Rig inspection checklist

Whilst this is not a complete and comprehensive listing of items and process in order to complete a rig inspection, it is a satisfactory guide to assist in ongoing maintenance.

Vessel name : _____

Vessel design : _____

Year of manufacture : _____

Rig design : _____

Vessel location : _____

_____

Authority for inspection given by : _____

A Rig Maintenance Program (RMP) manages the upkeep of a yacht's rig. It should include a though inspection of the rig, along with maintaining a record of the service history and provide reminders for future servicing.

The service should be completed by someone at regular intervals (suggest each 6 months) who demonstrates a level of competence and technical expertise. The question of how long should rigging systems last is not an easy one to answer. There are variables in each situation.
SeaRig design technicians can offer global support, but nothing beats local knowledge, and this is where a trained rigger, with a history of the boat becomes invaluable.

A rig inspection typically is a visual inspection of the rig from top to bottom.
Based on data from a previous inspection, wear can be monitored. The sighting of all rigging and hardware will ensure a standard is maintained for future inspection.
After inspection a written note should be completed highlighting existing or potential concerns.

Options for inspection would be non-destructive and may be a combination of both Visual and Dye testing, maybe ultrasound in some situations.
Dye Testing or Liquid Penetration Inspection is a method to reveal surface flaws by a coloured dye bleeding from a flaw that the human eye cannot detect. Penetrant inspection can be used on any metal material.
Dissasembly of the rig will be required , so this may fall into the 5 year inspection, whilst the visual can be undertaken at more regular intervals.

Cracks in rigging components, especially cracks that are orientated transverse to the load are an obvious sign of impending failure, whilst a stay which is misaligned to the load or unable to articulate may not be so obvious.
Rusty areas frequently indicate cracks underneath. In addition to cracks, you should look for corrosion.

A record of the work undertaken over a period of time will form the basis for sound decision making in respect to the replacement of your rigging hardware.

Deck check

End for end the halyard you will go up the mast on, to ensure your lifeline is not damaged	
Split pins are not broken or missing	
Threaded fittings have adequate thread engagement for intended load	
No broken strands of wire	
No visable signs of cracking along the length of swage section	
No visable signs of rust streaking, indicating broken strands or cracks	
Mast collar sheaves not oval, sharp on edges and pins secure	
Halyards lead correctly to exit slots, chafe guards if fitted are secure & in good condition	
No visable signs of damage or chafe on forestay from the anchor	

Aloft check

Securely fasten the chair or climbing harness to the halyard	
Work from the masthead down checking	

Masthead

Halyard sheaves rotate freely	
Bushes not worn	
Split pins are not broken or missing	
Sideways movement of sheaves is not excessive	
No sharp edges on sheaves able to cause wear on halyard	
Sheave correctly sized and correct for halyard type	
Electrical wires are clamped correctly and not suspended under their own weight	
No chafe on wires around the mast wall exit	
Lights operate correctly	
Shackles of external halyard blocks are secure and in good condition	
Windex, wind gear correctly alligned, and operating freely	

Forestay

Roller furling headstay is not damaged from a halyard wrap	
Halyard leads at the correct angle to the swivel car (see manufactures recommendations if unsure)	
Slacken Genoa halyard and inspect for wear on sheaves, fairlead, and check the swivel car rotates	
Mast tang pin hole has not elongated under load	
No signs of corrosion around mast tangs	
Threaded fittings have correct thread engagement, no exposed threads	
Fastenings all secure	
No broken strands of wire	
No visable signs of cracking along the length of swage section	
Signs of rust streaking, indicating broken strands or cracks not visable	

Inner forestay

Mast tang pin hole has not elongated under load	
No signs of corrosion around mast tangs	
Threaded fittings have correct thread engagement, no exposed threads	
Fastenings all secure	
No broken strands of wire	
No visable signs of cracking along the length of swage section	
Signs of rust streaking, indicating broken strands or cracks not visable	

