

SCHRS

SMALL CATAMARAN HANDICAP RATING SYSTEM

Recognised by



SCHRS activity report, November 14, 2023

JC.Rouvès President of the SCHRS World Council

In the statistical report dated November 15, 2022, I drew your attention to the various key points, which allowed us to justify possible modifications to the SCHRS Formula to adapt it to technological developments in sports catamarans. For the record, I recall below these different points

- The collection of data from regatta results, allowing the SCHRS to have reliable statistics
- A comparison of key figures over several years
- An overall comparison and by type of the participation of sports catamarans in inter-series regattas
- A global statistical analysis and by type of catamaran, intended to compare the 2023 SCHRS ratings with the 2023 performance ratings.
- Highlighting the impact that a modification of the parameters of the SCHRS calculation formula could have on the ratings, thanks to a tool developed for several years by the SCHRS.

1.Data sources

The table below shows the origin and distribution of the data that feeds the SCHRS database, and therefore the statistics.

It will be noted that the agreement signed in July 2020 with the French Sailing Federation now allows us to receive a large volume of data, according to an automated process concerning the results of inter-series sports catamaran regattas contested in France, Guadeloupe, in Martinique and Reunion.

Entering results from other countries is done manually and unfortunately time-consuming, on targeted clubs.

Data origin	From July 2020 to November 14, 2021		From November 15, 2021 to November 11, 2022		From November 12, 2022 to November 14, 2023	
	Nb races	%	Nb races	%	Nb races	%
France	746	64,76%	650	59,36%	944	67,00%
Europe (without France)	146	12,67%	173	15,80%	188	13,34%
Australia	169	14,67%	82	7,49%	99	7,03%
USA	59	5,12%	137	12,51%	117	8,30%
Dubai	32	2,78%	26	2,37%	47	3,34%
Canada	0	0,00%	27	2,47%	14	0,99%
Total	1152	100,00%	1095	100,00%	1409	100,00%

2.The key numbers (Dashboards 2021 – 2022 - 2023)

The comparison of key figures over 3 years shows stability of the different items, which do not call for specific comments, apart from the increase in the number of models presenting statistically usable data which goes from 41 to 48.

Dashboard 2020 - 2021		
Ratio SCHRS list / Number of multihull models having raced		
SCHRS list	320	
Multihull models that have raced	102	31,88%
Ratio SCHRS list / Nb of models with data stat. Exploitable		
Nb of models with data stat. exploitable	41	12,81%
Total number of multihulls registered	8578	
Total number of multihulls for statistics	1568	18,28%
Top five participation rates		
FORMULE 18	299	19,07%
HOBIE 16	102	6,51%
CLASSIC-A (DER.RAYON =)	98	6,25%
GOODALL VIPER DOUBLE	90	5,74%
SL16	68	4,34%
Total	657	41,90%
Diff.between ratings perf. and SCHRS ratings		
	Less advantage	Max advantage
Diff. between rating perf. and SCHRS rating	0,082006	-0,062349
Diff. In % between rating perf. and SCHRS rating	5,70%	-4,40%
Diff. between rating stat. SCHRS rating / hour	00:02:38	00:03:25
Standard deviation and variance		
	MAX	MIN
Standard deviation (Data dispersion)	0,10937498	0,00000000
Coefficient of variation	8,82%	0,00%

Dashboard 2022		
Ratio SCHRS list / Number of multihull models having raced		
SCHRS list	320	
Multihull models that have raced	103	32,19%
Ratio SCHRS list / Nb of models with data stat. Exploitable		
Nb of models with data stat. exploitable	41	12,81%
Total number of multihulls registered	11177	
Total number of multihulls for statistics	1936	17,32%
Top five participation rates		
FORMULE 18	303	15,65%
HOBIE 16	154	7,95%
GOODALL VIPER DOUBLE	120	6,20%
CLASSIC-A (DER.RAYON =)	104	5,37%
NACRA 15	88	4,55%
Total	769	39,72%
Diff.between ratings perf. and SCHRS ratings		
	Less advantage	Max advantage
Diff. between rating perf. and SCHRS rating	0,051878	-0,017334
Diff. In % between rating perf. and SCHRS rating	4,68%	-1,55%
Diff. between rating stat. SCHRS rating / hour	00:02:48	00:00:55
Standard deviation and variance		
	MAX	MIN
Standard deviation (Data dispersion)	0,11373787	0,00000000
Coefficient of variation	10,20%	0,00%

