2018

February 5, 2018

PHRF

Preliminary TCF **0.935**

0.935	Txl.AUS 4.08 wc 301
0.930	Txl.AUS 5.0x wc 338
0.964	Txl.AUS 7.13 wc 0
0.957	Txl.AUS 8.00 wc 0
	Txl.NDL 2017 wc 338

This form is for boats: a) New to the Fleet, b) Modified from the previous Configuration, or c) without a 2017 Rating

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		Marina	
Boat Model		Slip Number	
Manufacturer		Year Built	

Do you want an ODR (One Design Rating)? Yes ☐ TBD No ☐

Unmodified Class Boat ☐ Modified Class Boat ☐ Non-Class (Custom) ☐

Source of the information Provided (Circle/check all that apply)

Class Rules ☐ Estimate ☑ Sailmaker ☐ Measurement Certificate ☐

Sail Areas and the **Major Sail Dimensions** (**Luff, Foot, Le, LP**) are needed. Please use the "**Actual Sail Area**" from the sailmaker w/supporting dimensions.

Descriptions of terms used for sails makers, sailing weight and hull measurement are on following pages. **UMS** / IMS format is used for sails below (Universal Measurement System). Corsair Class Rules used these measurements for mains headsails & spins. More Text Below, expand this XLS row, or see the following pages for the diagrams and explanations. Please provide drawings or pictures showing side & end views of your boat if a modified or custom boat.

Actual Sail Area from the sailmaker makes Mainsail Widths & Jib Widths or Roach metrics, supporting items. Please give measurements in feet & decimals or metric. Mainsail Area is calculated using monohull ORC 109.1, HPR 309.3. Main LE is needed for aspect ratio and more accurate Area (see diagrams). Main Luff Girths will be used where the 7/8 MUW is above the head MHB. Jibs, Genoas, Gennakers, Screachers can use HPR/ORC 111.1 adding foot roach. Jib Area calculates below on ORC, Jibs/Gennakers can use World Sailing F18/Texel/SCHRS triangles. Jibs w/full-length battens see diagrams. Mains can use World Sailing F18/Texel/SCHRS triangles.

Sail areas are to be reported as accurately as practicable. Formulas for measurement are given for conventional sails. These procedures do not restrict the measurer from using alternative means to obtain an accurate area for any sail which is an unusual shape and is deemed to require a different measuring technique. RRS 50.2 & 50.3 are deferred for the spinnaker tack on a bowsprit, sheeted to the floats.

	Metric	Imp.Ft
Main 109.1/309.3 Rated Area	**42.06**	**453**
MeasuredArea LU.Girths-(below H.Area	39.74	428
Luff P class 487"	12.37	40.58
Foot E class 171.6"	4.36	14.30
MHB (MGH) Head	0.97	3.17
7/8 MUW (MGT)	1.71	5.61
3/4 MTW (MGU)	2.72	8.92
1/2 MGM (MHW)	3.67	12.05
1/4 MQW (MGL)	4.04	13.26
LE :	12.88	42.24
Area Below H ≈	0.55	5.92

Measured SA = P/8*(E+^2MWL+2*MWM+1.5*MWU+MWT+0.5 *HB) + (Foot Roach)

	Metric	Imp.Ft
Jib Calvert x Class full-batten	**23.33**	**251**
Luff par 5.9.2a 411.6" 34.3'	10.45	34.30
LPG par 5.9.2b 144" 12'	3.66	12.00
HHB (JH) Head:	0.05	0.17
7/8 HUW (JGT):	0.84	2.75
3/4 HTW (JGU):	1.52	5.00
1/2 HHW (JGM): par 5.9.2c 90"	2.29	7.50
1/4 HQW (JGL):	3.06	10.03
Foot :	4.16	13.64
Ft Roach	0.30	1.00
JLE Leech:	8.24	27.04

0.1125× JL× (1.445× LPG + 2× JGL + 2× JGM +1.5× JGU + JGT + 0.5× JH) ±Ft.Roach

	Metric	Imp.Ft
Screecher Calvert x Class dims	**42.81**	**461**
Lu class par 5.9.4b 39.0'	11.89	39.00
HLP Lp class par 5.9.4b 23.5'	7.16	23.50
HHB (JH) Head:	0.04	0.14
7/8 HUW (JGT):	0.93	3.06
3/4 HTW (JGU):	1.82	5.98
1/2 HHW (JGM):	3.60	11.82
1/4 HQW (JGL):	5.38	17.66
Foot:	8.29	27.20
Ft Roach, Offset	0.00	0.00
JLE Leech:	10.45	34.28

0.1125× JL× (1.445× LPG + 2× JGL + 2× JGM +1.5× JGU + JGT + 0.5× JH) ±Fl

	Metric	Imp.Ft
Asymmetric Calvert x Class 1,005		
Area :	**93.36**	**1,005**
SLU	13.77	45.17
SLE	12.09	39.67
SHW (SMG)	8.20	26.91
Ft	10.52	34.50
SMG as % SF	78%	

SA = (Luff+Leech)*(Foot + 4*Mid Girth) / 12

	Metric	Imp.Ft
Jib Calvert x Class full-batten	**23.33**	**251**
Luff par 5.9.2a 411.6" 34.3'	10.45	34.30
LPG par 5.9.2b 144" 12'	3.66	12.00
HHB (JH) Head	0.05	0.17
Leech1:	8.24	27.04
Leech2	8.24	27.04
Foot:	4.16	13.64
Lu Roach ±	0.00	0.00
Le2 Roach ±	0.57	1.89
Ft Roach ±	0.30	1.00
	8.27	27.12

	Kg	Lb
Displacement		
Wt Boat as raced, with racing sails	1,780	3,924
dry, no(Gas, Water, personal gear)		
YRA Safety equipment		
WE:		
Weight Sailing	1,780	3,924
Weight Crew Auto	301	664
Rated Weight	2,081	4,588

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

Hull	Metric	Imp.Ft
Length Overall:	9.45	31.00
Beam	5.62	18.44
Max. Draft	1.60	5.25
FOC Fwd Overhang		
AOC Aft Overhang		

Hull - Foils	
Daggerboard (y/n)	Yes
Centerboard (y/n)	n
Ctbd Fairing (y/n=0.990)	
Keel(y/n) (y 0.995 or 0.980)	
Lifting Foils (y/n, Curved, T, J)	n

Other		
Masthead Spin(yes/no)	no	
Masthead Scr.(yes/no)	no	
Sprit Length	std	
Rigging (SS, synthetic)	SS	
MastCircumference (If rotating) A	0.55	1.82
Holding Tank(s) (yes/no)	no	

Engine(s)	
Inboard (hp x type)	
Outboard (hp x type)	Tohatsu

Propeller(s)		
1 x feather/fold (0.980)	n/a	2 x feather/fold (0.970)
1 x fixed (blades 0.975)		2 x fixed (blades 0.964)

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

02-05-18: TCF 0.935 wm 3,924. lb 2,136.kg, class Main, Jib, Spi, Screecher MG & hhw/hlp 51%

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

Electronically — rating committee

Signature of Owner — Date 02/05/18

Example Measurement

C-31 Class Mainsail

	M²	Ft²
	42.06	**453**

1st: Enter **Lu**, **Le**, **Ft**

2nd: Enter Head and 7/8, 3/4, 1/2 and 1/4 Widths

Measured Area is calculated by the trapezoid formula dividing the Luff Length in amounts of 1/4, 1/2, 3/4 and 7/8.
Rated Area is calculated with actual heights on the Luff from the tack point (or H) to points where LE Widths are measured.

