



## Marine Surveys UK

*"Pragmatic Surveys in Plain English"*

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Survey Report no: [REDACTED]

Name of Vessel: "[REDACTED]"

Type of Vessel: Prior Coaster 33, FRP construction,  
double mast ketch rig motor sailor.

**At the request of:**

[REDACTED]

This survey was carried out on the [REDACTED] January 2011 in the water and hanging in travel hoist slings at Emsworth Marina, Emsworth, Hampshire, with a return visit on [REDACTED] January. The above named being a prospective purchaser of the vessel.



**Limitations:**

- ✚ Where access is restricted by fixed panels, linings etc. it was not possible to examine and I cannot say those areas are free from defects.
- ✚ This report has been prepared for the use of commissioning client and no liability is extended to others who may see it.
- ✚ 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.

**Scope of Survey:**

- ✚ This is a Pre-Purchase Survey and its purpose is to establish the structural and general condition of the vessel. Where items of equipment have been tested this will be stated in the text.
- ✚ Camera equipment was used in places to view normally inaccessible areas and the pictures analysed to identify any issues.
- ✚ A general inspection of the engine and installation will be made; this is a visual inspection and also running the engine.
- ✚ The hatches and port lights were not leak tested although it was raining on the day of survey.

**Recommendations:**

- ✚ These will not be made concerning cosmetic or other minor defects, although relevant suggestions may be made in the text.
- ✚ Recommendations will be restricted to those defects which should be rectified before vessel is used, (or within a given time span if specified), and items which may affect insurability.
- ✚ ***Recommendations will be printed in bold italics for quick reference.***
- ✚ The recommendations are contained in the body of report in order that they may be read in context, and are also listed as part of the Conclusions at the end of this Report.

**Conditions of Survey:**

Vessel was examined in the water and in travel hoist slings at the premises of Emsworth Marina having been afloat for the season.

There was constant rain during the survey and the owner and purchaser were present. No special conditions affected the survey other than as described in the text.



Information is reported in the Sections below, followed by recommendations and conclusions.

**Hull, Deck and Structure.**

1. Details of Subject Vessel, (General Description, Dimensions, Registration etc.).
2. Keel.
3. Hull below Waterline.
4. Topsides above Waterline including Rubbing Strake etc.
5. Deck Moulding.
6. Coach roof.
7. Cockpit.
8. Hull/Deck Join.
9. Bulkheads and Structural Stiffening including Internal Mouldings.

**Steering, Stern Gear, and Skin Fittings etc.**

10. Rudder and Steering.
11. Stern Gear.
12. Cathodic Protection.
13. Skin Fittings and other through Hull Apertures.

**On Deck.**

14. Main Companionway and other Accesses to Accommodation.
15. Ports Windows etc.
16. Pulpit, Stanchions, Pushpit, Lifelines and Jackstays.
17. Rigging Attachment Points.
18. Ground Tackle and Mooring Arrangements.
19. Other Deck Gear and Fittings.
20. Davits and Boarding Ladders.

**Rig.**

21. Spars.
22. Standing Rigging.
23. Running Rigging.
24. Sails and Covers etc.

**Safety.**

25. Navigation Lights.
26. Bilge Pumping Arrangements.
27. Fire fighting Equipment.
28. Lifesaving and Emergency Equipment.

**Engine.**

29. Engine and Installation.
30. Fuel System.

**Accommodation and onboard Systems.**

31. Accommodation General.
32. Gas Installation.
33. Fresh Water Tanks and Delivery.
34. Heads.
35. Electrical Installation.
36. Electronic and Navigation Equipment.
37. Heating & Refrigeration



**1. Details of subject vessel:**

The Coaster 33 was designed by Alan F. Hill. The hulls were moulded by Robert Ives Limited with most being fitted out by R.J.Prior and Sons of Quayside, Burnham on Crouch, Essex, England. All boats have a Lloyds Moulding Certificate. The hull is based on traditional MFV lines but the profile below the waterline gives the Coaster 33 an excellent sailing performance for a motor sailor. (*Information above supplied by Coaster 33 owners association*). The builders plate in the port cockpit locker states this is a Prior Coaster, Hull moulded by Robert Ives, Christchurch, Hampshire in November 1979. Hull number [REDACTED]. The owner states this is a 1981 boat which it may well be, the hull having been moulded in 1979.