Dashboard 2023		
Ratio SCHRS list / Number of multihull models having raced		
SCHRS list	320	
Multihull models that have raced	122	38,13%
Ratio SCHRS list / Nb of models with data stat. Exploitable		
Nb of models with data stat. exploitable	48	15,00%
Total number of multihulls registered	10717	
Total number of multihulls for statistics	1856	17,32%
Top five participation rates		
FORMULE 18	216	11,64%
HOBIE 16	142	7,65%
NACRA 15	127	6,84%
GOODALL VIPER DOUBLE	106	5,71%
SL16	105	5,66%
Total	696	37,50%
Diff.between ratings perf. and SCHRS ratings		
	Less advantage	Max advantage
Diff. between rating perf. and SCHRS rating	0,093135	-0,024935
Diff. In % between rating perf. and SCHRS rating	8,13%	-2,38%
Diff. between rating stat. SCHRS rating / hour	00:01:25	00:04:52
Standard deviation and variance		
	MAX	MIN
Standard deviation (Data dispersion)	0,08562978	0,00000000
Coefficient of variation	8,10%	0,00%

3. Evolution of the participation of different catamaran models in regattas

The table below shows that the evolution of the participation rate of the different groups of sports catamarans fluctuates, but remains generally stable.

It is nevertheless useful to know the evolution of the participation of catamaran models, because firstly, this informs us about the real activity of the catamaran practice in inter series, and allows us to identify the boats which have a important presence in regattas.

The identification of these boats allows us to determine the target boats, which are used to objectively compare their performance ratings with the ratings calculated by the SCHRS Formula

Finally, these comparisons allow us to identify abnormal differences in ratings, understand why they exist, and if necessary, to change one or more parameters of the SCHRS Formula to adapt it to technological developments in sports catamarans.

Groups	2021	2022	2023
Group C1 (Catamarans with daggerboards)	62,78%	55,97%	54,85%
Group C3 (Catamarans without daggerboard)	29,73%	32,66%	35,10%
Groupe FB (Flying catamarans)	2,32%	3,59%	3,22%
Groupe C4 (Small catamarans < or = 4,38 m, without daggerboard)	5,21%	7,79%	6,83%

Note: Do not confuse the presence rate of catamarans at regattas, and the participation rate of catamarans sufficiently represented to be statistically exploitable

4.SCHRS statistical results 2023

The table below shows that of the 48 catamaran models taken into account in the statistical calculations, the difference between the ratings calculated by the SCHRS Formula and the performance ratings is between - 2.38% and +4.86 %, while in 2022 the difference for the 42 models was between -1.55% and 4.68%. (The 2023 table can be found on the next page)

We will try to explain these differences, which remain generally constant, when analyzing the data group by group.

