

2010 Rating Application - Bay Area Multihull Association

The Rating Committee has no responsibility for the seaworthiness or safety of yachts rated & cites US SAILING Fundamental Rule 4, "It shall be the sole responsibility of each yacht to decide whether or not to start or to continue to race".

Boat Name	_____	Name	_____
Sail Number	_____	Street	_____
Boat Model	<u>Corsair 31R</u>	City, State, Zip	_____
Manufacturer	<u>Corsair Marine</u>	Email Address:	_____
Year Built	_____	Day Phone:	_____
Marina	_____	Evening Phone:	_____
Slip Number	_____	Emergency #:	_____

Do you want an ODR (One Design Rating)?

Yes <input type="checkbox"/>	No <input type="checkbox"/>	N / A <input type="checkbox"/>
This is a:	Source of the information Provided (Circle/check all that apply)	
Unmodified Class Boat <input type="checkbox"/>	Class Rules <input type="checkbox"/>	Sailmaker <input type="checkbox"/>
Modified Class Boat <input type="checkbox"/>	Designer <input type="checkbox"/>	Owner Measurement <input type="checkbox"/>
Non-Class (Custom) <input type="checkbox"/>	Sales Brochure <input type="checkbox"/>	Measurement Cert. <input type="checkbox"/>
Cut/paste <input checked="" type="checkbox"/>		

Descriptions of terms used for sails, hull measurement & sailing weight are on following pages. Sail Areas, Luff Lengths, Foot & LP generally come from the sailmaker. Where possible, please give measurements in metric or feet & decimals. Please provide drawings or pictures showing side & end views of your boat from deck to bottom & attach to the application if a modified or custom boat.

Mainsail 20XX sailmaker

Area:
 P (luff)
 E (foot)
 MGH
 MGT
 MGU
 MGM
 MastCirc
 Full Batten or Soft

Jib / Genoa (largest) 20XX sailmaker

Area:
 Luff Length
 LPG
 Leach
 Foot
 LuffL.roach + or -
 Le.roach + or -
 Ft.roach + or -
 Mid-Girth

Screacher 20XX sailmaker

yes/no
Area:
 Scr.Luff1
 LPG
 Scr.Luff2 (leach)
 Scr.MG
 Scr.Foot
 Sc.SMG as % Sc.SF 0%

Asymmetric Spin (largest) 20XX sailmaker

yes/no
Area:
 SLU (luff perimeter)
 SLU (leech perimeter)
 SMG
 SF (foot.perimeter)
 SMG as % SF 0%

Symmetric Spin (largest)

yes/no
Area:
 SL
 SSMG
 SSF (foot.perimeter)
 SMG as % SF 0%

Displacement (Load.cell metric or Mfg Displ)

Wt Boat sails, motor
 CG Safety, dry(gas,h2o)
 WE
 Weight Sailing
 WCD Weight Crew
 Declared
 Rated Weight 0

US Sailing and/or ISAF ERS methods of sail measurement may apply above, not class rules. Longest Luff Lengths from Class Rules & Maximum Sail Areas and will be assumed if not provided. Weight Sailing will be lightest boat in Class unless weighed w/inspection.

Hull

Length Overall:
 Waterline length
 Maximum Beam
 Maximum Draft
 FOC Fwd Overhang
 AOC Aft Overhang

Hull - Foils

Daggerboard (y/n)
 Centerboard (y/n)
 Ctb'd Fairing (y/n)
 Keel(s) (y/n)
 Lifting Foils (y/n)

Other

Masthead Spin(yes/no)
 Masthead Scr.(yes/no)
 Sprit Length
 Rigging (SS, synthetic)
 Holding Tank(s)

Engine(s)

Inboard (hp x type)
 Outboard (hp x type)

Propeller (s)

1 x feather/fold	2 x feather/fold
1 x fixed (blades)	2 x fixed (blades)

Modifications Describe modifications / comments/ trapeze(#) or hiking straps below

I certify that my vessel conforms to the configuration indicated above and understand that a BAMA ratings certificate will be issued based on this information, valid only for the indicated configuration.

Electronically
 Signature of Owner _____ Date _____

Office Use Only	PHRF	Amount Paid
TCF		

Sample - Metric Basic Sail Area Measurements

Corsair 31-R sail # Generic Corsair 31-R Class Std.Sail Areas

It is preferred to have a sail loft actually measure the sails, and fill out this sheet, or use the loft's computer calculation when built for Areas. Alternative: a competitor may measure sails; please use feet and tenths of feet, or metric for measurement.

