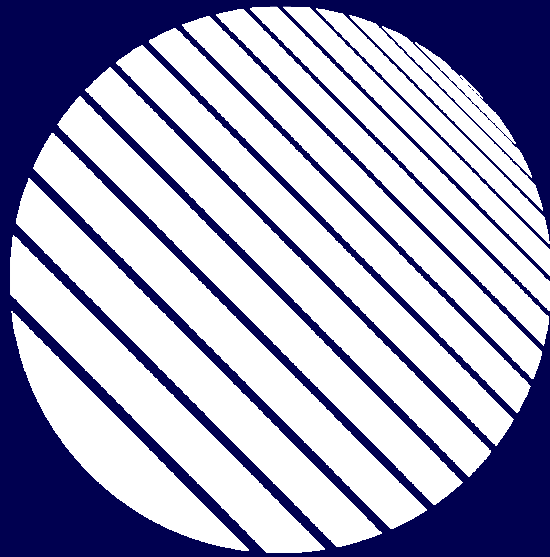


*The new Fusar Poli  
weighted Scoring System  
for Golf Competitions*



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*Rita Pizzi*



## INTRODUCTION

**This paper proposes a new scoring system for golf competitions based on a novel formula for the score calculation.**

The proposed new scoring system “Fusar Poli” , hereinafter referred to as FP, was born from the need to take account of the difficulty of the single hole not only in the a priori assessment of the player’s handicap , but also in the assessment of the player's performance in the specific competition which the scoring is calculated on.

For this purpose the FP scoring is calculated by a formula (FP Formula) that weighs the points on the single hole with a normalized value, according to the criterion described below, so that the player who in the specified competition has achieved a certain number of points on a difficult hole will be rewarded with a weighted score higher than the player who scored the same number of points on an easier hole.

Therefore the FP scoring meets more closely the needs of the player to see equally enhanced his commitment during the most challenging moments of the competition, while also seeing an equal reward of his enduring performance all along the course.

With the FP scoring the player keeps throughout the duration of the competition the excitement of ever new opportunities, because he lives for each hole the possibility of a major achievement.

The new FP scoring system was conceived by Luca Fusar Poli and elaborated in a functional form by Rita Pizzi.

In the following pages the proposed scoring system is described and analyzed in detail to evaluate technical features, functionalities and effectiveness.

## **THE UPDATE PROPOSAL FOR GOLF COMPETITIONS**

In the following a new scoring system for the golf competitions is proposed, based on the new FP Formula.

The update proposal refers to the Rules of Golf as approved by R &A Rules Limited and the United States Golf Association 31st edition, currently in force. The described update applies to Rule 32 " Bogey, Par and Stableford Competitions".

In addition to the Bogey, Par and Stableford Competitions a new type of competition, called FP Competition, is here defined, where the scoring is calculated by means of the FP Formula as follows:

### **FP Competitions**

**The scoring for FP competitions is made by assigning points related to a fixed score for each hole using the following FP Formula:**

**The Stableford score for each hole is multiplied by a weight in eighteenths commensurate with the difficulty of the hole. The weight is worth 1/18 for the easiest hole and increases up to the value of 18/18 for the most difficult hole on the course.**

## THE FP SCORING SYSTEM

The FP scoring system modifies the net Stableford scored by the player on each hole by applying the FP Formula, i.e. by multiplying the Stableford score by a weight in eighteenths (18-hole course). This weight is worth 1/18 for the easiest hole and gradually increases up to the value of 18/18 for the most difficult hole.

Table 1 shows the sequence of the FP weights for each hole ordered by degree of difficulty.

The reported correspondence between difficulty and hole number is meant on the test golf course on which the assessment of the proposed FP scoring system was made.

The FP ranking will then be calculated by giving the player a score for each hole that will be obtained by means of the FP formula, ie multiplying the Stableford score by the FP weight related to that hole. The final ranking will consist, as usual, of the sum of the scores obtained for each hole.

HOLE	HCP	WEIGHT	VALUE
11	1	18/18	1.00
9	2	17/18	0.94
12	3	16/18	0.89
4	4	15/18	0.83
16	5	14/18	0.78
3	6	13/18	0.72
17	7	12/18	0.67
5	8	11/18	0.61
13	9	10/18	0.56
8	10	9/18	0.50
14	11	8/18	0.44
1	12	7/18	0.39
18	13	6/18	0.33
2	14	5/18	0.28
15	15	4/18	0.22
6	16	3/18	0.17
10	17	2/18	0.11
7	18	1/18	0.06

**Table 1 - FP Weight per hole**

The player who intends to take account of his progressive score will not be in difficulty because of the decimal digits of the FP multiplicative weights.

In fact it is sufficient to multiply the Stableford score obtained at the single hole by an integer number: 18 for the most difficult hole, and so on decreasing up to 1 for the easiest hole. The final cumulative score attributed in this way to the various players will provide a proper ranking. The FP scoring system that will be reported in the official tables will keep the same ranking, and it can be easily calculated by dividing by 18 the cumulative score of each player.



## AN EXAMPLE

The player **G** obtains 3 Stableford points on the most difficult hole and 2 Stableford points on the easiest hole.

Thus the FP score correctly totalized by **G** on these two holes is:

$$3 * 18/18 + 2 * 1/18 = 3 * 1 + 2 * 0,055 = 3 + 0.11 = \mathbf{3.11}$$

**G** can obtain the same score using this easy method:

$$3 * 18 + 2 * 1 = 56$$

This score, with no decimal digits, already allows him to correctly compare his ranking to that of other players.

To obtain the real score it is sufficient to divide by 18 the FP cumulative score:

$$56/18 = \mathbf{3.11}.$$

## ANALYSIS OF THE FP SCORING SYSTEM

In order to assess the effectiveness of the FP scoring system we have implemented an algorithm to calculate both the net Stableford and the FP scoring.

We have also developed descriptive statistics on the rankings based on the two scoring systems. Statistics were performed using the individual scores of a test competition held at the Crema Golf Resort in September 2011.

To confirm the results with a large sample size we also developed a complete simulation of a competition with 250 players.

In the following a comparative evaluation of these statistics is shown.

