

# How healthy is the National Baseball League?

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Let me start with the admittedly rather obvious essay introduction of defining a term. The term is “healthy”, and I use it to refer to the sustainability of a league in terms of how likely players from one season are to return for the next season. I believe very strongly that if there are aspirations to grow domestic baseball in Britain from its current status, then league organizers and team managers must strive to create a product that is likely to see players come back year after year. It is tempting to see player recruitment as the only obstacle to growing the game, but I wish to stress the dangers of overlooking player retention.

I refer to the “National Baseball League” in the title because it is this league that I will examine statistically later, but the arguments below apply to any level of structured amateur baseball.

## What causes players to not return?

All players in the British baseball league give up two things to participate: time and money. For them to return season after season, the enjoyment gained from playing must outweigh both of these factors, and by a sufficient extent to seem more attractive than other potential distractions at the weekend, such as cricket and golf. Immediately below I consider some factors that can have a direct effect on the level of players’ enjoyment.

## State of the field

In America, baseball grounds are referred to as “green cathedrals” because of their aesthetic beauty, and even in mainland Europe there are some extremely well-kept diamonds. The available funding does not justify having well-developed grounds in Britain, but a field with short grass and a true bounce, contained within permanent fencing, is an achievable aim, and one that must surely make playing more enjoyable.

## Quality of umpiring

Nothing matches perceived unfairness in an umpiring decision as a means of causing players visible annoyance. Of course, to vocally challenge an umpire is embedded in baseball’s traditions, but there is often more to it than just a ceremonial display of frustration.

## Statistics

Baseball is a game of numbers, and most players are keen to know how they performed in a game, as well as over the course of the season. If the statistics were collected in an unbiased fashion by each club and presented together during the course of the season, or even just at the end of the season, then this would add another dimension to the competition, and surely add to the enjoyment.

## Spectators

While players may be relieved that no-one is watching when they drop an easy fly-ball or let a simple ground-ball slip through their legs, playing in front of a good number of fans is, on the whole, more rewarding than providing an unexpected sight for dog walkers.

## Social side

The pleasure of playing a game of baseball can be multiplied during off-field socializing. It’s not for every player, but for those who are interested it is likely to increase attachment to the club and therefore directly aid retention.

## What can be done to improve retention?

Taking the factors just discussed one by one, we will start with the state of the field. Where possible, clubs should look to develop and maintain their ground as a priority. The British Baseball Federation (BBF)

could help by collecting examples of successes and sharing these among the member clubs.

Secondly, the issue of umpiring needs to be addressed with utmost urgency. The Amateur Baseball Umpires' Association – Great Britain (ABUA-GB; <http://www.abuagb.com/>) exists to improve the quality of umpiring, and the organization strives commendably to ensure that quality is not the problem. Rather, the issue is with quantity, as the number of umpires is currently declining. The ABUA-GB can work only with the umpires who sign up, and so clubs must take responsibility for sending more players to clinics to develop their interest and also for promoting umpiring as a means of remaining involved in the game to players who are soon to retire.

Thirdly, clubs should encourage anyone with a particular interest in statistics to take responsibility for collecting these for the team. Anyone with a strong interest may wish to become a league statistician, to try to ensure that the other teams are doing the same. Clearly, an increased number of scorers would make league statistics more achievable. Much like the ABUA-GB, the Great Britain Baseball Scorers Association (<http://www.gbbsa.org.uk/index.html>) exists to develop the abilities of scorers who wish to increase their knowledge, but clubs need to encourage individuals to register with the association in the first place.

Fourthly, those clubs who do not actively try to draw in spectators from the general public should start to do so, and the BBF should provide support. And when spectators do turn up to games, clubs can increase their chance of returning by making them feel welcome and keeping them updated with information on the game, including, perhaps, through the use of a scoreboard. In addition, pointing spectators who use the Internet in the direction of league fixtures and standings will be of benefit, as will an effort to provide such information on paper to those fans who do not use the Internet.

Finally, a lot of organizational effort is put into training a team and getting players out on the field every week of the season, but the additional organization required to give clubs a successful social element should not be overlooked.

