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MORETON INVESTIGATOR ASSOCIATION
Report on Arbitrary Time Correction Factor
Yacht Handicap System

Technical Report N^o 15.

Prepared by: Alan Chew 25/9/78

1. INTRODUCTION

The need for an appropriate handicapping system for the Association has been discussed on numerous occasions during the time over which we have been competing in races.

Handicap systems and racing in general terms have always been viewed critically relative to the basic aims of the Association as laid down in the constitution.

It is important to maintain the friendly atmosphere in competition which has prevailed so well throughout the Association for the past three years. In selecting this system of handicapping, the aims and requirements as mentioned above have been the major consideration.

Various yachts in the Association fleet are in different stages of speed trim due to weight carried and another important fact for consideration has been to provide handicaps which will permit these differences to prevail while allowing at least competitive handicap racing.

The fact only approximately 50% of the fleet carry spinnakers is another issue. In the past racing has been conducted in two divisions to cover this situation. The greatest practical drawback to the split division system with our small number of yachts is that on many occasions there was only one yacht in a particular division. The results are obviously not very meaningful in that case. The arbitrary T.C.F. system easily accommodates the spinnaker situation over an entire season. Some

discrepancies may occur from time to time in freakish conditions.

2. ADVANTAGES OF THE ARBITRARY T.C.F. SYSTEM

2.1 The Handicapper

Problems between members and the handicapper have no place in an Association of this nature. The close knit harmony which exists between our members must be preserved at all costs.

It is in this area that the system selected is the strongest of all other systems. Calculations and decisions are always mathematically conducted and no subjective judgement is required by the handicapper. The importance of this feature can not be overemphasized.

2.2 New Yachts

Any new yacht may sail into the system quite easily and an equitable handicap is achieved, once again simply and mathematically very quickly.

2.3 Sails and Hull Trim

The variations due to these parameters are catered for in the long term quite well by the system. A short lived "win" may be achieved one race but the payback comes next race when the penalty will apply because of increased Time Correction Factor. This feature of the system entirely removes the temptation for foxing for a race.

2.4 Operation of the System

The calculation sheets enclosed in this report were prepared by the author. The mathematics of the system is straight forward and a reader may sit down with a simple calculator and should find no difficulty in operating the system. A typical race result sheet can be

fully processed within fifteen minutes. It is felt that this amount of time does not impose a significant burden on the Sailing Director. Results could in fact be calculated immediately after the completion of a race. (Be very careful not to add salt water to your calculator circuit).

2.5 Accuracy of Recorded Results

It is important that the figures be calculated to number of decimal places as laid down in the form. When a calculation has been rounded off to the nearest figure the figure exactly as entered in the table must be re-entered in the calculator for the next calculation. In this way results will be consistent and may be re-checked reliably by others. This is important.

3. ESTABLISHING THE SYSTEM

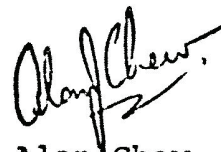
The results shown on the record sheets were used to establish the system for the 1978/79 season.

Three races were time recorded and a wide range of results were available. This has allowed a realistic start to the 1978/79 season to be made. Some anomalies of a minor nature may occur as new yachts are introduced to the system. These will be of less consequence than would occur in other systems and will be more quickly corrected.

4. CONCLUSION

The Arbitrary Time Correction Factor Handicapping System works well for the type of racing conducted by the Moreton Investigator Association.

The best interests of the Association and its members are served by this system to maintain harmony between members and to permit yachts in all stages of racing trim to compete on an equal footing with others. Subjective decision making is not demanded of the Sailing Director because all decisions are made mathematically.

A handwritten signature in dark ink, appearing to read 'Alan Chew', with a stylized flourish at the end.

Alan Chew

Vice Commodore

TRIAL **PAGE NO:** 1-1977/78 **SEASON**

STARTING TIME: 1100

COURSE DISTANCE (nautical miles): 11.35

COURSE DESCRIPTION: CABBAGE TREE CREEK/COMPASS ADJUSTMENT BU
OTTER ROCK/SHORNCLIFFE JETTY

[illegible]

1. Calculate Race Correction Factor: $CF = \frac{\sum ASF}{\sum SF}$ (Previous) = $\frac{962.11 + 967.40 + 999.12 + 1057.27}{4,500} =$ (use 1st group of 3 or 4 yachts)

2. Determine CSF for each yacht: $CSF = (ET) \times CF$ (enter in table)

3. If $CSF > 1.05$ (previous ASF), do not adjust TCF; then $TCF = AN$

If $CSF < 0.9$ (previous ASF), the correction to ASF is limited to 10% (Rule 2)

4. In cases where rules (1) and (2) do not apply:

Calculate new average speed factor:

$$ASF = \frac{ASF + 2 \times (ASF)}{3}$$
$$\text{TCP} = \frac{\text{Arbitrary Number}}{\text{New ASF}} = \frac{760}{\text{New ASF}}$$

NY - 760

5. Corrected time is calculated at: $CT = ET \times TCF$

5. Any new yacht adopts the ASP of the faster "neighbour".

Calculated by:.....