Area Below H is Added

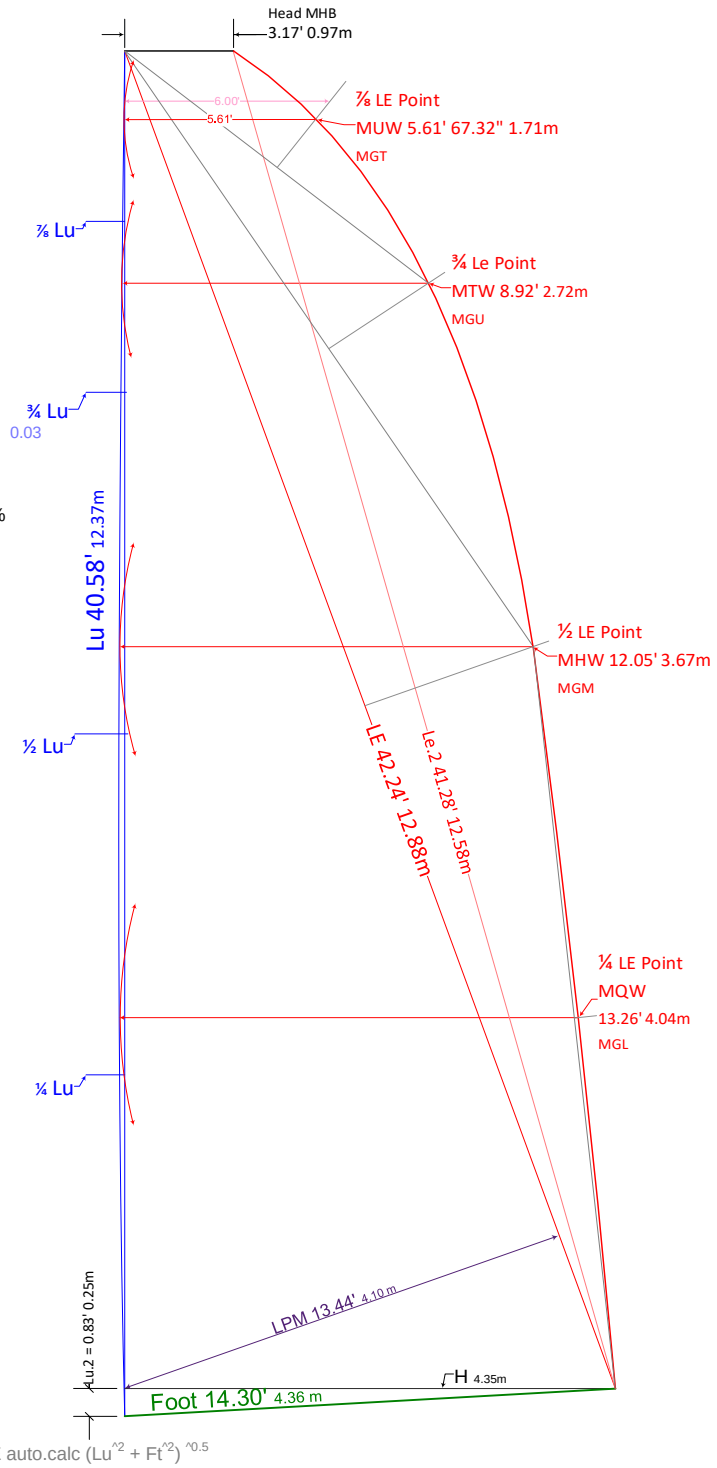
Color.Code = Estimate RatingsComm, 7/8 MUW, 1/4 MQW ☑

12/28/98: Farrier Sail Plan LE 12.875m **429** ft²		
Corsair Trimaran Owners Association CTOA **435** ft²	12.88	42.24
01/22/18: Class 7/8 **MUW 72"**	1.83	6.00
01/22/18: Diagram (visio.edit) x **7/8 MUW edit**	1.71	5.61

data entry		
Lu class 487"	**12.37**	**40.58**
Le class n/a, Farrier Sailplan	**12.88**	**42.24**
Ft class 171.6"	**4.36**	**14.30**
data entry		
MHB (MGH) Head class 38"	0.97	3.17
7/8 MUW (MGT) class 72"	1.71	5.61
3/4 MTW (MGU) class 107"	2.72	8.92
1/2 MHW (MGM) class 144.6"	3.67	12.05
1/4 MQW (MGL) est (MHW + E)/2 + 2"	4.04	13.26

	M²	Ft²
109.1 / 309.3 Rated Area + below H Area, Ft.Roach	**42.06**	**453** 6%
109.1 Area m² x LE Girth using LU.1 x H	41.51	447
MGMH = P/2+(MGM-E/2)/P*E	6.60	6.60
MGLH = MGMH/2+(MGL-(E+MGM)/2)*(E-MGM)/MGMH	3.30	3.30
MGUH = (MGMH+P)/2+(MGU-MGM/2)*MGM/(P-MGMH)	9.94	9.94
MGTH = (MGUH+P)/2+(MGT-MGU/2)*MGU/(P-MGUH)	11.47	11.47

109.1 / 309.3 Measured Area - below H,Ft.Roach	**39.73**	**428**
LU Girths **~CTOA Area**	40.28	**434**
P use Lu.1	12.12	39.75
P use Lu.1 + Lu.2	12.37	40.58
E foot uses **H**	4.35	14.28
MHB (MGH) Head class 38"	0.97	
7/8 MUW (MGT) class 72"	1.71	
3/4 MTW (MGU) class 107"	2.72	
1/2 MHW (MGM) class 144.6"	3.67	
1/4 MQW (MGL) est (MHW + E)/2 + 2"	4.04	
Area Below H	**0.55**	**6**
Lu.1	**12.12**	39.75
Lu.2	**0.25**	0.83
Foot	**4.36**	
Ft.Roach	0.00	0.00
H = (Triangle Area.Lu.Le.Ft) / Lu*2	4.35	14.28
Triangle Area x Lu Le Ft	26.92	289.7
S = 1/2 (a + b + c) {a=Lu b=Le c=Ft}	14.80	
Triangle.Area = (s*(s-a)*(s-b)*(s-c))^0.5	26.92	
LPM	4.10	13.44
Below H1 Diff m² ft²	**0.55**	**5.9**
Le2 (leech aft)	12.58	41.28



109.1 LE Girths Correction on Trapezoid Area (ORC.2016)
309.3 LE Girths Correction on Trapezoid Area (HPR.2013)
16.7 LE Girth Corrections on Trapezoid Area (HPR 2013)
16.4 LU Girth Trapezoid Equation x Ht. =0.25, 0.50 0.75, 0.875, 1.00

Efficiency Main (EFM):
EFM uses LPM (Le.Perp to Tack @ H) to set sail efficiency.
EFM Texel.NDL x H, EFM Texel.AUS 2012 x LPM
Area Below H = (1/2 *S1.2 *H1) + Ft.Roach
LU.2 = (E^2-H1^2)^0.5
LPM = (P.1*H1)/((P.1^2+H1^2)^0.5) 13.12 43.03 LE auto.calc (Lu^2 + Ft^2) ^0.5