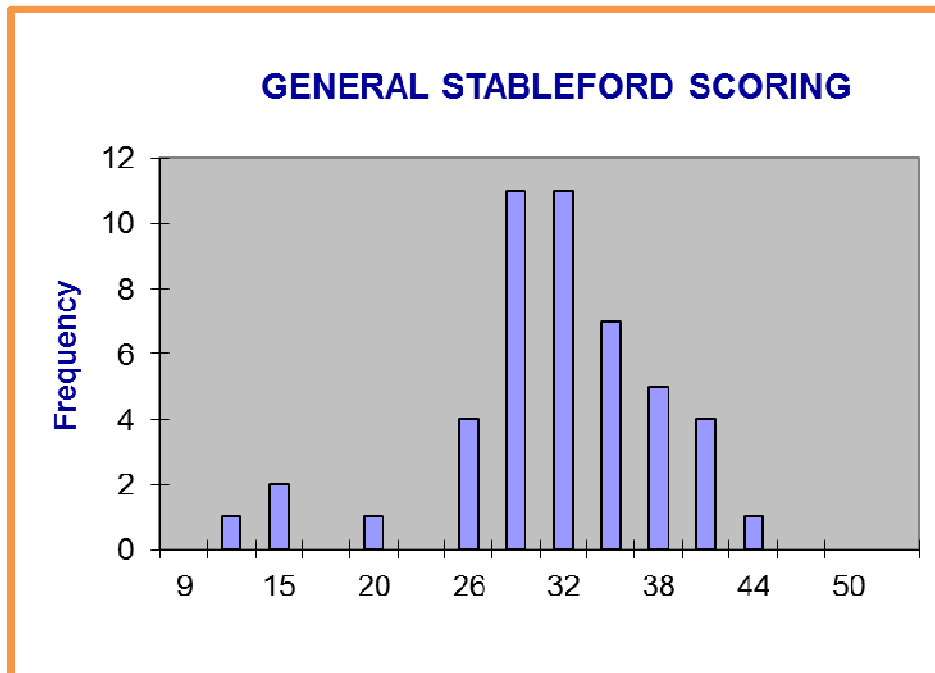
The general trend of the scores in the test competition closely follows the Gaussian curve both in the Stableford scoring and in the FP scoring, to testify that the FP ranking maintains the same balanced distribution of the classical one (Tables 2 and 3) <sup>(1)</sup>.

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<sup>(1)</sup> In the following tables frequencies are intended by range.

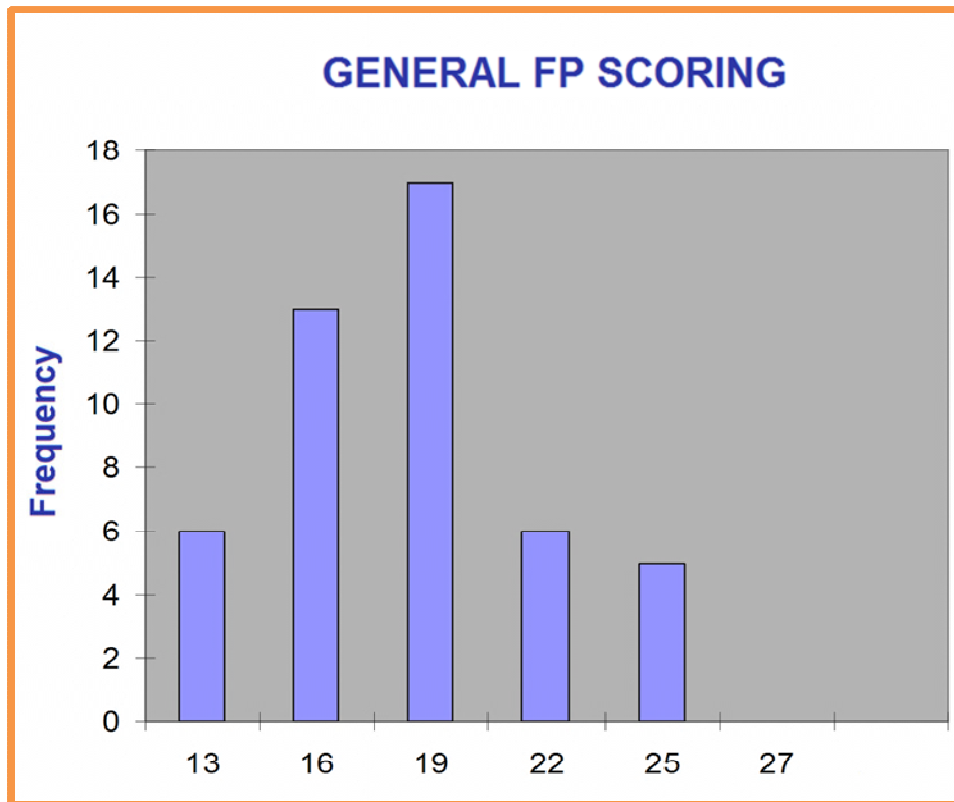
From the same tables it can be appreciated that the standard deviation in the two scorings remains of the same order of magnitude, showing that even with the new score the differentiation in the performances of the players is kept similar and proper : a crucial issue to assess the reliability of a scoring system.

These statements are confirmed by the distributions that emerge from the elaboration of a simulated competition with 250 players and random scores (Tables 4 and 5). The result of the simulation further validates the results of the test competition and demonstrates its effectiveness as a sample.



STABLEFORD SCORING		SCORING	FREQUENCY
Mean	30.638	9	0
Standard error	0.9538	12	1
Median	31	15	2
Mode	31	17	0
Standard deviation	6.5389	20	1
Sample variance	42.758	23	0
Kurtosis	1.1972	26	4
Asymmetry	-0.809	29	11
Range	30	32	11
Minimum	12	35	7
Maximum	42	38	5
Sum	1440	41	4
Confidence level (95%)	1.9199	44	1
		47	0
		50	0

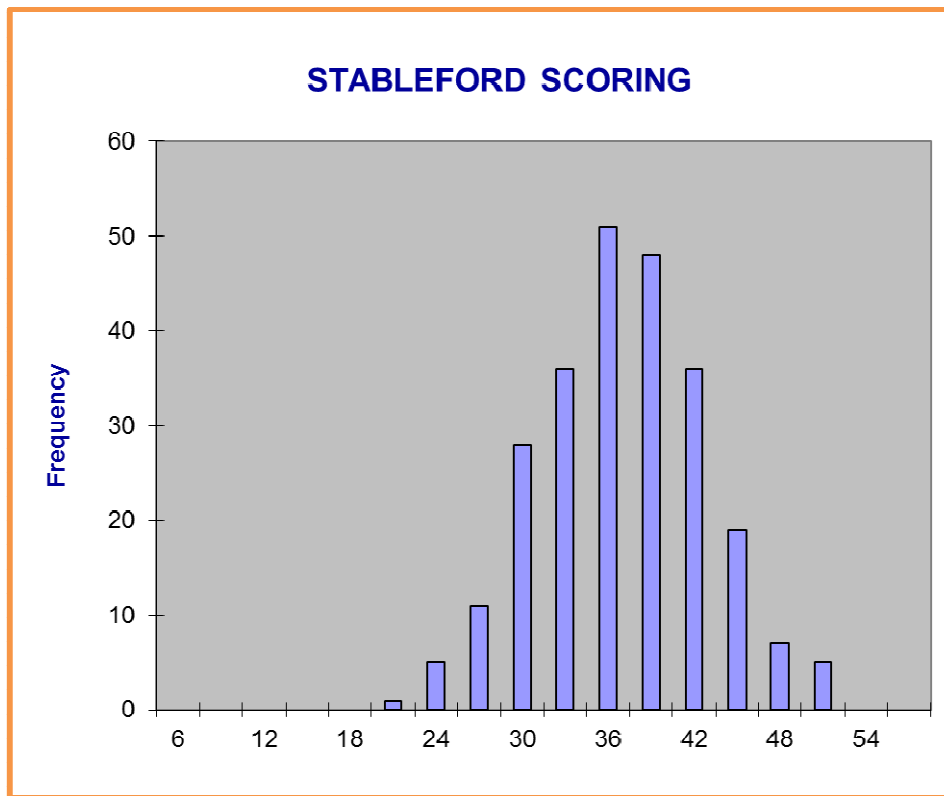
**Table 2 - Frequencies of the Stableford scoring**



