

AUSTRALIAN SAILING YARDSTICKS - CATAMARANS

Date: 01 October, 2020

Version: 1.1

INTRODUCTION

Australian Sailing (AS) Catamaran yardsticks are prepared to provide the fairest possible calculation of results for mixed fleet "Off the Beach" catamaran racing. The yardsticks for the 2020/21 season have been broadly reviewed, considering class open mixed fleet regatta performance and SCHRS measurement data. This review has indicated that minor adjustments to several classes since the 2019-20 review are warranted.

The aim of the AS Catamaran Yardsticks Table is to provide a basis for numerous classes and class variants of catamarans to compete fairly, when sailed well. The yardstick is not intended to compensate for differences in skills, competence or talent of individual crews (that is a personal handicap). The yardstick is calculated and maintained on a measurement and/or performance founded statistical basis and, within broad limits, remains valid for a variety of wind strengths and courses sailed. Comparison of catamarans of various classes sailing different courses is outside the scope of the current AS yardstick system.

SMALL CATAMARAN HANDICAP RATING SYSTEM (SCHRS)

World Sailing has adopted the SCHRS (Australia is represented on the World Council of the SCHRS) as the preferred system of rating (or allocating yardsticks) for small "off the beach" (OTB) racing catamarans. This system has significant merit in simplifying, improving and reducing the time and effort required in the calculation/validation of yardsticks for small OTB catamarans. However, for many seasons now the SCHRS formulae/class measurement system has had several problematic anomalies when calculating ratings (yardsticks) for some popular Australian classes, especially for smaller, light weight cat rigged versions of some popular classes, as well as technical issues assessing the performance differential of spinnaker boats, lifting foils and, more lately, full foiling. Indications are that the generally greater average wind strengths on Australian coastal waters (compared to Europe/UK) may be a prime driver behind some of these anomalies, as well as the algorithm used to calculate design crew weights across all classes, with little regard to boat size/design. There is also the issue of course configurations. Where regattas in Australia are more often around triangular and/or in combination with windward/leeward courses, in Europe course marks of major catamaran regattas can be fixed geographical points, irrespective of wind direction.

The SCHRS ratings formulae are extensively reviewed each year, to address these and other issues identified during debate by the SCHRS World Council and Technical Committee. Anomalies regarding Australian classes/courses have not, to date, been addressed, and in fact recent reviews (there was no review for calendar year 2018) could be considered regressive. There remains, at time of this publication, several issues in respect of some variants of Australian classes as well as questions surrounding the performance benefits of spinnakers, not to mention foils, which precludes full adoption of the SCHRS ratings system in Australia.

REVIEW METHODOLOGY

Yardsticks published over past seasons for the more popular classes, with reliable high-quality race results data, were predominantly derived using a “performance” based system, with data sourced and statistically analyzed from published results of major mixed fleet regattas, mixed “Class Championships” and to a lesser extent mixed fleet club racing. This methodology, or “Performance” based analysis for these “popular” classes, has been maintained for the current review. However, consistent with more recent reviews, an additional check or validation against the World Sailing (previously ISAF) Small Catamaran Handicap Rating System (SCHRS) was undertaken on all listed classes.

Disappointingly, with the exception of several well supported and popular classes, reliable and good quality race results data continues to be difficult to source (with some notable exceptions more recently) and/or assessing the quality of various competing crews has been challenging. Furthermore, under a strictly “performance” based system only, new and/or modified classes cannot realistically be allocated a yardstick (even tentatively) in a timely manner, until club/regatta race results from at least several boats with well performed crews are assessed. This has frustrated many owners of new and/or modified classes where, in some instances, such classes have been refused entry to one or more major regattas. A classic Catch-22 situation.

The solution to this predicament is to, in the first instance, determine an Australian Sailing Catamaran Yardstick based on the SCHRS rating, for all classes. This provides a “reality check” on existing Australian Sailing yardsticks, highlighting potential anomalies for further investigation/analysis. Consequently, through a lack of quality race results data for a majority of listed classes (refer above), many class yardsticks have been determined entirely from, and others with a considerable weighting to, SCHRS ratings. However, the original SCHRS formulae are revised to reflect optimal crew weights of Australian classes and also with modified parameters for foiling and spinnaker classes, given typical wind/wave conditions on Australian coastal or estuary waters.