C31 Jib Class Lu LP MG

	M²	Ft²
Area:	**23.34**	**251**

Color.Code = Estimate Comm, LE, FT Widths, Roach ☑

1st: Enter **Lu**, **Le**, **Ft**
2nd: Enter Head and 7/8, 3/4, 1/2 and 1/4 Widths, Foot Roach

09/02/99: Farrier Jib 218 ft2 41.6m2 Lu 34.3' 10.450m Le 30.3 9.235m Ft 13.5 4.114m LP 11
03/xx/04: CTOA Area **218** ft² Class MG 7.50'

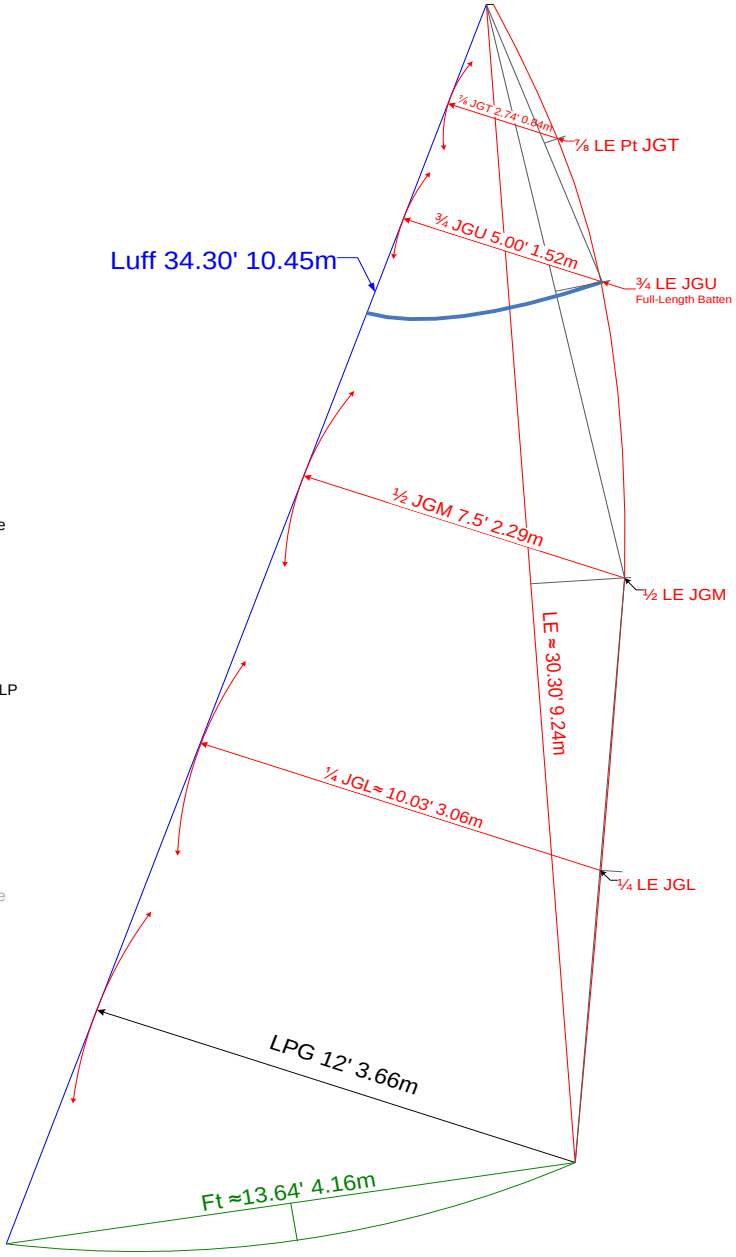
Alternate Full-batten diagramsTexel.AUS Texel.NDL SCHRS, LE triangle @largest batten

Area Triangle (Lu Le Ft Data Entry)	Metric	Imperial
Jib C-31 Triangle Area	**19.12**	**206**
Lu par 5.9.2a 411.6" 34.3'	10.45	34.30
Le	9.24	30.30
Ft	4.16	13.64
S = 1/2 (a + b + c)	11.9	39.12
Area = (s*(s-a)*(s-b)*(s-c))^0.5	19.12	205.82
H = (2 * Tri.Area / Lu) ≠ LP	3.66	12.00

US Sailing UMS (Widths Ft.Roach Data Entry)	Metric	Imperial	
Jib C-31	**23.34**	**251**	22% > Triangle
Lu par 5.9.2a 411.6" 34.3'	10.45	34.30	
HLP LPG par 5.9.2b 144" 12'	3.66	12.00	
HHB (JH) Head:	0.05	0.16	
7/8 HUW (JGT):	0.84	2.76	
3/4 HTW (JGU):	1.52	5.00	
1/2 HHW (JGM): par 5.9.2c 90" 7.5'	2.29	7.50	63% HHW / HLP
1/4 HQW (JGL):	3.06	10.03	
Foot:	4.16	13.64	
Ft Roach, Offset	0.30	1.00	3% Ft.R / LU
JLE Leech:	9.24	30.30	

0.1125× JL× (1.445× LPG + 2× JGL + 2× JGM +1.5× JGU + JGT + 0.5× JH) ±Ft.Roach

Texel.AUS, Texel.NDL, SCHRS	Metric	Imperial	
Screecher F-31	**23.34**	**251**	22% > Triangle
Luff	10.45	34.30	
LP > **H =**	3.66	12.00	
JLE Leech:	9.24	30.30	
Leech2	9.24	30.30	
Foot:	4.16	13.64	
HHB (JH)	0.05	0.16	
Luff Roach ±	0.00	0.00	
Leech2 Roach ±	0.51	1.68	
Ft Roach ±	0.30	1.00	
LE Triangle S = 1/2 (LE.1 + LE.2 + HHB)	9.26	30.38	
FootRoach Area	0.634	7	
Foot.Roach / LU	2.9%		
LP - H =	0.000	0.00	



LP := Shortest distance between the clew and **Luff**, see arc ERS G.7.12 (Fabric, ORC, ORR IMS)
H := Shortest distance between clew and **Luff Length**, ERS G.7.3 (Not Fabric, SCHRS, Texel)

UMS 63% HHW / HLP, 3% Foot.R/Lu	23.34	**251**	**22%** > Triangle
Class Area Lu x LP /2 =	19.12	**206**	0% > Triangle

C-31 Class Spin
Max Area 1,005 ft²

	M²	Ft²
	93.36	**1,005**

Par 5.9.3b = **1,005** sq.ft

Par 5.9.3a = Perimeter+MG ≤ 145 ft (not applicable for PHRF, Texel, MOCRA)

