

WORLD HANDICAP SYSTEM (WHS)

TECHNICAL ARTICLE 4, CALCULATING THE AVERAGE

The basic calculation of the player's handicap in the WHS is an average. The values to be averaged will be the differentials which were calculated (see Technical Article 3) based on adjusting the Score Differential (see Technical Article 2) which had previously determined the Adjusted Gross Score (see Technical Article 1) thanks to the Net Double Bogey.

1. AVERAGE OF THE BEST 8 RESULTS FROM THE LAST 20

The basis of the calculation of the handicap will be the average of the best 8 differentials from the last 20. To do this we need the last 20 scores submitted by the player and the differentials are calculated as explained in the three previous articles. The best differentials will be the lowest ones as they represent the best playing level.

For those not familiar with the mathematical process, the average is calculated as the sum of all the elements divided by the number of elements. In our case we will take the best 8 differentials, add them up and divide the total by 8.

Basing the average on the best 8 results of the last 20 guarantees that the player's handicap reflects the level of the player when he is playing well and not whenever he plays. The new WHS expects the player to play to his handicap approximately 20% of the times he plays.

The average is very different from the current system. The most notable is that the handicap can be reduced with a score of less than 36 points (providing the differential is better than the eighth best) and the handicap can be increased with a score of more than 36 points (providing the differential is worse than the score that was number 20 chronologically and it comes from the calculation of the average with the new differential).

Example 1

A player has the following scoring record:

	DATE	WHS HANDICAP	AGS	RATING	SCORE DIFFERENTIAL	ADJUSTMENTS			DIFFERENTIAL
						EXC. SCORE.	PREVIOUS ABILITY	NO RETURN	
1	2020-08-10	4.5	80	70.8 / 135 / 72	7.7	0	0	0	7.7
2	2020-08-04	4.5	78	73.2 / 136 / 72	4.0	0	0	0	4.0
3	2020-08-03	4.8	80	73.2 / 136 / 72	5.7	0	0	0	5.7
4	2020-06-16	4.9	52	50 / 55 / 54	4.1	0	0	0	4.1
5	2020-06-15	5.2	57	50 / 55 / 54	14.4	0	0	0	14.4
6	2020-06-15	5.2	53	50 / 55 / 54	6.2	0	0	0	6.2
7	2020-06-02	5.1	56	52.6 / 71 / 54	5.4	0	0	0	5.4
8	2020-04-06	5.4	79	71.5 / 128 / 72	6.6	0	0	0	6.6
9	2020-03-09	4.8	56	50 / 55 / 54	12.3	0	0	0	12.3
10	2020-01-19	4.3	55	51.7 / 73 / 54	5.1	0	0	0	5.1
11	2020-01-05	4.7	78	71.5 / 128 / 72	5.7	0	0	0	5.7
12	2019-12-15	4.9	79	71.5 / 128 / 72	6.6	0	0	0	6.6
13	2019-11-11	5.1	55	50 / 55 / 54	10.3	0	0	0	10.3
14	2019-11-10	5	56	50 / 55 / 54	12.3	0	0	0	12.3
15	2019-11-10	5	58	50 / 55 / 54	16.4	0	0	0	16.4
16	2019-09-22	5	56	50 / 55 / 54	12.3	0	0	0	12.3
17	2019-09-08	5	81	71.5 / 128 / 72	8.4	0	0	0	8.4
18	2019-08-05	4.8	78	73.2 / 136 / 72	4.0	0	0	0.2	4.2
19	2019-08-04	5	76	73.2 / 136 / 72	2.3	0	0	0.2	2.5
20	2019-07-25	5	79	71.7 / 122 / 71	6.8	0	0	0.2	7.0

The 8 best differentials are: 4.0, 5.7, 4.1, 5.4, 5.1, 5.7, 4.2 and 2.5.

The average of these 8 differentials is: $(4.0+5.7+4.1+5.4+5.1+5.7+4.2+2.5) / 8 = (36.7) / 8 = 4.5875$

Example 2

A player has the following scoring record:

	DATE	WHS HANDICAP	AGS	RATING	SCORE DIFFERENTIAL	ADJUSTMENTS			DIFFERENTIAL
						EXC. SCORE.	PREVIOUS ABILITY	NO RETURN	
1	2020-08-12	26.2	112	71.5 / 122 / 72	37.5	0	0	0	37.5
2	2020-08-09	26.5	101	71.5 / 122 / 72	27.3	0	0	0	27.3
3	2020-08-08	26.5	120	71.5 / 122 / 72	44.9	0	0	0	44.9
4	2020-06-16	26.5	119	71.5 / 122 / 72	44.0	0	0	0	44.0
5	2020-06-14	26.7	98	71.5 / 122 / 72	24.5	0	0	0	24.5
6	2020-06-10	26.4	105	71.5 / 122 / 72	31.0	0	0	0	31.0
7	2020-06-02	26.8	100	71.5 / 122 / 72	26.4	0	0	0	26.4
8	2020-05-23	26.8	131	70.9 / 131 / 71	51.8	0	0	0	51.8
9	2020-05-17	26.8	108	71.5 / 122 / 72	33.8	0	0	0	33.8
10	2020-05-09	27.1	98	71.5 / 122 / 72	24.5	0	0	0	24.5
11	2020-05-01	26.9	105	71.5 / 122 / 72	31.0	0	0	0	31.0
12	2020-04-30	26.9	103	71.5 / 122 / 72	29.2	0	0	0	29.2
13	2020-04-19	26.8	66	49.8 / 57 / 54	32.1	0	0	0	32.1
14	2020-04-02	27.2	99	71.5 / 122 / 72	25.5	0	0	0	25.5
15	2020-03-27	27.2	109	71.5 / 122 / 72	34.7	0	0	0	34.7
16	2020-03-15	26.7	110	71.5 / 122 / 72	35.7	0	0	0	35.7
17	2020-03-03	26.7	107	71.5 / 122 / 72	32.9	0	0	0	32.9
18	2020-02-15	27	102	71.5 / 122 / 72	28.3	0	0	0	28.3
19	2020-02-14	27.2	92	66.3 / 119 / 72	24.4	0	0	0	24.4
20	2020-02-01	27.2	104	71.5 / 122 / 72	30.1	0	0	0	30.1