The issue of quantifying the increased performance of spinnakers and foils remains a debatable topic within SCHRS circles. There remains, at the time of this review, further investigation/analysis required. Notwithstanding the above, the calculated SCHRS ratings (when converted to AS yardsticks) have been “adjusted” where there is overwhelming and statistically valid data from recent (up to the past 5 years) regatta results.

The 2020/21 Australian Sailing Catamaran yardsticks are calculated/validated with a significant weighting to SCHRS ratings for many classes. It is probable that this current “hybrid” performance + measurement SCHRS/AS yardsticks system will remain the predominant catamaran yardstick system for use at Australian sailing venues/clubs for the foreseeable future.

The “base” class for conversion of SCHRS ratings to Australian Sailing Yardsticks remains the F18. The F18 class is well represented in large numbers with reliable, validated mixed fleet race data across Europe, USA, UK and Australia. The F18 continues to present as an ideal class to standardize on for conversion between yardstick systems.

Generally, yardsticks are little changed from the 2019/20 review, although a small number of classes have had more significant adjustments. Of the 94 listed classes or class variants, 54 remain unchanged, 25 have moved by ± 0.5 only, 9 by ± 1 and 2 by ± 1.5 . There are 3 new classes and a revised rig for the Maricat 5.0 sloop (-6). Movements of ± 1 or greater (except Maricat 5.0 sloop) are generally foiling classes and/or classes where reliable regatta results from the 2019-2020 season have now been analysed or the A Class “Vintage”, where the definition has changed significantly.

CLASS DEVELOPMENTS

iFly 15: The introduction of the iFly 15 in the European and North American markets during the 2019 northern hemisphere summer season is interesting and not entirely unexpected. This class clearly demonstrates that foiling technology has now developed to the point where to sail a foiling cat to its full potential does not require a helmsperson of Olympic or International standard. Stable and competitive foiling would now appear to be within reach of many experienced club racers. However, the iFly 15 is not currently available in the Australasian market, but the class has been independently measured and SCHRS ratings published. The iFly is not listed under AS Catamaran Yardsticks for 2020-2021 but, should a boat be independently imported to Australia, an AS yardstick could be readily calculated from SCHRS measurement data.

UFO Foiler: Similarly, like the iFly 15, the UFO Foiler has been marketed worldwide during 2019-20. This is a small, single crew foiling cat (loa 2.67m) with a single T shaped foil and rudder (think Moth). The class has not been rated under SCHRS and would not, at first glance, be applicable for rating under SCHRS measurement data. At least one boat has been imported to WA, but at this stage the class is not listed under AS Catamaran Yardsticks for 2020-2021.

Enquiries regarding either of these classes by Club ROs may be directed to the Australian Sailing Catamaran Yardsticks Coordinator at: sailingservices@sailing.org.au.

A Class: The International A-Division Catamaran Association (IADCA) and World Sailing are trialing rule changes, intended to prevent foiling in the A Class "Classic" division. A full description of the Trial Rules, applicable for 2020 is here:

https://www.a-cat.org/sites/default/files/2020.02.14-definition_of_classic_2020_1.pdf

However, Race Officers need to be aware that the "trial" rule changes do not "physically" prevent the A Cat "Classic" from foiling, but adopt an "honor" system, whereby the "Classic" division shall not foil (with exceptions). This may prove problematic to police.

The current Australian Sailing Yardstick for the A Cat "Classic" reflects the capability to foil when equipped with C shaped foils, as per the current or trial (except Rule 5) A Cat International Regulations, overseen by World Sailing.

It is recommended that RO's ensure that Sailing Instructions for mixed fleet regattas or club events/series state that "Trial Rule 5 for 2020, pertaining to the definition of a "Classic" A Class, does not apply".

Refer to the "notes" column opposite the A Class "Classic" in the Yardsticks table. This may be revisited following voting by IADCA affiliated Associations, expected in late 2020.

