

WORLD HÁNDICAP SYSTEM (WHS)

TECHNICAL ARTICLE 2, SCORE DIFFERENTIAL

Once we have adjusted the result at each hole to a maximum Net Double Bogey and have added up the score at each hole to obtain an Adjusted Gross Score, AGS (see Technical Article 1), the World Handicap System (WHS) calculates the Score Differential.

1. CONCEPT

In future articles we will see that the WHS calculates the player's handicap on the basis of an average, namely of the best 8 results of the last 20 scores returned. We need to know what results the WHS refers to for this calculation.

We can quickly see that it does not refer to Stableford results as these depend on the handicap the player played with. For example, a score of 40 Stableford points with a playing handicap of 23 reflects a worse level than a Stableford score of 35 points with a playing handicap of 11. On the other hand, if we take the gross score, the number of strokes taken by the player (or even the gross Stableford result in points), it will be affected by the difficulty of the set of tees played from. For example, 85 strokes on a difficult course is not the same as on an easy course. In the same way, it is not the same to shoot 85 from the back tees of a golf course as from the front tees. Playing from the back tees reflects a better performance than from the front tees.

Therefore, the result for a round will be influenced by the difficulty of the course and in the case of net scores, it will also be influenced by the handicap the player played with. We need a new concept to allow us to compare results obtained on different courses (even on the same course, from different tees, to determine which are the best 8 of the 20 scores obtained. This concept is the Score Differential.

The Score Differential (SD) corresponds to the handicap the player played to with the result obtained. It is easy to understand that if a player with a handicap of 32 shoots her net par (that is 36 Stableford points), we can say that she has played to her handicap on that day. If she plays 8 over her handicap (28 Stableford points) we can say that she has played worse than her handicap and if she shoots two under, we can say she has played better than her handicap. Now all we need to do is to calculate exactly what handicap she has played to based on her result.

The handicap a player plays to is a comparable concept regardless of the difficulty of the course and the handicap used to obtain the result, therefore it is a perfectly comparable magnitude and can be used in the calculation of the average.

2. FORMULA

The following formula is used to calculate the SD:

$$SD = AGS - (CR + PCC) * \frac{113}{SR}$$

where

AGS: Adjusted Gross Score

CR: Course Rating of the set of tees played

SR: Slope Rating of the set of tees played

PCC: Playing Conditions Calculation of the conditions played in

As we can see the formula uses the AGS, but it also uses the rating of the tees played from (depending on the sex of the

player) and even has an adjustment for the difficulty of the course on that specific day (the PCC measures whether the course played easier, PCC -1, the same, PCC 0, or more difficult, PCC +1, +2 or +3 than its rating). This is done to remove the difficulty of the course (expressed through the rating and the PCC) from a gross score, the AGS.

It may seem that this formula is very similar to the formula for the Playing Handicap, in fact it is almost the opposite. The Playing Handicap formula allows us to go from our handicap referring to a course with a standard difficulty (Slope 113) to a Playing Handicap that expresses the number of strokes required, based on the difficulty of the course, to play to our handicap. The Score Differential formula goes the opposite way (thus it being almost the opposite formula), starting from the player's score and calculating the handicap the player has played to.

Example 1

A player with a handicap index of 10.3 submits an AGS of 84 playing from the yellow tees of his course which have a CR of 70.9 and SR of 121. The PCC for the day is 0. What is the player's Score Differential?

$$SD = (84 - (70.9 + 0)) * \frac{113}{121} = (84 - 70.9) * \frac{113}{121} = 13.1 * \frac{113}{121} = 12.23388$$

The player's Score Differential was 12.2, which means he played to a handicap of 12.2 (he played worse than his handicap).

Example 2

The same player from the previous example submits an AGS of 84 from the white tees of his course with a CR of 73.8 and a SR of 134. The PCC for the day is 0. What is the player's Score Differential?

$$SD = (84 - (73.8 + 0)) * \frac{113}{134} = (84 - 73.8) * \frac{113}{134} = 10.2 * \frac{113}{134} = 8.60149$$

The player's Score Differential was 8.6, which means he played to a handicap of 8.6, (he played better than his handicap).

These two examples highlight the difficulty of the course, expressed in its rating, in the calculation of the SD in both cases the player has the same score of 84, but obviously the result obtained from the more difficult tees (example 2) represents a better SD.

Example 3

A player with a handicap of 30.7 submits an AGS of 105 strokes playing from the red tees of her course which have a CR of 71.5 and a SR of 123. The PCC for the day is -1. What is the player's Score Differential?

$$SD = (105 - (71.5 + -1)) * \frac{113}{123} = (105 - 70.5) * \frac{113}{123} = 34.5 * \frac{113}{123} = 31.69512$$

The player's Score Differential was 31.7, which means she played to a handicap of 3.17 (worse than her handicap)

Example 4

The following day, the same player submitted an AGS of 105 paying from the same tees but this day the PCC was +2. What is the player's Score Differential?

$$SD = (105 - (71.5 + 2)) * \frac{113}{123} = (105 - 73.5) * \frac{113}{123} = 32.5 * \frac{113}{123} = 28.93902$$

Her Score Differential is now 28.9, which means she played to a handicap of 28.9 (she played better than her handicap).

These two examples show the role of the PCC. The AGS is the same for both days but the SD is better on the second day (28.9) than the first (31.7) as it was played in more difficult conditions (PCC +2 as opposed to -1 on the first day).

Example 5

A player with a handicap index of 0.7, submitted an AGS of 65 playing from a set of tees with a CR of 72.8 and SR of 140. The PCC for this day was 0. What is the player's Score Differential?

$$SD = (65 - (72.8 + 0)) * \frac{113}{140} = (65 - 72.8) * \frac{113}{140} = -7.8 * \frac{113}{140} = -6.29571$$

The player's Score Differential was -6.3, which means she played to a "plus" handicap of +6.3 (better than her handicap).

Example 6

A player with a handicap index of 2.1, submitted an AGS of 52 playing on a P&P course with a CR of 49.88 and SR of 56. The PCC for this day was -1. What is the player's Score Differential?

$$SD = (52 - (49.8 - 1)) * \frac{113}{56} = (52 - 48.8) * \frac{113}{56} = 3.2 * \frac{113}{56} = 6.45714$$

The score differential was 6.5, that is he played to a handicap of 6.5 (he played worse than his handicap).

As we said at the beginning of this article the SD will be the value that is used to determine the best rounds to be used in the calculation of the average. Those rounds with lower SD represent better rounds and therefore the best 8 SD of the last 20 submitted will be used in the calculation. Before explaining the average, however, in the next article we will see how the SD can be adjusted as a result of Exceptional Scores or Evidence of Previous Ability.