Marine Surveys UK is the trading name for Boat Surveyor Ltd registered in UK
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Scope of survey for GRP sail boat pre- purchase survey November 2018

This scope of survey forms part of the agreement for survey. The surveyor carrying out the survey is a professional, trained and qualified surveyor who will use his best abilities to assess the condition of the vessel using various techniques described below. The survey report can be read in the knowledge these detailed inspections and tests are carried out as appropriate for the design and type of boat.

Scope of Survey and limitations:

- This is a Pre-Purchase Survey and its purpose is to establish the structural and general condition of the vessel. The MAIN focus is on the structural condition of the hull and deck and fabrication plus items relating to the safe use of the boat. It is EXPECTED that you will have viewed the boat and accepted its COSMETIC condition where you would have viewed it prior to your offer of purchase and cosmetic items will not necessarily be mentioned. Electronic and electrical items , we will carry out a switch test.
- The engine and systems are visually checked only, and we will report on what we can see and hear at the time, they are not dismantled in any way and internal condition of performance is not part of the survey.
- If the mast is stepped inspection is restricted to what can be reached and viewed from deck on the mast and rigging.
- Sails are only checked in situation, if weather permits the sails will be hoisted and checked using a blunt instrument to check stitching. If in bags they will be inspected as far as possible. Maximum of 3 sails checked in survey unless agreed otherwise.
- Where access is restricted by fixed panels, linings etc. it is not possible to examine and we cannot say those areas are free from defects. No fixed panels are removed.
- In some cases it is not possible to detect latent and hidden defects without destructive testing which is not possible without the Owner's consent.
- Inventory is not checked and tenders and outboards are not checked as part of this survey. They can be at extra cost.
- If the owner has left personal items aboard or lockers are particularly full, this may obscure inspections, we will try to work around but a better service is given if the boat is empty of all items other than safety equipment.

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The attached table states what is carried out as a matter of course on this type of vessel as applicable to the type of installations.

Details of surveyor checks and tests
1. Details of vessel
• Record HIN Number or hull number • Record Registration number • Record boat dimensions from data available • Record CE category if applicable • Record other relevant information found on vessel.
2. Keel and attachment
• The exterior condition of the keel is checked for condition and repairs.
• Hull inspected at front and aft of keel joint and antifouling removed if required at keel joint checking for cracks in hull.
• The joint to the hull is carefully checked with a spike, as required, for gaps and signs of leakage. Ideally this will be done with boat suspended in travel hoist. If in travel hoist, operator will be asked to lower boat gently onto floor and raise to check for movement.
• The keel fixings are checked in the bilge area for signs of corrosion and security with a hammer as appropriate provided no fixed panels restrict access.
• The condition of the keel root reinforcing is checked for repairs and hammer sounded.
• If the boat is resting on the keel and cannot be viewed in tension this will be noted.
• An encapsulated keel is hammer tested and visually checked for damage and ballast movement or leaking.
3. Hull, top sides, Rubbing Strake
• The hull is visually checked for signs of deflections and distortion, condition of coatings and signs of repairs, damage, stress crazing and other defects.
• Light hammer sounding is carried out (not heavy enough to damage the anti-fouling or gelcoat) of the hull below water line randomly at close intervals testing for voids, dry areas of construction and the above.
• The antifouling maybe carefully removed in areas approximately 50mm x 50mm at random around the hull below the water line looking for evidence of wicking or blistering and once removed patches are checked with 10x magnification. We avoid removing Epoxy coatings if possible. Epoxy copper antifoulings like copper coat are not removed.
• Random sample moisture readings are taken around the hull using a capacitance type moisture meter of either a Sovereign Quantum type, operating in both shallow and deep reading modes and Tramex skipper +. The meter is first checked for correct calibration.
• Where possible the hull is checked inside the vessel and moisture readings taken if possible.
• The topsides are closely visually examined for condition of coating or gel coat, general cosmetic condition (only major cosmetic damage reported), crazing especially around hard spots, major abrasion damage, repairs and significant damage.