Mast Circumference 0.483

				Sail Areas - CTOA	
Measured Sails				Imp sq.ft	Metric sq.m
Mainsail	40.39	SA= (Foot*2+MGM*3+1.5*MGU+MGT+.5*HW)*Luff/8	Imp.	Metric	434.8 40.39
Luff / P	12.37		40.58	12.370	435.0 CTOA
Foot / E	4.36		14.30	4.359	
HW / MGH	0.97	Head mainsail shall extend @ right angles not more than	3.17	0.965	
MGT	1.83	Maximum MGT (max 7/8 point girth) =	6.00	1.829	
MGU	2.72	Maximum MGU (max 3/4 point girth)=	8.92	2.718	
MGM	3.67	Maximum MGM (max 1/2 point girth)=	12.05	3.673	
MGL	0.00	Maximum MGL (max 1/4 point girth) =	0.00	0.000	
Jib - Large	19.12	SA= Luff * LP * .5	Imp.	Metric	205.8 19.12
Luff	10.45	Maximum Luff =	34.30	10.455	214.0 19.88
LP	3.66	Maximum Overlap =	12.00	3.658	ISAF % > CTOA
Mid-Girth	2.29	Maximum Overlap = 90 inches	7.50	2.286	244.7 22.73
Height (=vlg)	9.83	Jib Height = 0.94 * Luff.Length			(max/min)-1 14%
Screacher	42.57	SA= Luff * LP * .5	Imp.	Metric	458.2 42.57
Luff	11.89	Maximum Luff =	39.00	11.887	454.0 CTOA
LP	7.16	Maximum Overlap =	23.50	7.163	
smg screecher	0.00	Estimate (scaled from pencil.paper, no penalty config.)	0.00	0.000	
sf screecher	0.00	Estimate (scaled from pencil.paper)	0.00	0.000	
Asym.Spin.Large	93.37	SA = (Luff+Leech)*(Foot + 4*Mid Girth) / 12	Imp.	Metric	1005.0 93.37
SLU / Luff	13.78	Head to tack (luff) maximum length =	45.20	13.777	1005.0 CTOA
SLE / Leech	12.10	Clew to head (leech) maximum length =	39.70	12.101	
ASF / Foot	9.07	Tack to clew (foot) maximum length =	29.75	9.068	
ASMG / mid-girth	8.56	SMG =	28.07	8.557	
ISAF	93.37	SA= (SLU+SLE) x .25 x ASF + (ASMG-.5ASF) x (SLU+SLE)/3			
One Design Rules:	Corsair 31R Class Rules – 2003		Imp	Metric	
5.9.1	Mainsail				
5.9.1b	P=	487 inches	40.58	12.37	
5.9.1c	E=	171.6 inches	14.30	4.36	
5.9.1a	Head (MGH) =	38 inches	3.17	0.97	
5.9.1d	Maximum MGT (max 7/8 point girth)=	72 inches	6.00	1.83	
	Maximum MGU (max 3/4 point girth)=	107 inches	8.92	2.72	
	Maximum MGM (max 1/2 point girth)=	144.6 inches	12.05	3.67	
	Maximum MGL (max 1/4 point girth)=			0.00	
	Leech, Plan A sail plan → exceed			0.00	
5.9.2	Jib				
5.9.2a	Luff - head to tack maximum length=	411.6 inches	34.30	10.45	
5.9.2b	LPG=	144 inches	12.00	3.66	
	Leech -clew to head maximum length=			0.00	
	Foot - tack to clew maximum length=			0.00	
5.9.2c	Midgirth =	90 inches	7.50	2.29	
5.9.3	Spinnaker dimensions:				Inches
5.9.3a	Luff, Leech, Foot and mid-girth combined not to exceed	145 ft (1740in)	Imp	Metric	1740.00
sailplan	Luff - Head to tack maximum length=		45.20	13.78	542.40
	Leech - clew - head maximum length=		39.70	12.10	476.40
	Foot - Tack to clew maximum length=		29.75	9.07	357.00
	Spin Mid-Girth(SMG)=		28.07	8.56	336.90
5.9.3b	Maximum sail area for the spinnaker is	1005 sf	1005.00	93.37	
	Sum Inches (sample above) <=	145 ft (1740 inches)	142.72		1712.70
			94.37%		
5.9.4	Screacher				
5.9.4b	Luff - head to tack maximum=	468 inches	39.00	11.89	
5.9.4c	LP=	282 inches	23.50	7.16	
	Foot - tack to clew maximum=			0.00	
	Leech - leech maximum length=			0.00	