Maricat 5.0 The Maricat 5.0 (sloop and cat) has a re-designed sail-plan with increased total sail area and a square top mainsail. The revised Maricat Class Association approved rig design is reflected in the class yardsticks for this review, which now includes Cat Rigged and Super Sloop variants.

NEW OTB CATAMARAN CLASSES - PROVISIONAL RATINGS

For new OTB Catamaran Classes, a rating under SCHRS is calculated, based on published class rules/restrictions and/or supplemented by measurements taken from available prototype (or preferably production) boats for input to SCHRS. The SCHRS rating is then converted to a "Tentative" Australian Sailing yardstick. Existing validated class measurement data from International SCHRS measurers is used where available (provided the International class is demonstrably the same as the Australian variant – this is not always the case).

Similarly, where an existing class modifies class rules/restrictions, and these changes potentially have an effect on performance (and can be readily input under SCHRS), a revised (or additional) Australian Sailing yardstick has or can be calculated (e.g. - square top or deck sweeper mainsails, total weight and/or sail area reduction/increases, changes to centreboards/rudders measurement/design, addition of spinnaker in class rules etc).

Note: All such new and/or modified yardsticks are regarded as "Tentative" until verified and/or amended by subsequent consistent and extensive mixed fleet regatta race data. Manufacturers and/or Australian distributors and/or Class Associations of new and/or modified catamaran classes are encouraged to submit relevant measurement data to Australian Sailing for consideration. Please refer to www.schrs.com for measurement data required and/or email queries to Australian Sailing Catamaran Yardsticks Coordinator at: sailingservices@sailing.org.au.

APPLICABILITY OF CATAMARAN YARDSTICKS

Yardsticks for OTB Catamarans have been determined, for most popular classes, based on results of mixed fleet racing at major regattas and/or club racing, generally over a wide range of wind/wave/tidal conditions, but predominately in moderate to fresh winds on coastal and/or estuary waters (i.e. - typical average conditions at most coastal Australian sailing venues/waters). Under these wind/wave conditions (say consistently 10-15 knots+ with a short chop, moderate tidal influences and limited swell), sloop rigged (2 up) variants of some classes (e.g. Taipan 4.9, Mosquito et al) typically outperform the cat rigged (1 up) variant, whereas in light/moderate conditions (say consistently under 10 knots and smoother waters) the 2 variants are much closer or equal in performance. Race Officers at inland waters clubs and/or other sailing venues with smooth waters and generally light/moderate winds, may wish to modify Australian Sailing yardsticks for these or other classes, based on observed performances between racing crews of similar skills across various classes. All such "locally derived" yardsticks are to be referred to as "Club" yardsticks or some other similar term. Race Officers should be alert for and not permit regatta/club entrants "cherry picking" race conditions and sailing cat and/or sloop rigged to suit conditions vs yardstick, with results then aggregated under 1 entrant. Sailing Instructions should be worded to prohibit such actions.

REVISION OF YARDSTICKS

Yardsticks are based on the current design of a class or class variants, unless noted otherwise. Where recent design changes have occurred within class rules/restrictions, the Class Association/Manufacturer should inform the Yardstick Coordinator of these changes and provide the necessary rules/restrictions and/or measurement data to enable a review of the Class yardstick to be undertaken in a timely manner.

Class Associations/Manufacturers wishing to query "Reliable and/or Probable" class yardstick(s) must ensure that Australian Sailing receives sufficient quality race data to

undertake a review. This involves ensuring that Clubs/Associations organising multi-class OTB catamaran events (in particular Regattas and Class Championships), where several classes or class variants sail the same course, forward the results to the Australian Sailing Catamaran Yardstick Co-Coordinator in the required formats.

Similarly, Class Associations/Manufacturers may also request a review of "Tentative" yardsticks, should they believe that SCHRS measurement data is in error. Class measurement data must be provided by reference to Class measurement rules and restrictions (which take precedence) or by measurement of an existing class example that has been sailed at or near the top of the national fleet. Generally, such measurements taken from an existing boat refer to SCHRS measurements not covered by Class rules/restrictions.