Classes	Groups	Difference between rating perf. and SCHRS rating list	Difference in % between rating perf. and SCHRS rating list	Deviation rating stat./ hour more favorable than SCHRS rating	Deviation rating stat./ hour less favorable than SCHRS rating	Participation by model	Percentage of participation by type of boat
UNICORN	C1	0,058	4,86%		00:02:54	7	0,38%
TORNADO (Big rig - Spi)	C1	0,045	4,70%		00:02:49	47	2,53%
NACRA 17 "C" FOILS	C1	0,045	4,47%		00:02:41	9	0,48%
NACRA 5.0 DOUBLE	C3	0,052	4,42%		00:02:39	8	0,43%
NACRA INTER 20 F20	C1	0,042	4,36%		00:02:37	24	1,29%
NACRA 500 SPORT Spi	C3	0,048	4,26%		00:02:33	9	0,48%
HOBIE TWIXXY	C4	0,060	4,17%		00:02:30	6	0,32%
TORNADO CLASSIC	C1	0,044	4,14%		00:02:29	9	0,48%
TORNADO 24M2 SPINNAKER	C1	0,039	3,98%		00:02:23	8	0,43%
SL16	C3	0,043	3,78%		00:02:16	105	5,66%
RS CAT 16 S	C3	0,046	3,38%		00:02:01	8	0,43%
HOBIE 18	C1	0,037	3,35%		00:02:00	6	0,32%
SL15.5	C3	0,041	3,35%		00:02:00	70	3,77%
TOPAZ 14C	C4	0,049	3,33%		00:01:59	15	0,81%
TOPAZ 16C	C3	0,044	3,27%		00:01:57	11	0,59%
NACRA 16 DOUBLE	C1	0,034	3,24%		00:01:56	10	0,54%
FALCON F16 - 2 CREW	C1	0,033	3,19%		00:01:54	22	1,19%
FORMULE 16 DOUBLE	C1	0,033	3,18%		00:01:54	44	2,37%
CIRRUS 16 Q F 16	C1	0,033	3,14%		00:01:53	12	0,65%
M BY ERPLAST	C4	0,048	3,14%		00:01:52	6	0,32%
SHADOW X	C1	0,034	3,07%		00:01:50	17	0,92%
HOBIE 16 SPINNAKER	C3	0,034	2,93%		00:01:45	48	2,59%
NEW CAT F1	C4	0,042	2,93%		00:01:45	9	0,48%
NACRA F20 CARBON	C1	0,025	2,81%		00:01:41	35	1,89%
TOPAZ 16S SPINNAKER	C3	0,035	2,69%		00:01:36	12	0,65%
CLASSIC-A (DER.RAYON =)	C1	0,026	2,57%		00:01:32	87	4,69%
NACRA 580 (WITHOUT SPI)	C1	0,028	2,56%		00:01:32	32	1,72%
BIMARE F16	C1	0,026	2,51%		00:01:30	37	1,99%
CLASSE A (Foils)	FB	0,024	2,42%		00:01:27	54	2,91%
AHPC TAIWAN 4.9 SOLO	C1	0,026	2,34%		00:01:24	45	2,42%
HOBIE 17 (WINGS)	C1	0,026	2,14%		00:01:17	12	0,65%
HOBIE 16	C3	0,026	2,13%		00:01:16	142	7,65%
HOBIE 15	C3	0,028	2,11%		00:01:15	17	0,92%
DART 18 CAT BOAT	C3	0,026	2,07%		00:01:14	38	2,05%
GOODALL VIPER DOUBLE	C1	0,022	2,07%		00:01:14	106	5,71%
NACRA 15	C1	0,019	1,70%		00:01:01	127	6,84%
TYKA	C4	0,018	1,29%		00:00:46	48	2,59%
SHADOW	C1	0,014	1,23%		00:00:44	6	0,32%
SPRINT 15 CAT BOAT	C3	0,014	1,00%		00:00:35	16	0,86%
HOBIE 16 EASY	C3	0,013	0,95%		00:00:34	23	1,24%
DART 18	C3	0,011	0,91%		00:00:32	93	5,01%
HOBIE 14	C4	0,012	0,82%		00:00:29	37	1,99%
RS CAT 16 CLUB	C3	0,010	0,73%		00:00:26	12	0,65%
HOBIE 14 RACE (WITH JIB)	C3	0,006	0,43%		00:00:15	6	0,32%
AHPC TAIWAN 4.9	C1	0,002	0,22%		00:00:07	24	1,29%
FORMULE 18	C1	0,000	0,00%	00:00:00	00:00:00	216	11,64%
DART 16	C3	-0,020	-1,51%	00:00:54		19	1,02%
SPITFIRE	C1	-0,025	-2,38%	00:01:25		6	0,32%

Analysis by group

5.1 Group FB

Flying boat group catamarans represent **2.91%** of models used in the statistics

Classes	Groups	Difference between rating perf. and SCHRS rating list	Difference in % between rating perf. and SCHRS rating list	Deviation rating stat./ hour more favorable than SCHRS rating	Deviation rating stat./ hour less favorable than SCHRS rating	Participation by model	Percentage of participation by type of boat
CLASSE A (Foils)	FB	0,024	2,42%		00:01:27	54	2,91%

Le CLASSE A (Foils) est en 2023 le seul Flying Boat suffisamment représenté pour entrer dans cette analyse statistique. La faible présence des Flying boats dans les régates peut s'expliquer par leur coût élevé, et l'important niveau technique requis par les équipages, pour piloter avec succès ces bateaux.