CSPI = (SLU+SLE) x .25 x ASF + (ASMG-.5ASF) x (SLU+SLE)/3

SA = (Luff+Leech)*(Foot + 4*Mid Girth) / 12

CSPI=

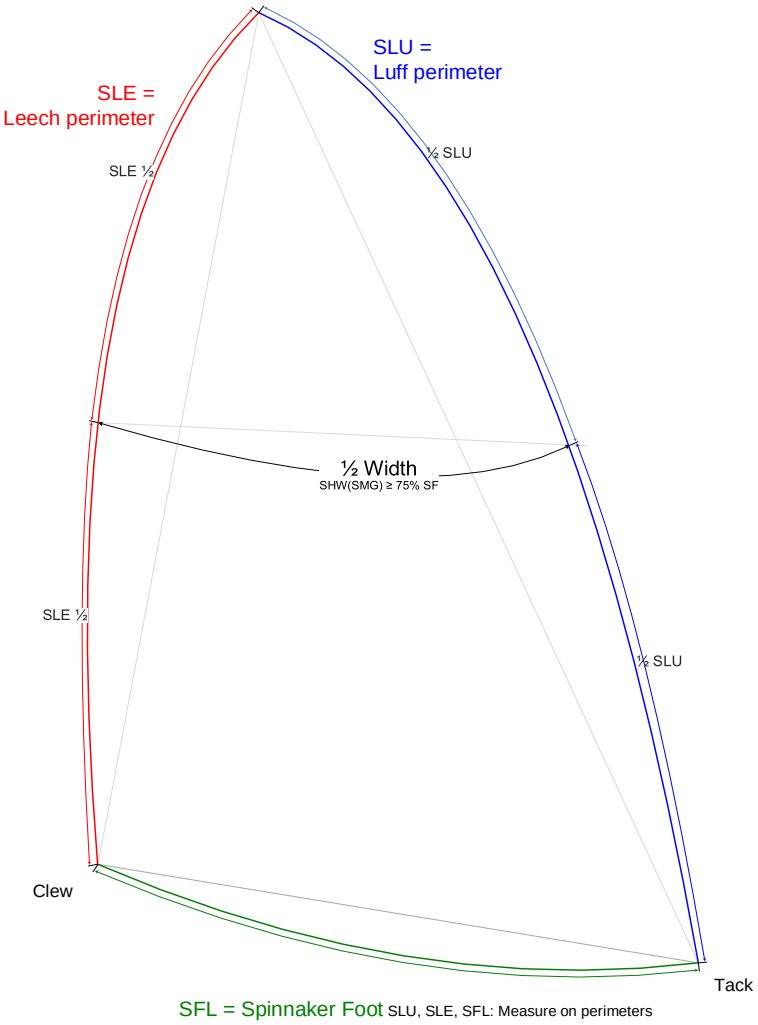
C-31 Class Spin		
Area:	**93.36**	**1,005**
SLU (luff tape perimeter)	13.77	45.17
SLE (leech perimeter)	12.09	39.67
SHW	8.20	26.91
SF (foot.perimeter)	10.52	34.50
SMG as % SF	78%	
		146.25

SA=

C-31 Class Spin		
Area:	**93.36**	**1,005**
SLU (luff tape perimeter)	13.77	45.17
SLE (leech perimeter)	12.09	39.67
SHW	8.20	26.91
SF (foot.perimeter)	10.52	34.50
SMG as % SF	78%	

Dims Metric x Class Rules (2 equations, same answer)

CSPI	93.36	1,005
Spin SA	93.36	1,005



RRS 50.4 ½ Width (SMG) ≥ 75% = spin

Sail ≠ Jib, Genoa, Gennaker, Screecher

RRS 50.4 "the difference between a headsail and a spinnaker is that the width of a headsail, measured between the midpoints of its luff and leech, is less than 75% of the length of its foot."

Weight : Inventory, Equipment Declaration Form **(Texel** AUS THA DEN GER NDL NOR SWE CSA **MOCRA** BRA UK **Multi2000** FRA FIN**)**

Load-Cell Measurement	**Weight Sailing lb**	3,924
Hull ID: CSR 30173G001	**Weight Sailing kg**	1,780

2/3/2018

Boat: Boom
Mast: Mast tube; Shrouds; Forestay; Halyards
Sails: Racing, Main, Solent, Staysail, Gennaker, Battens, Furlers

This is to **Declare** that the yacht **Corsair 31RS To.Be.Named sail# 90822** weighs the above, 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)	
Engine/s	Outboard	Mainsails	One (1) on the boom Calvert	**Offshore**	
Outboard(hp)	Tohatsu 9hp 4 stroke	Headsails	One (1) hank-on Calvert	NCORC List	2018
Battery #1 Amp/Hrs	West Marine Group	Headsails			
	WM Model 437475	Spinnaker #1	One (1) Calvert		
Tools / Spares	Minimal	Gennaker / Screecher	One (1) Calvert	Offshore Option	
Fenders	Four (4) floats 2 each	Shrouds	Stainless	Separately	
Moorings	Two (2)	Other	bucket	Item Desc.	Kg
Safety YRA	Inshore 2018	Spare sheets	minimal		
2.5.3 Bilge Pump	Yes, port float	Roller Furlers	One for Screecher		
3.1.3 Life Jackets	Two (2) see pics blue bag	Winch Handles	Two		
3.3.1 Running Lights	Yes	Tiller Extension	One (1)		
3.4 Fire Extinguisher	?	Auto-Pilot	Yes		
3.5 Air Horn	?	Stove (fuel type)	no		
3.6.4 Flares day/night		Refrigerator	No		
3.7.3 Heaving line 50′	Lifesling2 Ovbd System pic	Dining Table	no		
3.8 CG Type IV throwable	Two (2) see pics	Solar Panels	small		
3.9 VHF portable		Seat cushions	no		
3.11 GPS / charts		Bunk Cushions	Yes main cabin, none forward		
3.19.1 Compass magnetic		Porta-Potty	yes		
3.23 Anchor 1	Fortress FX-7 [4.lb 2kg]lb/k	Water Tank	no		
3.23 a. Chain (size/m)	Yes[SS 8mm?]link. [1]m	Enlclosed Head	no		
3.23 b. Rode (dia/m)	Yes [14mm?]dia [30+]m	Black Water Tank	no		
3.25 First Aid Kit	Yes	Pressure H/C Water	no		

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 **NCORC** equip.

WM	1,780	Offshore	**WE**	**0**
	1,780	Inshore		

SIGNED:

MEASURER slackwater_sf.electronic **OWNER** T. Olsen

data entry	3,924	Gross: C-31RS
	0	Lifting Bridle, Tared to Zero (0)
	0	NIST test deviation @ 5,000 lbs
	0	Sail Covers
	0.0	Del. Misc Items
	3,924	Net: C-31RS

Weight Measured:

Weight Measured is the "Empty Weight" of the boat taken by a load-cell in the following dry condition (no water/gas):

1 Fully rigged with all spars, standing rigging, runners-checkstays, halyards and sheets.
2 Main engine installed, or outboard engine aboard in stowed position.
3 Trampolines and netting.
4 Sails, not more than 1 mainsail, 1 jib, 1 reacher, 1 or 2 spinnakers, or as equipped to race (size dependent).
5 Headsail and spinnaker sheets.
6 Batteries & fitted berth cushions on board in their normal positions if carried while racing (noted above).
7 Anchor, chain, rode, mooring lines.
8 Safety equipment, life jackets.
9 All permanent fixtures detachable or not, including hatchboards & table in the normal positions.
10 Fenders etc. (qty noted above).
11 Cooking facilities (items noted above).
12 Holding Tanks (black water) will be empty for weighing.

All items included in "Weight Measured" will be carried while racing.

The following items shall not be on board for weighing:

1 Spare standing and running rigging.
2 Fuel, water and the contents of any other tanks. Fluids will cause a full-tank weight deduction.
3 Food.
4 Clothing, bedding and personal effects.
5 Spare Tools and large spare parts inventory.
6 Loose gear.
7 Crew.

