

# Technical Inspection Manual and Guide to Measuring the Racing Crackerbox

The purpose and intention of this manual is to provide a unified and simplified procedure to inspect the racing crackerbox. This is a guide to be used as a **minimum** inspection procedure while inspecting the hull and in no way supersedes the inspector, referee, or other binding authority's right to perform a complete inspection including but not limited to lofting of frame work and hull dimension measuring as specified in section 50.5 of the rule book. Rule 50 and rule 49 take precedent in any discrepancy with this guide. This procedure identifies a minimum of twelve points to be inspected of the more critical areas of the hull verifying basic dimensional compliance as paraphrased in section 50.1 of the rulebook.

## Suggested Tools (these are recommended, similar tools may be substituted)

- 1-Aluminum Straight Edge 3/8 thick, 2" wide, 4' long (or equivalent)
- 1-1/8" Dowel
- 2 - 1/2" Dowels
- 1- Grease Pen
- 1-20' Tape Measure
- 2-2' Carpenters Level (two plumb bobs or equivalent may be used)

**Note to Inspector:** Prior to lifting a hull for inspection, Verify that the lifting slings used are in compliance with rule 3.9 of the general safety rules. Additional references can be found in rule 49.8 hull lifting requirements.

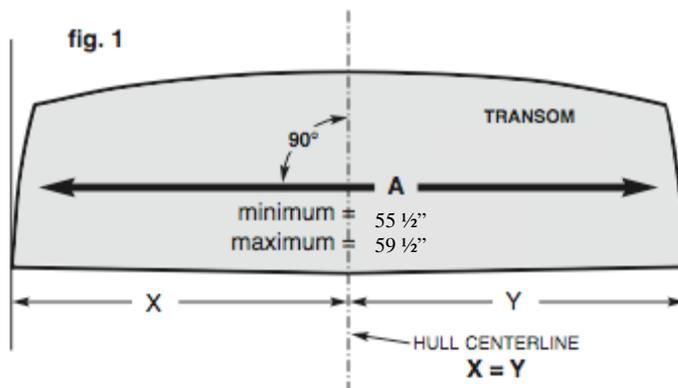
## Transom Definition

For the purposes of this Guide the transom will be the primary vertical plane at the stern of the hull. All measurements taken from the transom must be perpendicular to the transom (see fig. 1).

## Transom Width Measurement: Point A

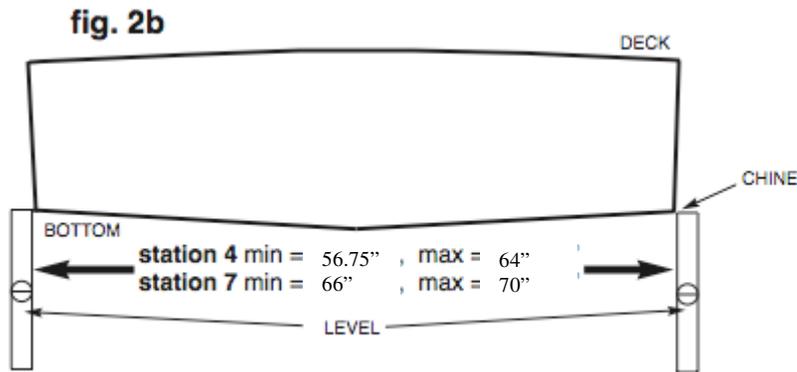
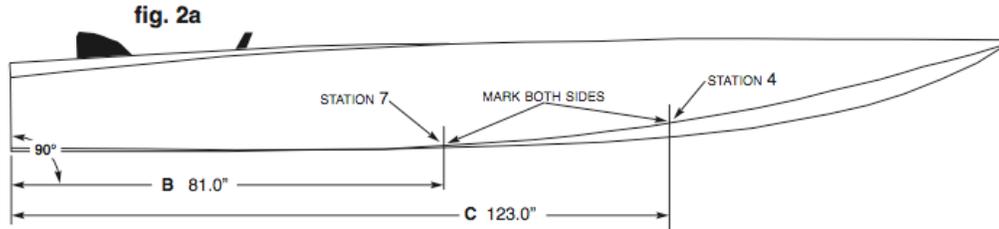
Measure the minimum and maximum distance across the transom perpendicular to the hull centerline. The minimum dimension is 55 1/2", and the maximum dimension is 59 1/2".

Note: That the 1" +/- tolerance as specified in section 50.5 TABLE OF OFFSETS do not apply to these dimensions. (See fig. 1).