Typically: "all up" sailing weight or sail area measurements (including mast area and supported by written/signed confirmation from a recognized sailmaker). Weight measurements must be provided by and signed by the current respective National/State measurer. The total "all up ready to sail" weight must be given to the nearest kg. Measurement of the respective components: rigging, sails, mast, rudders etc, may be calculated individually to the closest 0.1kg, then totaled and rounded to the nearest kg. Class Associations/Manufacturers are responsible for providing adequate data to allow any review to be undertaken.

The A Class Flying and Nacra 15 yardsticks have been moved from Tentative to Probable. Foiling technology developments are stabilizing and analysis of recent regatta results supports this assessment. The Hobie 16 and Nacra 5.8NA have been moved from Probable to Reliable, owing to more recent and reliable regatta race data.

USE OF THE AUSTRALIAN SAILING CATAMARAN YARDSTICKS

An Australian Sailing affiliated Club, intending to conduct a race series or event under the Australian Sailing Catamaran Yardstick system, should include in the Notice of Race and/or Sailing Instructions, clauses based on the following:

1 The version# of the AS Catamaran Yardsticks that is used in calculating the mixed catamaran class/fleet racing results.

2 The AS Catamaran Yardstick used for each class, adjusted as per Notice of Race and/or Sailing Instructions for variations from optimal design crew weights (refer crew weight adjustment table below).

- or

2 The AS Catamaran Yardstick numbers will be those published by the Race Committee 'n' minutes prior to the start of the first*/each* race. (* choose one)

- or

2 AS Catamaran Yardstick numbers will be those listed hereunder or published on Club Notice board etc:

3 Class entries without a AS Catamaran Yardstick published in the current listing will be allocated an estimated "tentative" Yardstick.

- or

3 Class entries without a AS Catamaran Yardstick published in the current listing will not be included in yardstick adjusted results.

4 Whether or not AS Catamaran Yardstick numbers may/will be adjusted during the series.

ONGOING VALADITY OF YARDSTICKS

In order to assure the continued validity of yardsticks, mixed fleet race result returns (especially for major regattas and/or mixed class State/National Championships) must be submitted to the Catamaran Yardsticks Coordinator. Electronic submission of race results containing the information set out below is encouraged and preferred.

Race Officers are asked to submit race results as soon as possible. To ensure the ongoing reliability of Australian Sailing yardsticks for all forms of mixed class racing at club and regatta level, a consistent and steady supply of results is required.

Race Officers are encouraged to submit data to the Australian Sailing Catamaran Yardsticks Coordinator at: sailingservices@sailing.org.au

Sailwave or excel files may be attached "as is". Results from other race results programs such as Top Yacht etc. may be submitted as csv files, together with a pdf or doc/docx format results file. In all cases, a copy of the Sailing Instructions in pdf or doc/docx format must also accompany the results files.

The following relevant data should be included, where not already defined in the Sailing Instructions or Sailwave file:

- Date, location and status of the event (National/State/Club Championships or open mixed class regatta).
- Contact details of Race Officers.
- Whether crews are current/past National, State or Club Champions.
Conditions:
- Wind strength/variability (gusty, shifty, etc.)

Course sailed by each Division (mandatory). This needs to include:

- Course angles (relative to wind direction)
- Course configuration – Mandatory (W-L; Triangle, W-L; etc.)
- Number of legs sailed

Race results for each entry, including:

- Class
- Sail number, boat name, skipper's name
- Elapsed times (or start times and finish times) or code (DNC, DNF etc) for all competitors

Other information:

- Suggested review of ratings for specific classes.