Mast stay wires and mast fittings

No broken strands of wire	
No visable signs of cracking along the length of swage section	
Signs of rust streaking, indicating broken strands or cracks not visable	
Tbar plates have retaining plugs or locking tabs	
Mast fittings allow articulation of stay	
Signs of corrosion around mast tangs	
Fastenings all secure	
Threaded fittings have correct thread engagement, minimum safe bury	
Rigging screws are locked to avoid unintended rotation	

Spreader roots / Bands

No visable signs of cracking	
Fastenings all secure	

Spreader lights

Electrical wires are clamped correctly and not suspended under their own weight	
No chafe of wires around the mast wall exit	
No signs of corrosion around light base	
Lights operate	

Spreader ends - Remove covers for inspection and replace afterwards

Continuous	Wire is securely seized or clamped in spreader end design	
	No broken strands or wear	
Discontinuous	No broken strands of wire	
	No visable signs of cracking along the length of swage section	
	No visable signs of rust streaking, indicating broken strands or cracks	
	Diagonals are not over tensioned if lower stays tensioned after dock tune	
	Fastenings all secure	
	Threaded fittings have correct thread engagement, no exposed threads	
	Split pins are not broken or missing	

Runner tang and Checkstay fittings

No signs of elongation	
Stay connections are secure and articulate	
Split pins are well covered and protected to avoid damage to sails	

Steaming light

Electrical wires are clamped correctly and not suspended under their own weight	
No chafe of wires around the mast wall exit	
Lights operate	
Signs of corrosion around light base	
Deflective guard is adequate and secured	

Radar

Electrical wires are clamped correctly and not suspended under their own weight	
No chafe of wires around the mast wall exit	
Lights operate	
Deflective guard is adequate and secured	

Insulators

No sunlight degradation of plastic insulators	
Aerial wire is fastened securely on insulated stay	
Aerial wire is in good condition with no cracks in the plastic casing	

Hydraulics

No sign of oil leaking	
Fittings are tight, (do not over tighten) see supplier recommendations	
Hoses are not kinked or damaged	

Spinnaker pole ring or car

Attachment points are secure	
Pole ring is sized correctly for pole end	
Signs of corrosion around mast tangs	

Deck collar

Collar is secure in position	
Adequate partners support the mast	
Watertight shield is secure and not perished	

Mast step

No evidence of excessive corrosion	
No chafe of wires around the mast wall exit	
Maststep is secure to the hull	

Deck tie downs

Ideal stay tension	
No signs of elongation in collar plate	
No broken strands of wire	
No visable signs of cracking along the length of swage section	
Signs of rust streaking, indicating broken strands or cracks not visable	
Tbar plates have retaining plugs or locking tabs if used	
Signs of corrosion around mast tangs	
Fastenings all secure	
Threaded fittings have correct thread engagement, minimum safe bury	
Rigging screws are locked to avoid unintended rotation	

Chainplates

No signs of excessive wear on spacers or bushes	
No signs of elongation in pin holes	
Chainplates align with stay angles	
No evidence of fracture in chainplates at deck level	
Chainplates are fastened securely below deck to hull with integrity	

Gooseneck, Vang and Knuckles

Signs of corrosion around mast tangs	
Split pins are well covered and protected to avoid damage to sails	
Fastenings all secure	
No signs of excessive wear on spacers or bushes	
No signs of elongation in fittings	

Check rig tensions, adjust where necessary	
Follow up dock tune with a sea trial to gauge ideal stay tensions and rig performance under load	

A Rod rig is more difficult to inspect without the removal of the mast but the approach to the inspection will remain the same. Non destructive testing using at a minimum, dye penetrant, will be required to ensure the integrity of the cold formed rod head. A fitting which does not allow articulation will reduce the cycle life of the stay.

INSPECTION COMPLETED BY : _____

COMPANY NAME : _____

Date : / /

Notes further to inspection :

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For support or technical assistance contact a SeaRig authorised dealer nearest you, or mail us, support@searig.co.nz

SeaRig
Yacht Rigging Systems