C31 Screacher Class Lu LP

	M²	Ft²
Area:	**42.81**	**461**

Color.Code = Estimate RatingsComm, Foot.R ☑

1st: Enter **Lu**, **Le**, **Ft**
2nd: Enter Head and 7/8, 3/4, 1/2 and 1/4 Widths

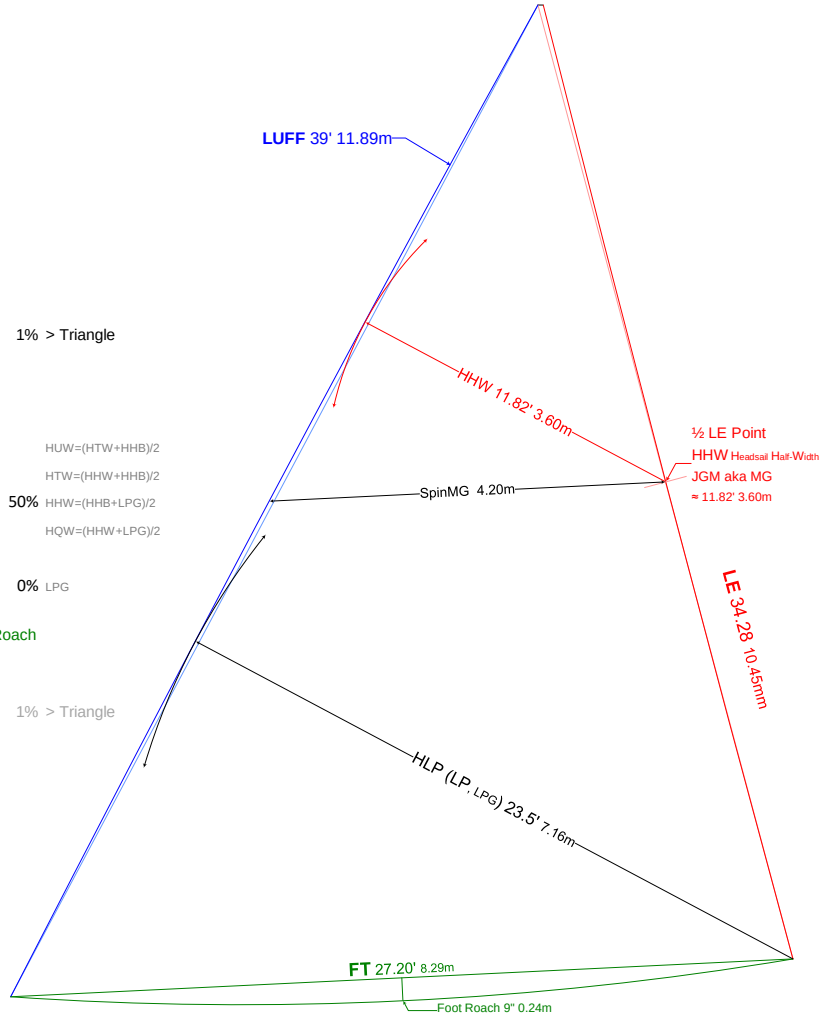
09/02/99: **Farrier** Scr **449** ft² 41.6m² Lu 39' 11.890 **Le** 34.8' **10.610m Ft** 25.8' **7.865**
03/xx/04: **Class** Area **458** ft² = (Lu 39' x LP 23.5') / 2, par.5.9.4d 1xFoot Batte
01/18/18: 0.28m, 11" = (LP - H) Class LU, x **Farrier Le Ft**
01/18/18: 0.04m, 1.5" =(LP - H) Adjust **LE** 10.45m FT 8.29m
01/22/18: Visio diagram

Area Triangle (Lu Le Ft Data Entry)	Metric	Imperial
Screecher C-31 Triangle Area	**42.33**	**456**
Lu Farrier & Class 39'	11.89	39.00
Le	10.45	34.28
Ft	8.29	27.20
S = 1/2 (a + b + c)	15.3	50.24
Area = (s*(s-a)*(s-b)*(s-c))^0.5	42.33	455.68
H = (2 * Tri.Area / Lu) ≠ LP	7.123	23.37

US Sailing UMS(Data Entry Widths Ft.Roach)	Metric	Imperial		
Screecher F-31	**42.81**	**461**	1%	> Triangle
Lu class par 5.9.4b 39.0'	11.89	39.00		
HLP Lp class par 5.9.4b 23.5'	7.16	23.50		
HHB (JH) Head:	0.04	0.14		
7/8 HUW (JGT):	0.93	3.06		HUW=(HTW+HHB)/2
3/4 HTW (JGU):	1.82	5.98		HTW=(HHW+HHB)/2
1/2 HHW (JGM):	3.60	11.82	50%	HHW=(HHB+LPG)/2
1/4 HQW (JGL):	5.38	17.66		HQW=(HHW+LPG)/2
Foot:	8.29	27.20		
Ft Roach, Offset	0.00	0.00	0%	LPG
JLE Leech:	10.45	34.28		

0.1125× JL× (1.445× LPG + 2× JGL + 2× JGM +1.5× JGU + JGT + 0.5× JH) ±Ft.Roach

Texel.AUS, Texel.NDL, SCHRS	Metric	Imperial	
Screecher F-31	**42.81**	**461**	1% > Triangle
Luff	11.89	39.00	
LP > **H =**	7.12	23.37	
JLE Leech:	10.45	34.28	
Leech2	10.45	34.28	
Foot:	8.29	27.20	
HHB (JH)	0.04	0.14	
Luff Roach ±	0.04	0.13	
Leech2 Roach ±	-0.01	-0.03	
Ft Roach ±	0.00	0.00	
LE Triangle S = 1/2 (LE.1 + LE.2 + HHB)	10.47	34.36	
FootRoach Area	0.000		
Foot.Roach / LU	0.0%		
LP - H =	0.040	0.13	



LP := Shortest distance between the clew and luff, see arc ERS G.7.12 (Fabric, ORC, ORR IMS)
H := Shortest distance between clew and Luff Length, ERS G.7.3 (Not Fabric, SCHRS, Texel)

UMS 60% HHW / HLP, 5% Foot.R/Lu	49.75	**536**	**18%**	> Triangle
UMS 55% HHW / HLP, 3% Foot.R/Lu	46.55	**501**	**10%**	> Triangle
UMS 50% HHW / HLP, 0% Foot.R/Lu	42.81	**461**	**1%**	> Triangle
spinMG (½ LE - ½ LU)	4.20	**13.79**	**50.7%**	ScrMG / Foot
Class Area Class Lu x LP /2 =	42.57	**458**	0.6%	> Triangle

C/F-31 Jib Areas

Examples

Leech Widths Class dimensions,
269 ft² North Area 30%+ > 206 ft² Triangle
251 ft² Class UMS 22% >
218 ft² Class CTOA 6% > Triangle, ~closer to Roller-Furling Jib

LP := Shortest distance between the clew and luff, see arc ERS G.7.12 (Fabric, ORC, ORR IMS)
H := Shortest distance between clew and Luff Length, ERS G.7.3 (Not Fabric, SCHRS, Texel)