Mainsail

- a) The HEAD shall be defined as the point of intersection of the line of the Luff, including the boltrope, and the highest point of the sail perpendicular to the Luff. The Head Width shall be measured from the HEAD.
- b) Luff is measured as the distance between two points along a line parallel to the sail Luff from which lines drawn at 90 degrees intersect the highest point on the HEAD or the lowest point on the Foot, respectively.
- c) The Foot is measured as the two farthest points along the Foot.
- d) The cross width measurements shall be taken from the seven-eighths, three-quarter, and one-half points on the Leech, located when the HEAD is folded to the Clew for the half height point, and when the HEAD is folded to the half height point to determine the three-quarter point. The seven-eighths point is located by folding the Head to the three-quarter point. Girth is measured as the shortest distance from Leech points to Luff, including the boltrope.

Spinnaker

- e) For purposes of spinnaker measurement, the mid-girth shall be measured from the one-half point on the Luff to the one-half point on the Leech. These one-half points shall be found by folding the Head to the Tack for the one-half point on the Luff, and folding the Head to the Clew for the one-half point on the Leech.

Jib

- f) For purposes of headsail measurement, the Tack is defined as the point where the Luff and Foot, if extended, would intersect each other. The Head is defined as the point of intersection of the line of the Luff, including the boltrope, and the highest point of the sail perpendicular to the Luff. The Clew is the point where the Leech and Foot, if extended, would intersect each other.
- g) The diagonal (LP) is defined as the shortest distance from the Luff to the Clew.
- h) The mid-girth is measured by folding the Head to the Clew to find the mid-leech. The distance from the mid-leech to the closest point on the Luff is the mid-girth

Screecher

- i) For purposes of Screecher measurement, the Tack is defined as the point where the Luff and Foot, if extended, would intersect each other. The Head is defined as the point of intersection of the line of the Luff, including the boltrope, and the highest point of the sail perpendicular to the Luff. The Clew is the point where the Leech and Foot, if extended, would intersect each other.
- j) The diagonal (LP) is defined as the shortest distance from the Luff to the Clew

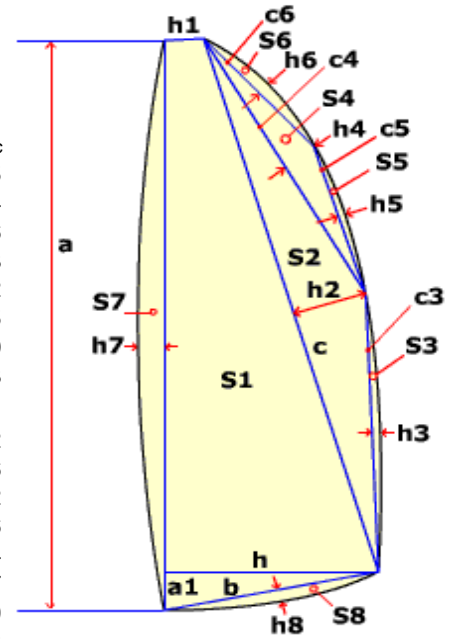
ISAF Equipment Rules of Sailing (ERS)

Corsair 31R

CM - Area of Mainsail (Template formula, sample data)

- 77.37 $S1 = ((h + h1)(a - a1) + (a1 \times h))/2$
 - 2.56 $S2 = c \times h2/2$
 - 0.00 $S3 = 2/3 \times c3 \times h3$
 - 0.01 $S4 = c4 \times h4/2$
 - 0.00 $S5 = 2/3 \times c5 \times h5$
 - 0.00 $S6 = 2/3 \times c6 \times h6$
 - 1.26 $S7 = 2/3 \times a \times h7$
 - 0.00 $S8 = 2/3 \times b \times h8$
 - 81.20** $CM^* = (S1+S2+S3+S4+S5+S6+S7+S8) \text{ m}^2$
- $CM = (CM^* + \text{Area of Mast} + \text{Area of Boom}) \text{ m}^2$
 Non-Rotating Masts add no Sail Area
 Area of Mast = (Total Length x Perimeter / 2) m^2
 Area of Boom = (Total Length x Height) m^2
 Larger Multihulls Mast Area = $(MC/2 \times a)$; a = P.luff or VLM