**Manufacturers’ information from owner association website (not verified by measurement)**

Length Overall	32’9” / 9.98m
Length waterline	28’5” / 8.66m
Beam:	10’2” / 3.10m
Draft:	4’ / 1.21m
Displacement	17,920lbs / 8,127kgs
CE Marked	no



**Boat specific information**

Registration	Part 1 British Reg no. [REDACTED] (paper on vessel)
Year of Build	Hull 1979, 1981 stated on Ships papers.
RCD	Not applicable
Yard number	[REDACTED] – builders plate.

**2. Keel**

- a) The long keel is integral to the hull and fully encapsulates concrete type material ballast and resin
- b) The keel was treated as part of the hull for the purpose of checking gel coat and laminates and is included in section 3.
- c) The vessel seen hanging in slings, the underside was checked where possible and no signs of damage were noted.



**3. Hull below Waterline:**

- a) Construction of the hull below the waterline is white gel coat with solid FRP construction. It is reported by the owner that in 2000 the hull had its gel coat peeled after high moisture readings were noted. The hull was dried out and checked down to reading 5 on sovereign meter. It was then coated with epoxy.
- b) The vessel seen hanging in slings and no distortion was noted in hull.
- c) Light hammer sounding (not heavy enough to damage anti-foul) of hull all over. No sounds of delaminating were noted.
- d) The antifouling (4 layers) was removed in 12 patches approximately 70mm x 70mm at random around the hull below the water line. A green coating under the antifouling came away easily in places leaving a hard grey coating which I believe is the 2000 applied epoxy. While scraping I was looking for evidence of wicking or blistering and once removed all patches were checked with 10x magnification.
- e) There was unevenness under the scraping but I put this down to the hand applied epoxy surface and no evidence was found of wicking or blisters
- f) In the port cockpit locker inside hull a star crack approximately 50mm diameter was noted. As this is inside the hull and no damage was noted externally no repair is necessary.
- g) There are no visible signs of significant damage or repairs to the hull below water line except stated above
- h) Moisture readings were taken where the antifouling was removed using a capacitance type moisture meter of Sovereign Quantum type, operating in both shallow and deep reading modes. The meter was first checked for correct calibration.

The readings recorded below are from the meter operating in the shallow and also deep mode on the relative scale 0-100. **(It should be noted that the Sovereign Meter scale was 0 – 25 and the Sovereign Quantum meters 0 -100).**

The readings are relative and **do not** express moisture content as a percentage of dry weight. High moisture content is not generally a structural defect, and is to be expected in older boats. However where some moisture has been absorbed the likelihood of moisture related problems occurring is higher, and the actual state of the laminate cannot be completely guaranteed without destructive testing followed by chemical analysis. The opinion given in this survey is based on all the evidence available at the time but without destructive testing.



The conditions prevailing when the readings were taken were as follows:

<b>Air Temperature:</b>	<b>6.2<sup>o</sup>C</b>
<b>Surface temperature:</b>	<b>6.3<sup>o</sup>C</b>
<b>Relative Humidity:</b>	<b>82.1%</b>
<b>Time ashore</b>	<b>30mins having been afloat since spring.</b>
<b>In summary the weather conditions for obtaining moisture readings were very poor.</b>	

Readings were as follows:

<b>Meter</b>	<b>Range below waterline.</b>	<b>Range above waterline.</b>
Sovereign Quantum, Scale A, 0-100 Shallow mode	<b>26 - 32</b>	<b>18 - 20</b>
Deep Mode	<b>25 - 33</b>	<b>18 - 20</b>

The interpretation of the readings in shallow mode range;

- 16 - 20: Some moisture present at low levels but of no great concern.
- 21 - 30: Considered medium, but those at the top of the range i.e 30 are at the point where the risk of moisture related defects developing is significant.
- 31- 45 Considered high and at a level where the risk of moisture related defects being present but not yet physically detectable is significant.
- 46 – 60 Very High and will usually be accompanied by physically detectable signs. Likely to be accompanied by a significant increase when switching to deep mode.
- 61 – 100 extremely high and indicative of possible laminate damage in addition to osmotic blistering. Likely to be accompanied by a significant increase when switching to deep mode.

These readings need to be considered in conjunction with the period the vessel has been ashore and the weather conditions when obtained. As a rule of thumb you can expect the levels to drop by one range after a few weeks ashore.

Advisory note:- The conditions for taking the readings was very poor with constant rain and high humidity and will certainly adversely affect the readings. One should consider the difference between the above and below water line being only 8 – 12, this is not significant. I dried and re checked the patches numerous times and came back with the same readings. It



should be noted that readings will drop slightly after a boat has been ashore 3 or 4 weeks but in my experience not significantly. It should also be noted that epoxy coatings, fresh from the water will give higher readings than pure gel coat. This is because gel coat is relatively smooth and void free, while epoxy coatings have been applied with spray, roller or brush and contain micro fissures and voids. These take up moisture and are slower to dry out. There are no sounds of neither delaminating nor visual signs of moisture ingress. There is nothing to indicate that blisters will appear.