**Station #7: Point B and Station #4: Point C**

Measuring perpendicular from the transom toward the bow place a mark at 81 inches (Point B, Station 7) and at 123 inches (Point C, Station 4) on both sides of the boat. Use the markings at each point along with two levels to measure the width of the minimum and maximum width of the hull at the chine at each station. The readings should be no less than 66 inches and no greater than 70 inches for point B (Station 7) and no less than 56 3/4 inches and no greater than 64 inches for point C (Station 4). (See fig.2a and fig.2b).

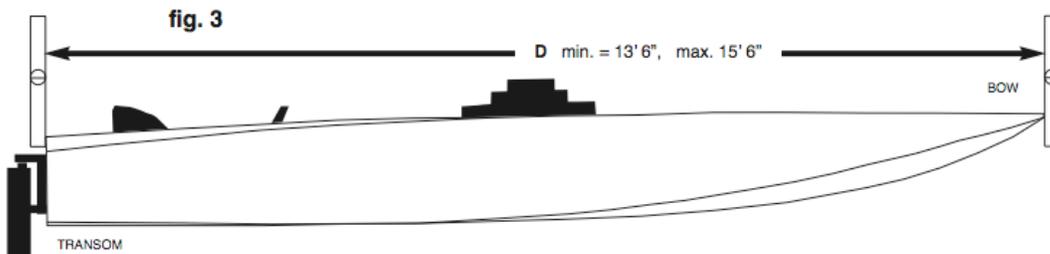


**Overall Length: Point D**

Measuring from the transom center to the tip of bow the overall length of the hull should be no less than 13' 6" and no greater than 15' 6". Per rule 50.5.3 the adjustable plates are in no way to be included in the measurement of overall length.

When engine height or other deck attachments interfere with the tape measure a simple method of determining hull length is to use two carpenters levels or plumb bobs, one at the transom center and one at the tip of the bow. (See fig. 3).

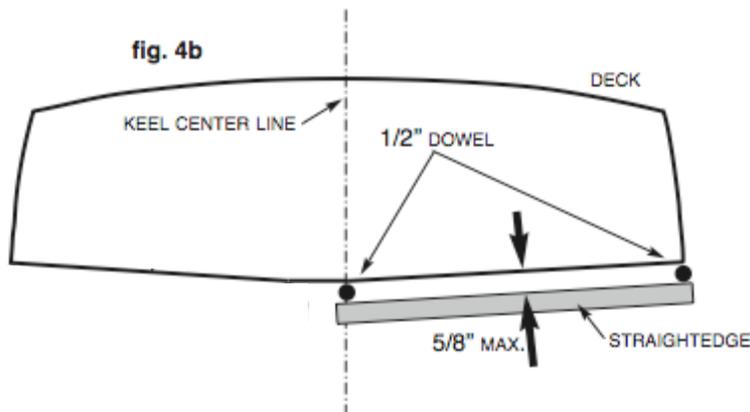
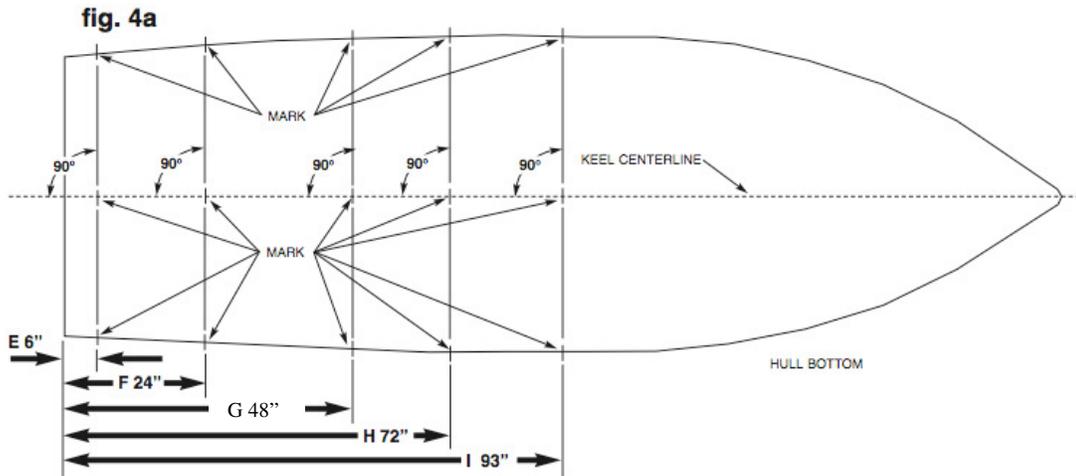
If the measured value does not meet the requirements set out in rule 50.5.3 and the Inspector feels the issue is due to measurement error the Inspector shall measure the length of the hull per rule 50.5.