### One other factor

So far I have pointed out factors to improve player retention that are at least partially in the control of clubs. There is one factor out of the control of clubs, though, that I feel is very important: the excitingness of competition. In terms of maintaining player's interest in competing each week, the worst possible outcome of a game is a forfeit (we will ignore weather-affected games as this is out of the control of everyone). The second worst outcome is a blowout, even for the winning team. A match-up that goes the distance, in that the game-shortening "slaughter rule" is not triggered by a 10-run lead, is clearly a better outcome, but even within this category of games the excitingness can vary markedly between a really close game and one where very little doubt exists as to the eventual outcome.

It is the task of the BBF to try to keep the different divisions of the league as competitive as possible, and it is far from easy. Teams can improve or worsen quite substantially between seasons, and new teams can appear while existing ones can fold. Inevitably, the BBF is heavily reliant on teams' own assessments of the level at which they should be competing.

With the first five factors mentioned (grounds, umpires, statistics, spectators, and socializing), it would be difficult to meaningfully quantify them in order to see how league "health" varies from season to season. Excitingness, however, is much easier to quantify, and we have the numbers we need for the National Baseball League on the BBF's website (<http://www.britishbaseball.org/>). We can therefore track healthiness, as related to this particular element, over time. The BBF's website has results going back to 2003, with the exception of games in which both teams no longer exist (those results have disappeared from the system, unfortunately).

### A formula for healthiness

The three ingredients of healthiness mentioned in the excitingness section above are forfeits, blowouts, and the general closeness of games. We can quantify forfeits as the percentage of all games decided this way, blowouts as the percentage of all non-forfeits won by at least 10 runs, and the closeness of games as the median run difference in non-forfeits. The median is the best type of average to use for this as it gives us

the middle value in a ranked list of all run differences; as such, it is not affected by the size of blowouts, and will thus tell us about the typical run difference in closer games.

We have already decided that forfeits are the worst possible outcome of a game, so we will assign half of the weight in our “healthiness” score to these. A quarter can go to blowouts, and the remaining quarter can go to the typical closeness of non-blowouts. Combining all of these gives the following expression, which is a score out of 100:

$$\frac{50 * \text{Non-forfeits}}{\text{All games}} + \frac{25 * \text{Non-blowouts}}{\text{Non-forfeits}} + \frac{25 * (11 - \text{MRD})}{10}$$

MRD = median run difference (since the minimum value of MRD is 1, the maximum value of  $[11 - \text{MRD}]/10$  is 1).

All we need to do now is plug in the values for each season back to 2003 in the National Baseball League. In 2003, the league combined southern teams and northern teams in a single division, but between 2004 and 2008 it has been split into a northern division and a southern division. Since all but one of the teams in 2003 were southern, I will use values from the southern split between 2004 and 2008. The raw data and computed scores are shown in Table 1.

The results have the 2003 league coming out as a comfortable winner, with 2004, 2005, and 2008 fairly closely bunched in second, third, and fourth place. There is not much difference between 2006 and 2007

at the bottom of the pile. Both of these seasons had interleague play between teams from the top tier and teams from the second tier built into the schedule, so this is not a surprising result.

### Can we see an effect on player retention?

The first part of this article listed a collection of factors not captured in the healthiness formula that might contribute to player retention, so we should not be expecting to find a strong correlation between league health and player retention. And there are two other reasons for leaving British baseball that have not been mentioned yet: retirement and moving to a different country. While we should be able to assume that the first factor adds nothing more than a bit of random noise to the levels of player retention, this is not so safe an assumption for players moving to a different country. As an example, we might expect to see some decline in the retention rate between 2008 and 2009 caused by overseas players returning to their home country in the face of the economic difficulties currently facing Britain.

Nevertheless, it is an interesting exercise to plot player retention on the same graph as league healthiness to see if there is a relationship between health in one season and retention in the next. Player retention will be quantified as the percentage of players who gain the minimum number of plate appearances required for the batting title, who also qualify for the batting title in the next season (we will

Season	Teams	Schedule length	Results listed*	Proportion of games involving a second-tier opponent†	Forfeits	Blowouts	Median run difference	Healthiness
2003	6	25 games	45	0.0%	0	4	3	90.3
2004	6	30 games	71	0.0%	0	20	6	78.0
2005	5	30 games	66	0.0%	1	22	6	75.8
2006	4	28 games	59 <sup>†</sup>	45.8%	8	25	9	58.5
2007	4	28 games	82 <sup>†</sup>	75.6%	11	34	9	58.8
2008	4	24 games	48	0.0%	0	19	7	72.6