Always storing the boat ashore out of season to allow some natural drying out to occur will contribute significantly to maintaining condition.

#### **4. Topsides above Waterline including Rubbing Strake:**

- a) Similar composition to below waterline with balsa or foam core in places and a double chine.
- b) Top side moulding found fair in original white gel coat.
- c) Moulded into the topside adjacent to the deck line is a teak section. This has some cosmetic damage only.
- d) The topsides were lightly hammer sounded and no indication of voids found. Moisture readings were taken and recorded 18 - 20 shallow, 18 -20 deep mode.
- e) The wooden capping around the topsides is well attached.

#### **5. Deck moulding:**

- a) The deck is of GRP with heavier laminate for strength in places, balsa or foam core for extra stiffness and plywood pads are laminated in for strength under some deck fittings along with metal plates. Access to the underside was greatly restricted by head lining in all spaces .
- b) The gel coat is white with Treadmaster diamond non slip covering a lot of areas.
- c) The whole deck was carefully tested underfoot for signs of delaminating or other structural defect. No fault found.
- d) The deck was lightly hammer sounded with no significant defects found.
- e) Moisture readings were not able to be taken due to weather conditions.
- f) The side decks have a bulwark (area of topside extending above deck level) and drain directly overboard by the deckhouse.

#### **6. Coachroof:**

- a) Integral with deck moulding and constructed in the same way. The whole area was carefully tested underfoot and no sign of delaminating or other structural defect was found.
- b) There was no flexing of the coach roof area below the mast when the shrouds were flexed.
- c) Hand rails were tested with a lever and found secure.



### **7. Cockpit/wheel house moulding:**

- a) Integral with the deck moulding partially enclosed with fixed screens and roof. Teak faced ply seats, lockers to port and starboard and removable engine hatches.
- b) The locker lids are securely hinged designed with no method of fastening shut.
- c) The engine covers have no method of locking in place, presumably designed to stay in place with own weight. There is a gully around the lip of the engine compartment which drains aft through two pipes, securely attached and crossed over exiting through DZR valves and bronze skin fittings and securely fasten with 2 clips. These were tested as per section 13 with no fault found.

### **8. Hull/Deck Join:**

- a) The deck and hull mouldings are laminated together at the joint.
- b) Where seen there is no signs of movement or water ingress of the joint.
- c) Access to the joint was restricted to the aft cabin lockers and bow locker due to fixed linings.

### **9. Bulkheads and Structural Stiffening including Internal Mouldings:**

This is a Monocoque (single box) construction and a number of components contribute to the overall structure.

- a) The shell mouldings are robust in the first place with laminated in foam or balsa filled longitudinal stringers up the hull.
- b) The main bulkheads are laminated to the deck and hull at the base.
- c) There are a number of floors (Floors in this case are foam filled mouldings laminated to the hull and plywood panels on either side forming the cabin furniture and not continuing full height to deck level) bonded to the hull throughout the length of the hull. Where seen the bulkheads and floors are well bonded with no signs of movement or cracking found. The wooden cabin furniture is bonded in many places and forms part of the structural strength
- d) Wood edges where possible were tested with spike and hammer although most edges are behind headlining or wood covers. Discrete spike testing showed no deterioration in wood.
- e) The main mast compression loadings are transferred onto a wooden kingpost attached to the main bulkhead and then to the hull structure above the keel. The base of the king post was not accessible. No signs of stress or movement found.
- f) The cabin sole had been lifted in the saloon for access and all lockers were checked.

### **10. Rudder and Steering:**

- a) An FRP moulded rudder around a stainless steel rudder post. It is Skeg supported in a bronze shoe. The rudder has been epoxy treated.
- b) The rudder post has a stainless steel coupling below the water line with 4 stainless steel nuts and bolts (so that rudder can be removed and drive shaft taken out).



- c) The rudder top bearing is a rope packed bronze gland with grease attachment point.
- d) Rudder stock is connected via bolted arm to a hydraulic ram which is bolted to a mild steel bracket in-turn bolted to the under berth locker top.
- e) The hydraulic ram has flexible cables attached to solid copper pipes leading to the pump attached to the wheel steering from the deck house.
- f) All accessible bolts, nuts and fastening above and below water were hammer tested and checked with mirrors and found secure. The rudder shoe bolts had epoxy over and could not be checked without destructive testing.
- g) Rudder tested with full body weight, no signs of movement at seams.
- h) Minor play in bush lower bush.
- i) Rudder was scraped and moisture tested. The readings were 35 shallow 44 deep port side and off the scale starboard side although the conditions noted in hull section above should be taken into consideration.
- j) Owner advised Emergency tiller is onboard and attachment point on stock is secure. It was not found.
- k) Autohelm Wheel pilot 6000 fitted to and seen operated full lock to lock.

