

## **A description of the handicapping system used by the Lake Jindabyne Sailing Club.**

The handicapping system used by the club has been developed in-house over many, many of years. It is ONLY applied to results of Twilight Races.

It has as its basis the Yardstick value that has been calculated by Australian Sailing (AS) for each class of yacht. The slower the yacht, the larger its Yardstick will be. For example, a Laser Radial has a Yardstick of 118.5, a Hobie 17 has a Yardstick of 80.

What is the Yardstick used for? To adjust a yachts finishing time, that is the actual elapsed race time, in order to "even out" the results in a race containing a mixed class of yachts. Thus, let's say a Laser Radial and a Hobie 17 are the only yachts in the first race of the season. The Hobie's elapsed time is 37 minutes 17 seconds and the Laser Radial elapsed time is 52 minutes 28 seconds. To determine the "real" winner of the race, the Yardstick is applied to the results.

The calculation is: 
$$\frac{\text{Elapsed Time} * 100}{\text{Yardstick}} = \text{Corrected Time}$$

Laser Radial Elapsed Time = 3,148 seconds \* 100 = 314,800

Divide 314,800 by 118.5 = 2656.5 seconds

Corrected Time = 44 minutes (2,640 seconds) 16.5 seconds.

Hobie 17 Elapsed Time = 2,237 seconds \* 100 = 223,700

Divide 223,700 by 80 = 2796.2 seconds

Corrected Time = 46 minutes (2,760 seconds) 36.2 seconds.

The Laser Radial wins the race on Corrected Time.

The clubs Handicapping System takes this time adjustment calculation one step further. The Yardstick value is adjusted after each TWILIGHT race to become the yachts HANDICAP.

There are two terms you need to be clear on.

Firstly, Yardstick, which is a yachts value set by AS, it does not change during the season.

Secondly, Handicap, which is a yacht's "new yardstick" once it has been adjusted in accordance with each yacht's race results. It will usually change every time a yacht competes in a Twilight Race during the season.

For new members, the Handicap for their first race is the AS Yardstick for the yacht. For returning members, the Committee reviews all Handicaps from the previous season at the start of the new season and MAY adjust the Handicaps or carry them over unchanged.

For ALL members, after each race, the Handicap is adjusted depending upon the yacht's finishing position in a race. (Note – the finishing position is determined on the corrected finishing time, not the elapsed finishing time.)

For multihulls, a first or second place will see the yacht's Handicap reduced, a third place will see a yacht's Handicap remain unchanged, whilst a fourth or more will see the yacht's Handicap increased.

For monohulls, a first, second or third place will see the yacht's Handicap reduced, a fourth place will see a yacht's Handicap remain unchanged, whilst a fifth or more will see the yacht's Handicap increased.

When a yacht's Handicap is increased, it reduces the Corrected Time thus making it easier to win a race. When a yacht's Handicap is reduced, it increases the Corrected Time thus making it harder to win a race.

OK, so by how much does a yacht's Handicap get adjusted after a race? Here are the values for the multihulls.

For a 1<sup>st</sup> place, the Handicap is reduced by 2% of the yacht's Yardstick.

For a 2<sup>nd</sup> place, the Handicap is reduced by 1% of the yacht's Yardstick.

For a 3<sup>rd</sup> place, there is no adjustment made.

For a 4<sup>th</sup> place, the Handicap is increased by 1% of the yacht's Yardstick.

For a 5<sup>th</sup> place, the Handicap is increased by 1.5% of the yacht's Yardstick.

For a 6<sup>th</sup> place, the Handicap is increased by 2% of the yacht's Yardstick.

For a 7<sup>th</sup> place, the Handicap is increased by 2.5% of the yacht's Yardstick.

For an 8<sup>th</sup> place, the Handicap is increased by 3% of the yacht's Yardstick.

For a 9<sup>th</sup> place, the Handicap is increased by 3.5% of the yacht's Yardstick.

