

## **Storm Trysail - Transpac 65 Box Rule** - Updated 9-15-06

- 1.0 Class Name: Storm Trysail - Transpac 65
- 1.1 Objectives:
  - 1.1.1 The Storm Trysail and Transpacific Yacht Club have produced the Storm Trysail - Transpac 65 Box Rule to meet the following objectives:
  - 1.1.2 To provide owners the opportunity to race a high performance fixed ballast boats in close racing for both inshore and offshore. Safety, reliability, and self sufficiency while racing both inshore and offshore are primary objectives.
  - 1.1.3 To create state of the art rule parameters that maintain tight restrictions with regard to construction and design, yet allow some flexibility for each owner to customize the yacht in their own image.
  - 1.1.4 To create a design box tight enough to eliminate the quick obsolescence found in broader development classes, yet not go to the point of actual one design criteria.
- 1.3 Spare
- 1.4 Structure of the Rule:
  - 1.4.1 Compliance with other rules is required as part of this rule. In the absence of specific changes provided for by this rule, the applicable portion of other referenced rules shall apply. Anything that is not expressly permitted is prohibited. Teams are cautioned that there are no provisions in this rule to correct for failure to fit within the box rule limits.
  - 1.4.2 The language of the Rule is English.
  - 1.4.3 The units of the Rule are Kilogram-meters.
- 2.0 Applicable Rules - In descending order of priority
  - This Storm Trysail - Transpac 65 Box Rule
  - The Storm Trysail - Transpac 65 Class By-Laws
  - ISAF Special Regulations- Category 1
  - ABS Guidelines for Building and Classing Offshore Racing Yachts-1994
  - ISAF Racing Rules of Sailing
  - IMS
- 2.1 Supplemental Construction Requirements:
  - 2.1.1 The Scantling "L" used in ABS shall be taken as 20m
  - 2.1.2 To be eligible for class events, the yacht must not only meet the letter of the structural requirements of ISAF Category 1, but also must be truly designed and built to aggressively complete the world's most rigorous Category 1 offshore races.
  - 2.1.3 The owner shall certify that he has instructed his designer in accordance with section 2.1.2.
  - 2.1.4 The designer shall certify the boat was designed in accordance with section 2.1.2.
  - 2.1.5 The builder shall certify the boat was built in accordance with the plans

furnished by the designer.

2.1.6 Any structural failures, along with a complete description shall be reported to the STP 65 board or if section 1.3 has occurred, to the Owner's Association.

## 2.3 Specific Changes to the IMS.

2.3.1 The boat shall conform to IMS Rules 2005, and IMS Regulations 2005 with the following modifications:

2.3.2 IMS Reg 203 is modified as follows: The maximum allowable cure temperature in association with honeycomb construction is 105o C.

2.3.3 IMS Rule 305.2 is modified such that a single, adjustable permanent backstay not less than 23 meters in length is required. It shall attach to the mast on the longitudinal centerplane of the mast tube.

2.3.4 IMS Rules 203.7 and 305.2 is modified such that both the forestay length and backstay length may be adjusted while racing.

2.3.5 IMS Rule 305.e is modified such that running backstays in any form are prohibited.

2.3.6 IMS Reg Part 3- Racer Division Accommodation shall apply  
Accommodation 'L' shall be taken as 17.1 meters.

2.3.7 IMS Reg 305.3 shall be modified as follows:

**Overhead Area at Full Interior Height:** At a height IH above the level established in 305.1 there shall exist under the overhead a contiguous plane of length not less than 2.91 meters and area not less than 3.8 m<sup>2</sup>. For a length of 2.91m found parallel to the centerline the width of this plane shall not be less than 0.6m and for a length of 1.8m, found parallel to the centerline of the yacht, the width of this plane shall not be less than 1.2m. The space from this plane to 0.5 meters vertically below shall be clear and unobstructed except for a keel trunk and/or structural transverse frames, if fitted. The aft extent of this area at the centerline shall lie not forward of a point located 0.55\*LOA aft of the stem.

2.3.8 IMS Rule 310 is modified such that the enclosed head shall consist of a volume enclosed by at least three partitions, at least one of which is longitudinal. Access shall be through a door. There shall be a floor space of at least 0.5m<sup>2</sup>. Partitions shall be rigid and of a weight not less than 2.1 kg/m<sup>2</sup>. The head will have a rigid door not less than 2.1 kg/m<sup>2</sup>.