Advisory note: It is not unusual for a rudder constructed this way to have a high water content, often located in the foam or hollow core. Eventually it is possible the rudder will deteriorate from the inside. One method of cure is to drill 6mm holes into the middle of the rudder, allow any moisture to drain and evaporate, firstly inject acetone into the voids and allow evaporating and then injecting resin into the voids.

The copper pipes for the Hydraulic are unsupported in the port locker. These should be secured to prevent damage from equipment stowage.

### **11. Stern Gear:**

- a) 3 blade bronze propellor fitted on stainless steel shaft with bronze locknut secured with stainless split pin.
- b) Shaft is supported outboard end by bronze cutlass bearing housing bolted to the hull with 2 stainless steel bolts. There is approximately 1mm play in the cutlass bearing.  
Advisory note:- Cutlass bearing has life left in it but should be replaced when boat is next hauled.
- c) Inboard stern gland is bronze greased rope type with remote greaser securely mounted in cockpit locker.
- d) The gland inboard is bonded to the hull.
- e) All bolts, nuts and fixings were tested with a hammer and found secure except the propeller nut which had sections breakaway revealing dark, de-zincified bronze.

***Recommendation – The propeller nut should be replaced with new.***



### **12. Cathodic Protection:**

- a) The hull anode is partially wasted. It was checked for electrical continuity with the shaft, bearing housing and rudder stock and found complete. Wires inside vessel confirm this and are well fitted although they have copper stranded wire crimped to electrical connectors which are not marine environment resistant.

### **13. Skin Fittings and other through Hull Apertures:**

Some thru hulls may not be reported below but will be with relevant systems sections and have been tested the same way.

No skin fittings or valves were dismantled as part of this survey but the following routine tests were carried out:

- ✚ Examination from outside and inside the boat. Checked for de-zincification
- ✚ All valves open and closed to their full extent where possible.
- ✚ Any fixing bolts hammer tested where accessible.
- ✚ Bodies of metal valves or sea cocks tested with a hammer inside the boat and external parts hammer tested outside the boat.
- ✚ Fittings aggressively tested inside the boat for security in the hull.
- ✚ Hose clips inspected and hoses aggressively tested for security. 2 clips correctly fitted unless noted.
- ✚ Lying fair to hull unless noted

### **Below Waterline:**

- a) Engine seawater inlet: Bronze thru hull skin fitting with DZR (dezincification resistant) valve.
- b) 2 cockpit drains are reported above
- c) Toilet inlet and waste/second bilge outlet: Blakes bronze seacocks. Outlet was free to turn, Inlet I could not turn. They are mounted in difficult to access locker by engine steps. Inlet pipe clips showing minor corrosion.

***Recommendation – toilet inlet seacock should be serviced to free up and clips replaced at same time.***

- d) Galley sink drain combined with shower discharge pipe: Bronze thru hull skin fitting with DZR valve. Shower pipe came off fitting when tested. Copper joining pipe very pink in colour. Valve has been closed.

***Recommendation – shower drain has been T'eed into galley drain via copper T pipe. The shower pipe is hard and should be replaced fully checking that it cannot back flood. The copper fitting should be replaced with either a plastic or bronze one.***

### **Above Waterline:**

- e) Electric and manual bilge pump outlets are plastic thru hull skin fittings reported below.
- f) A bronze thru hull skin fitting with DZR valve is located in port locker. Owner advises this was gas locker drain no longer required.



**14. Main Companionway and other Access to Accommodation:**

- a) Main cabin and aft cabin have wooden lockable doors and folding hatch ways. Cill is above cockpit floor.
- b) Fore hatch is wooden, hinged forward over large lip. Secure method of closure.

**15. Ports, Windows etc.:**

- a) Deck house windows are aluminium and wood framed with glass. Seals are in fair condition, no signs of major leaks although it was raining hard and there was a lot of condensation so I cannot guarantee it.
- b) Cabin portlights are aluminium framed with glass. There was evidence of silicon sealant both inside and out on most windows although no leaks inside. Some are silicone shut. Fixings were randomly tested and found secure.