**Concavity: Point E, F, G, H, I**

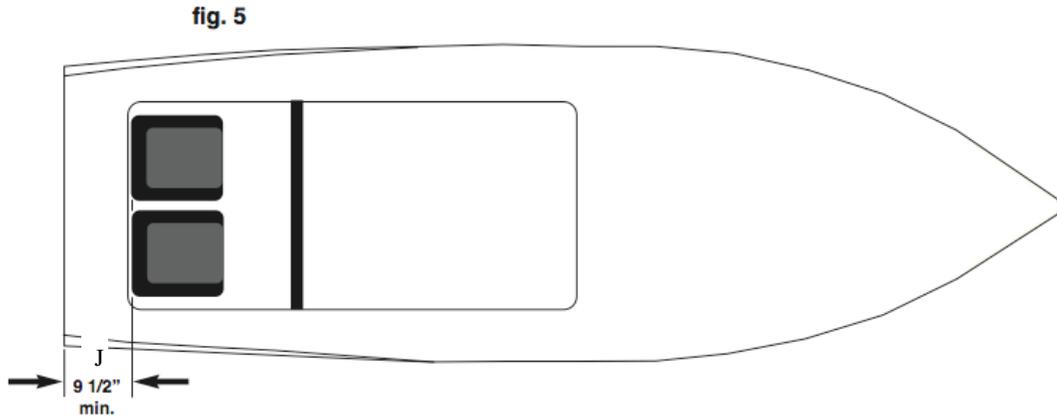
With the hull suspended in the air in a safe manor as determined by the inspector, measuring perpendicular from the transom towards the bow place a mark at 6 inches, 24 inches, and 48 inches, 72 inches, and 93 inches on the keel centerline and on the chine on both sides of the hull (see fig. 4a). Place a straight edge flat on the bottom at the keel centerline to the chine at each marked location. Repeat this process on both sides of the keel. If space is observed between the hulls bottom and the straight edge then using the 1/8 inch dowel to determine if it can be placed between the bottom and the straight edge. When measuring the bottom concavity there will be a 1/8 inch maximum deviation from a theoretical straight line from the keel centerline to chine from the transom forward to the amidships per rule 50.5.9. It should be expected that some underwater gear such as the strut, prop shaft shrouds, water pickups, etc. could interfere with getting a measurement to the keel centerline. In this case the inspector shall use his/her best judgment as to if the device is hiding potential concavity. In this case simply move the straight edge around the area and re-measure to achieve an accurate determination of the hulls legality. (See fig. 4b).

Note: If devices such as water pickups, mounting plates, blast plates etc. are mounted to the keel obstructing the centerline an offset must be used to determine bottom concavity. For Example, using two 1/2" dowels place one on the keel centerline and the other on the chine. Place the straight edge across the dowels and take a measurement. The measurement should be no more than 5/8 of an inch. (See fig. 4b).



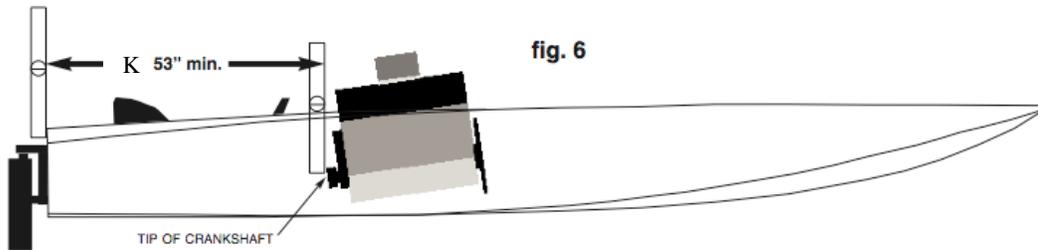
**Seat Back: Point J**

Measuring from the transom to the back of the drivers and riders seats there must be no less than 9 1/2" inches per rule 50.5.6 (See fig. 5).



**Engine Placement: Point K**

Engine must be mounted in front of the cockpit and have a minimum distance of 53" inches perpendicular from the transom to the tip of the crankshaft per rule 50.5.5. A simple method of determining engine location is to use two carpenters levels, one at the transom and one at the tip of the crankshaft (See fig. 6).



**Visual Inspection: Point L**

The bottom shall be visually inspected per rule 50.5 and 50.6. The adjustable plates should be blended or flushed to the bottom per rule 50.6.5. All other underwater gear must be mounted in accordance with rule 50.5.10 and 50.6 (See fig 7 and fig 8 below for examples).