FP SCORING	
Mean	16.743
Standard error	0.5775
Median	17.5
Mode	17.5
Standard deviation	3.9593
Sample variance	15.676
Kurtosis	0.6221
Asymmetry	-0.625
Range	17.22
Minimum	6.72
Maximum	23.94
Sum	786.93
Confidence level (95%)	1.1625

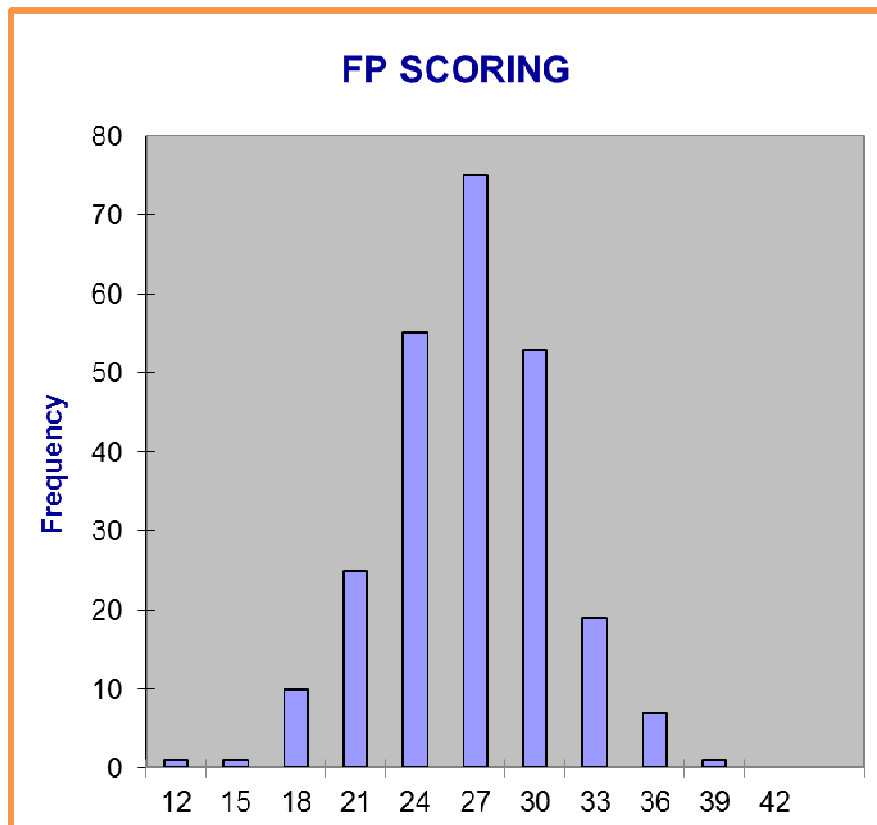
SCORING	FREQUENCY
13	6
16	13
19	17
22	6
25	5
27	0
Others	0

**Table 3 - Frequencies of the FP scoring**



<b>STABLEFORD SCORING</b>		<b>SCORING</b>	<b>FREQUENCY</b>
Mean	35.992	6	0
Standard error	0.3672	9	0
Median	36	12	0
Mode	36	15	0
Standard deviation	5.7707	18	0
Sample variance	33.301	21	1
Kurtosis	-0.295	24	5
Asymmetry	-0.029	27	11
Range	30	30	28
Minimum	20	33	36
Maximum	50	36	51
Sum	8890	39	48
Confidence level (95%)	0.7232	42	36
		45	19
		48	7
		51	5
		54	0
		Others	0

**Table 4 - Frequencies of the Stableford scoring – random simulation**



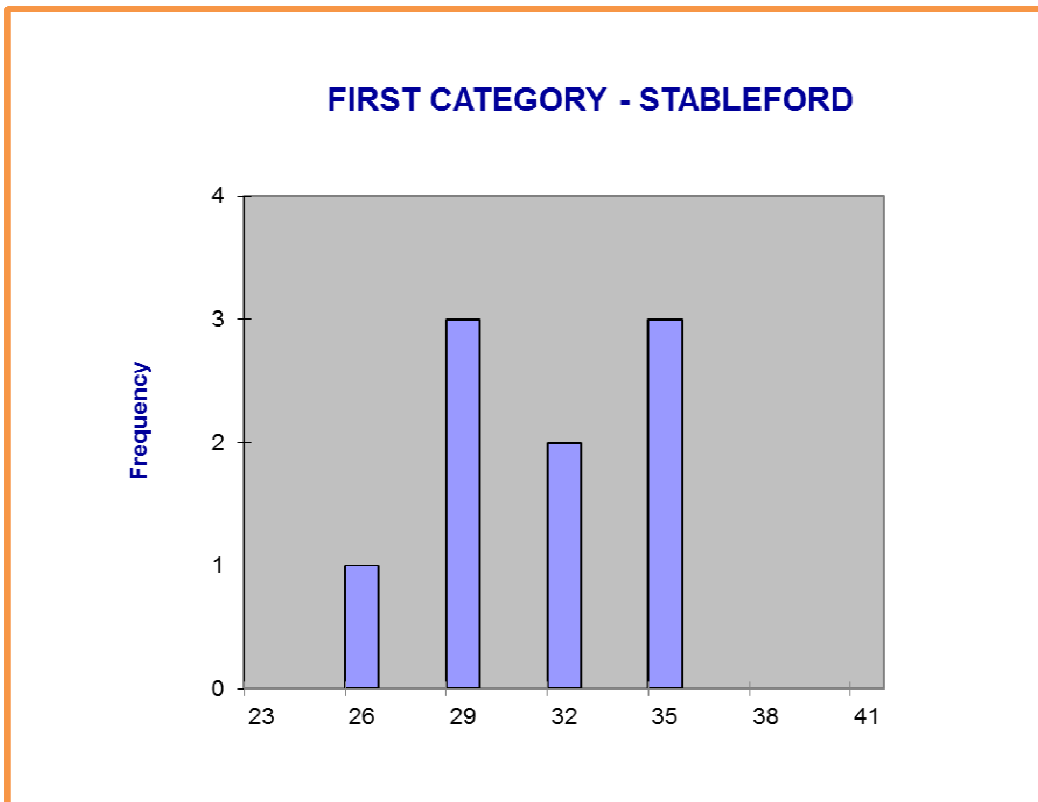
FP SCORING		SCORING	FREQUENCY
Mean	25.073	12	1
Standard error	0.2637	15	1
Median	25.09	18	10
Mode	27.11	21	25
Standard deviation	4.1448	24	55
Sample variance	17.18	27	75
Kurtosis	0.3637	30	53
Asymmetry	-0.164	33	19
Range	26.42	36	7
Minimum	9.7	39	1
Maximum	36.12	42	0
Sum	6192.9	Others	0
Confidence level (95%)	0.5195		

**Table 5 - Frequencies of the FP scoring – random simulation**

In the ranking by categories (Tables 6,7,8) two facts are immediately highlighted:

- The frequency distributions lose of course the bell shape, assuming the irregularities typical of small sample sizes. In particular, the third category for both scores indicates the presence of a not Gaussian peak on the low scores, to correctly highlight the existence of a group of inexperienced players for whom the handicap is not sufficient to compensate their serious shortcomings. To demonstrate the functional fairness of the FP scoring system, is it correct that this peak remains unchanged even after the weighing procedure performed by the FP Formula.
- The comparison between the Stableford and FP scoring trends shows evident differences, thus clearly indicating that the two different scores made different, not proportional, assessments of the players, which have led to changes in the individual scorings. These changes are evident in each of the three categories.