A noter que les Nacra 17 Olympic full foiling ne sont pas présents sur les épreuves interséries

5.2 Group C1

Group C1 catamarans (Boats with daggerboards) represent **51.08%** of the models used in the statistics

Classes	Groups	Difference between rating perf. and SCHRS rating list	Difference in % between rating perf. and SCHRS rating list	Deviation rating stat./ hour more favorable than SCHRS rating	Deviation rating stat./ hour less favorable than SCHRS rating	Participation by model	Percentage of participation by type of boat
UNICORN	C1	0,058	4,86%		00:02:54	7	0,38%
TORNADO (Big rig - Spi)	C1	0,045	4,70%		00:02:49	47	2,53%
NACRA 17 "C" FOILS	C1	0,045	4,47%		00:02:41	9	0,48%
NACRA INTER 20 F20	C1	0,042	4,36%		00:02:37	24	1,29%
TORNADO CLASSIC	C1	0,044	4,14%		00:02:29	9	0,48%
TORNADO 24M2 SPINNAKER	C1	0,039	3,98%		00:02:23	8	0,43%
HOBIE 18	C1	0,037	3,35%		00:02:00	6	0,32%
NACRA 16 DOUBLE	C1	0,034	3,24%		00:01:56	10	0,54%
FALCON F16 - 2 CREW	C1	0,033	3,19%		00:01:54	22	1,19%
FORMULE 16 DOUBLE	C1	0,033	3,18%		00:01:54	44	2,37%
CIRRUS 16 Q F 16	C1	0,033	3,14%		00:01:53	12	0,65%
SHADOW X	C1	0,034	3,07%		00:01:50	17	0,92%
NACRA F20 CARBON	C1	0,025	2,81%		00:01:41	35	1,89%
CLASSIC-A (DER.RAYON =)	C1	0,026	2,57%		00:01:32	87	4,69%
NACRA 580 (WITHOUT SPI)	C1	0,028	2,56%		00:01:32	32	1,72%
BIMARE F16	C1	0,026	2,51%		00:01:30	37	1,99%
AHPC TAIWAN 4.9 SOLO	C1	0,026	2,34%		00:01:24	45	2,42%
HOBIE 17 (WINGS)	C1	0,026	2,14%		00:01:17	12	0,65%
GOODALL VIPER DOUBLE	C1	0,022	2,07%		00:01:14	106	5,71%
NACRA 15	C1	0,019	1,70%		00:01:01	127	6,84%
SHADOW	C1	0,014	1,23%		00:00:44	6	0,32%
AHPC TAIWAN 4.9	C1	0,002	0,22%		00:00:07	24	1,29%
FORMULE 18	C1	0,000	0,00%	00:00:00	00:00:00	216	11,64%
SPITFIRE	C1	-0,025	-2,38%	00:01:25		6	0,32%

This table shows that of the 24 catamaran models taken into account in the statistical calculations, 12 have differences between the performance ratings and the SCHRS ratings, between **-2.38% and +2.81%**, and fall within the tolerance range of plus or minus 3%. On the other hand, 12 models have rating differences of between **3.07% and 4.86%**

This deviation of more than 1%, which only concerned 3 boats in 2022, increased in 2023 and now concerns 12 models of group C1 catamarans.

5.3 Group C3

Catamarans without centerboard represent **34.32%** of models used in the statistics