CATAMARAN YARDSTICKS 2020 - 2021

	RELIABLE *	PROBABLE *	TENTATIVE *	Change from 2019-20	Design Crew Weight (kgs)	NOTES
<u>A</u> Class (Flying) Θ		61.5		-1	75	*** Includes all <u>A</u> Class Catamarans (with a valid measurement certificate) that do not comply with the restrictions of the Classic or Vintage Divisions.
<u>A</u> Class (Classic)		67		+1	75	*** All hull designs (with a valid measurement certificate) inclusive of boards/foils that are parallel and straight and/or canted or with a constant curvature or "C" shape (other foil designs, including but not limited to "J", "L" or "Z" shapes, are not permitted). Rudder winglets and decksweeper mainsails permitted.
<u>A</u> Class (Vintage)	70			-1.5	75	*** Vintage hull designs (with a valid measurement certificate dated prior to 1 March 2019) inclusive of boards that are parallel and straight and/or canted. Typically, but not necessarily exclusively, pre 2014 designs/builds. Club ROs should apply a degree of common sense and personal experience when defining an <u>A</u> Cat as "Vintage". NO curved foils or decksweeper mainsails. Rudder winglets permitted.
Arafura			101	-	64	1 up trap (+3 no trap) Class approved Square Top Main, +1 for Pin Head Main
Arrow		89		-	73	1 up trap (Class approved Square Top Main, +1.5 for Pin Head Main)
Capricorn (AHPC) Φ		66.5		-	150	Sloop - 2 up trap (F18 compliant)
Cobra Cat			83.5	-	75	1 up trap (Class approved Square Top Main, (+1 for Pin Head main)
Cobra Sloop			79.5	-0.5	130	2 up trap (Class approved Square Top Main, (+1 for Pin Head main)
F16 Cat			71	-	80	(F16 Box Rules)
F16 Sloop			68	-	141	(F16 Box Rules)
F18	65			-	150	Standard Class for SCHRS/YV conversions (F18 Box Rules)
Flying Phantom			56	-	160	Sloop - 2 up trap ("L" foils and" T" rudders)
Hobie 14		97		+0.5	67	1 up (trap -2)
Hobie 14 Turbo		91		+0.5	72	1 up trap
Hobie 16	80.5			-	133	Sloop - 2 up trap
Hobie 16 Spin			75.5	-	143	Sloop - 2 up trap (Spin of 17.65 m ²)
Hobie 17			80	-	75	SE - 1 up trap: cat rigged with "wings"
Hobie 18		76		-	148	Sloop - 2 up trap
Hobie Getaway			87	-	132	Sloop - 2 up, 1 trap (wings and front tramp removed)
Hobie T2			86.5	-	129	Sloop - 2 up trap
Hobie Tiger Φ		67		-	150	Sloop - 2 up trap (F18 compliant)
Hobie Wave (Cat)			104	-	64/1 13	1 up (no trap) +6 for 2 up
Hobie Wave (Sloop)			99	-	113	2 up (no trap)
Hobie Wave (Turbo)			97.5	+0.5	69	1 up (jib + trap)
Hydra 16			81.5	-0.5	132	Sloop - 2 up trap
Maricat 4.0 Sloop			94	-	69	1 up (-2 trap)