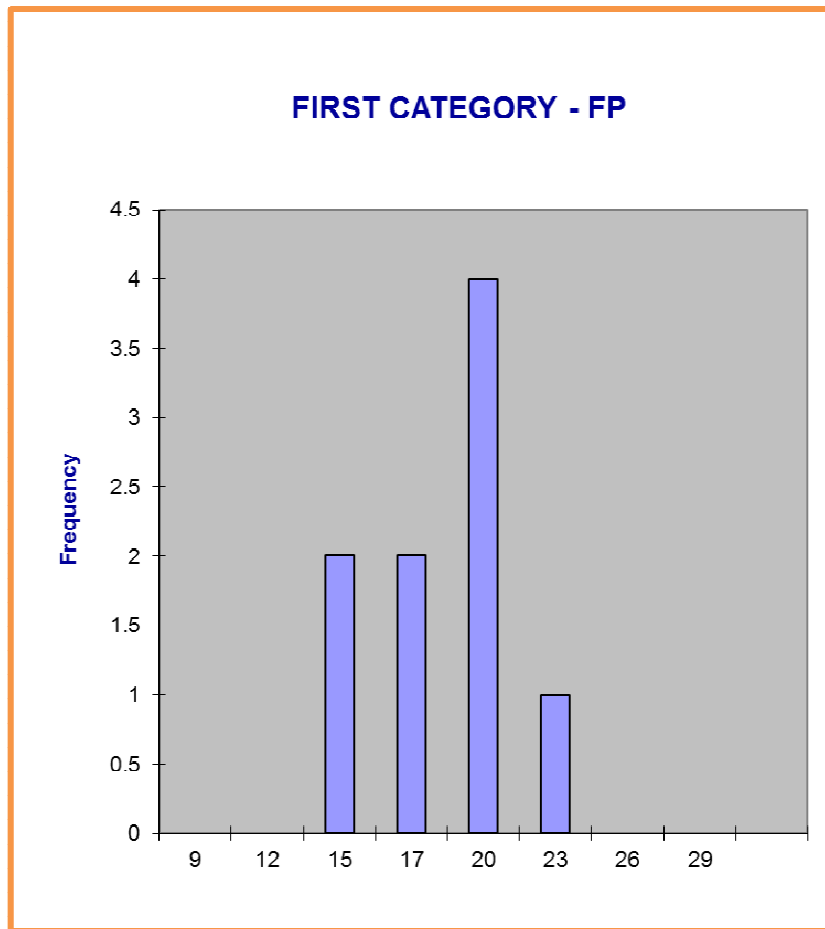




<b>STABLEFORD SCORING</b>	
Mean	30.5556
Standard error	1.226
Median	31
Mode	35
Standard deviation	3.67801
Sample variance	13.5278
Kurtosis	-0.41619
Asymmetry	-0.45516
Range	11
Minimum	24
Maximum	35
Sum	275
Confidence level (95%)	2.82717

<b>SCORING</b>	<b>FREQUENCY</b>
23	0
26	1
29	3
32	2
35	3
38	0
41	0
Others	0

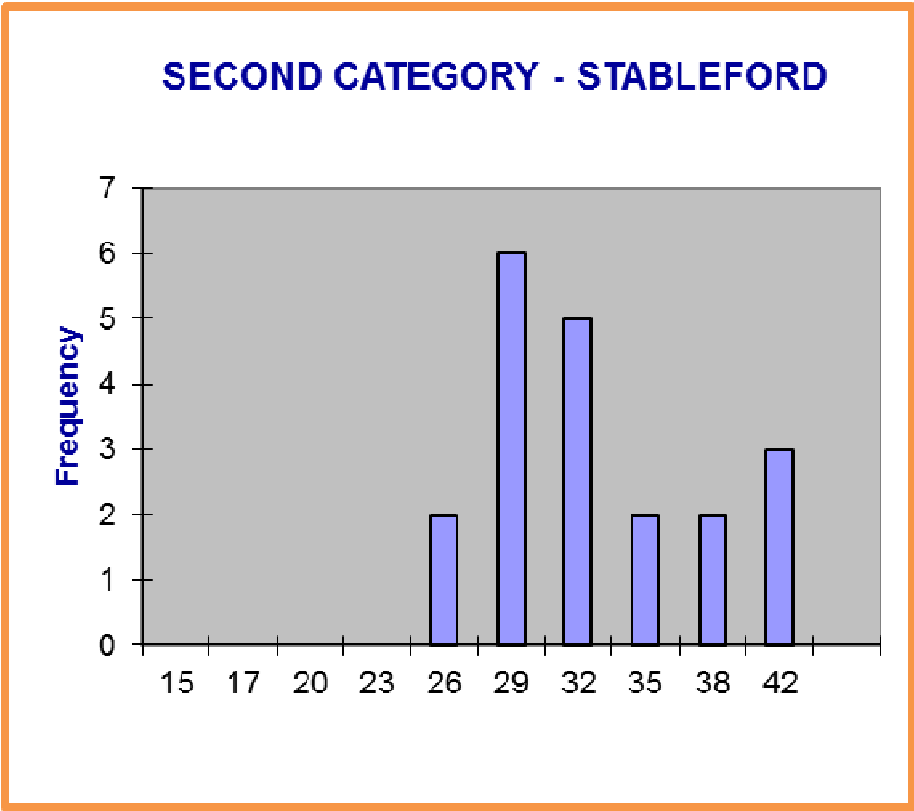
**Table 6a - Frequencies of the first category –  
Stableford scoring**



FP SCORING	
Mean	17.222
Standard error	0.8881
Median	17.5
Mode	21.72
Standard deviation	2.6644
Sample variance	7.0988
Kurtosis	-0.058
Asymmetry	-0.105
Range	8.84
Minimum	12.72
Maximum	21.56
Sum	155
Confidence level (95%)	2.048