**16. Pulpit, Stanchions, Pushpit, Lifelines and Jackstays:**

- a) Pulpit and push pit and guard rails are of stainless steel, flat feet with bolts through teak capping. Full body tested, some fixings were loose but secure.
- b) Wire jackstays were fitted either side of deck. Attached by 3mm rope forward. Fixing points were tested with lever and found secure.
- c) Life line attachment point in cockpit.

Advisory note:- The attaching bolts for guard rails should be tightened to prevent further excessive movement.

**17. Rigging Attachment Points:**

- ✚ All attachment points were 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 with a 500mm crowbar on wood block

Unless noted below, no movement found.

There was no access to the inside of any of the fittings due to fixed linings.

- a) Main mast upper shrouds attachment points. Stainless steel fittings through bolted the bulwarks.
- b) Main mast lower shrouds fixing points are stainless steel U bolts through coach roof.
- c) Forestay fixing point is stainless steel stem head through bolted over bow with 3 stainless steel bolts.
- d) Inner forestay attachment point is U bolt through bolted deck with pad underneath.
- e) Mizzen mast main shrouds attaching points are stainless steel plate attached to bulwarks with 4 stainless steel bolts in sheer tension.
- f) Mizzen lower shrouds attaching point is u bolts in aft cabin coach roof.



**18. Ground Tackle and Mooring Arrangements:**

- a) Main bow anchor. Brittany anchor attached to 10mm chain from locker below deck, over Horizon 1500 electric windlass and through hawse pipe on deck through stem. Shackle to chain slightly rusted. Chain not laid out and checked link by link. Links in locker have no major signs of corrosion. Could not see if bitter end tied off.
- b) Windlass tested under weight of 5m chain and anchor. Windlass has electronic breaker fitted.
- c) 2nd Brittany type anchor on deck. No chain attached.
- d) Other anchors, including Fishermans type stowed under sole in forepeak. Extra warps seen but not measured.
- e) Mooring cleats on bulwarks tested with lever and found secure.
- f) Stemhead fitting is stainless steel with single bow roller, Hammer tested and no sign of major damage. Chain securing pin is in place.

**19. Other Deck Gear and Fittings:**

- a) All found of adequate size and securely through bolted, lever tested where possible, although inspection from under side restricted by linings.
- b) The following winches fitted were all tested as far as possible but not under load.
  - a. 1 x Cockpit self tailing
  - b. 1 x Cockpit non self tailing
  - c. Main mast has two winches, starboard winch has the genoa halyard attached. The backing plate is cracked.

Advisory note. The starboard winch should be checked when the genoa halyard is removed and may need replacement.

**20. Davits and Boarding Ladders:**

- a) Two stainless steel davits attached through transom with 4 bolts. Slight flex under my weight but secure.
- b) Vessel has no fixed boarding ladder. It has drop over side ladder aboard.

**21. Spars:**

**Mast**

- a) Main mast – Deck stepped single spreader masthead rig and in-mast furling system fitted externally, the sail is in place. The mast was stepped so inspection is restricted to fittings and area to head height. It is gold anodised, no excessive signs of corrosion around base or fittings. No damage or distortion to the extrusion was noted.
- b) Spreaders fit into stainless steel sockets bolted to mast.
- c) Headsail furling system seen with sail attached, weather did not permit unfurling either sail but purchaser advised he has inspected sails and so furling system movement.



### **Booms and Mizzen**

- a) These are gold anodised in similar condition to mast.
- b) Main sheet and kicking strap attachment points are secure.
- c) Goose necks no signs of wear at the mast fittings.

### **Booming out pole**

- a) Stowed on deck, parrot beaks operated. No signs damage.

### **22. Standing Rigging:**

- a) Rigging could only be checked at deck level. These were examined where the wire enters the terminal under 10x magnification, no broken strands visible nor excess corrosion seen.
- b) Mizzen rigging and inner forestay have Sta-Lok Norseman type fittings. Purchaser advises rigging replaced for Mizzen in 1999 and main mast in 2000. Advises forestay replaced 2008.
- c) The rigging screws are chrome plated bronze open bodied type and all had split pins removed and had good articulation. All seen were found free from distortion or visible stress cracks, when examined under 10 x magnifications.

Advisory Note:- STA-LOK terminals can be taken apart and the condition of wire checked with simple tools. Many insurance companies advise rigging should be replaced after 10 years. There are no indications seen that this rigging is defective. If the rig is required to be tested, one method is to bring mast down and check each terminal by bending wire 90 degrees which will identify any broken strands. Check each STA-LOK. Alternatively have the fittings tested electronically which can be done with the mast in situ.