MORETON INVESTIGATOR ASSOCIATION

RACE NO: TRIAL NO.2

STARTING TIME: 1030

COURSE DESCRIPTION: WELLINGTON PT./HANLON LIGHT/PLATYPUS WRECK

DATE: 1977/78

COURSE DISTANCE (nautical miles): 9

DATE: 11th February, 1978

FINISHING ORDER	ELAPSED TIME (ET) Minutes (2 dec. places)	PREVIOUS ASF (Seconds/mile) (2 decimals)	CSF (Corrected Speed Factor)	NEW ASF (Seconds/mile)	NEW TCF (3 dec.)	CORRECTED TIME (CT) (Mins. 2 dec.)	HANDICAP PLACE	REMARKS
ALLEGRO	178	972.02	956.750	966.93	.786	139.91	1	
TAMYL	179	972.00	962.125	968.71	.784	140.34	2	No Previous Results
JULIE ANN	190	997.99	1021.25	1005.74	.756	143.64	3	
WINDSONG 34	195	975.73	1048.125	999.86	.760	148.20	4	No previous results - adopt Hicap of Fastest neighbour
ARCTIC TERN	196	975.73	1053.50	1001.65	.759	148.76	5	
WINDSONG I	202	975.73	1085.75	1012.15	.751	151.70	6	No previous results

1. Calculate Race Correction Factor: $CF = \frac{\sum ASF \text{ (previous)}}{\sum ET} = \frac{972.02 + 972 + 997.99}{178 + 179 + 190} = 5.375$ (use 1st group of 3 or 4 yachts)

2. Determine CSF for each yacht: $CSF = (ET) \times CF$ (enter in table)

3. If $CSF > 1.05$ (previous ASF), do not adjust TCF; then $TCF = AN$ (Rule 1)

If $CSF < 0.9$ (previous ASF), the correction to ASF is limited to 10% (Rule 2)

4. In cases where rules (1) and (2) do not apply:

Calculate new average speed factor: $ASF = \frac{CSF + 2 \times (ASF)}{3}$ Then determine time correction factor: $TCF = \frac{\text{Arbitrary Number} = 760}{\text{New ASF}}$ AN = 760

5. Corrected time is calculated at: $CT = ET \times TCF$

6. Any new yacht adopts the ASF of the faster "neighbour".

Calculated by: *Alan J. Clark*

COURSE DESCRIPTION: CABBAGE TREE CK./COMPASS ADJUSTMENT BUOY/
OTTER ROCK/SHORNCcliffe JETTY

RACE NO: TRIAL 3-1977/78 STARTING TIME: 10.30

STARTING TIME: 10.30

DATE: LST JULY 1978

[illegible]

1. Calculate Race Correction Factor: $CF = \frac{\sum ASF \text{ (Previous)}}{\sum ET} = \frac{968.71 + 1005.74 + 999.86}{240 + 253 + 253} = 3.987$
(use 1st group of 3 or 4 yachts)
2. Determine CSF for each yacht: $CSF = (ET) \times CF$
(enter in table)
3. If $CSF > 1.05$ (previous ASF), do not adjust TCF; then $TCF = AN$
(Rule 1)
- If $CSF < 0.9$ (previous ASF), the correction to ASF is limited to 10%
(Rule 2)
4. In cases where rules (1) and (2) do not apply:
Calculate new average speed factor: $ASF = \frac{CSF + 2 \times (ASF)}{3}$
Then determine time correction factor: $TCF = \frac{\text{Arbitrary Number}}{\text{New ASF}}$
AN = 760
5. Corrected time is calculated at: $CT = ET \times TCF$
6. Any new yacht adopts the ASF of the faster "neighbour".

Calculated by: May Chew.....

COURSE DESCRIPTION: MANLY/AIRCRAFT BEACON/HOPE BANKS/GREEN IS.

