

## **APPENDIX L**

### **Model Keel and Rudder Inspection Procedure**

The model form is not the only means of meeting the needs of OSR 3.02.3 Evidence of Periodic Structural Inspection, Organizing Authorities may develop on-line forms.

Structural Inspection of a boat shall be completed by a qualified person both internally (may be in the water) and externally (out of the water). The purpose of this inspection is to identify and report to the Owner the condition of the keel and keel structure observed during this inspection. It is the responsibility of the Owner to undertake any repairs.

Consult the Owners' Manual for the specific boat, steering system and type of keel (e.g. fin, lifting, swinging, full length). Inspect in detail any high-load areas: keel attachment, keel floor, steering systems, rudder(s). Pay special attention to prior repairs, especially following groundings.

Internal Inspection: Check backing plates, bolting arrangements, sump area and keel floors for any signs of cracking, weakening, or de-laminated tabbing. Lead or lead alloy keels may require tightening of bolts to ISO standards due to lead creeping. Inspect keel bolt nuts for corrosion. Check bolt holes for "ovaling." Visually inspect for possible de-bonding of the supporting structure.

External Inspection: Check there are no signs of stress cracks (not gelcoat cracks) around the keel attachments to hull, or movement or opening around the keel/hull interface which may allow water ingress and consequent keel bolt crevice corrosion. If in doubt, sand back bottom paint/gel coat to identify depth of crack. Check keel tip deflection to insure immediate return and no internal concomitant movement in the keel floor. Visually check high stress regions, particularly around the forward and aft hull attachment areas of the keel, for signs of paint or gelcoat cracking or large, deep blisters, which can indicate separation and structural weakness.

Rudder/Steering system: Check bearing area for any damage/stress cracks; check rudder shaft and blade integrity, especially at any shaft joins and at upper connections to hull/deck. Undertake a tip deflection test to identify any excessive movement. If applicable, check rudder straps and gudgeons for corrosion or cracking.

Lifting and swing keels: In addition to above, check there are no significant stress cracks in structure around pins supporting the keel. Check for extensive corrosion on pins, cylinders and supporting metal structure.

## Model Keel and Rudder Inspection Form

Boat Name:		Sail Number:	
Owner Name:		Designer:	
Address:			
Owner email:		Builder:	
Primary Launch Date:		Hull Identification Number:	
World Sailing Plan Review Certificate Number:			
<b>The following checks may be completed with boat in the water:</b>			
Item:	Action:	Inspector's Notes:	
Keel Bolts	Check for excessive corrosion. Torque to manufacturer's specs.		
Internal Hull Structure	Check for signs of structural failure and/or laminate separation especially in area around keel structure, keel floor and other stress points.		
<b>The following checks to be conducted externally with boat out of the water:</b>			
External Hull Condition	Check for hull stress cracks around leading and trailing edge attachment point to structure, hull appendages and keel sumps.  Inspect keel/hull interface for signs of damage by tip deflection test.		
Rudder	Check for cracking of the rudder bearing/hull assembly.  Inspect rudder for integrity by tip deflection test.		
<b>Declaration of Completed Inspection:</b>			
Location:		Date:	
This visual inspection has been conducted to observe and report on visually noticeable indications that may compromise the structural integrity of the vessel's keel and rudder. It does not ensure that the vessel is seaworthy or that the Owner has repaired the identified problems.			
Print name:		Signature:	
Address:			