### **23. Running Rigging:**

- a) Running rigging seen appears in fair condition with most ends burn closed and thimbles in place.

### **24. Sails and Covers etc:**

- a) Weather did not permit through inspection of sails other than in situ on furling systems and boom. Stitching was tested randomly with 50p coin in places (non abrasive) and found sound.
- b) Genoa mounted on furling system – purchaser advised 1997
- c) Mainsail stowed on boom. purchaser advised 2001
- d) Mizzen sail stowed on boom. purchaser advised 2001
- e) Storm Jib in aft cabin, little used. Good condition. purchaser advised 1997
- f) Spinnaker or cruising chute in aft cabin, no damage noted but not fully unfurled.



### **25. Navigation Lights:**

Vessel fitted with the following lights of correct size and seen working unless noted

- a) White on stern
- b) Bi colour on bow
- c) Steaming light on mast
- d) Mooring light at mizzen mast head – could not see if lit.

Advisory note – check all around white in correct condition or use hoist up light when anchored.

### **26. Bilge Pumping Arrangements:**

- a) Manual bilge pump, Henderson MKV mounted in and operated from port cockpit locker. 30mm inside diameter pipe. Single clips at all points. Pick up in aft bilge with strum box (Strainer) attached. Swan neck correctly fitted in pipe. Plastic skin fitting exiting port side.
- b) Electric Rule 500 submersible bilge pump. Is automatic and can be operated manually from deck house area. Could not see if strum box fitted due to dirty bilge water. Swan neck correctly fitted in pipe. Plastic skin fitting exiting port side above water line.
- c) Second pump, Henderson MKV fitted in cockpit locker starboard. This is attached to holding tank and via 3 way valve suction pipe with strum box under engine bilge.

### **27. Fire-fighting Equipment:**

- a) There were the following fire-fighting appliances found onboard.
  - a. 1 x 1KG powder fire extinguisher in forepeak, last tested 2004
  - b. 1 x 2kg foam fire extinguisher mounted in saloon. Green on gauge. No date seen
  - c. 1 x 1KG dry powder automatic in engine compartment – in red on guage.
- b) There was no access point in the engine compartment to discharge an extinguisher without removing the steps or covers.

There are no regulations covering this vessel in private use.

***Recommendation:-. Fire extinguishers should be serviced or replaced every 5 years. The MCA recommend one fire extinguishers be fitted at every exit to open space and one automatic in engine space or manual one mounted near the engine space and ability to discharge into engine compartment without opening hatches. Plugged hole is a good solution. Fire blanket at galley and 2 buckets with lanyards. This vessel should be equipped to this standard.***

### **28. Lifesaving and Emergency Equipment:**

The following was found aboard –

- a) Life raft
- b) 2 x horseshoe life buoys



- c) Man overboard sling in aft cabin
- d) Flare pack – out of date
- e) Electric horn
- f) All flares out of date.

The RNLI operate an excellent free inspection and advice service concerning levels of safety equipment (SEA Check) and can be contacted on 08003280600 or via the RNLI website, [www.rnli.org.uk](http://www.rnli.org.uk).

The RYA also publish a booklet, G16, "The Boat Safety Handbook" and this specifies levels of Safety Equipment for different categories of use and it is ***Recommended this vessel be equipped to the level appropriate to proposed use.***

Booklet is obtainable from nautical bookshops or direct from the RYA, [www.rya.org.uk](http://www.rya.org.uk).

### **29. Engine and Installation:**

Engine is Mercedes OM636 Diesel. No engine number located. No engine hour meter found.

- a) General appearance – it has been repainted in the past. Top of engine area is clean. Front of engine, black belt dust and paint peeled. It does not appear to be regularly serviced and certainly not cleaned.
- b) No signs water or diesel leaks on the engine
- c) Bilge has some black oil drips into it.
- d) There is a lot of black oil around the starboard side of the engine; it appears to be coming from a side cover gasket.
- e) Engine is mounted on rubber mounts. Tested with crow bar and found in ok condition. No signs of corrosion and these are bolted to mild steel plates bolted to laminated frames in hull. Bolts all hammer tested and found secure. Metal plates / brackets have surface rust.
- f) Exhaust hose is marine grade, plastic water trap by engine, hose loops up to deck level then exits hull through bronze fitting. 2 clips at all fittings.
- g) Morse throttle and gear control located in wheel house. Cables correctly clipped and attached and operates correctly. They appear new.
- h) Engine vents through the boat structure, no dedicated vents seen.
- i) Raw water inlet routed to clear water strainer in cockpit locker then to engine. All pipes secure.
- j) Engine was started in water. No smoke from exhaust or deposits on water.
- k) Wiring loom on port side is rubbing on engine.
- l) Gearbox heard to rattle at low revs. Owner advises this is normal.