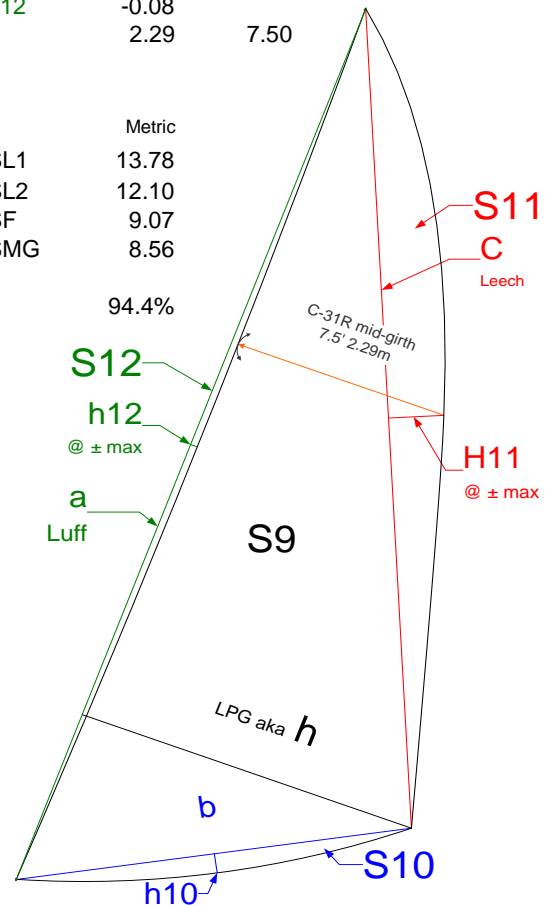
	Metric
h	7.25
h1	0.14
a	20.96
a1	0.13
c	20.52
h2	0.25
c3	0.10
h3	0.03
c4	0.11
h4	0.12
c5	0.06
h5	0.02
c6	0.06
h6	0.04
b	0.07
h7	0.09
h8	0.03



CJ - Area Jib Sample C31R Jib: max luff, lp, std mid-girth, 8" roach.Ft

- 19.12 $S9 = a \times h / 2$
- 0.60 $S10 = 2/3 \times b \times h10$
- 3.55 $S11 = 2/3 \times c \times h11$
- 0.53 $S12 = 2/3 \times a \times h12$
- 22.73** $CJ = (S9 + \text{or- } S10 + \text{or- } S11 + \text{or- } S12) \text{ m}^2$
- 19% $(CJ/S9) - 1$
Mid-Girth 90"
- 244.7 Area Sq.Ft.

	Metric	Imperial
a	10.45	
h	3.66	
b	4.15	
h10	0.22	
c	9.22	
h11	0.58	
h12	-0.08	
	2.29	7.50

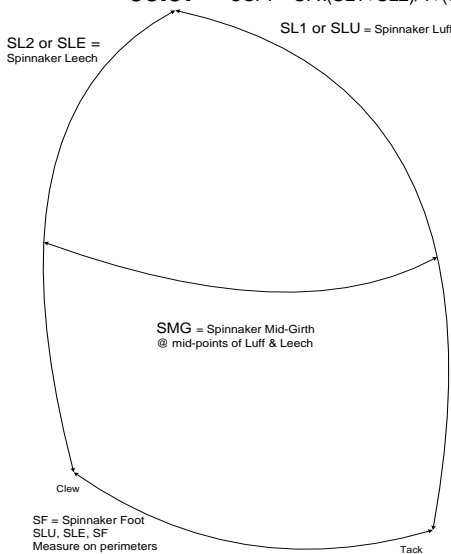


CSPI - Area of Spinnaker (Sample Corsair 28R)

93.37 $CSPI = SF \times (SL1 + SL2) / 4 + (SMG^* - SF / 2) \times 2/3 \times (SL1 + SL2) / 2 \text{ m}^2$

