

DELAWARE COMPENSATION RATING BUREAU, INC.

Excess Loss Ratios and Loss Limitations

Page 1 shows a history of loss limits consistent with an excess loss ratio of 0.0757 for excess loss factor revisions since 1983, the 0.0757 ratio corresponding to a loss limit of \$1,288,146 (on a post-House Bill 175, pre-House Bill 373 basis) effective with the December 1, 2004 filing when a limited loss approach was first introduced. An exponential curve fit to the loss limitations from 1981 to 2004 showed an average annual change of 6.27% in loss limits, which is applicable to Policy Years December 1, 2004 and prior.

After review of recent changes in loss limitations, an average annual change of 5.35% was selected for policy periods after December 1, 2004.

Page 2 shows the calculation of loss limits by policy year tied to a limit of \$2,672,000 for policies effective during the twelve months beginning December 1, 2018 and with the underlying annual changes in the loss limit as described above.

All calculations on pages 1 and 2 are made on a post-House Bill 175, pre-House Bill 373 basis and indicate that a loss limit of \$2,672,000 is appropriate for the policy period beginning December 1, 2018.

The DCRB developed overall empirical distributions using Delaware data with losses adjusted to both post-House Bill 175, pre-House Bill 373 and post-House Bill 373 bases. A comparison of these distributions indicated that a post-House Bill 175, pre-House Bill 373 loss limit of \$2,672,000 produced an excess loss factor comparable to a post-House Bill 373 loss limit of \$1,819,104.

Page 3 shows the calculation of the excess loss ratio consistent with a loss limitation (post-House Bill 373) of \$1,819,104 per claim in the current filing. Excess ratios, prior to adjustments for expense and risk load, are weighted with standard premiums by hazard group to get an average excess ratio of 0.0765.

**Delaware December 1, 2018 Rate & Loss Cost Filing
Loss Limitations for Excess Loss Factor = .0757
All Losses at Post-HB175, Pre-HB373 Levels**

Applicable to policy years beginning 12/1/2004 and Earlier

| Policy Year | Midpoint | Time (t) | Loss Limit at ELF = 0.0757 |
|--------------------|-----------------|-----------------|-----------------------------------|
| 1983 | 1/1/1984 | 1.0000 | 339,727 |
| 1984 | 1/1/1985 | 2.0000 | 361,028 |
| 1985 | 1/1/1986 | 3.0000 | 383,664 |
| 1986 | 1/1/1987 | 4.0000 | 407,720 |
| 1987 | 1/1/1988 | 5.0000 | 433,284 |
| 1988 | 1/1/1989 | 6.0000 | 460,451 |
| 1989 | 1/1/1990 | 7.0000 | 489,321 |
| 1990 | 1/1/1991 | 8.0000 | 520,002 |
| 1991 | 1/1/1992 | 9.0000 | 552,606 |
| 1992 | 1/1/1993 | 10.0000 | 587,254 |
| 1993 | 1/1/1994 | 11.0000 | 624,075 |
| 1994 | 1/1/1995 | 12.0000 | 663,205 |
| 1995 | 1/1/1996 | 13.0000 | 704,788 |
| 1996 | 1/1/1997 | 14.0000 | 748,978 |
| 1997 | 1/1/1998 | 15.0000 | 795,939 |
| 1998 | 1/1/1999 | 16.0000 | 845,844 |
| 1999 | 1/1/2000 | 17.0000 | 898,878 |
| 2000 | 1/1/2001 | 18.0000 | 955,238 |
| 2001 | 1/1/2002 | 19.0000 | 1,015,131 |
| 2002 | 1/1/2003 | 20.0000 | 1,078,780 |
| 2003 | 1/1/2004 | 21.0000 | 1,146,420 |
| 2004 | 1/1/2005 | 22.0000 | 1,218,300 |
| 12/1/2004 | 12/1/2005 | 22.9167 | 1,288,146 |