C-31R North Dims x UMS	Imperial	Metric	
Jib Roshambo	**269**	**24.96**	31%
Luff S1 par 5.9.2a 411.6" 34.3'	34.28	10.45	
LPG par 5.9.2b 144" 12'	12.01	3.66	
HHB (JH) Head:	0.33	0.10	
7/8 HUW (JGT):	2.82	0.86	
3/4 HTW (JGU):	5.25	1.60	
1/2 HHW (JGM): par 5.9.2c 90" 7.5'	8.69	2.65	
1/4 HQW (JGL):	11.27	3.44	
Foot	13.38	4.08	
Foot.Roach	0.65	0.20	

0.1125× JL× (1.445× LPG + 2× JGL + 2× JGM +1.5× JGU + JGT + 0.5× JH) ±Ft.Roach

C-31 Class Diagram LU, LP HHW(MG)	Imperial	Metric		
Jib	**251**	**23.33**	22%	
Luff S1 par 5.9.2a 411.6" 34.3'	34.30	10.45		
LPG par 5.9.2b 144" 12'	12.00	3.66		
HHB (JH) Head:	0.17	0.05		
7/8 HUW (JGT):	2.75	0.84	0.17	
3/4 HTW (JGU):	5.00	1.52	1.17	
1/2 HHW (JGM): par 5.9.2c 90" 7.5'	7.50	2.29		
1/4 HQW (JGL):	10.03	3.06	0.28	
Foot	13.64	4.16		
Foot.Roach 12" w/batten	1.00	0.30		

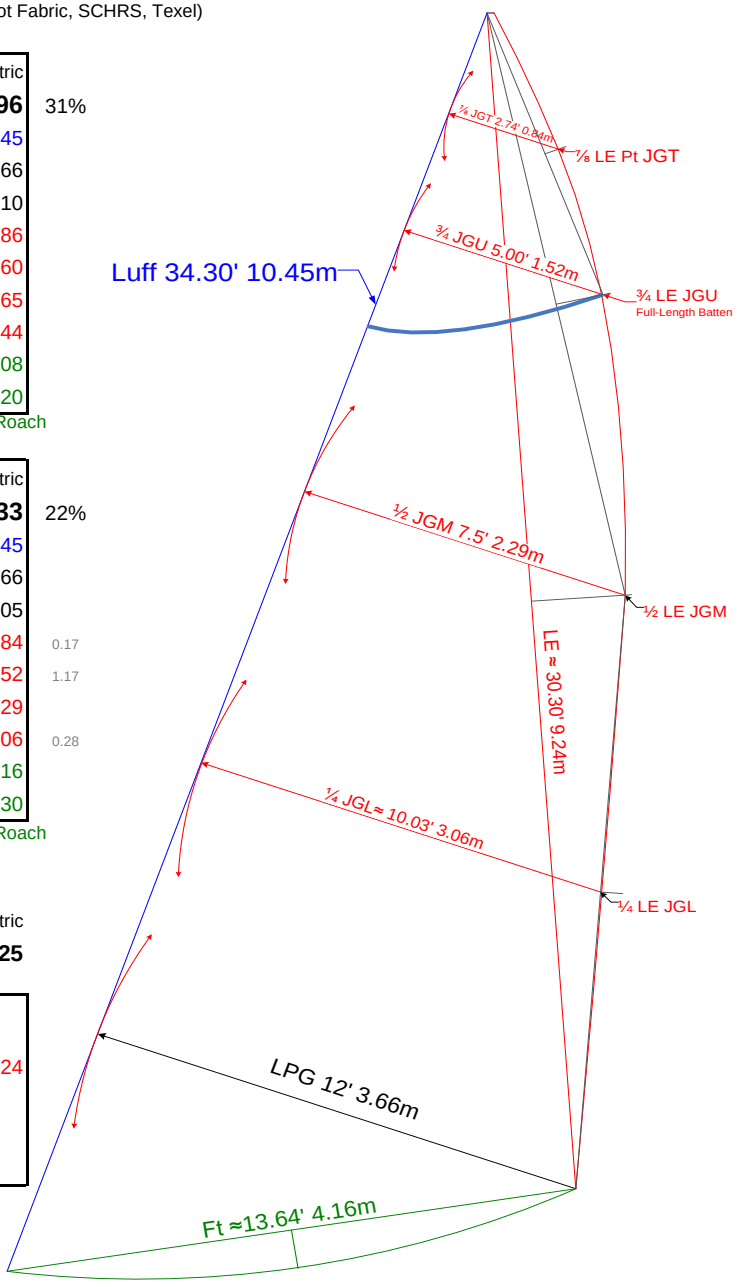
0.1125× JL× (1.445× LPG + 2× JGL + 2× JGM +1.5× JGU + JGT + 0.5× JH) ±Ft.Roach

CTOA Rule: Maximum allowable PHRF sail area in square feet

	Imperial	Metric
CTOA Jib Area	**218**	**20.25**

Triangle Area (Lu,Le,Ft)	206	
Lu	34.30	
Le.calc	30.30	9.24
Ft	13.64	
s = 1/2 (a + b + c)	39.1	
Area = (s*(s-a)*(s-b)*(s-c))^0.5	206	
H = 2 * TriangleArea / Lu	12.0	

(C-31 North HHW / LPG)	72%
(C-31 Class HHW / LPG)	63%
AREA (C-31 North Area / Triangle) -1	31%
AREA (C-31 Class Area / Triangle) -1	22%
AREA (C-31 CTOA / Triangle) -1	6%



Mast Circumference

MC := Rotating Masts Only - tape or paper around mast above boom and measure from tick marks. Please report on the Rating Application in metric or inches.

Boat	MC		Date	Comments
Orion	1.830	c	05/28/13	C. Ogletree
Vamonos!	0.940	c	06/25/12	M.Park
Native, Newick Tri	0.908	w	08/20/09	Blue Tape, taper above spin.halyard (img_0060...)
Antrim 30	0.865	t	04/05/10	TB.verified, Erin #28910
Extreme 40, Smart Recruiters	0.745	c	01/27/13	Texel Denmark MC, Extreme40 #4, SEB
Humdinger, Acapella Tri	0.800	w	03/20/10	Owner TB.Verified
Formula 40 Tuki	0.760	c	07/28/09	Blue Tape
Formula 40 Shadow	0.719	a	04/04/09	Blue tape, 1st pass, taper above hounds
Seacart 30 Wegwezen	0.700	c	03/09/17	Texel.NDL 82
D-Class Cat Adrenaline Marstrom	0.700	c	05/30/09	Assumption, not measured pre-Delta.Ditch @RichmondYC
SL-33 #4	0.665	c	12/23/11	Blue Tape, Alameda Marina
C-37R, Miss Saigon	0.620	a	12/01/11	P.Harper THA
C-37R, Zhuka	0.600	a	07/12/10	P.Harper THA
Viva 27 Cat Sass	0.600	a	05/30/09	Estimate, w/o measure pre-Delta.Ditch @RichmondYC
Seacart 30, Thor	0.600	c	12/01/10	M.Pescott/THA
Contour 34SC	0.585	a	01/08/10	Blue.Tape, measured by owner
Marstrom32	0.577	c	08/21/13	preliminary
Corsair 31RS Leneman	0.554	a	05/30/09	Blue Tape, C-31RS #28543 Prime Directive
Seacart 26	0.530	c	11/28/11	M.Pescott/THA
Diam 24	0.510	c	11/16/16	P. Boyed / AUS for Nationals.AUS
Diam 24	0.500	c	02/16/17	ADH Inotec x F. Bouju
Dash 750.AUS	0.500	a	11/10/10	S.Barton/G.Scott AUS
Dash 750.THA	0.480	a	04/11/11	P.Herning/M.Pescott THA
D-Class Cat Rocket88	0.495	a	07/15/10	Wet, 1st pass
D-Class Cat Beowulf V Marstrom	0.483	c	06/01/10	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 Pulse 600	0.440	a	11/03/16	Blue Tape Pulse 600 Origami II Treasure Island Sailing Center
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	Blue tape M. Leneman, US Tri.Nationals, standard section