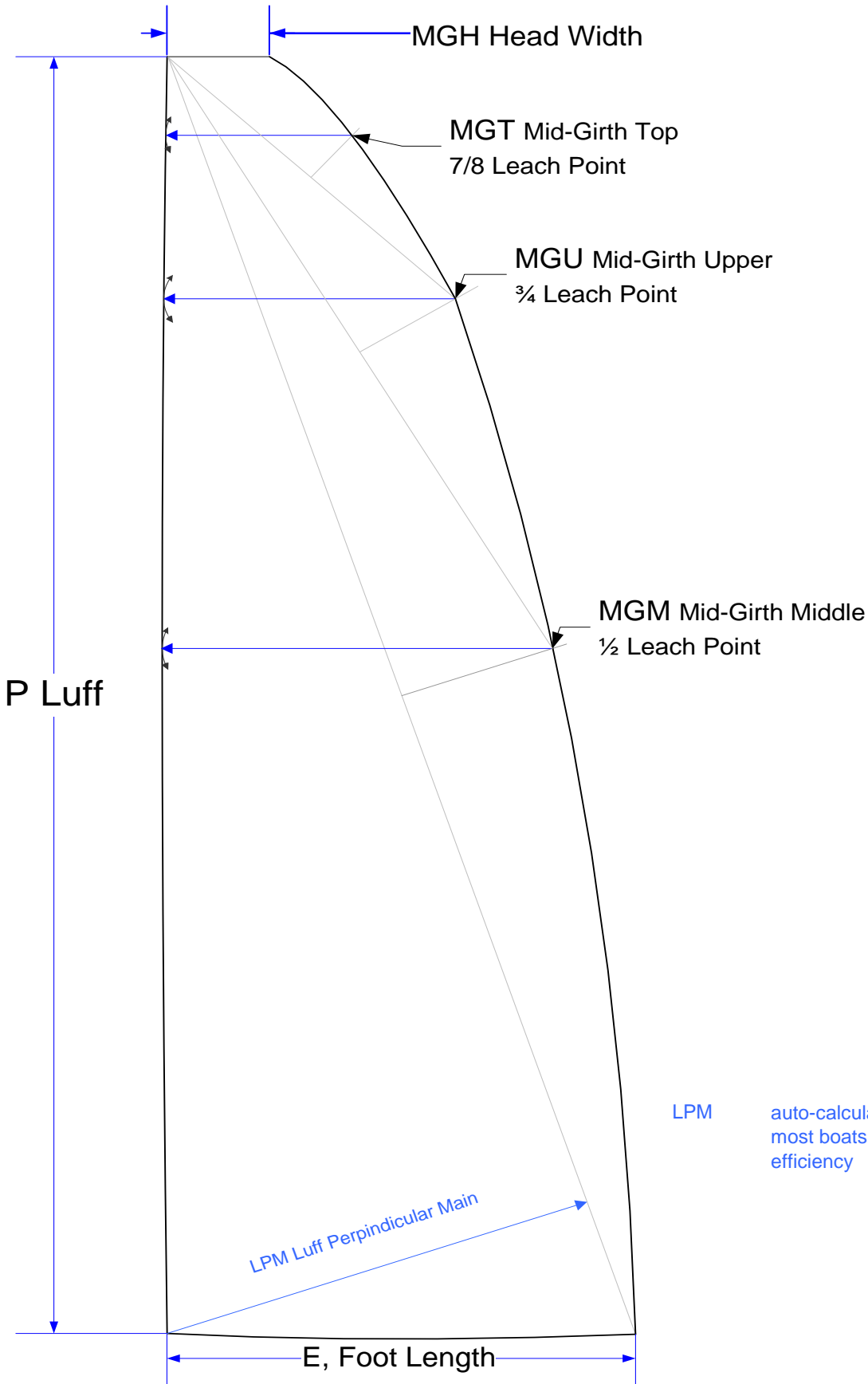
	Metric
SL1	13.78
SL2	12.10
SF	9.07
SMG	8.56

* where $SMG \geq 75\%$ of SF
SMG % SF



Mainsail Measurement - Sample

Corsair 28-R - US Sailing Girth Points



Mainsail	Metric m ²	Imperial ft ²
Area	30.17	324.74
Luff / P	10.922	35.83
Foot / E	3.708	12.17
HW / MGH	0.889	2.92
MGT	1.473	4.83
MGU	2.311	7.58
MGM	3.099	10.17
MGL	0.000	0.00
CTOA		325.00

LPM auto-calculated for most boats; sets sail efficiency

Texel AUS/NDL MEASUREMENT FORM

Weight Sailing lb 3446.0 Texel AUS/NDL Inventory Form
 Weight Sailing kg 1563.1 Equipment Declaration Form

Date: September 1, 2010

This is to **state** that the yacht **Corsair 28-R sail AUS 102, Summit** weighs the above w/the following in a dry condition (no:water, gas). All equipment "Declared" is part of the "Inventory" that must remain on the boat for racing including a set of racing sails & **U.S. Coast Guard required equipment** applicable to the boat size. Texel Weight Equipment (WE) of individual items is waived based on inclusion of same in Sailing Weight.