RACE NO: 1 - 1978/79 Season

STARTING TIME: 1030

DATE: 5th August, 1978 COURSE DISTANCE (nautical miles): 10.1

[illegible]

1. Calculate Race Correction Factor: $CF = \frac{\sum ASF \text{ (Previous)}}{\sum ET}$ (use 1st group of 3 or 4 yachts)
2. Determine CSF for each yacht: $CSF = (ET) \times CF$ (enter in table)
3. If $CSF > 1.05$ (previous ASF), do not adjust TCF; then $TCF = AN$ (Rule 1)
4. If $CSF < 0.9$ (previous ASF), the correction to ASF is limited to 10% (Rule 2)
5. In cases where rules (1) and (2) do not apply:
Calculate new average speed factor: $ASF = \frac{CSF + 2 \times (ASF)}{3}$
Then determine time correction factor: $TCF = \frac{\text{Arbitrary Number}}{\text{New ASF}}$
AN = 760
New ASF = 760
6. Corrected time is calculated at: $CT = ET \times TCF$
7. Any new yacht adopts the ASF of the faster "neighbour".

Calculated by: Warren

MORETON INVESTIGATOR ASSOCIATION

RACE NO: 2-1978/79 SEASON STARTING TIME: 11.30 COURSE DESCRIPTION: WELLINGTON PT./COOCHIEMUDDLO IS.
 DATE: 2nd Sept. 1978 COURSE DISTANCE (nautical miles): 5.2

FINISHING ORDER	ELAPSED TIME (ET) Minutes (2 dec. places)	PREVIOUS ASF (Seconds/mile) (2 decimals)	CSF (Corrected Speed Factor)	NEW ASF (Seconds/mile)	NEW TCF (3 dec.)	CORRECTED TIME (CT) (Mins. ² / _{dec.})	HANDICAP PLACE	REMARKS
TAMYL	144.5	951.35	939.68	947.46	.802	115.89	1	
JULIE ANN	154.62	1006.73	1005.49	1006.32	.755	116.74	2	
WINDSONG I	157.62	1012.15	1025.00	1016.43	.748	117.90	3	
ALLEGRO	159.53	975.73	1037.42	975.73	.779	124.27	4	Do Not Adjust - Rule 1
ARCTIC TERN	174.56	1036.77	1135.16	1036.77	.745	130.05	5	Do Not Adjust - Rule 1

6.503

- Calculate Race Correction Factor: $CF = \frac{\sum ASF \text{ (Previous)}}{\sum ET} = \frac{951.35 + 1006.73 + 1012.15}{144.5 + 154.62 + 157.62} =$ (use 1st group of 3 or 4 yachts)
- Determine CSF for each yacht: $CSF = (ET) \times CF$ (enter in table)
- If $CSF > 1.05$ (previous ASF), do not adjust TCF; then $TCF = AN$ (Rule 1)
 If $CSF < 0.9$ (previous ASF), the correction to ASF is limited to 10% (Rule 2)
- In cases where rules (1) and (2) do not apply:
 Calculate new average speed factor: $ASF = \frac{CSF + 2 \times (ASF)}{3}$ Then determine time correction factor: $TCF = \frac{\text{Arbitrary Number} = 760}{\text{New ASF}}$ AN = 760
- Corrected time is calculated at: $CT = ET \times TCF$
- Any new yacht adopts the ASF of the faster "neighbour".

Calculated by: *Alan J. Chant*

MORETON INVESTIGATOR ASSOCIATION

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Refer Previous Report No. 6

27 MHZ Marine Band Radios

Information Ex Telecom

All 27MHZ Marine Band Radios should be modified immediately to include the following frequencies: 27.86, 27.88, 27.89, 27.90, 27.91, 27.94, 27.96. If your set has only 6 channels then leave out 27.89.

It is not anticipated at this time to convert from AM to SSB or UHF.

GENERAL INFORMATION

In future when calling the channel should be determined by its frequency ie 27.91 not channel B or 3. This will be obvious when calling Manly Coast Guard on 27.88 as you will be requested to immediately go over to another channel of their choice for further traffic.

All radios should now be standardised as to channel selector positions for frequencies as laid down by Telecom; a list of which is at the end of this report.

For those members anticipating fitting a radio the following list of suppliers may be of assistance.

Sea Hound	ex Morgan & Walker	6 crystals	\$195 with aerial
Handic	ex Amal Wireless	4 crystals	\$145 plus aerial
Teltronic	ex Sailing Specialists	"	\$145 " "
Westrans TX66	ex O'Donnell Griffin	6 crystals	\$187 with aerial
Midland 77A - 882M	ex Dick Smith	7 crystals	\$125 plus aerial

I have fitted a new radio to "Julie Ann" and chose the Midland unit from Dick Smith using existing cables and aerial. After having tuned the unit to the aerial I found the reception excellent, receiving stations as far away as Southport and even Hobart.

Don Murray