## 2.3.9 Measurement trim

IMS rule (402.2) is modified so the following shall NOT be on board for measurement:

- Sails, sheets and guys, spare standing and running rigging
- Halyards (Taglines are permitted per IMS 725.5b)
- Fuel, water, Gas bottles shall be removed
- Food, cooking utensils
- Anchors, chains, warps, mooring lines, and fenders
- Clothing, bedding, and personal effects
- All removable safety equipment, all tools and spares
- Loose gear

2.3.10 When for practical reasons, it is not possible to remove all items and equipment such as fuel, it is acceptable to deduct the weight of these from the gross weight provided the total weight does not exceed 40 kg. The rating authority reserves the right to refuse such data when inadequate detail is supplied.

## 2.4 Required Certificates:

2.4.1 A yacht must have an IMS certificate issued by its national authority or an ORR certificate issued by US Sailing. For either certificate, the boat must be in STP measurement trim. ORR permits designer lines and if designer lines are used, ORR will specify spot checks including, but not limited to freeboards, canoe body depth, maximum draft, maximum beam, beam at the freeboard stations, appendage spans, chord lengths and thicknesses.

2.4.1 A yacht shall also have a valid STP 65 certificate issued by the class measurer.

## 3.0 Hull:

3.1.1 Hull measurements to be to the nearest .001m and 10kg

3.1.2 The Hull surface shall not contain hollows except within the forward 6 meters. Hollows with a depth of 1mm over lengths less than 1m or a depth of 2mm over lengths greater than 1m are permitted. Transverse hull sections shall not increase in depth with increasing beam. The sheer line shall have continuous curvature without inflections in both plan and profile between SFFP and SFAP, with a radius of greater than 25mm and less than 75mm in transverse section joining the hull and deck. This radius shall be constant and not bumped at the measurement points. Below the sheer radius limit, transverse hull sections shall not increase in beam with increasing depth.

3.1.3 If a fixed sprit is fitted, no surfaces of the sprit can be more than .25m below FFM, except that a bobstay, whose sole purpose is to support the sprit may attach anywhere on the stem.

3.1.4 Moveable ballast and water ballast are prohibited.

3.1.5 A structural, watertight bulkhead, in its entirety, must be located between 2.9m and 3.3m aft of the forward end of LOA.

3.1.6 DSPM is the calculated displacement in measurement trim.

3.1.7 DSPW is the weighed displacement in measurement trim.

3.1.8 Yachts must be capable of being lifted by a single point without support from outside of the hull skin. Two internal attachment points and a connecting sling are acceptable.

3.1.9 Stations shall be located by hand as follows:

Stations shall be marked by brad heads in sheer, placed by measurer

SFFP (fixed at) 0.300 m horizontal distance aft stem.

SFAP (fixed at) 18.000 m horizontal distance aft stem.

SFBI (measured) Horizontal distance to mast's aft face from stem. FBI

(fixed at) The forward face of the mast.

SDM (measured) Horizontal distance -maximum depth aft of stem.

SBMAX (measured) Horizontal distance- maximum beam aft of stem.

3.1.10 Hull Measurements by hand shall be as follows:

LOA	
BMAX	
FFS	1.750 vertical distance to measurement datum
FBIS	Vertical distance to measurement datum
FAS	1.280 vertical distance to measurement datum
DMS	DM measured to datum at SDM

The respective differences between FFM - FFS, FBI - FBIS and FAM - FAS shall not exceed 0.050m.

Calculated Measurements

$$DM=(FFS-FFM+DMS-(FAM-(FAS-FFA-FAM))*(SDM-.3)/17.7$$

3.1.11 There shall be a minimum and maximum allowable VCG as calculated on the IMS or ORR certificate. The first three boats measured shall submit their VCG numbers. Should one of the boats have a VCG more than 0.05m lower than the next lowest one, it shall be remeasured in full. The lowest allowed class VCG shall be the lowest correctly measured VCG of any of the first three boats plus (deeper than) .3mm . Should remeasurement be required, under this section, the owner may deduct the cost of this remeasurement from his next year's class dues. The highest VCG allowed shall be set at 0.2m above the lowest, unless one of the three boats is higher than that number in which case that shall become the highest allowed VCG.

3.2 Appendages:

3.2.1 A maximum of one keel and one rudder is allowed. The maximum transverse width of the keel or rudder shall not exceed 800mm.

3.2.2 The keel shall be fixed in the down position while racing. It shall be made of a keel foil, and a bulb.

3.2.3 The keel shall be retractable for port entry. Retraction may be powered. A maximum of 10 minutes is allowed for lowering or retraction. Retraction and lowering must be accomplished without outside assistance.