Advisory note – The engines should be cleaned down to locate the oil leak. The following work is required and it is advised that the engine is fully serviced.

- Clip loom to hull away from engine.
- Replace gasket where oil leak is.
- Check and adjust or replace fan belts



- Clean and paint with rust paint engine mounting plates

Advisory note:- I have called an engineer familiar with these gearboxes and he says that they can make a noise at low revs and the idea of springs taking up is logical but the only way to be sure if there is not a problem is to open the box up.

### **30. Fuel System:**

- a) 2 Stainless steel tanks are mounted either side under cockpit side decks. These are bolted to laminate bearers. They were checked underneath with a mirror and all visible seams examined from engine bay and locker. Underside not corroded or painted. Not able to reach to hammer test all seams. Tanks are filled from side deck, pipe secure. Drain fitted under sump in each. Tanks are connected by copper pipe from port tank to starboard valve. Pipe scraped and found sound.
- b) The hose from tank to Separ glass bowl primary filter is not marked ISO 7840 but it is a high pressure and has no signs that it is not correct grade. The fittings are swaged.
- c) Breather hoses from tank are clear petrol fuel hoses. Single clip on fittings. These hoses tend to harden with use and fittings come loose.
- d) Return pipe to secondary filter, again not marked ISO 7840 but no signs of leaks.
- e) Metal fuel pipes have signs of corrosion at filter but when scraped, found solid.

Advisory note:- All flexible diesel pipes in marine environment should ideally be ISO 7840. Suggest gradual replacement.

### **31. Accommodation General:**

- a) The boat has a well lived in feel, little or no cleaning has taken place in any lockers or difficult to reach areas. Many spares have built up in lockers.
- b) Cushions are worn, all buttons are missing.
- c) There is an impression that condensation may have been a problem in the past, from black staining in lockers.
- d) Interior woodwork fair condition

### **32. Gas Installation:**

This vessel has not been MCA coded nor has it been RCD compliant.

Irrespective of the above **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. Suggestions will also be made where appropriate to enhance safety criteria, particularly with systems where there is no mandatory requirement to conform to a standard. 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.



**Sources of further information:**

[www.calormarineshop.co.uk/rules-regs-answer.htm](http://www.calormarineshop.co.uk/rules-regs-answer.htm) Comprehensive information on standards and best practice. [www.boatsafetyscheme.com](http://www.boatsafetyscheme.com) Even if your boat is not required to comply with this standard it contains much sensible advice and the manual can be downloaded.

**Gas Observation and action table**

<b>Item</b>	<b>Result</b>	<b>Action required. <i>Recommendation to be carried out before use.</i></b>
<b>Condition and efficiency of self draining bottle storage</b>	Original stowage has been removed with wooden box made up and mounted on aft cabin deck. Open drains onto deck.	
<b>Age and condition of flexible hose</b>	OK	
<b>Age and condition of regulator</b>	Fair condition	
<b>Condition of copper pipe where accessible</b>	Some areas seen have corroded but when scraped were solid.	
<b>Is pipework adequately supported and not under stress where accessible?</b>	Copper pipe has been fed from stowage across deck, around cockpit coaming. It protected in places but open in others.	Advisory note. This arrangement might be acceptable for current owners use of yacht but if actively sailed and cockpit used vigorously the copper pipes are in danger of being damaged. I would prefer to see them below decks in a continuous run.
<b>Are all appliances fitted with flame failure devices on all burners, and did these work properly under test?</b>	Burners and grill not fitted with FFD's. Oven is. Not operated.	See note below.
<b>Are any appliances requiring flues properly fitted with same?</b>	N/A	
<b>Is a gas alarm fitted?</b>	Yes – not tested.	
<b>Is each appliance fitted with an isolating tap</b>	Yes	



If fitted did leak bubble tester function?	Yes	
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**Additional Observations:**

The cooker gas system appears home grown. The gas valve is by the steering wheel. The copper pipe is externally mounted. Any gas venting from box will drain onto aft deck and potentially back into boat. Cooker is non marine type with NO flame failures on burners.