CATAMARAN YARDSTICKS 2020 - 2021

	RELIABLE *	PROBABLE *	TENTATIVE *	Change from 2019-20	Design Crew Weight (kgs)	NOTES
Maricat 4.3 Cat	96			-	68	1 up (+1 for GRP Hulls **)
Maricat 4.3 Sloop		91		-	119	2 up (+1 for GRP Hulls **)
Maricat 4.3 Super Sloop		88		-	73	1 up trap (+1 for GRP Hulls **)
Maricat 5.0 Cat			79.5	NA	75	1 up trap (+2 for Pin Head)
Maricat 5.0 Sloop			75	-6	133	Sloop - 2 up trap (+1 for Pinhead)
Maricat 5.0 Super Sloop			74.5	NA	85	1 up trap (+1.5 for Pinhead)
Marstrom 20			56.5	NA	160	2 up trap
Mosquito Cat (Mk1)	81.5			-0.5	75	1 up trap
Mosquito Cat Spin	76.5			-	80	1 up trap – (Spin of 14.1m ²)
Mosquito Sloop (Mk11)		78		-0.5	128	2 up trap
Mosquito Sloop Spin			74	-0.5	138	2 up trap – (Spin of 14.1 m ²)
Nacra 14sq		84		-0.5	71	(Class approved Square Top Main, +1 for Pin Head)
Nacra 15		71		+0.5	134	Sloop + Spin - 2 up trap with “C” shaped foils
Nacra 15 FCS			68	+1	134	Sloop + Spin - 2 up trap with “Z” shaped foils
Nacra 15 FCS ONE			71	+0.5	78	Cat + Spin - 1 up trap with “Z” shaped foils
Nacra 16sq		78.5		-1	75	(Class approved Square Top Main, +1 for Pin Head)
Nacra 16sq Spin			74.5	-0.5	80	(Class approved Square Top Main, +1 for Pin Head main)
Nacra 17			65	+0.5	140	Sloop + Spin - 2 up trap with “C” shaped foils
Nacra 17 FCS			62.5	+0.5	140	Sloop + Spin - 2 up trap with “Z” shaped foils (IOC Olympic Multihull – mixed crew)
Nacra F20 Carbon			57.5	+1	160	Sloop - 2 up trap
Nacra F20 FCS			54.5	+0.5	160	Nacra F20 Carbon with “J/L” foils and” T” rudders
Nacra 350 Sloop			107	-	101	2 up – 1 trap
Nacra 350 Super Sloop			105	-	63	1 up trap
Nacra 430 Sloop			95	-	118	2 up – 1 trap
Nacra 430 Super Sloop			91.5	-	72	1 up trap
Nacra 430 Super Sloop Spin			87.5	-	77	1 up trap
Nacra 4.5 Sloop			90	-0.5	120	2 up – 1 trap
Nacra 4.5 Super Sloop			87	-	75	1 up trap
Nacra 4.5 Super Sloop Spin			82.5	-	80	1 up trap
Nacra 5.0 Cat			84	-	75	1 up trap (Class approved Sq Top Main, +1 for Pin Head)
Nacra 5.0 Sloop			78.5	-0.5	133	2 up trap (Class approved Sq Top Main, +1 for Pin Head)
Nacra 5.2			77.5	-	140	Sloop - 2 up trap
Nacra 5.5			73.5	-	148	Sloop - 2 up trap (-0.5 for Sq Top main)
Nacra 5.5 Spin			68.5	-	148	Sloop - 2 up trap (-0.5 for Sq Top main)
Nacra 5.8		73.5		-	157	Sloop - 2 up trap (Small jib/no foil bridle)
Nacra 5.8NA	70			-1	157	Sloop - 2 up trap (Class approved Square Top Main + Large jib/foil bridle, +1 for pin head main)

CATAMARAN YARDSTICKS 2020 - 2021

	RELIABLE *	PROBABLE *	TENTATIVE *	Change from 2019-20	Design Crew Weight (kgs)	NOTES
Nacra 5.8NA Spin			65	-1	157	Sloop - 2 up trap - Spin of 24m ² (Class approved Square Top Main + Large jib/foil bridle, +1 for pin head main)
Nacra F16 Cat			72	-	80	1 up trap (F16 Compliant)
Nacra F16 Sloop			68.5	-	141	2 up trap (F16 Compliant)
Nacra F17 Cat			72.5	-	80	1 up trap
Nacra F17 Sloop			68.5	-	142	2 up trap
Nacra Inter 17 Cat			73.5	-	80	1 up trap
Nacra Inter 17 Sloop			69	-	142	2 up trap
Paper Tiger	92.5			-	68	1 up
Prindle 15			89	-	71	1 up trap
Prindle 16			83	-	128	Sloop - 2 up trap
Prindle 18			79	-	148	Sloop - 2 up trap
Stingray Mk11			72.5	-	149	Sloop - 2 up trap with wing mast + Sq. top main (+2.5 for Mk1 rig)
Taipan 4.9 Cat	76.5			+0.5	75	1 up trap
Taipan 4.9 Cat Spin			72.5	-	80	1 up trap - (Spin of 17.5 m ²)
Taipan 4.9 Sloop	73			+0.5	130	2 up trap
Taipan 4.9 Sloop Spin			69	-	140	2 up trap - (Spin of 17.5 m ²)
Taipan 5.7			69.5	-	154	Sloop - 2 up trap
Taipan 5.7 Spin			64.5	-	154	Sloop - 2 up trap (Spin of 23 m ²)
Tornado International			63.5	-0.5	160	*** Post 2001 Class Rules Amendments
Tornado Classic			64	-0.5	160	*** As above but no carbon spars
Tornado Vintage		72		-	160	*** Pre 2001 sail measurements – No spin, 1 trap
Viper Cat			71.5	-0.5	80	1 up trap (F16 Compliant)
Viper Cat Flying			67	+1	80	1 up trap with “Z” foils (+0.5 without Decksweeper)
Viper Sloop		68.5		-	141	2 up trap (F16 Compliant)
Viper Sloop Flying			64	+1.5	141	2 up trap with “Z” foils (+0.5 without Decksweeper)
Weta 4.4 Trimaran SQ			87	-	NA	1 up (+3 for 2 up) SQ – 9.3m ² Square Top mainsail PH – 8.3m ² Pin Head mainsail Provided for Race Officer’s guidance only.
Weta 4.4 Trimaran PH			90	-	NA	Tentative rating based on limited data – use with caution. Analysis of data suggests a wide disparity between light and moderate/heavy air performance.
Windrush 4.3 Cat	95			-0.5	68	1 up (Class approved Square Top Main, +1 for Pin Head main)
Windrush 4.3 Sloop		90		-0.5	119	2 up (Class approved Square Top Main, +1 for Pin Head main)
Windrush 4.3 Super Sloop	87			-1	73	1 up trap (Class approved Square Top Main, +1 for Pin Head main)
Windrush 4.3 Super Sloop Spin			84	-0.5	78	1 up trap (Class approved Square Top Main, +1 for Pin Head main)
Yvonne 20			77	-	160	2 up 1 trap