Mast Area added to mainsail area, **IF and ONLY IF**, the mast rotates
Mast Area = 1/2 * Mast Circumference* P (mainsail luff, Vertical Luff Mainsail)
No Correction Factor (CF) on airfoil shape, carbon, weight difference vs. aluminum, …
CF-Carbon Mast may be added later (ref: Multi2000 (FRA), MOCRA (UK))
a: aluminum

Corsair 31 Jib Area - Headboard 262 ft²

Txl.AUS 5.0x Area = (0.5*LL*LPG)+((2/3)*LL*LLRG)+((2/3)*FG*FRG)+(0.5*LG1*HG)+(IF((HG > 0),((2/3)*LG2*LRG),((2/3)*LG1*LRG)))

F-31: Class Luff, LP, batten @ Head

19.12	**S9 = LL** a **x LPG / 2** (Triangle)
1.05	**S10 = 2/3 FG** b **x FRG** h10 (Foot)
2.94	**S11 = 1/2 HG x** LG2
-0.12	**S12 = 2/3 LL** a **x LLRG** h12 (Luff)
1.32	**S13 = 2/3 LG2 x LRG** h11

OMR Txl.AUS	ISAF Txl.NDL	ORC HPR	Metric	Imp
LL	a luff	JL	10.45	34.30
LPG	h lpg	LPG	3.66	12.00
FG	b foot		4.15	13.60
FRG	h10		0.38	1.25
LG1	C1 leech		9.22	30.25
LG2	C2 leech		9.39	30.80
HG	hw	JH	0.47	1.54
LRG	h11 Le.R		0.28	0.92
LLRG	h12		-0.02	-0.06
	Le.mg 1/2	JGM	2.29	7.50

24.32 **Jib m²** = S9 +/- (S10 S11 S12 S13 S14)

127% (ISAF ~ Texel) / Triangle

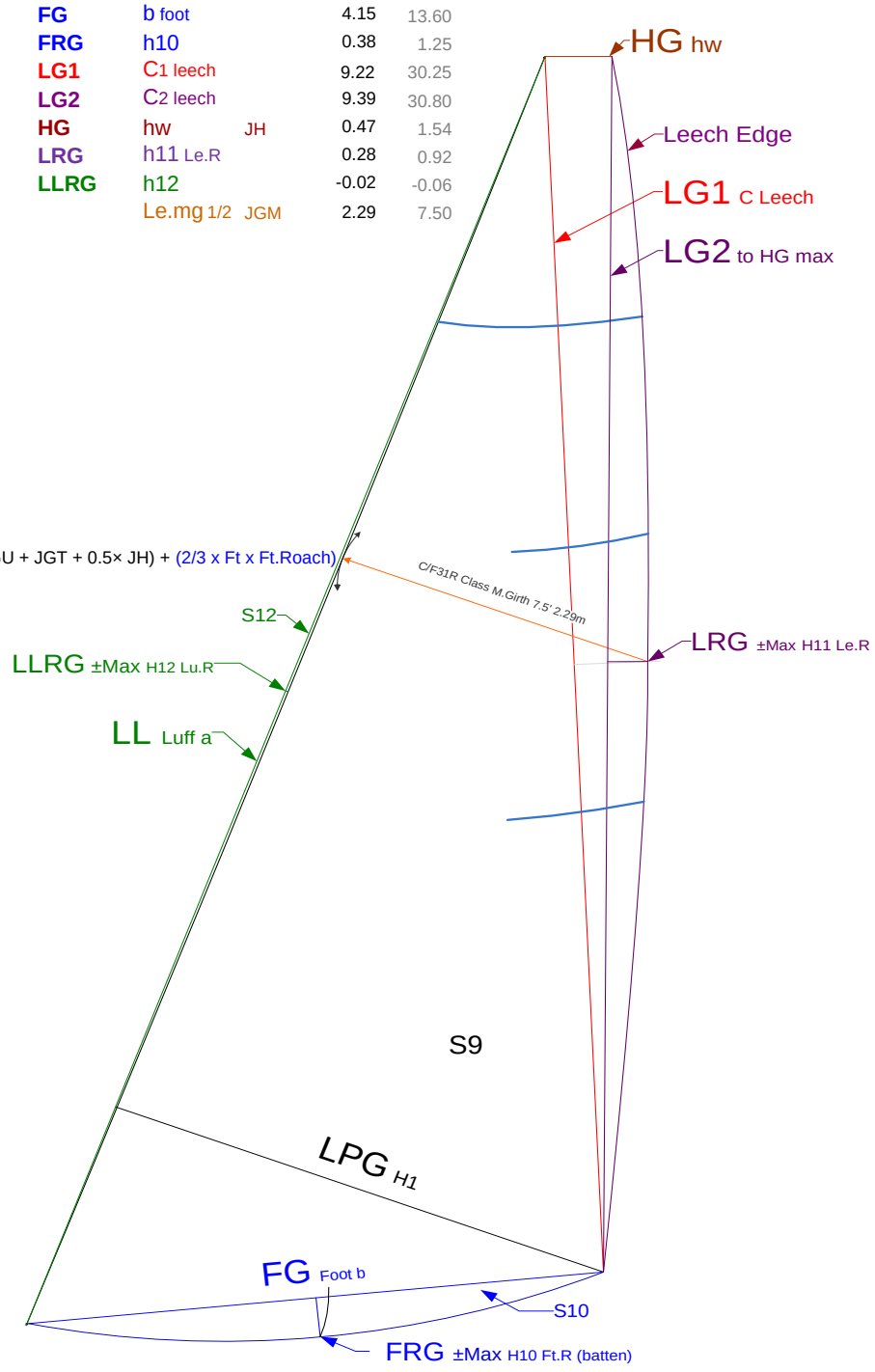
262 **Jib ft²**

206 Triangle

214 CTOA Jib ft²

90" JGM, Le.mg Class Rule US

ORC 111.1 Jib/Genoa/Code0/Gennaker **(HPR)**
Area = 0.1125× JL× (1.445× LPG + 2× JGL + 2× JGM +1.5× JGU + JGT + 0.5× JH) + (2/3 x Ft x Ft.Roach)

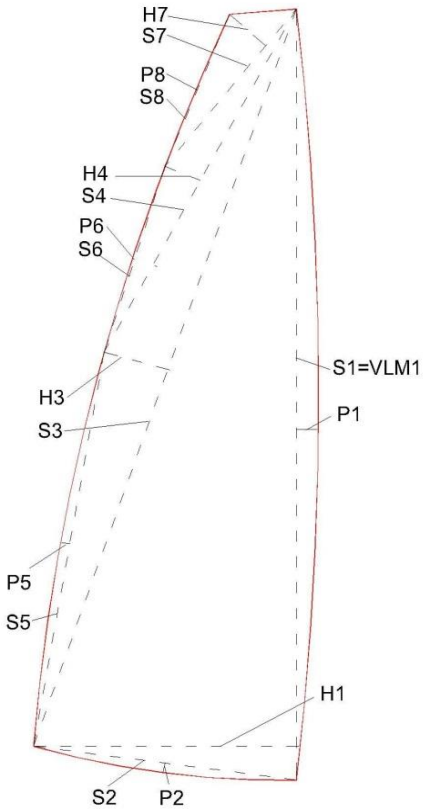


Texel Example Measurements: Nacra Infusion F18 Jib, eXtreme 20 Main

Please use **Actual Area** from sailmakers with the **Major Dimensions** (**Luff** & **Foot**, P & E or H1).