• Any suspect areas of the topsides are lightly hammer sounded and sample moisture readings are taken and recorded as above.
• The rubbing strake is inspected and tested for condition and security.
• The inside of the topsides are checked where possible inside the boat.
4. <u>Deck, coach roof and the wheelhouse moulding:</u>
• The decks are carefully tested underfoot for signs of delaminating or other structural defects, visually inspected.
• Hammer sounding is carried out of the deck.
• If the boat has a decorative hardwood "Teak Deck" covering, this is closely inspected and randomly hammer sounded to check for bonding, attachment, wear and general thickness. This is a cosmetic item unless the fixing screws are affecting the underlying deck structure. If we can access areas below deck, we will do so.
• Areas around fittings are checked for crushing and moisture readings taken on suspect areas for water ingress.
• The area is visually checked distortion and crazing around load bearing fittings.
• Hand rails are tested for security.
• Any deck coverings, unless structural are considered cosmetic. Their condition will be appraised as best possible.
• If the boat has a deck stepped mast, the area below the mast step is checked for distortion and crazing.
• A visual inspection of the type and size of deck and cockpit drainage is made, locker lids are checked for security against water entering the boat, the condition of gratings, the condition and security of wheel pedestal if fitted, any stress crazing and damage particularly around load bearing fittings are checked.
• Hose clips and security of drainage is checked.
5. <u>Hull/Deck Join Bulkheads and Structural Stiffening including Internal Mouldings::</u>
• Checks made for movement and leaks using meter on linings if joint is not accessible and are suspected.
• Checked condition of bolts where applicable and accessible and hammer tested.
• Inspection of external area for damage
• All access to reinforcement structure is visually checked – opening lockers, under berths, lifting sole boards where not screwed down - for signs of delamination and cracks. Visual and hammer or spike tests carried out as required.
• The bulkheads are carefully hammer sounded near the deck, hull and floors for signs of debonding.
• Discreet spike testing carried out in suspect areas of water ingress and bilges and also around chain plate fixings.
• Use of moisture meter on panels or structure where issue suspected.
6. <u>Steering, stern gear and anodes:</u>
• Rudder Blade - While vessel is ashore the rudder blade or blades are checked for damage, sometimes requiring scraping antifouling away from base of rudder, rudder blade is randomly hammer sounded. Moisture readings taken on blade.

• Steering is operated fully lock to lock.
• Visual access behind wheel if possible.
• Metal parts are visually checked for corrosion where accessible.
• Rudder tube/s is / are checked for security inside the hull and top seals viewed.
• Play in bushes and bearings checked by shaking rudder blade.
• Cables checked where visible, rudder arms checked for security.
• Hydraulic hoses, steering pump and belt visually checked.
• Operation of bow thruster seen. Bow thrusters fixings hammer tested.
• Emergency tiller identified and fitted if possible.
• The Autopilot is operated as far as possible given the location on functions +10, -10, +1, -1, auto and standby
Sail drive
• Date of diaphragm checked if possible.
• Corrosion checked visually on leg.
• Security of diaphragm fixing bolts hammer tested and condition.
• Condition of seawater intake on sail drive visually checked and aggressively shaken for security.
• The Shaft visually checked while rotating for straightness and freedom to turn.
• The Propeller is checked for damage and corrosion.
• Hull fairing shield checked for security.
• Any rope cutter fitted checked for security.
Shaft drive/s.
• The propeller is checked for damage and corrosion by scraping parts of the blades and lightly hammer sounding.
• All bronze is scraped and checked for de-zincification. (Put simply, bronze is made of copper and zinc amongst other things and through insufficient bonding to an external zinc anode at some time, the zinc in the propeller wastes away through electrolysis and leaves just the copper and is weakened).
• The propeller locking arrangement if possible is checked for security on shaft with hammer if applicable.
• All cutlass bearings checked for play by lifting and vibrating the shaft.
• The P Bracket if fitted is vigorously shaken for security in hull and fixings hammer tested.
• The shaft is visually checked, while rotating, for straightness and freedom to turn. It is tested with magnet for quality of stainless steel.
• The Rope cutter is checked for security if fitted.
• The stern gland is checked with mirrors for corrosion on the underside. The Flexible hosing checked for splits if fitted. The clips are checked with mirror and hammer. The bolts are hammer tested to check the security of the stern gland.
• The stern tube security and material are checked.