SCORING	FREQUENCY
9	0
12	0
15	2
17	2
20	4
23	1
26	0
29	0
Others	0

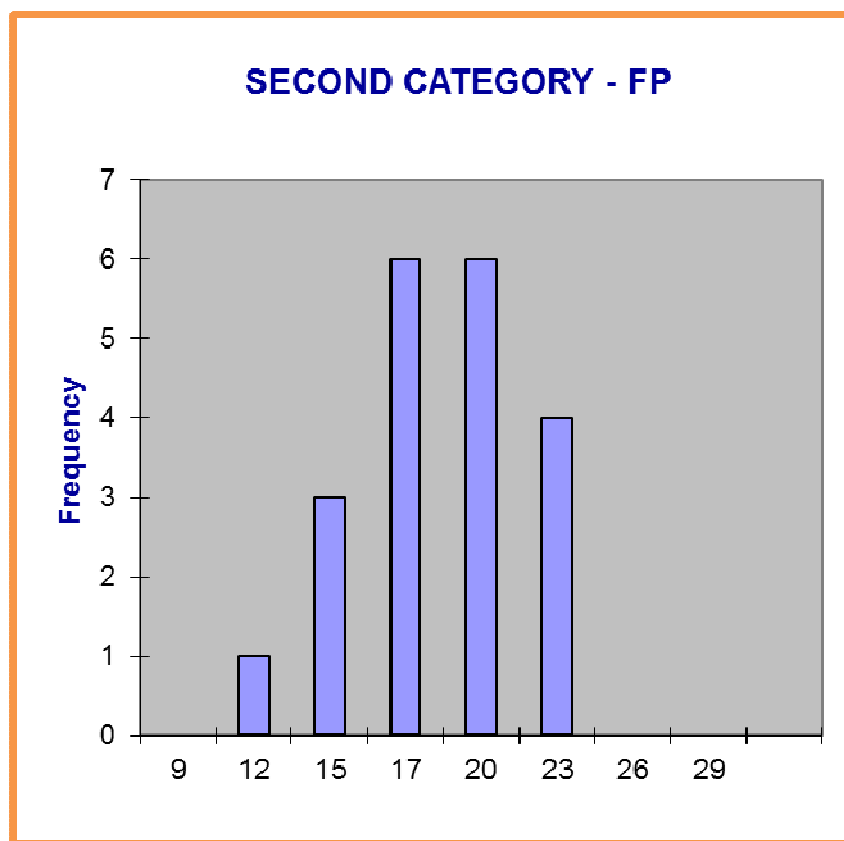
**Table 6b - Frequencies of the first category – FP scoring**



STABLEFORD SCORING	
Mean	28.5
Standard error	1.32288
Median	28.5
Mode	42
Standard deviation	5.91608
Sample variance	35
Kurtosis	-1.2
Asymmetry	0
Range	19
Minimum	19
Maximum	38
Sum	570
Confidence level (95%)	2.76881

SCORING	FREQUENCY
15	0
17	0
20	0
23	0
26	2
29	6
32	5
35	2
38	2
42	3
Others	0

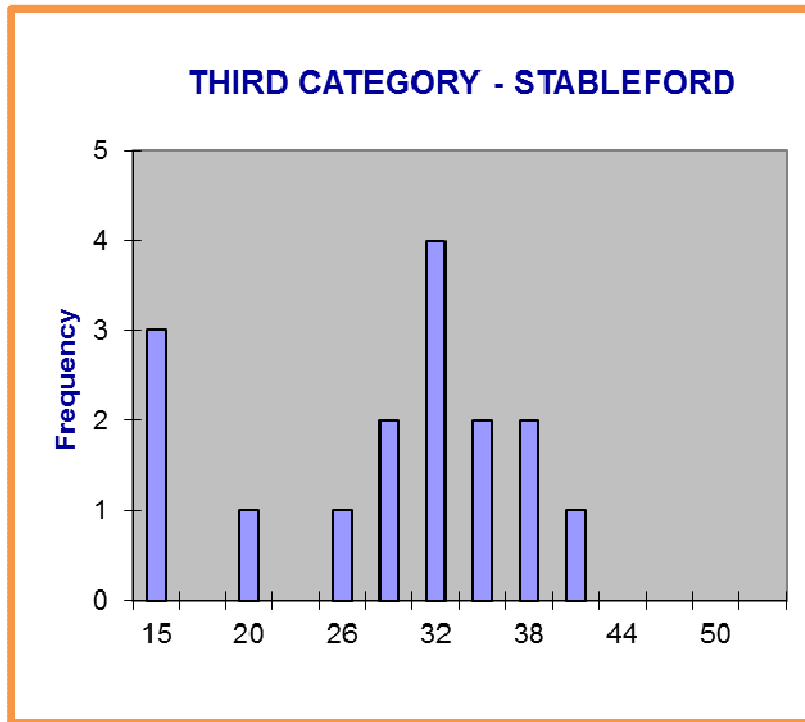
**Table 7a - Frequencies of the second category - Stableford scoring**



FP SCORING	
Mean	17.153
Standard error	0.7199
Median	17.25
Mode	22.61
Standard deviation	3.2193
Sample variance	10.364
Kurtosis	-0.375
Asymmetry	-0.014
Range	12.05
Minimum	10.56
Maximum	22.61
Sum	343.05
Confidence level (95%)	1.5067

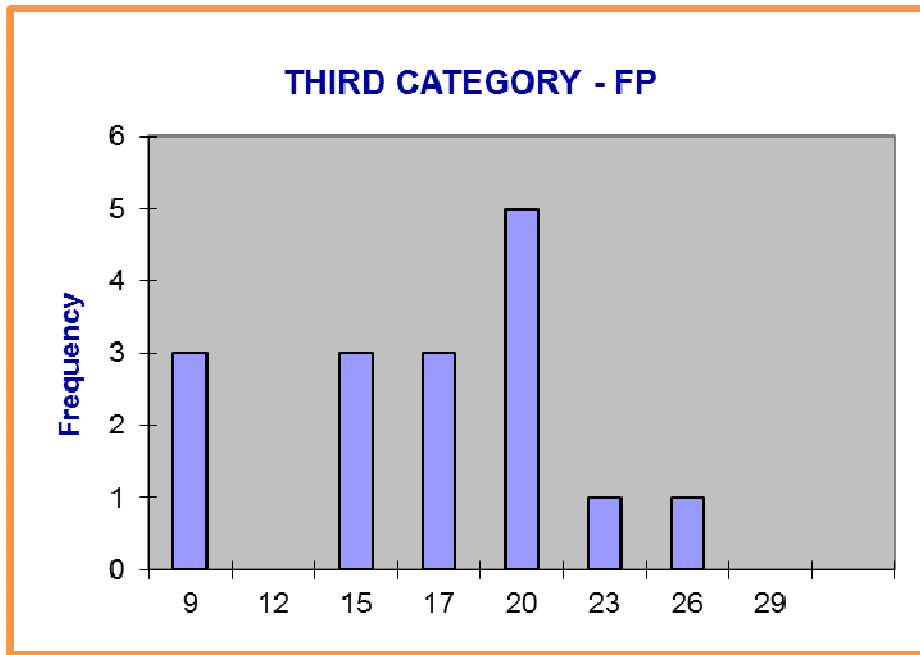
SCORING	FREQUENCY
9	0
12	1
15	3
17	6
20	6
23	4
26	0
29	0
Others	0