The 8 best differentials are: 27.3, 24.5, 26.4, 24.5, 29.2, 25.5, 28.3 and 24.4.

The average of these 8 differentials is: $(27.3+24.5+26.4+24.5+29.2+25.5+28.3+24.4) / 8 = (210.1) / 8 = 26.2625$

2. LESS THAN 20 SCORES

If the player has less than 20 scores in his or her scoring record, the average is based on the following table:

Number of Differentials in the scoring record	Differentials to be used in calculating the handicap	Adjustment
1	The score	-2.0
2	The lowest	-2.0
3	The lowest	-2.0
4	The lowest	-1.0
5	The lowest	0
6	The average of the 2 lowest	-1.0
7 or 8	The average of the 2 lowest	0
9 to 11	The average of the 3 lowest	0
12 to 14	The average of the 4 lowest	0
15 or 16	The average of the 5 lowest	0
17 or 18	The average of the 6 lowest	0
19	The average of the 7 lowest	0
20	The average of the 8 lowest	0

When a player has 15 differentials in his or her scoring record, the average is calculated from the 5 best differentials.

When a player only has 3 differentials in his or her scoring record, the lowest differential of the three is used and two strokes are subtracted.

As we can see, the results that are averaged are not in the same proportion as when there are 20 results. This is clear when there are 10 differentials. The average is taken from the 3 lowest and not the 4 lowest. This is so because it is normal for players who are beginning and who therefore have the potential for improvement are usually those who have less than 20 scores and when taking the average of a lower number of differentials the handicap calculated will be slightly lower than that calculated with a proportion of 8/20.

Example 3

A player who has recently obtained a handicap, presents the following scoring record:

	DATE	WHS HANDICAP	AGS	RATING	SCORE DIFFERENTIAL	ADJUSTMENTS			DIFFERENTIAL
						EXC. SCORE.	PREVIOUS ABILITY	NO RETURN	
1	2021-03-09	38.9	107	70.5 / 124 / 72	33.3	0	0	0	33.3
2	2021-01-19	38.9	120	70.5 / 124 / 72	45.1	0	0	0	45.1
3	2021-01-05	42.8	110	68.4 / 115 / 72	40.9	0	0	0	40.9
4	2020-12-15	--	114	68.4 / 115 / 72	44.8	0	0	0	44.8
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As he only has 4 differentials, we take the best one and subtract a stroke.

The best differential of the 4 is 33.3 and with the adjustment of -1, the calculation will be 32.3

Example 4

The player in example 3 returns more scores and his scoring record now looks as follows:

	DATE	WHS HANDICAP	AGS	RATING	SCORE DIFFERENTIAL	ADJUSTMENTS			DIFFERENTIAL
						EXC. SCORE.	PREVIOUS ABILITY	NO RETURN	
1	2021-08-10	23.4	100	70.5 / 124 / 72	26.9	0	0	0	26.9
2	2021-08-04	23.4	98	70.5 / 124 / 72	25.1	0	0	0	25.1
3	2021-08-03	23.4	99	70.5 / 124 / 72	26.0	0	0	0	26.0
4	2021-06-16	23.4	109	70.5 / 124 / 72	35.1	0	0	0	35.1
5	2021-06-15	26.2	95	70.5 / 124 / 72	22.3	0	0	0	22.3
6	2021-06-15	29.6	100	71.8 / 130 / 72	24.5	0	0	0	24.5
7	2021-06-02	27.8	106	70.5 / 124 / 72	32.4	0	0	0	32.4
8	2021-04-06	32.3	101	70.5 / 124 / 72	27.8	0	0	0	27.8
9	2021-03-09	38.9	107	70.5 / 124 / 72	33.3	0	0	0	33.3
10	2021-01-19	38.9	120	70.5 / 124 / 72	45.1	0	0	0	45.1
11	2021-01-05	42.8	110	68.4 / 115 / 72	40.9	0	0	0	40.9
12	2020-12-15	--	114	68.4 / 115 / 72	44.8	0	0	0	44.8

As the table has 12 differentials, we must calculate the average of the best 4.

The 4 best differentials are: 25.1, 26.0, 22.3 and 24.5.

The average of these 4 differentials would be: $(25.1+26.0+22.3+24.5) / 4 = (97.9) / 4 = 24.475$

Once the average has been calculated it is time to apply the caps, which limit the amount by which a handicap can be increased. This will be explained in the next article.