• **Cathodic Protection:**A Visual inspection of metal parts for galvanic action occurring, visual inspection of the anode for wastage. The Anode fixings are hammer tested for security
• The anodes are tested with an ohm meter for continuity to the propeller, shaft and stern gland and other under water metals.
• If shore power is fitted, visual check if any Galvanic isolator or transformer fitted.
7. <u>Skin Fittings and other through Hull Apertures:</u>
No skin fittings or valves are dismantled as part of this survey.
• A visual examination from outside and inside the boat and checked for de-zincification by scraping the surface. Checked skin fittings are lying fair to hull. Bodies of metal valves or sea cocks tested with a hammer inside the boat and external parts hammer tested outside the boat. All valves are opened and closed to their full extent where possible. Any fixing bolts are hammer tested where accessible. Fittings aggressively tested inside the boat for security in the hull.
• Hose clips are inspected and hoses aggressively tested for security. Checked that 2 clips are correctly fitted below water line on outlet spigot.
• Checked the type of material is suitable for the location.
• Skin fittings above the water line are checked for condition of material and fixing of hoses if accessible. Only one clip is required, and they are checked for security. The likelihood of back flooding is assessed if pipes are visible.
8. <u>Main Companionway, other Access to Accommodation, Ports, Windows:</u>
These are all checked as applicable:
• Security against break in • Frames checked for damage.
• Check for a secure method of closure, correctly fitted hinges, glazing checked for damage. Gaskets checked all by opening each hatch or portlight.
The hatches are not hose tested for leaks.
9. <u>Guard rails, Other Deck Gear and Fittings, Davits and Boarding Ladders:</u>
• All posts and fixings are tested under body weight where practical and deck and fixing checked for flexing and cracking.
• The underside of fixing checked where possible for seepage and reinforcing backing panels.
• Checked by shaking frames securely fixed.
• Fixings tested by hammer if appropriate.
• Covers checked for condition of material and frame fixing.
• Boarding ladders, Check general condition, working order and extends below the waterline for recovery
• Davits. A visual inspection of attachment points for stressing and cracks is carried out
• Turning blocks, jammers, winches fitted are all tested as far as possible but not under load, for play on base and are free to turn. Genoa and main sheet tracks and cars operated.

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10. <u>Rigging Attachment Points</u>
• All attachment points are tested visually with 10 x magnification, • Nuts and bolts struck with hammer against sheer where possible, • Checked with magnet for quality of steel where possible, • Fittings tested, Checking for movement, distortion of deck, • Check terminals follow line of rigging, • Check for seepage via deck fittings, wood on bulkheads.
11. <u>Ground Tackle and Mooring Arrangements:</u>
• Checked size and type of anchors, chains and warps .
• A visual inspection of anchors, chain, warp, shackles, cleats for condition is made. Checked cleat fixings where accessible. Checked shackles condition and lock wired
• Checked windlass security of fixings, operation and condition. Not normally operated under load.
12. <u>Spars, standing rigging, running rigging</u> • If mast is down, the upper areas will be checked as well. • Visual check for corrosion, wear, • Visual check for standing in column and undistorted, • Mast heel checked for compression , Fittings checked where accessible for security and stress cracking, Anodising condition, • Winches in working order, • Spreader sockets for movement by swigging shrouds if possible. • Check terminals, riggings screws, toggles and where the wire enters the terminals under 10x magnification for corrosion and any visible damage to wire, • Check visible the angles the terminals enter the mast in line with the rigging wires. • Check for good articulation of toggles if possible. • Check split pins are in place if they can be seen. • Operated the furling system and check extrusion for straightness and damage. – weather dependant. • Sails are only checked in situation, if weather permits the sails will be hoisted and checked using a blunt instrument to check stitching. If in bags they will be inspected as far as possible. Maximum of 3 sails checked in survey unless agreed otherwise.
13. <u>Bilge Pumping Arrangements:</u>
• Checked the number and type of pumps aboard.
• They are operated by hand, switch or float switch as applicable. Checked for strum boxes being fitted and position of discharge. Pipes followed as far as possible and clips checked secure and hose condition where accessible. Bilges are not filled with water to check.
14. <u>Fire-fighting Equipment:</u>
• The Fire extinguishers aboard are checked for manufacturer or service dates, the gauges visually checked, cylinders shaken for content identification or condition i.e hard powder and condition of cylinders
• Check equipment aboard compared to MCA guidelines for commercial vessels.