Equipment	Description	Equipment	Description	WE items (list)	Kg
Engine/s	Outboard	Mainsails	One (1) on boom		
Generator	No	Mizzens			
Anchor 1	Yes, [Fortress] [3kg]lb/kg	Headsails	One (1) Jib, furling		
Anchor 2		Headsails	One (1) Screacher		
Chain (size/m)	Yes[6mm]link.dia. [3]m	Spinnaker #1	One (1) Spinnaker		
Rode (dia/m)	Yes [8mm] dia. [25]m	Spinnaker #2			
Moorings	dock lines	Screacher	One (1) w/furling gear		
Fenders	Yes (2)	Other sails			
Drogues	No	Spare sheets	Minimal		
Tools(kgs)	Yes	Mattresses No.	None		
Spares(kgs)	Minimal	Seat cushions	No		
Dinghy	No	Bunk cushions	No		
Liferaft	No	Stove type	Yes		
Outboard(hp)	Yes [Nissan], [8] hp min.	Refrig	No		
Battery #1 Amp/Hrs	20 amp hour	Awning	No		
Battery #2 Amp/Hrs	TBD (no)	T.V.	No		
VHF Radio	handheld	Video	No		
Solar panels	No	Radar	No		
Gas bottles (kgs)	No	Wine Rack	No		
Safety Category (Offshore)	Inshore - Coast Guard Req.	Other (list)			
Other (list)					

Where it is simpler to weigh items such as tools and spares, use kgs, where it is simpler to count items, use numbers etc. For example [Tools - 10kg], [Mattresses - 4], [Chain 8mm - 50 metres]. Otherwise describe, [Engine - 9.8 hp Yamaha outboard 27hp Yanmar Diesel] or mark to show it is carried [Video - X]. WE may be used for Offshore Races requiring Category X equip.

WM 1563.1 Offshore WE 0

WM 1563.1 Inshore Wt.Sailing = (Wt.Measured + Wt.Equipment)

SIGNED:

