

## Transcontinental Baseball League Rules Concerning Pitching Grade Calculation

### 5.1.2 Split-Grade pitchers

Pitchers used as both starters and relievers in the major leagues, with at least 5 starts and at least 25 innings pitched in relief, will be issued separate grades for starting and relief use in TBL.

Split-grade pitchers may be used in relief past their actual number of relief innings, but must use the lower of the two grades (starting/relief) for the remaining relief appearances, with no +5 bonus.

Split-grade pitchers may also pitch past their actual starts at the lower of their two grades, but are then limited to their actual total innings pitched.

No pitcher may be issued a starting or relief grade higher than the number of innings pitched that the grade is based on. In other words, a composite grade pitcher cannot be graded higher than his total innings pitched. And a split grade pitcher cannot receive a grade higher than his innings pitched in each respective role.

### 5.6 Control and Home Run Ratings

Each pitcher shall be assigned a control factor between -62 and +62 based on his unintentional walks per batter faced. The League shall distribute these ratings as part of the pitching grades each season. The ratings are used as follows:

- If the pitcher has a positive control factor ( $>0$ ), when a "14" play result occurs, roll the dice again. If the result is less than or equal to the pitcher's control factor, the walk is treated as a result of "Z" or "Ball 2." A dice roll higher than the control factor leaves the walk in effect. This result affects ALL on-base situations.
- If the pitcher has a negative control factor ( $<0$ ), when a "12" or "35" play result occurs WHICH IS NOT ALREADY A HIT FROM THE PITCHING CHANGE TABLE, roll the dice again. If the result is less than or equal to the absolute value of the pitcher's control factor, the results as a play result of "14" (for a hit-and-run play, you follow the play just like a "14", Two balls and the runner attempts to steal). Otherwise, it is treated as a normal "12" or "35" result.

Each pitcher will also be given a home run factor between -62 and +62, also distributed by the League each season. The procedure for applying these ratings is similar to that for control factors.

- If the pitcher has a positive home run factor ( $>0$ ), when the play result is a home run, roll the dice again. If the result is less than or equal to the pitcher's home run factor, the play result is treated as a "6" (unless there is a runner on 3<sup>rd</sup> base only, in which case it is treated as a "5"; if the bases are full, in which case it is treated as a "4").
- If the pitcher has a negative control factor ( $<0$ ), when the play result is a double as a result of a first column 1 through 6 or a second column result of 1 through 5, roll the dice again. If the roll result is less than or equal to the absolute value of the pitcher's home run factor, the play result is treated as a home run. This occurs even if the batter hit no homeruns in the MBL season and does not have a "1" anywhere on his card.

### 5.7.1 Control and Home Run Ratings

The CMBA system is used to compute the control and home run allowance of all carded pitchers (calculations are done by a TBL member). Pitchers' ratings are based upon the league (AL or NL) they pitched in real baseball.

The following variables are used in the calculations:

- LW = The league (NL or AL) average number of unintentional walks per batter faced
- LHR = The average number of home runs allowed per batter faced
- LD = The average number of doubles allowed per batter faced

Pitchers who played in both leagues will have "LW," "LHR," and "LD" prorated according to batters faced in each league. Batters Faced is computed as "BFP - IBB."

If the pitcher averages fewer unintentional walks per batter faced than the league average, his control rating is based on a linear scale from zero (which corresponds to the league average number of unintentional walks) to +36 (a die roll of "66"), which essentially allows no walks. To compute the control rating, the following variables are used:

- UBB = The pitcher's unintentional walks per batter faced  $(BB - IBB) / (BFP - IBB)$
- LW = The league average number of unintentional walks per batter faced
- CTL =  $36 * [1 - (UBB / LW)]$ , rounded to nearest integer

The CTL rating, now a number between 1 and 36, is changed to die rolls "11" through "66," using the APBA tables. Maximum and minimum TBL ratings are the die rolls "62" and "-62."

If the pitcher averages more than the league average number of walks per batter faced, the CTL rating is determined on a linear scale from zero (which corresponds to the league average number of unintentional walks) to 2 per 36 at bats (which equals the maximum number of extra walks expected from a control rating of -36, the die roll of "66").