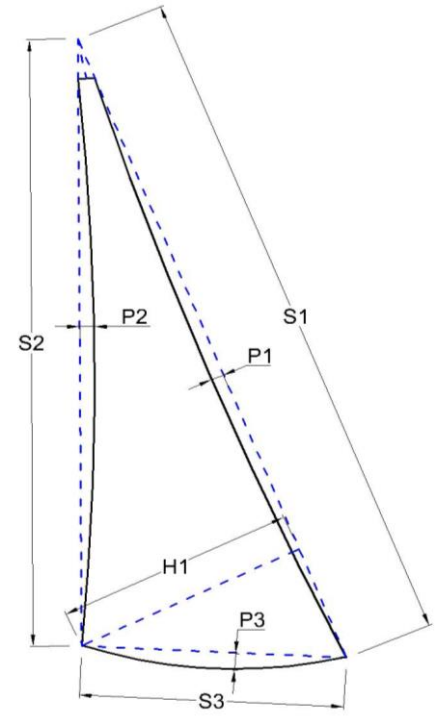
Txl.NDL.2016: "The real sail area is determined by one of the usual methods"

Texel Extreme 20 Main



		m^2	ft^2
	Area	**20.52**	221
10.07	S1 VLM1 Lu		
2.44	H1		
	mtr1	12.29	
0.11	P1		
	segm1	0.70	
2.47	S2 Foot		
0.05	P2		
	segm2	0.08	
9.76	S3 Le		
0.88	H3		
	mtr3	4.29	
5.14	S4		
0.73	H4		
	tr4	1.88	
4.78	S5		
0.03	P5		
	segm5	0.10	
2.77	S6		
0.04	P6		
	segm6	0.07	
2.58	S7		
0.81	P7		
	tr7	1.04	
2.01	S8		
0.05	P8		
	segm8	0.07	

Texel F18 Infusion Jib: S1= luff if Jib Head < 30 mm (?)



		m^2	ft^2	
	Area Jib	**4.136**	45	
5.970	**S1 Luff**			gs1
1.485	H1			gh1
	gtr1	4.433		
0.000	**P1** Lu.Roach			gp1
	gsegm1	0.000		
5.730	**S2 Leech**			gs2
-0.085	P2 Le.R			gp2
	gsegm2	-0.325		
1.530	**S3 Foot**			gs3
0.027	P3 Ft.R			gp3
	gsegm3	0.028		

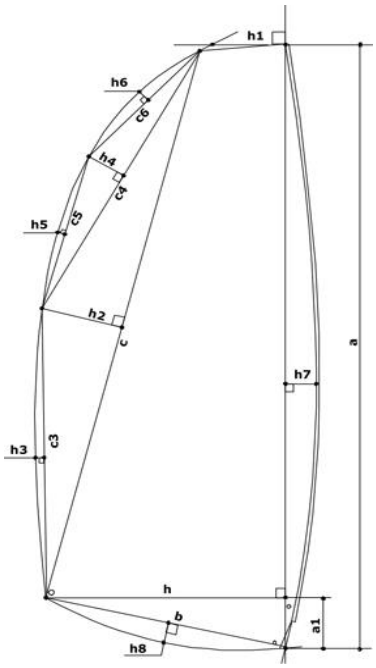
F18 Class: SCHRS

Hobie Wildcat example France: **FRA 2009-042** link

Nacra Infusion MkII, France: **FRA 2017-003** link

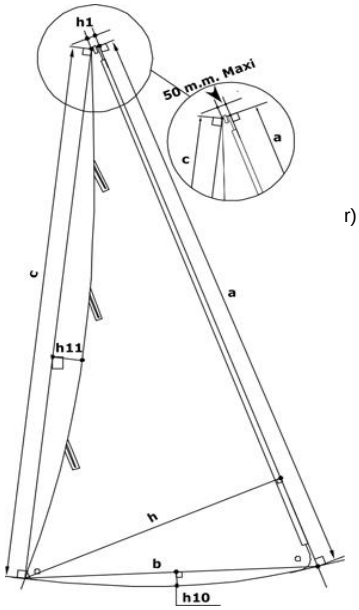
Mainsail Area - (Sample Data) SCHRS CM, F18

			Metric
12.998	S1 = ((h + h1)(a - a1) + (a1 x h))/2	h	2.125
1.046	S2 = c x h2/2	h1	0.965
0.096	S3 = 2/3 c3 x h3	a	8.505
0.000	S4 = c4 x h4/2	a1	0.295
0.301	S5 = 2/3 c5 x h5	c	8.205
0.000	S6 = 2/3 c6 x h6	h2	0.255
0.720	S7 = 2/3 a x h7	c3	4.110
0.000	S8 = 2/3 b x h8	h3	0.035
15.161	CM* = (S1+S2+S3+S4+S5+S6+S7+S8) m^2	c4	0.000
		h4	0.000
		c5	4.105
	CM = (CM* +Area of Mast +Area of Boom) m^2	h5	0.110
	Mast Area = (Total Length x Perimeter / 2) m^2	c6	0.000
	Mast Area = (MC/2 * a); a = P.luff or VLM larger multihulls	h6	0.000
	Boom Area = (Total Length x Height) m^2	b	2.145
	Boom Area IFF foot attached	h7	0.127
		h8	0.000
	Mast Length (Wildcat)		9.055
	Mast Circumference (max 0.385)		0.385
1.743	Mast Area (L x Circ.)/2		
16.904	Main Maximum **17 m^2**		



Jib Area - (Sample Data) Texel, SCHRS CJ, F18

4.268	S9 : a x h/2	a	5.990	r)
0.012	S10 : 2/3 b x h10	h9	0.041	
-0.300	S11 : 2/3 c x h11	c	5.770	
0.164	S12 : 2/3 a x h7	h	1.425	
		b	1.470	
		h10	0.012	
4.143	Jib Maximum **4.15 m^2**	h11	-0.078	



Asym Area - (Sample Data) SCHRS CSPI, F18

AsymMaximum **21.00 m^2**

20.994	CSPI = SFx(SL1+SL2)/4+(SMG*-SF/2)x2/3(SL1+SL2)/2 m^2		226	ft^2
20.994	SA = (Luff+Leech)*(Foot + 4*Mid Girth) /12 m^2		226	ft^2
		SLU	8.850	
		SLE	7.680	
		SMG	2.864	
		SF	3.785	
		smg/sf	75.7%