• Check no Halon aboard as illegal
15. <u>Lifesaving and Emergency Equipment:</u>
• A visual check of condition is carried out of general safety equipment seen.
• Life jackets and buoyancy aids are not checked unless noted.
16. <u>Engine and other mechanical Installation:</u>
<u>Description</u>
• The engine is **visually** checked using a camera and mirrors for difficult to access areas looking for condition and leaks of oil or coolant.
• The engine mountings are hammer tested looking for security and bonding failures.
• Visual inspection for coolant water leaks, oil leaks, corrosion.
• The exhaust is visually checked for corrosion and for security.
• The fresh water expansion tank is checked for level of coolant.
• The oils are checked on the dipstick for levels.
• The engine compartment is checked for anything likely to cause unnecessary fire hazards and any asbestos present is noted.
• The control and cables are checked where accessible for corrosion and fixings. The controls are operated in forward and astern stationary.
• If the boat is afloat and we have owners permission, the engine will be started and run under load, so the engine can be seen at operating temperature. The exhaust emissions are visually checked, any untoward noises reported. We can only report on what we see and hear at the time, no parts are dismantled. It should be appreciated that some components may appear serviceable but found to be defective when the engine is run for a long period of time. • If the boat is ashore, the engine will not be run and the limitations of this should be understood unless the boat is safely chocked, there is a water supply nearby and we have permission from yard and owner. If the boat is shaft drive we will not put in gear as bearings often water fed. We will report what we can see and here and if there is anything untoward we will advise to have the engine checked by a service company.
• Outboard inspections may be more limited due to the construction.
• Generators have a visual examination as the engine and are run if possible.
17. <u>Fuel System:</u>
• The tank condition is visually checked where accessible, the security of fittings checked. It is checked for a shut off valve location and condition, the location and condition of site gauges, filler and breather and fitting.
• The type of pipe work and hoses are checked for marine fuel grade that they are well supported and free from stress or damage and for visible leaks or signs of.
• The water separator condition is checked.
• System checked visually for leaks where accessible.
• Any stowage of petrol is checked to be away from a source of ignition.
18. <u>Accommodation General:</u>
• An Inspection in all lockers and cupboards for damp, cracks or other issues.
• The general condition of linings, furniture, woodwork, only major damage noted.

• Visual check of ventilation for cooking and staying overnight.
• Check for any carbon monoxide detectors or smoke alarms.
• Switch test lights by turning on, test blinds or window covers.
• TV's, computors, audio visual and entertainment systems are not generally tested.
19. <u>Gas Installation:</u>
All gas systems are subject to the checks listed below as part of this survey. Recommendations will be made where there is an obvious serious safety issue and these must be carried out before use. It must be understood however that some Insurance companies require a declaration from the assured that the gas system conforms to ***current*** standards and if that is the case here upgrading may be required as a condition of the insurance policy.
• Check - Condition and efficiency of self draining bottle storage, • Condition of flexible hose at bottle, • Condition of regulator, • Connection to copper pipe • Condition of copper pipe where accessible, Is pipework adequately supported and not under stress where accessible? • Connections and Flexible pipe to cooker and other appliances, • Does cooker gimball? • Are all appliances fitted with flame failure devices on all burners, and did these work properly under test? • Are any appliances requiring flues properly fitted with same? • Is a gas alarm fitted? • Is each appliance fitted with an isolating tap, • If fitted did leak bubble tester function?
20. <u>Water and waste systems, heating and refridgeration.</u>
• The material and condition of the tanks are visually checked without removing covers.
• The condition and type of hoses where seen is checked, Pumps run, water run from taps checking for leaks.
• The Shower discharges are checked and operated and grey water tanks checked visually and operated.
• The calorifier is visually checked for external corrosion where it is accessible. It is operated if possible. • Tanks will be filled if allowed to test systems.
• Water Makers are not tested as standard as normally they are Pickled.
Heads:
• The general condition and security of fittings, hoses and clips is checked for leaks and corrosion.
• A check made to see if Swan necks are fitted in hoses if required.
• The condition of tanks is checked visually • Toilets will be operated if afloat

Heating and refrigeration
• The general quality of the installation and confirmation of operation is checked if suitable power and or water available.
21. Electrical Installation:
DC circuits
• The security of batteries, battery terminal insulation, battery visual condition and ventilation of battery area.
• The type of circuit protection fitted is checked, the condition and quality of system and operation of items checked where accessible.
• A check is made that the vessel is fitted with lights that conform to Collision regulations and are securely mounted, the condition of the lens and seen working unless noted. • Systems are switch tested only.
240v Circuits
• A check for the provision of Shore side 30ma RCCB earth breaker, Circuit breakers for all appliances of appropriate value and the condition and quality of system and operation of items.
• This is a not a guarantee of correct wiring and it is advised that any 240V system should be checked by a qualified electrician.
22. Electronic and Navigation Equipment:
• The items are turned on and random menu items tested.

Data Protection

The information contained in the report is the intellectual property of the surveyor. This document contains confidential information that is legally privileged and is intended for the use of the addressee only. All information contained herein is covered by the EU data protection directive (95/46/EC).