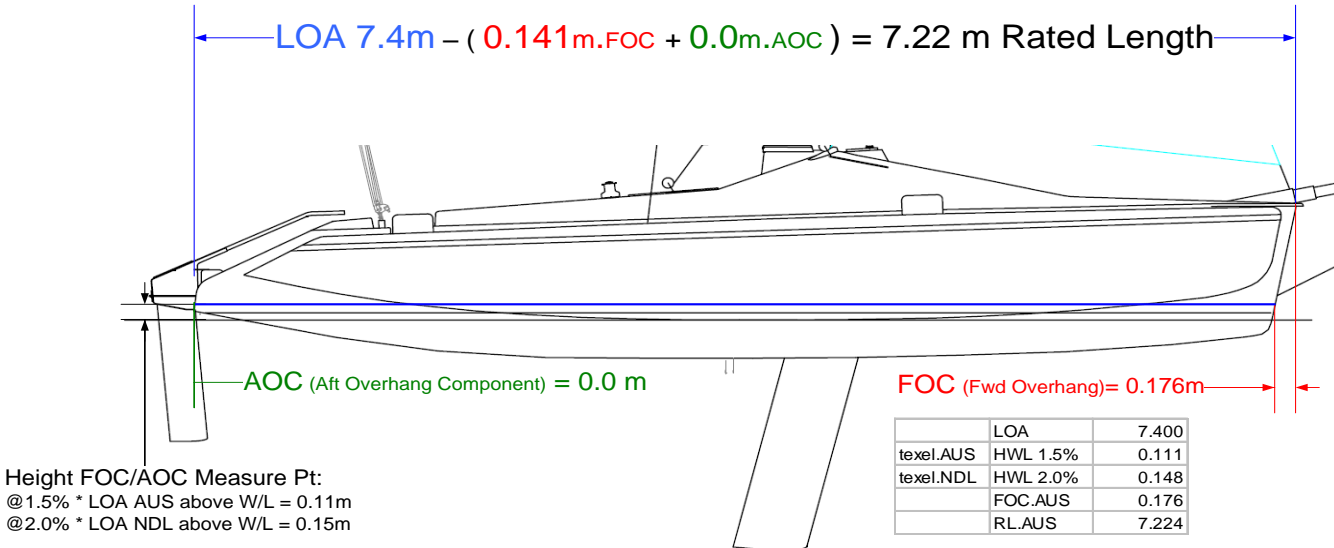
MEASURER slackwater_sf.electronic

OWNER D. Berry

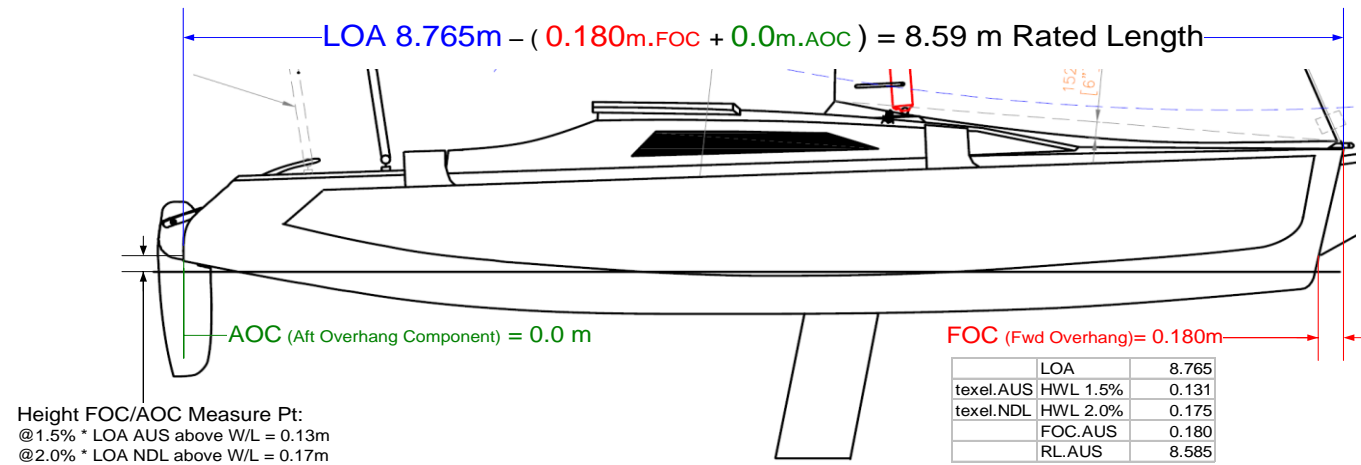
1563 3448 Gross: Summit F-28R, dry, all sails
 2.2 0 Lifting Bridle, stays aboard while sailing
 3438.6 -2 NIST test deviation @ 3,000 lbs
 0 Subtract: inspection found x Liters gas in tank, minimal food, no (water-beer)
 3446 Net: Summit F-28R dry, all sails

Rated Length Examples

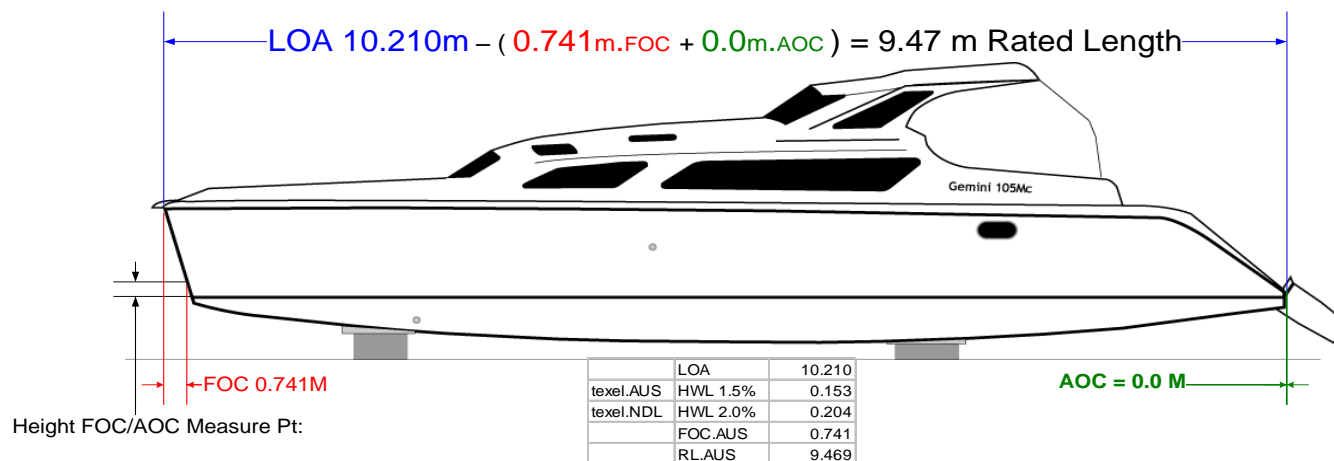
Corsair Sprint 750: Sample Forward Overhang Component (FOC) Australia (10 boats)