For 10<sup>th</sup> and subsequent places, the Handicap is increased by 4% of the yacht's Yardstick.

SPECIAL NOTE – The adjustment percentage is applied to the yachts YARDSTICK value (which does not change) and NOT the yachts HANDICAP value (which does change). (See table below for additional information.)

So, using the result of the two yacht race above, the Laser Radial has come first so its Handicap will be reduced by 2%.

Thus  $118.5 - 2\% = 116.3$  which becomes the yachts Handicap for the next Twilight race.

For the Hobie 17 a second place means its Handicap will be adjusted by 1%.

Thus  $80 - 1\% = 79.2$  which becomes the Yachts Handicap for the next Twilight Race.

For the sake of the example, let's say a Hobie 16 comes third in the race and a Laser comes fourth. The Handicap of both boats would not be adjusted.

Further let's say a Flying Fifteen comes fifth. The Handicap would be adjusted by +1%. The standard Yardstick of a Flying Fifteen is 109, thus  $109 + 1\% = 110.1$  which becomes the yachts Handicap for the next Twilight race.

Now let's progress to the next Twilight race.

Say the Flying Fifteen wins the race, the Laser comes second, the Hobie 17 comes third and the Laser Radial comes 4<sup>th</sup>.

Yacht	Yardstick	Result	Adjustment Percentage	Adjustment Amount *	Old Handicap	New Handicap
F15	109	1 <sup>st</sup>	-2%	-2.18	110.1	107.9
Laser	114	2 <sup>nd</sup>	-1%	-1.14	116.3	115.1
Hobie17	80	3 <sup>rd</sup>	0	0	79.2	79.2
Radial	118.5	4 <sup>th</sup>	0	0	118.5	118.5
Hobie16	80.5	5 <sup>th</sup>	+1.5%	+1.2	80.5	81.7

\* Yardstick multiplied by the Adjustment Percentage.

Handicap values are round to one decimal point.

The ultimate aim of the Handicapping System is to spread the results amongst all competitors. That is, the more a sailor wins, the harder it becomes to continue winning because of their decreasing Handicap is increasing their elapsed time. The sailor finishing mid-field, will eventually win because their increasing Handicap is decreasing their corrected time.

And it works! In season 2018-19 there were 18 different winners in Division 1 and Division 2 Twilight races.

FOOTNOTE:

A question that I am sure is on your mind is "Why is the adjustment percentage applied to the original Yardstick value and not the Handicap value?"

The simple answer is to ensure the progression/regression of the Handicap is a consistent value.

To explain, let's say your Yardstick is 118. You come 1<sup>st</sup> in the first four races. (A 1st pace means your Handicap decreases by 2%). Your Handicap would become:

After Race 1:  $118.00 - 2.36 (118 * 2\%) = 115.64$

After Race 2:  $115.64 - 2.36 (118 * 2\%) = 113.28$

After Race 3:  $113.28 - 2.36 (118 * 2\%) = 110.92$

After Race 4:  $110.92 - 2.36 (118 * 2\%) = 108.56$

Now, if the percentage increase was applied to the Handicap, the result would be:

After Race 1:  $118.00 - 2.36 (118.00 * 2\%) = 115.64$

After Race 2:  $115.64 - 2.31 (115.64 * 2\%) = 113.33$

After Race 3:  $113.33 - 2.27 (113.33 * 2\%) = 110.06$

After Race 4:  $110.06 - 2.22 (110.06 * 2\%) = 107.84$

As can be seen, if the adjustment percentage is applied to the Handicap, the amount of the adjustment amount varies each time. Not so if the adjustment percentage is applied to the Yardstick.

Thus the amount the Handicap is varied is consistent. That is, a yacht that comes first early in the season and again late in the season will have its Handicap adjusted by the same amount each time.

Finally, I appreciate that the variation in the adjustment amount is relatively minor – and the variation is almost non-existent at 1% - but I think the system should be as consistent as possible.

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