An additional column is included in the table to list "adjustments" ± from the previous review.

* The validity of yardsticks is divided into three categories, which are of statistical and/or historical significance only. Yardsticks within any category should not be altered by Club Race Officials without reference to the Catamaran Yardsticks Coordinator at sailingservices@sailing.org.au. and submission of all relevant data, accompanied by a reasoned "fact" based argument in support of any suggested alteration(s).

RELIABLE: At least several years of extensive, good quality race data is available from major regattas over a wide range of wind/wave conditions and the SCHRS rating is within ± 1.5% of assessed race data.

PROBABLE: As for "RELIABLE", but the race data may be of lesser quality/quantity and/or there is a significant discrepancy between the SCHRS rating and assessed race data. There may be a significant bias towards the SCHRS rating.

TENTATIVE: The class is new/revised and/or race data is nonexistent and/or unreliable and/or of questionable quality. The yardstick is largely determined based on SCHRS measurement data.

** Where there is any doubt, Foam Sandwich Hulls are assumed.

*** The A Class and Tornado classes have been divided into multiple divisions, as defined in the respective notes. This has been provided primarily for racing at Club level, to reflect that many older examples of these classes, uncompetitive with contemporary designs, or made so as a result of changes to class rules/restrictions, are sailing at some clubs in significant numbers.

The "guidance" in the comments section in respect of the A Class "Vintage" and "Classic" divisions has been updated and clarified following representations from the Australian International A-Division Catamaran Association.

These A Class Divisions are advisory only. However, should Race Officers elect to treat these class divisions as one single class with a common yardstick, the lowest yardstick typically applies. Notwithstanding the above, Race Officers may elect to enter all A Class variants (Flying, Classic and Vintage) as a common fleet but competing under each division's yardstick. Alternatively, the Classic and Vintage divisions may be combined under the Classic yardstick and/or the Flying and Classic combined under the Flying yardstick. Race Officers are encouraged to reflect on (considering respective divisional numbers and/or relevant local conditions or for any other measured reason) whatever A Class divisional outcome is most appropriate for their club/regatta events.

Race Officers requiring more information/advice and/or guidance in respect of A Class divisions are encouraged to contact the Australian Sailing Catamaran Yardstick Co-Ordinator at: sailingservices@sailing.org.au and/or the Australian International A-Division Catamaran Association at: secretary@a-cat.org.au

o The International A-Division Catamaran Association continues to preside over a major "development design phase", following the introduction of "Foiling" hull designs at the 2014 World Championships. "Foiling" hull and sailplan designs have evolved rapidly since 2014, although the technology is now maturing, which has

led to a re-rating of the A Class (Flying) yardstick to "Probable". However, designers continue to explore and challenge the limits of foiling/sailplan technology, within class rules, and crews are adapting to the physical and technical challenges. Further technological advances are not only plausible, but quite likely. (refer Class Developments above)

The "Flying" and "Classic" divisional terminology under Australian Sailing Yardsticks is consistent with that of SCHRS for the A Class and the Trial Rules adopted by the International A-Division Catamaran Association and World Sailing defining the A Class "Classic" (non-foiling variant) for 2020.

