b) The proposed experience rating plan off-balance factor (Collectible Premium Ratio).
  - (c) The inverse of the permissible loss and loss adjustment ratio.
  - (d) The estimated effect of the July 1, 2017 benefit change.
- (14) Apply the composite pure premium multiplier obtained in (13) above to the proposed total pure premiums to obtain Manual Rates.
- (15) Test to assure that the maximum departure of the Manual Rates derived in (14) above from current Manual Rates is in accordance with the following parameters:

Maximum Change in Rates:  
Upward: The industry group average change plus 25% rounded to the nearest 1%.  
Downward: The industry group average change minus 25% rounded to the nearest 1%.
- (16) Manual rates are to be rounded to the nearest \$.01.
- (17) Test the Manual Rates derived in (16) above to determine if balance has been achieved within 0.0005 of the indicated change in rate level by industry group. If such balance has not been achieved, calculate the necessary correction factor to adjust the composite pure premium multipliers derived in (13) above to achieve the necessary balance. Perform steps (14) through (17) iteratively until the desired balance is achieved.

## RATE AND LOSS COST FORMULAE (continued)

### Non-reviewed Classifications

- (18) For classifications with insufficient credibility (non-reviewed classifications), an alternative calculation is used to derive indicated rates.

Insufficient credibility is defined as having five-year payroll less than that necessary to achieve 5% credibility for the non-serious component of pure premium. For non-payroll based classifications, expected losses replace payrolls.

For these non-reviewed classes, the indicated rate is calculated as follows:

- a) An average loss cost using Pennsylvania loss cost values and the Delaware distribution of business by class is calculated.
- b) Classification relativities are then calculated that relate the Pennsylvania loss cost by classification to the average overall loss cost calculated in (a) above.
- c) Indicated average loss costs are calculated by class by multiplying the relativities in (b) above times the average Delaware loss cost value for all classes combined times the average manual change in rates times the indicated composite pure premium multiplier.
- d) A second indicated rate is calculated by applying the average manual change in rates by industry group to the current Delaware rate for the class.
- e) A final indicated rate, subject to capping and balancing criteria previously described, is calculated by applying one-third weight to (c) above plus two-thirds weight to (d) above.

### Loss Costs

The calculation of non-assigned risk classification loss costs will be made in accordance with the following procedure:

- (19) Multiply the proposed assigned risk Manual Rates by classification by the permissible loss, loss adjustment expense and loss based assessment ratio.