**Table 7b - Frequencies of the second category – FP scoring**



STABLEFORD SCORING		SCORING		FREQUENCY	
Mean	27.875	15		3	
Standard error	2.1053	17		0	
Median	30.5	20		1	
Mode	37	23		0	
Standard deviation	8.4212	26		1	
Sample variance	70.917	29		2	
Kurtosis	-0.619	32		4	
Asymmetry	-0.729	35		2	
Range	27	38		2	
Minimum	12	41		1	
Maximum	39	44		0	
Sum	446	47		0	
Confidence level (95%)	4.4873	50		0	
		Others		0	

**Table 8a - Frequencies of the third category –  
Stableford scoring**



FP SCORING	
Mean	15.301
Standard error	1.2464
Median	16.11
Mode	23.94
Standard deviation	4.9855
Sample variance	24.855
Kurtosis	-0.134
Asymmetry	-0.398
Range	17.22
Minimum	6.72
Maximum	23.94
Sum	244.82
Confidence level (95%)	2.6566

SCORING	FREQUENCY
9	3
12	0
15	3
17	3
20	5
23	1
26	1
29	0
Others	0

**Table 8b - Frequencies of the third category – FP scoring**

Following the overall ranking table by category (Table 9) we observe that in the third category, according to the Stableford scoring, the player **G1** is the winner, while according to the FP scoring the winner is the player **G3**.

The comparison between the scorings (Table 10) shows that the player **G3**, according to the Stableford scoring, scores a few points on several holes, but in most of the holes with heavy FP weight (11,12,4), **G3** totalizes more points than the player **G1**: therefore **G3** wins according to the FP scoring, even though he behaves worse than **G1** on the easier holes 7 and 10.

CAT 1	PLAYER	STABLEFORD	STABLEFORD	FP	PLAYER	STABLEFORD	STABLEFORD	FP
		SCORING	RANKING	SCORING			SCORING	RANKING
	G39	38	1	21.72	G39	38	1	21.72
	G40	35	2	21.56	G40	35	2	21.56
	G41	35	3	19.61	G41	35	3	19.61
	G42	33	4	18.78	G42	33	4	18.78
	G43	32	5	17.5	G44	31	6	17.72
	G44	31	6	17.72	G43	32	5	17.5
	G45	29	7	14.78	G46	29	8	16.89
	G46	29	8	16.89	G47	27	9	15.44
	G47	27	9	15.44	G45	29	7	14.78
	G48	24	10	12.72	G48	24	10	12.72
CAT 2	G18	42	1	22	G19	41	2	22.61
	G19	41	2	22.61	G20	41	3	22.61
	G20	41	3	22.61	G18	42	1	22
	G21	39	4	20.5	G22	38	5	21.22
	G22	38	5	21.22	G21	39	4	20.5
	G23	36	6	17.5	G25	35	8	19.39
	G24	35	7	18.89	G24	35	7	18.89
	G25	35	8	19.39	G26	31	9	18.89
	G26	31	9	18.89	G30	30	13	18
	G27	31	10	15.67	G28	31	11	17.56
	G28	31	11	17.56	G23	36	6	17.5
	G29	30	12	17	G29	30	12	17
	G30	30	13	18	G34	28	17	16.44
	G31	29	14	13.61	G27	31	10	15.67
	G32	29	15	13.61	G33	28	16	15.33
	G33	28	16	15.33	G35	28	18	15.22
	G34	28	17	16.44	G36	27	19	15.22
	G35	28	18	15.22	G31	29	14	13.61
	G36	27	19	15.22	G32	29	15	13.61
	G37	26	20	13.22	G37	26	20	13.22
	G38	26	21	10.56	G38	26	21	10.56
CAT 3	G1	40	1	22.06	G3	37	3	23.94
	G2	39	2	22.28	G2	39	2	22.28
	G3	37	3	23.94	G1	40	1	22.06
	G4	37	4	18.17	G4	37	4	18.17
	G5	33	5	16.39	G8	31	8	17.94
	G6	33	6	17.83	G6	33	6	17.83
	G7	32	7	17.61	G7	32	7	17.61
	G8	31	8	17.94	G9	31	9	17.5
	G9	31	9	17.5	G5	33	5	16.39
	G10	30	10	15.83	G10	30	10	15.83
	G11	29	11	14.94	G12	29	12	15.5
	G12	29	12	15.5	G11	29	11	14.94
	G13	24	13	13.28	G13	24	13	13.28
	G14	19	14	12.39	G14	19	14	12.39
	G15	15	15	6.72	G17	12	17	7.61
	G16	15	16	6.89	G16	15	16	6.89
	G17	12	17	7.61	G15	15	15	6.72

**Table 9 – Ranking by category based on the Stableford scoring (left) and the FP scoring (right)**



THIRD CATEGORY						
PLAYER G1						
HOLE	STROKES	HCP	STABLEFORD	SCORING WEIGHT	FP SCORING	
1	7	1	1	0.39	0.39	
2	5	1	2	0.28	0.56	
3	5	2	3	0.72	2.17	
4	4	2	3	0.83	2.5	
5	6	2	2	0.61	1.22	
6	4	1	3	0.17	0.5	
7	3	1	3	0.06	0.17	
8	7	1	1	0.5	0.5	
9	5	2	3	0.94	2.83	
10	6	1	2	0.11	0.22	
11	6	2	2	1	2	
12	5	2	2	0.89	1.78	
13	8	2	1	0.56	0.56	
14	5	1	2	0.44	0.89	
15	5	1	2	0.22	0.44	
16	4	2	3	0.78	2.33	
17	4	2	4	0.67	2.67	
18	7	1	1	0.33	0.33	
			39		21.67	

THIRD CATEGORY						
PLAYER G3						
HOLE	STROKES	HCP	STABLEFORD	SCORING WEIGHT	FP SCORING	
1	10	1	0	0.39	0.00	
2	5	1	2	0.28	0.56	
3	5	2	3	0.72	2.17	
4	3	2	4	0.83	3.33	
5	6	2	2	0.61	1.22	
6	6	1	1	0.17	0.17	
7	5	1	1	0.06	0.06	
8	10	1	0	0.50	0.00	
9	6	2	2	0.94	1.89	
10	10	1	0	0.11	0.00	
11	5	2	3	1.00	3.00	
12	4	2	3	0.89	2.67	
13	7	2	2	0.56	1.11	
14	6	1	1	0.44	0.44	
15	5	1	2	0.22	0.44	
16	2	2	5	0.78	3.89	
17	5	2	3	0.67	2.00	
18	5	1	3	0.33	1.00	
			37		23.94	

**Table 10 – Scoring detail of the players G1 and G3**

Table 9 also shows that in the second category, according to the Stableford scoring, the player **G18** wins, while according to the FP scoring the player **G19** is the winner.

The two players (Table 11) are behaving the same way on the first most difficult holes 11,9,12,4, but the player **G19** behaves better than **G18** on other important holes, 16,3,17. Thus **G19** wins according to the FP scoring even though he behaves worse than **G18** on the easiest hole 7.