Classes	Groups	Difference between rating perf. and SCHRS rating list	Difference in % between rating perf. and SCHRS rating list	Deviation rating stat./ hour more favorable than SCHRS rating	Deviation rating stat./ hour less favorable than SCHRS rating	Participation by model	Percentage of participation by type of boat
NACRA 5.0 DOUBLE	C3	0,052	4,42%		00:02:39	8	0,43%
NACRA 500 SPORT Spi	C3	0,048	4,26%		00:02:33	9	0,48%
SL16	C3	0,043	3,78%		00:02:16	105	5,66%
RS CAT 16 S	C3	0,046	3,38%		00:02:01	8	0,43%
SL15.5	C3	0,041	3,35%		00:02:00	70	3,77%
TOPAZ 16C	C3	0,044	3,27%		00:01:57	11	0,59%
HOBIE 16 SPINNAKER	C3	0,034	2,93%		00:01:45	48	2,59%
TOPAZ 16S SPINNAKER	C3	0,035	2,69%		00:01:36	12	0,65%
HOBIE 16	C3	0,026	2,13%		00:01:16	142	7,65%
HOBIE 15	C3	0,028	2,11%		00:01:15	17	0,92%
DART 18 CAT BOAT	C3	0,026	2,07%		00:01:14	38	2,05%
SPRINT 15 CAT BOAT	C3	0,014	1,00%		00:00:35	16	0,86%
HOBIE 16 EASY	C3	0,013	0,95%		00:00:34	23	1,24%
DART 18	C3	0,011	0,91%		00:00:32	93	5,01%
RS CAT 16 CLUB	C3	0,010	0,73%		00:00:26	12	0,65%
HOBIE 14 RACE (WITH JIB)	C3	0,006	0,43%		00:00:15	6	0,32%
DART 16	C3	-0,020	-1,51%	00:00:54		19	1,02%

This table shows that of the 17 catamaran models from the C3 group taken into account in the statistical calculations, 12 have differences between the performance ratings and the SCHRS ratings, between **-1.51% and +2.93%**, and fall within the tolerance range of plus or minus 3%. On the other hand, 6 models have rating differences of between **3.27%** and **4.42%**

This deviation of more than 1%, which did not concern any boat in the C3 group in 2022, increased in 2023 and now concerns 6 models of catamarans in the C3 group.

5.4 Group C4

Small catamarans without centerboard (< or = 4.38 m) represent **6.52%** of the models used in the statistics

Classes	Groups	Difference between rating perf. and SCHRS rating list	Difference in % between rating perf. and SCHRS rating list	Deviation rating stat./ hour more favorable than SCHRS rating	Deviation rating stat./ hour less favorable than SCHRS rating	Participation by model	Percentage of participation by type of boat
HOBIE TWIXXY	C4	0,060	4,17%		00:02:30	6	0,32%
TOPAZ 14C	C4	0,049	3,33%		00:01:59	15	0,81%
M BY ERPLAST	C4	0,048	3,14%		00:01:52	6	0,32%
NEW CAT F1	C4	0,042	2,93%		00:01:45	9	0,48%
TYKA	C4	0,018	1,29%		00:00:46	48	2,59%
HOBIE 14	C4	0,012	0,82%		00:00:29	37	1,99%

This table shows that of the 6 catamaran models taken into account in the statistical calculations, three have differences between the performance ratings and the SCHRS ratings of between **-0.82% and +2.93%** and fall within the range limit of 3%.

On the other hand, HOBIE TWIXXY (4.17%), TOPAZ 14C (3.33%) and M by Erplast (3.14%) do not fall into the 3% range. But we cannot draw hasty conclusions, because it must be remembered that these small catamarans are initiation boats for young, inexperienced crews.

6. What are the lessons from this analysis

Comparison of figures over 3 years highlighted two situations:

The first shows that the modification of the parameter of column "J" of the SCHRS Formula, whose value increased in 2022 from 12 to 14, resulted in a positive refocusing compared to 2021 differences in ratings of boats equipped with spinnakers.

The second has resulted since 2022 in a growing number of catamarans which do not fall within the range of plus or minus 3% difference between performance ratings and SCHRS ratings. This deviance of more than 1% has to date been revealed by statistical studies, but nothing allows us to identify its causes precisely.

In conclusion of this analysis

To date, as we have not identified the origin of the observed deviance which remains low, and as we have not observed any technological development of sports catamarans which is attributable to one or more criteria of the SCHRS Formula, I believe that there is no need to change the parameters of the SCHRS Formula for 2024.

But of course, I leave it to the members of the SCHRS Technical Committee and the SCHRS World Council to propose possible modifications supported by a technical argument. Remembering that

The SCHRS FORMULA IS THE RULE, and the statistics are there to alert us to the deviations observed between the SCHRS ratings and the performance ratings of the target boats