Corsair 28-R: Sample Forward Overhang Component (FOC) Australia & Thailand (10 boats)



Gemini105MC Mood Indigo: Preliminary Forward Overhang Component (FOC)



Mast Circumference

Boat	MC		Date	Comments
Native, Newick Tri	0.908	w	08/20/09	Blue Tape, taper above spin.halyard (img_0060...)
Humdinger, Acapella Tri	0.800	w	03/20/10	Owner TB.Verified
Formula 40 Tuki	0.760	c	07/28/09	Blue Tape
Antrim 30	0.750	t	04/05/10	TB.verified, Erin #28910
Formula 40 Shadow	0.719	a	04/04/09	Dirty blue tape, 1st pass, taper above hounds
D-Class Cat Adrenaline Marstrom	0.700	c	05/30/09	Assumption, not measured pre-Delta.Ditch @RichmondYC
Viva 27 Cat Sass	0.600	a	05/30/09	Measure pre-Delta.Ditch @RichmondYC
Contour 34SC	0.585	a	01/08/10	Blue.Tape, measured by owner
Corsair 31RS Leneman	0.554	a	05/30/09	Blue Tape, C-31RS #28543 Prime Directive
D-Class Cat Rocket88	0.495	a	07/15/10	Dirty, 1st pass
D-Class Cat Beowulf V Marstrom	0.483	c	06/01/10	Correction, Corsair 28R Section
Corsair 28R Marstrom	0.483	c	03/31/10	Blue Tape C-28R, Alameda Marina
Corsair 31R Marstrom	0.483	c	04/22/09	Blue Tape C-31R #135 Roshambo, Alameda Marina
Corsair Sprint 750	0.481	a	05/02/09	Blue Tape Sprint 750 #70 Afterburner, Alameda Marina
Corsair 24 Mk II	0.397	a	08/01/09	Blue tape C-24MkII #006 Emma Jean, Alameda Marina
Multi23	0.356	c	04/07/09	M. Leneman, US Tri.Nationals, Standard Section

Mast Circumference: wrap paper or tape around mast above boom

Mast Area added to mainsail area IFF mast rotates

Mast Area = $1/2 * \text{Mast Circumference} * P$ (mainsail luff, Vertical Luff Mainsail)

No Correction Factor (CF) on airfoil shape

CF - Carbon Mast may be added later (ref: Multi2000 CF.carbon-mast)

a: aluminum

w: wood composite

t: tuttle carbon honeycomb composite

NOTE: The values on this worksheet are not used for Texel ratings, but for storage of measurements of extra sails for future possible changes.

Genoa #
 LLg
 LPG
 FG
 frg + or -
 LG
 lrg + or -
 llrg + or -

0

Area Genoa 2 **0.00**

Genoa #
 LLg
 LPG
 FG
 frg + or -
 LG
 lrg + or -
 llrg + or -

0

Area Genoa 3 **0.00**

Genoa #
 LLg
 LPG
 FG
 frg + or -
 LG
 lrg + or -
 llrg + or -

0

Area Genoa 4 **0.00**

Spinnaker #
 SF
 SL1
 SL2
 SMG
 Area of Spinnaker
 SMG as % SF

0
0.00
Must be >75%

Spinnaker #
 SF
 SL1
 SL2
 SMG
 Area of Spinnaker
 SMG as % SF

0
0.00
Must be >75%

Spinnaker #
 SF
 SL1
 SL2
 SMG
 Area of Spinnaker
 SMG as % SF

0
0.00
Must be >75%

Screecher #
 ScrF
 ScrL1
 ScrL2
 ScrMG
 Area of Screecher
 SMG as % SF

0
0.00
Must be >50%

Screecher #
 ScrF
 ScrL1
 ScrL2
 ScrMG
 Area of Screecher
 SMG as % SF

0
0.00
Must be >50%

Screecher #
 ScrF
 ScrL1
 ScrL2
 ScrMG
 Area of Screecher
 SMG as % SF

0
0.00
Must be >50%