SECOND CATEGORY PLAYER G18					
HOLE	STROKES	HCP	STABLEFORD	SCORING WEIGHT	FP SCORING
1	10	1	0	0.39	0.00
2	4	1	3	0.28	0.83
3	6	1	1	0.72	0.72
4	3	1	3	0.83	2.50
5	4	1	3	0.61	1.83
6	3	1	4	0.17	0.67
7	3	1	3	0.06	0.17
8	6	1	2	0.50	1.00
9	5	2	3	0.94	2.83
10	6	1	2	0.11	0.22
11	5	2	3	1.00	3.00
12	5	2	2	0.89	1.78
13	6	1	2	0.56	1.11
14	4	1	3	0.44	1.33
15	5	1	2	0.22	0.44
16	4	1	2	0.78	1.56
17	5	1	2	0.67	1.33
18	6	1	2	0.33	0.67
			42		22.00

SECOND CATEGORY PLAYER G19					
HOLE	STROKES	HCP	STABLEFORD	SCORING WEIGHT	FP SCORING
1	6	1	2	0.39	0.78
2	5	1	2	0.28	0.56
3	5	1	2	0.72	1.44
4	4	2	3	0.83	2.5
5	5	1	2	0.61	1.22
6	4	1	3	0.17	0.5
7	4	1	2	0.06	0.11
8	6	2	3	0.50	1.5
9	5	1	2	0.94	1.89
10	6	1	2	0.11	0.22
11	5	2	3	1.00	3
12	4	2	3	0.89	2.67
13	10	1	0	0.56	0
14	6	1	1	0.44	0.44
15	5	1	2	0.22	0.44
16	3	1	3	0.78	2.33
17	4	1	3	0.67	2
18	5	1	3	0.33	1
			41		22.61

**Table 11 - Scoring detail of the players G18 and G19**

Table 9 also shows that in the first category, according to both scores, the player **G39** wins, followed by the players **G40**, **G41**, **G42**. But there is a difference in the fifth place, which is attributed to the player **G43** according to the Stableford scoring and to the player **G44** and according to the FP scoring.

The Stableford score of the player **G43** on the holes 11,12 is respectively 1,2 (Table 12). The player **G44** has instead a Stableford score 2,3 on these holes, therefore he wins according to the FP scoring because he scored higher on these major holes.

Looking at the overall ranking table (Table 13), we note that the absolute winner, the player **G18**, according to the FP scoring moves down to the sixth place, while according to the Stableford scoring the absolute winner becomes the player **G3**, who in the overall Stableford scoring got ninth place.

FIRST CATEGORY					
PLAYER G43					
HOLE	STROKES	HCP	STABLEFORD	SCORING WEIGHT	FP SCORING
1	5	1	3	0.39	1.17
2	10	0	0	0.28	0.00
3	5	1	2	0.72	1.44
4	4	1	2	0.83	1.67
5	5	1	2	0.61	1.22
6	3	0	3	0.17	0.50
7	4	0	1	0.06	0.06
8	5	1	3	0.50	1.50
9	6	1	1	0.94	0.94
10	6	0	1	0.11	0.11
11	6	1	1	1.00	1.00
12	4	1	2	0.89	1.78
13	6	1	2	0.56	1.11
14	5	1	2	0.44	0.89
15	5	0	1	0.22	0.22
16	4	1	2	0.78	1.56
17	4	1	3	0.67	2.00
18	6	0	1	0.33	0.33
			32		17.50

FIRST CATEGORY					
PLAYER G44					
HOLE	STROKES	HCP	STABLEFORD	SCORING WEIGHT	FP SCORING
1	6	1	2	0.39	0.78
2	5	0	1	0.28	0.28
3	4	1	3	0.72	2.17
4	10	1	0	0.83	0.00
5	6	1	1	0.61	0.61
6	6	0	0	0.17	0.00
7	4	0	1	0.06	0.06
8	4	1	4	0.50	2.00
9	6	1	1	0.94	0.94
10	6	0	1	0.11	0.11
11	5	1	2	1.00	2.00
12	3	1	3	0.89	2.67
13	6	1	2	0.56	1.11
14	5	1	2	0.44	0.89
15	5	0	1	0.22	0.22
16	4	1	2	0.78	1.56
17	5	1	2	0.67	1.33
18	4	0	3	0.33	1.00
			31		17.72

**Table 12 - Scoring detail of the players G43 and G44**

STABLEFORD		FP	STABLEFORD		FP		
CAT	PLAYER	SCORING	SCORING	CAT	PLAYER	SCORING	SCORING
2	G18	42	22	3	G3	37	23.94
2	G19	41	22.61	2	G19	41	22.61
2	G20	41	22.61	2	G20	41	22.61
3	G1	40	22.06	3	G2	39	22.28
3	G2	39	22.28	3	G1	40	22.06
2	G21	39	20.5	2	G18	42	22
1	G39	38	21.72	1	G39	38	21.72
2	G22	38	21.22	1	G40	35	21.56
3	G3	37	23.94	2	G22	38	21.22
3	G4	37	18.17	2	G21	39	20.5
2	G23	36	17.5	1	G41	35	19.61
1	G40	35	21.56	2	G25	35	19.39
1	G41	35	19.61	2	G24	35	18.89
2	G25	35	19.39	2	G26	31	18.89
2	G24	35	18.89	1	G42	33	18.78
1	G42	33	18.78	3	G4	37	18.17
3	G6	33	17.83	2	G30	30	18
3	G5	33	16.39	3	G8	31	17.94
3	G7	32	17.61	3	G6	33	17.83
1	G43	32	17.5	1	G44	31	17.72
2	G26	31	18.89	3	G7	32	17.61
3	G8	31	17.94	2	G28	31	17.56
1	G44	31	17.72	3	G9	31	17.5
2	G28	31	17.56	2	G23	36	17.5
3	G9	31	17.5	1	G43	32	17.5
2	G27	31	15.67	2	G29	30	17
2	G30	30	18	1	G46	29	16.89
2	G29	30	17	2	G34	28	16.44
3	G10	30	15.83	3	G5	33	16.39
1	G46	29	16.89	3	G10	30	15.83
3	G12	29	15.5	2	G27	31	15.67
3	G11	29	14.94	3	G12	29	15.5
1	G45	29	14.78	1	G47	27	15.44
2	G31	29	13.61	2	G33	28	15.33
2	G32	29	13.61	2	G35	28	15.22
2	G34	28	16.44	2	G36	27	15.22
2	G33	28	15.33	3	G11	29	14.94
2	G35	28	15.22	1	G45	29	14.78
1	G47	27	15.44	2	G31	29	13.61
2	G36	27	15.22	2	G32	29	13.61
2	G37	26	13.22	3	G13	24	13.28
2	G38	26	10.56	2	G37	26	13.22
3	G13	24	13.28	1	G48	24	12.72
1	G48	24	12.72	3	G14	19	12.39
3	G14	19	12.39	2	G38	26	10.56
3	G16	15	6.89	3	G17	12	7.61
3	G15	15	6.72	3	G16	15	6.89
3	G17	12	7.61	3	G15	15	6.72

**Table 13 – Overall scores sorted by Stableford scoring (left) and by FP scoring (right)**

Analyzing the trend of the competition we observe that the player **G18** scored 3,3,3,2,3 points respectively in the holes 7,11,9,12,4 (Table 14). The player **G3**, however, scored only 1 point on the easiest hole 7, but respectively 3, 2, 3, 4 points on the most difficult holes 11,9,12,4.