- ☉ Refers to one of 2 recognised "Vintage" F18 designs (generally uncompetitive with more contemporary F18 designs) which have been rated separately under SCHRS measurement data as a "one design" class. Race Officers may elect to enter these classes as an F18 for club or open mixed fleet regatta racing at their discretion.

CREW WEIGHT ADJUSTMENT TABLE

The following table of adjustments, first introduced in the 2013/14 review, is provided for the guidance of Race Officers for mixed fleet racing at Club level only.

- The Crew Weight Adjustment Table does NOT apply to the Weta Trimaran.
- Australian Sailing does not support adoption of the Crew Weight Adjustment Table for National/State/Regatta level Championships/events.

The total weight of crew(s) refers to the "ready to sail" weight, including all mandated and typical (at Race Committee's discretion) sailing equipment including, but not necessarily limited to, wetsuit, buoyancy vest, trapeze harness, gloves, booties, spray jacket. Adjustments are in multiples of 0.5 yardstick points. The adjustment refers to the total (1 or 2 up) crew weight. The table has been prepared based on the adjustment provided by the SCHRS ratings formulae, for the stated increase in the design or optimal total crew weight, as shown in the AS catamaran yardstick table above. Adjustments may be extrapolated above the ranges in the table. There is no adjustment for total crew weights under the stated design/optimal crew weight.

Class LOA/Configuration/Crew #	Total Crew Weight Increase over Design Weight	Yardstick Points Adjustment
Up to 4.8 metres Cat or Sloop rigged – 1 or 2 crew	Up to 4 kg	zero
	Up to 8 kg	0.5
	Up to 12 kg	1
	Up to 16 kg	1.5
	Up to 20 kg	2
4.9 – 5.5 metres Cat rigged – 1 crew	Up to 5 kg	zero
	Up to 10 kg	0.5
	Up to 15 kg	1
	Up to 20 kg	1.5
4.9 – 5.2 metres Sloop rigged – 2 crew	Up to 7 kg	zero
	Up to 15 kg	0.5
	Up to 22 kg	1
Greater than 5.2 metres Sloop rigged – 2 crew	Up to 10 kg	Zero
	Up to 20 kg	0.5
	Up to 30 kg	1

NEW AND ARCHIVED CLASSES

The Marstrom 20 has been included this season, following representations from a club RO. A "tentative" Australian Sailing Yardstick has been calculated from hull and sailplan/rig measurements supplied by SCHRS measurers.

The Weta Trimaran remains in this review, despite being a trimaran, after introduction in 2015-16. The Weta is a multihull and their owners tend to race in Catamaran Regattas and/or sail in Catamaran Divisions at their local club, which is understandable.

However, the Weta presents a yardstick dilemma, as Trimarans cannot be rated under SCHRS measurement rules. Fortunately, recent and quality race data from several open mixed fleet catamaran regattas, with significant numbers of Wetas entered, has become available. Although, pending further regatta results, especially in more brisk conditions, the listed yardstick remains "tentative" and should be treated with caution.

The manufacturer markets the Weta with (post 2017) a square top mainsail (SQ) that is 12% larger than the original pinhead (PH). The Weta is listed in the table under SQ and PH variants. The class also has an unusually wide disparity between light and moderate/heavy air performance, compared to most catamaran classes, although the re-designed main may correct this, at least in part. More race data from mixed fleet regattas is still urgently required.

Should Club Race Officers and/or Class Associations or individual boat owners be aware of a new class, or class formerly listed, that is currently raced actively at club or regatta level, please contact the Australian Sailing Catamaran Yardstick Coordinator at: sailingservices@sailing.org.au.