**Recommendation – gas system should be checked by Gas safe engineer. I believe it will need rethinking and items replacing.**

Please note this survey is not a gas safety certificate, that is only obtainable after comprehensive pressure testing and assessment by a qualified person listed on the Gas safe register (formally CORGI) [www.gassaferegister.co.uk](http://www.gassaferegister.co.uk)

**33. Fresh Water Tanks and Delivery.**

- a) Water tanks are plastic and fitted under saloon cabin sole.
- b) Electric pressure system.
- c) Taps at heads and galley seen operating at galley only.
- d) Hot water Calorifier fitted behind fridge so could not access. Advised by purchaser fitted 2000. From small area seen, no corrosion noted.
- e) Windscreen washers run from fresh water. Hose off at fitting in cockpit, port of helm seat.

Advisory note:- refit hose before operating switch as water is pressurised and will go onto electrics.

**34. Heads:**

- a) Toilet is a Jabsco PAR ITT. No signs of leaks
- b) Swan necks for inlet and outlet to under deck and well secured to toilet.
- c) Nylon holding tank fitted in cockpit locker. All clips seen secure. Outlet on deck and also through pump in locker noted above.
- d) Blakes sea cocks reported above.
- e) Heads sink drain is into toilet bowl

**35. Electrical Installation:**

12v circuits

- a) 12V alternator charging :-
- b) 1 x 12V 102ah engine start battery stowed in starboard aft cockpit locker – This is loosely stowed in a plastic box with no straps to hold in place. Terminals are tight, not greased. Indicator is green.



Advisory note – battery should ideally be secured in place with straps to prevent it falling over and not rely on other items of stowage.

2 x 12v 115 Exide batteries both showing green on indicators fitted in starboard forward locker in wooden box with loose lid. These are securely fitted although not strapped down. OK except in full inversion situation. Terminals tight.

Advisory note:- Battery straps should be fitted.

- c) Battery isolator switch mounted in same locker. Terminals tight.
- d) Switches doubling as circuit breakers all well labelled.

Advisory Note:- Most of the system appears well fitted, probably original wiring. There are some “choc block” type connectors that are not weather protected. The starboard forward cockpit locker houses much electrical connections and I suggest this locker is isolated for this use only and no metal stowage.

#### 240v Circuits

- e) 240V lead attached to socket in cockpit. RCD fitted directly below. System appears professional fitted.
- f) Battery charger and hot water heater on 240V circuit. Fridge plugged into 13amp socket. Various 13amp sockets wired in. Not tested.

Advisory note:- It would be good practice to get marine electrician to check all electrical circuits.

#### **36. Electronic and Navigation Equipment:**

The following was seen aboard operating

- a) Raymarine C70 radar
- b) Garmin 12 GPS
- c) Seavoice Type RT550 VHF – Not DSC
- d) Plastimo offshore compass
- e) Garmin GPS 50
- f) Raymarine Bidata ST40
- g) Metal radar reflector
- h) Clock and barometer

#### **37. Heating and refrigeration**

- a) 240V and 12V Electrolux fridge – the gas side has been disabled.
- b) Eberspacher heater seen operating.



## **RECOMMENDATIONS and CONCLUSIONS:**

### **Maintenance Overview:**

Cosmetic maintenance:

Technical Maintenance:

### **List of Recommendations:**

The Recommendations made in the Report are listed below with their respective section numbers. *All Recommendations should be carried out before use of vessel or as stated.*

#### 11. Stern Gear:

The propeller nut should be replaced with new.

#### 13. Skin Fittings and other through Hull Apertures:

The toilet inlet seacock should be serviced to free up and clips replaced at the same time.

The shower drain has been T'eed into galley drain via copper T pipe. The shower pipe is hard and should be replaced fully checking that it cannot back flood. The copper fitting should be replaced with either a plastic or bronze one.

#### 27. Fire-fighting Equipment:

Fire extinguishers should be serviced or replaced every 5 years. The MCA recommend one fire extinguishers be fitted at every exit to open space and one automatic in engine space or manual one mounted near the engine space and ability to discharge into engine compartment without opening hatches. Plugged hole is a good solution. Fire blanket at galley and 2 buckets with lanyards. This vessel should be equipped to this standard.

#### 28. Lifesaving and Emergency Equipment:

Recommended this vessel be equipped to the level appropriate to proposed use.

#### 32. Gas Installation:

Gas system should be checked by Gas safe engineer. I believe it will need rethinking and items replacing.

### **Conclusions:**

██████████ is a boat that has proven she can handle most conditions, solidly built and well fitted out. Some of the fittings and replacement items are now again due for renewal, the electronics are all dated with the exception of the radar. The hull has been professionally treated 10 years ago and the readings are not considered excessive by this surveyor and other BMSE surveyors contacted. She will need a lot of cleaning and I believe the gas system rethinking to protect the pipe work.