Consequently in the FP scoring the player **G3** wins over the player **G18** because, despite the total Stableford scoring on these holes is one point lower, the point gained by **G18** over **G3** on the hole 7 is not significant, whereas the higher number of points accumulated by **G3** on the most difficult holes becomes crucial.

Also from Table 13 we observe that the last ranked player in the Stableford scoring is **G17**, while in the FP scoring the last player is **G15**.

Suffice it to see (Table 15) that in the most difficult hole 11, **G15** scored 0 whereas **G17** scored 2 points, and again **G15** scored 0 points on hole 4, where **G17** scored 3 points.

THIRD CATEGORY					
PLAYER G3					
HOLE	STROKES	HCP	STABLEFORD	SCORING WEIGHT	FP SCORING
1	10	1	0	0.39	0.00
2	5	1	2	0.28	0.56
3	5	2	3	0.72	2.17
4	3	2	4	0.83	3.33
5	6	2	2	0.61	1.22
6	6	1	1	0.17	0.17
7	5	1	1	0.06	0.06
8	10	1	0	0.50	0.00
9	6	2	2	0.94	1.89
10	10	1	0	0.11	0.00
11	5	2	3	1.00	3.00
12	4	2	3	0.89	2.67
13	7	2	2	0.56	1.11
14	6	1	1	0.44	0.44
15	5	1	2	0.22	0.44
16	2	2	5	0.78	3.89
17	5	2	3	0.67	2.00
18	5	1	3	0.33	1.00
			37		23.94

SECOND CATEGORY					
PLAYER G18					
HOLE	STROKES	HCP	STABLEFORD	SCORING WEIGHT	FP SCORING
1	10	1	0	0.39	0.00
2	4	1	3	0.28	0.83
3	6	1	1	0.72	0.72
4	3	1	3	0.83	2.50
5	4	1	3	0.61	1.83
6	3	1	4	0.17	0.67
7	3	1	3	0.06	0.17
8	6	1	2	0.50	1.00
9	5	2	3	0.94	2.83
10	6	1	2	0.11	0.22
11	5	2	3	1.00	3.00
12	5	2	2	0.89	1.78
13	6	1	2	0.56	1.11
14	4	1	3	0.44	1.33
15	5	1	2	0.22	0.44
16	4	1	2	0.78	1.56
17	5	1	2	0.67	1.33
18	6	1	2	0.33	0.67
			42		22.00

**Table 14 - Scoring detail of the players G18 and G3**



THIRD CATEGORY						
PLAYER G15						
HOLE	STROKES	HCP	STABLEFORD	SCORING	peso	FP SCORING
1	8	2	1		0.39	0.39
2	8	2	0		0.28	0.00
3	6	2	2		0.72	1.44
4	8	2	0		0.83	0.00
5	6	2	2		0.61	1.22
6	7	2	1		0.17	0.17
7	4	2	3		0.06	0.17
8	9	2	0		0.50	0.00
9	8	2	0		0.94	0.00
10	9	2	0		0.11	0.00
11	8	2	0		1.00	0.00
12	7	2	0		0.89	0.00
13	9	2	0		0.56	0.00
14	5	2	3		0.44	1.33
15	8	2	0		0.22	0.00
16	7	2	0		0.78	0.00
17	5	2	3		0.67	2.00
18	10	2	0		0.33	0.00
			14			6.33

THIRD CATEGORY						
PLAYER G17						
HOLE	STROKES	HCP	STABLEFORD	SCORING	peso	FP SCORING
1	10	2	0		0.39	0.00
2	10	2	0		0.28	0.00
3	10	2	0		0.72	0.00
4	4	2	3		0.83	2.50
5	7	2	1		0.61	0.61
6	7	2	1		0.17	0.17
7	5	2	2		0.06	0.11
8	10	2	0		0.50	0.00
9	10	2	0		0.94	0.00
10	10	2	0		0.11	0.00
11	6	2	2		1.00	2.00
12	10	2	0		0.89	0.00
13	10	2	0		0.56	0.00
14	10	2	0		0.44	0.00
15	10	2	0		0.22	0.00
16	5	2	2		0.78	1.56
17	7	2	1		0.67	0.67
18	10	2	0		0.33	0.00
			12			7.61

**Table 15- Scoring detail of the players G15 and G17**

## **ADVANTAGES OF THE FP SCORING SYSTEM**

In conclusion we can affirm that the FP scoring system, while maintaining a ranking overall in line with the classic Stableford scoring, rewards the players that in the specific competition obtain higher scores on the most challenging holes.

It may therefore be interesting to propose the FP scoring system beside the classical one, in order to highlight and reward the excellence and the commitment of the players in successfully overcoming the difficulties proposed along the course.

Therefore the choice to adopt the FP scoring system allows the tournament organization to offer a visible reward to the players that enhance the specificity and the excellence of the golf course.

Players will be rewarded using greater equity and respect for their effective performances on the specific hole. The FP scoring system gives both the beginner and the experienced player a new opportunity: the way to rediscover a renewed chance to and enhance their commitment on each hole, as well as their performance continuity on the course.

Finally it should be noted that the FP scoring system is particularly accurate: in fact it assigns a number of points that are on average lower than those assigned by the classic Stableford scoring, reflecting indeed the rigor of its evaluation.

With respect for the rigor of the evaluation, the FP scoring system also maintains an approximation to the second decimal place, allowing extremely precise and well differentiated rankings.

## THE AUTHORS



**LUCA FUSAR POLI**

Luca Fusar Poli's primary interests have always been centered on the pursuit of innovation in various fields, ranging from farming to trade, to genetic research and to habitat restoration.

In particular, he was concerned with maize breeding, realizing some of the most widespread varieties of maize listed on the Italian cereal stock exchanges, forming homozygous lines currently used in Southern Europe.

He is also the author of musical fairy tales for children.

In 1994 he started the realization of his first Mummy 9-hole golf course, and in 2000 he completed the 18-hole Daddy course in Crema, transforming one of the most enchanting farm estates in Italy, an example of rural architecture also studied at academic level, in a resort with international expectations.



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Rita Pizzi received her Degree in Physics from the University of Milan, and her Ph.D. in Electronic Engineering and Computer Science from the University of Pavia.

After working until 2001 at the National Research Council - Institute of Advanced Biomedical Technologies, she is currently Senior Research Fellow and Professor of Probabilistic Methods at the Department of Computer Science, University of Milan. Her research interests concern Artificial Intelligence applied to data analysis and computational physics.

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*Fusar Poli Formula*