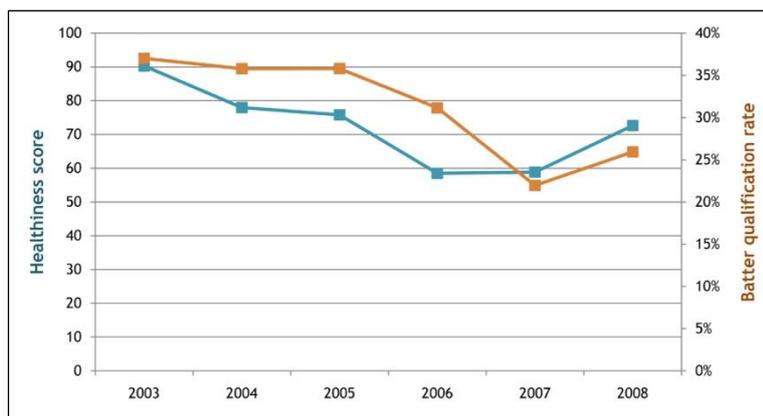
**Table 1.** Raw data and computed healthiness scores for the National Baseball League between 2003 and 2008, based on the combined northern and southern league in 2003 and the southern split for 2004–2008.

\*As mentioned earlier in the article, the BBF’s website has results going back to 2003, with the exception of games in which both teams no longer exist (because of this, 30 games are missing from 2003, 18 from 2004, and 6 from 2005). †Match-ups against second-tier teams were built into the schedule as interleague games.

ignore players on teams that folded to avoid skewing the numbers; see Figure 1).

Alternatively we can try to plot a more immediate indicator of player interest in the league, which will be simply the percentage of all players who gain the minimum number of plate appearances required for the batting title (see Figure 2).

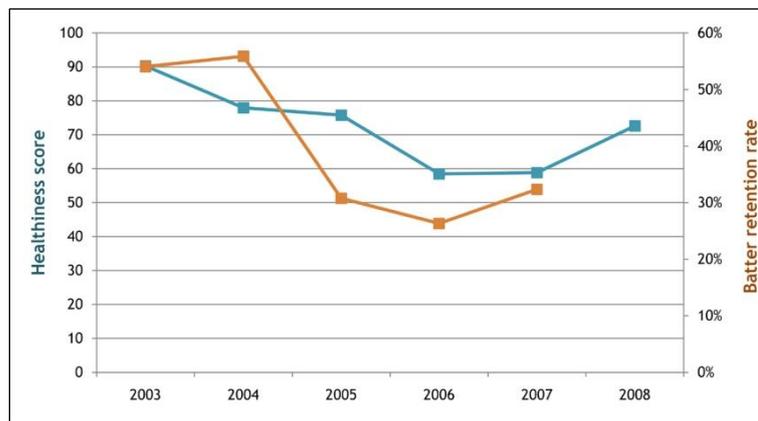
In Figure 1 we see some kind of relationship between the healthiness score and the proportion of batters with enough plate appearances to qualify for the batting title in one season who amass sufficient plate appearances during the next season to also qualify. The low retention rates in 2005, 2006, and 2007 are a cause for concern,



**Figure 2.** Healthiness score and batter qualification rate (the percentage of all players who gain the minimum number of plate appearances required for the batting title) in the National Baseball League between 2003 and 2008.

and it possible that the low healthiness score of the interleague seasons of 2006 and 2007 may have contributed to this.

In Figure 2, in which the qualification rate for the batting title is added to the graph instead of the



**Figure 1.** Healthiness score and batter retention rate (the percentage of players who gain the minimum number of plate appearances required for the batting title, who also qualify for the batting title in the next season, excluding teams that folded) in the National Baseball League between 2003 and 2008.

retention rate, we see a tighter relationship between the two scores. The relationship probably appears stronger than it actually is, as there are many factors not captured in the healthiness score that could cause players' interest to be reduced. Nevertheless, the data do lend support to the notion that the competitiveness of the league can have a marked effect on getting players to turn up every week.

I am hoping that a rise in healthiness and batter qualification rate can happen again in 2009 as it did in 2008, and also that once we have data to see what the retention rate is like for the qualifying batters in 2008 we will also see an increase here. Finally, I hope that the interleague

experiment of 2006–2007 is not repeated.



<http://www.baseballgb.co.uk/?p=2438>