Annual Trend = .0627

Applicable to Policy Years after 12/1/2004

| Policy Year | Midpoint | Time (t) | Loss Limit at ELF = 0.0757 | Ratio to \$1,288,146 | Annual Change from \$1,288,146 |
|--------------------|-----------------|-----------------|-----------------------------------|-----------------------------|---------------------------------------|
| 12/1/2004 | 12/1/2005 | 1.0000 | 1,288,146 | 1.0000 | |
| 2005 | 1/1/2006 | 1.0833 | 1,295,879 | 1.0060 | 1.0745 |
| 2006 | 1/1/2007 | 2.0833 | 1,392,422 | 1.0810 | 1.0745 |
| 2007 | 1/1/2008 | 3.0833 | 1,496,158 | 1.1615 | 1.0745 |
| 2008 | 1/1/2009 | 4.0833 | 1,600,106 | 1.2422 | 1.0729 |
| 2009 | 1/1/2010 | 5.0833 | 1,695,313 | 1.3161 | 1.0696 |
| 2010 | 1/1/2011 | 6.0833 | 1,796,184 | 1.3944 | 1.0676 |
| 2011 | 1/1/2012 | 7.0833 | 1,903,057 | 1.4774 | 1.0663 |
| 2012 | 1/1/2013 | 8.0833 | 2,016,288 | 1.5653 | 1.0653 |
| 2013 | 1/1/2014 | 9.0833 | 2,130,712 | 1.6541 | 1.0642 |
| 2014 | 1/1/2015 | 10.0833 | 2,251,097 | 1.7475 | 1.0634 |
| 2015 | 1/1/2016 | 11.0833 | 2,378,284 | 1.8463 | 1.0627 |
| 12/1/2016 | 12/1/2017 | 13.0000 | 2,642,496 | 2.0514 | 1.0617 |
| 12/1/2017 | 12/1/2018 | 14.0000 | 2,494,761 | 1.9367 | 1.0522 |
| 12/1/2018 | 12/1/2019 | 15.0000 | 1,981,299 | 1.5381 | 1.0312 |

Average of latest 5 years

$$2,349,588 = (2,251,097 + 2,378,284 + 2,642,496 + 2,494,761 + 1,981,299) / 5$$

Annual Trend from 12/1/2005 to 6/15/2017

$$= (2,349,588 / 1,288,146) ^ (1/11.5417) = 1.0535$$

Annual Trend = .0535

**Delaware December 1, 2018 Rate & Loss Cost Filing
Calculation of Policy Year Loss Limitations
All Losses at Post-HB175, Pre-HB373 Levels**