To calculate this:

$$CTL = (LW - UBB) * 648, \text{ rounded to nearest integer}$$

The home run allowance ratings are determined in a similar fashion. For a pitcher who has allowed less than the league average number of home runs per batter faced:

$$HRA = \text{Home runs allowed divided by (BFP - IBB)}$$

$$HA = 36 * [1 - (HRA / LHR)], \text{ rounded to nearest integer}$$

The HA rating given above is changed to a die roll from "11" to "66," using APBA tables. If the pitcher gives up more than the league average of home runs, the negative HA allowance is computed as:

$$HA = 36 * [LHR - HRA] / LD, \text{ rounded to nearest integer}$$

This fixes the rating on a linear scale with zero being the league average number of home runs per batter faced, and -36 being the league average number of doubles per batter faced, which is the maximum number of home runs that can be achieved with the present system. Maximum and minimum values for HA are die rolls "62" and "-62."

### 5.7.2 Grades

This section explains how to compute TBL pitching grades. The same procedure applies to both starting and relief grades. If a pitcher is eligible for a split-grade in TBL (at least 5 starts and 25 relief innings), each grade is determined separately, using starting and relief ERA and H/IP, but combined control and home run allowances (in later steps).

#### *Step 1 – ERA base grade.*

Define "MERA" as the league (AL or NL) average ERA -  $\{1.80 * \text{MLB ERA} / 3.90\}$ . MERA is prorated by Batters Faced for pitchers who played in both leagues. If the pitcher's ERA is less than or equal to MERA, then the base grade "B" is:

$$B = 18.00 + 10 * (\text{MERA} - \text{ERA}) * (3.90 / \text{MLB ERA})$$

Otherwise:

$$B = 18.00 - 5 * (\text{ERA} - \text{MERA}) * (3.90 / \text{MLB ERA})$$

#### *Step 2 – Adjust for CTL/HR.*

Figure the pitcher's control chance and home run chance by converting the CTL and HRA numbers back to a scale of 1 to 36 (rounding off to the nearest integer). For example, a +11 rating is +1 chance, -25 rating is a -11 chance, etc. Now the final grade "PP" is calculated by:

$$PP = P - [0.10 * CTL] - [0.06 * HRA]$$

Note that negative control increases the grade because a greater number of batters reaching base by walks increases the ERA for the same pitching grade. Thus pitchers with the same ERA but different control ratings would need different grades to reproduce their ERA.

#### *Step 3 – H/IP base grade.*

MLB means the respective league the pitcher was in, or the prorated value if he pitched in both leagues.

$$\text{MHIP} = \text{MLB H/IP} - (18 - \text{Avg Grade}) * (\text{MLB H/IP}) / 30$$

$$\text{If H/IP} > \text{MHIP: Base Grade} = 18 - (30 * (\text{H/IP} - \text{MHIP}) / \text{MLB H/IP})$$

$$\text{If H/IP} < \text{MHIP: Base Grade} = 18 + (60 * (\text{MHIP} - \text{H/IP}) / \text{MLB H/IP})$$

$$\text{If Ctrl} < -32 \text{ (Its not a dice roll yet); H/IP grade} = \text{Base Grade} + (.1 * (\text{Ctrl} + 32))$$

#### *Step 4 – Final grade.*

The final grade is determined by averaging the two base grades calculated in Step 2 and Step 3, rounded off to the nearest integer, and limited to a minimum of 1 and a maximum of 30.

### 5.4 In-Game Fatigue

The "Q" ratings given to pitchers by APBA are not used by TBL for any game version. Starting pitchers shall be assigned a Fatigue Rating equal to their Batters-Faced-by-Pitcher (BFP) minus average intentional walks (IBB) per game started, rounded to the nearest whole integer. BFP always means actual BFP - IBB.

Relievers shall have a Fatigue Rating equal to their BFP - IBB per game average, plus two. A starter who had no relief appearances in the Major Leagues will have a relief fatigue rating of 1/3 his starting fatigue value, rounded up.

#### 5.4.1 Calculation of Fatigue Rating

The fatigue rating of bad starting pitchers is increased to represent physical capabilities as opposed to their average performance for getting yanked early. There is no change for pitchers with an ERA below the League ERA minus 0.4.

The "BFP/GS" (batters faced per game) is increased by 7 for pitchers with an ERA at or above the League ERA plus 2.6.

For others, the "BFP/GS" is increased by (rounded off):  $7 * (\text{ERA} - \text{League ERA} + 0.4) / 3.00$