3.2.4 The keel shall not be capable of changing shape or symmetry with the exception that deflection due to gravity or water pressure is permitted. Moveable surfaces are prohibited.

3.2.5 A weed knife is allowed, which may only travel in the centerline vertical plane.

3.2.6 The permitted materials for the keel foil are:  
Steel, Stainless Steel, Cast Iron, Bronze

3.2.7 Fairing material is limited to 20mm in depth and shall have a specific gravity less than 2.

3.2.8 A weed knife system is permitted to be of materials not in above list.

3.2.9 The maximum UTS for any keel material allowed is 900 MPa. This does not change the ABS requirement in 9.13.3 that tensile yield strength not be taken as greater than 390 MPa in calculations.

3.2.10 The material for the bulb shall not exceed a SG=11.3.

3.2.11 The rudder's axis of rotation shall be in the center plane of the hull. The rudder shall not be multi surfaced.

3.2.12 The rudder shall not be capable of changing shape or symmetry with the exceptions that: a) deflection due to gravity or water pressure is permitted and b) a weed knife operating on the vertical center plane of the rudder is permitted.

#### 4.0 Sailplan:

4.1 The sail plan shall be a fractional sloop with masthead spinnakers.

4.2 Shrouds and stays must terminate to the hull/deck structure, and not to outriggers. Chainplates shall not extend outside the hull more than 12mm. The centerline of the port and starboard upper shrouds, where they intersect the deck, shall not be narrower than CPW. There shall not be transverse rigging attached to the mast below 5 meters above FBI.

4.2 The mast must be keel stepped.

4.3 The mast dimensions MDT and MDL must be maintained below the top of I. Hollows in spar surfaces are not permitted, except where caused by reinforcement material in way of fittings.

4.4 Standing rigging including backstays and forestays shall be made of a material with a tensile modulus not greater than 310 GPa. Standing rigging shall be circular in cross section as defined by IMS.

4.5 The forestay may be adjusted up to 300mm while racing.

4.6 The mainsail area shall be controlled by P and E, and girth and headboard dimensions.

4.7 The jib area shall be controlled by IM, LP, and girth dimensions.

4.8 The spinnaker area shall be determined by the following formula:  
$$SA = (SLU + SLE) * SF / 4 + (SMG - SF / 2) * (SLU + SLE) / 3$$

4.9 Spinnakers must have a mid girth of at least 75% of the foot length.

4.10 A yacht is permitted a fixed sprit with a centerline tacking point for the spinnaker tack.

4.11 For races longer than 700 nautical miles, the board may permit additional spinnaker gear for purposes of setting the spinnaker tack off centerline.

4.12 Spar and headboard dimensions shall be taken to the nearest 0.001m  
Sail measurements shall be taken to the nearest 0.01m.

5.0 Propulsion

5.1 The propeller and associated shafting and support structure may retract when racing but must meet the requirements of section 3.1.2.

5.2 Permitted Engines

Volvo D-275/150S/MS25A

Specs: 75 HP at 3000 RPM maximum rating

Weight Dry weight w/ gear - ??? kg minimum \*\*\*\*\*

Yanmar 4JH-TE

Specs : 75 HP at 3800 RPM maximum rating

Weight Dry weight w/ gear - ??? kg minimum \*\*\*\*\*

5.3 The minimum powering speed of 9 knots.

5.4 The engine, or its components, shall not be modified for weight reduction.

6.0 Minimum and Maximum Dimensions:

Hull	Min	Max	Comments
LOA		20.000	
BMAX	4.500	4.800	
DSPW	13000	13400	Weighed displacement per 3.1.8
FFM	1.750		
FBI	1.500		
FAM	1.280		
DM		4.800	
DR		3.300	
VCG	See section 3.1.9		

Spar Dimensions	Min	Max
IM		25.550
J		7.600
P		26.400
E		9.550
BAS	2.050	2.200
ISP		28.800
CPW	3.600	

Fixed sprit:	Min	Max
TPS		10.300

Mast and Rigging Dimensions and Weight (to be checked by sparmaker)

	Min	max
MDT	.175	.200
MDL	.350	.400
MWT	550	
MCG	9.80	

Note: Spar specifics are not final and are subject to review by a sparmaker.

SAILS	Min	Max
Mainsail		
HB		0.35
MGT		2.33
MGU		3.83
MGM		6.08
MGL		7.99 (or 7.94)
Jibs		
LP		7.83
3/4 Girth		5.89
Mid Girth		4.05
1/4 Girth		2.18
Spinnaker Area		410 m <sup>2</sup>