| Policy Year * (1) | Midpoint (2) | Time (t) (3) | Trend period To/From 12/1/2005 (4) | Annual Trend + (5) | Trend Factor (6) = [1+(5)]^(4) | Loss Limit (7) = (6) * 1,288,146 |
|----------------------|-----------------|-----------------|--|--------------------------|-----------------------------------|---|
| 1983 | 1/1/1984 | 1.0000 | -21.9167 | 0.0627 | 0.263734 | 339,728 |
| 1984 | 1/1/1985 | 2.0000 | -20.9167 | 0.0627 | 0.280270 | 361,029 |
| 1985 | 1/1/1986 | 3.0000 | -19.9167 | 0.0627 | 0.297843 | 383,665 |
| 1986 | 1/1/1987 | 4.0000 | -18.9167 | 0.0627 | 0.316518 | 407,721 |
| 1987 | 1/1/1988 | 5.0000 | -17.9167 | 0.0627 | 0.336363 | 433,285 |
| 1988 | 1/1/1989 | 6.0000 | -16.9167 | 0.0627 | 0.357453 | 460,452 |
| 1989 | 1/1/1990 | 7.0000 | -15.9167 | 0.0627 | 0.379866 | 489,322 |
| 1990 | 1/1/1991 | 8.0000 | -14.9167 | 0.0627 | 0.403683 | 520,003 |
| 1991 | 1/1/1992 | 9.0000 | -13.9167 | 0.0627 | 0.428994 | 552,607 |
| 1992 | 1/1/1993 | 10.0000 | -12.9167 | 0.0627 | 0.455892 | 587,256 |
| 1993 | 1/1/1994 | 11.0000 | -11.9167 | 0.0627 | 0.484477 | 624,076 |
| 1994 | 1/1/1995 | 12.0000 | -10.9167 | 0.0627 | 0.514853 | 663,206 |
| 1995 | 1/1/1996 | 13.0000 | -9.9167 | 0.0627 | 0.547134 | 704,789 |
| 1996 | 1/1/1997 | 14.0000 | -8.9167 | 0.0627 | 0.581440 | 748,979 |
| 1997 | 1/1/1998 | 15.0000 | -7.9167 | 0.0627 | 0.617896 | 795,940 |
| 1998 | 1/1/1999 | 16.0000 | -6.9167 | 0.0627 | 0.656638 | 845,846 |
| 1999 | 1/1/2000 | 17.0000 | -5.9167 | 0.0627 | 0.697809 | 898,880 |
| 2000 | 1/1/2001 | 18.0000 | -4.9167 | 0.0627 | 0.741562 | 955,240 |
| 2001 | 1/1/2002 | 19.0000 | -3.9167 | 0.0627 | 0.788058 | 1,015,134 |
| 2002 | 1/1/2003 | 20.0000 | -2.9167 | 0.0627 | 0.837469 | 1,078,783 |
| 2003 | 1/1/2004 | 21.0000 | -1.9167 | 0.0627 | 0.889979 | 1,146,422 |
| 2004 | 1/1/2005 | 22.0000 | -0.9167 | 0.0627 | 0.945780 | 1,218,303 |
| 12/1/2004 | 12/1/2005 | 22.9167 | 0.0000 | - | 1.000000 | 1,288,146 |
| 2005 | 1/1/2006 | 23.0000 | 0.0833 | 0.0535 | 1.004353 | 1,293,753 |
| 2006 | 1/1/2007 | 24.0000 | 1.0833 | 0.0535 | 1.058085 | 1,362,969 |
| 2007 | 1/1/2008 | 25.0000 | 2.0833 | 0.0535 | 1.114693 | 1,435,887 |
| 2008 | 1/1/2009 | 26.0000 | 3.0833 | 0.0535 | 1.174329 | 1,512,707 |
| 2009 | 1/1/2010 | 27.0000 | 4.0833 | 0.0535 | 1.237156 | 1,593,637 |
| 2010 | 1/1/2011 | 28.0000 | 5.0833 | 0.0535 | 1.303344 | 1,678,897 |
| 2011 | 1/1/2012 | 29.0000 | 6.0833 | 0.0535 | 1.373072 | 1,768,718 |
| 2012 | 1/1/2013 | 30.0000 | 7.0833 | 0.0535 | 1.446532 | 1,863,344 |
| 2013 | 1/1/2014 | 31.0000 | 8.0833 | 0.0535 | 1.523921 | 1,963,033 |
| 2014 | 1/1/2015 | 32.0000 | 9.0833 | 0.0535 | 1.605451 | 2,068,055 |
| 2015 | 1/1/2016 | 33.0000 | 10.0833 | 0.0535 | 1.691343 | 2,178,696 |
| 2016 | 1/1/2017 | 34.0000 | 11.0833 | 0.0535 | 1.781830 | 2,295,257 |
| 2017 | 1/1/2018 | 35.0000 | 12.0833 | 0.0535 | 1.877157 | 2,418,053 |
| 12/1/2018 | 12/1/2019 | 34.9167 | 14.0000 | 0.0535 | 2.074357 | 2,672,075 |
| | | | | | | 2,672,000 (Selected) |

* Beginning 1/1/XXXX unless otherwise noted.

+ See page 1.

Delaware December 1, 2018 Rate & Loss Cost Filing
Average Excess Ratio for Losses Limited at \$1,819,104 #
(Post-HB373 Basis)

| Hazard Group | Standard Earned Premium | Average Excess Ratio \$1,819,104 # |
|--------------|-------------------------|---------------------------------------|
| A | 33,557,973 | 0.0325 |
| B | 93,861,181 | 0.0675 |
| C | 247,189,621 | 0.0605 |
| D | 62,874,030 | 0.0853 |
| E | 129,654,861 | 0.0889 |
| F | 69,678,409 | 0.1178 |
| G | 16,119,371 | 0.1519 |
| TOTAL | 652,935,446 | 0.0765 |

\$1,819,104 represents a loss limit on a post-House Bill 373 basis consistent with a post-House Bill 175, pre-House Bill 373 loss limit of \$2,672,000.