

Full condition Survey of Yacht 'XXXXXX' – 1932 Cardnell Bros Yawl



Report number 041401

18/04/2014



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General Notes

Survey carried out on 11th April 2014 at XXXXXX for: Mr MXXXXX (the Client) by the surveyor: Andrew Edmond, Compass Marine Yacht Surveys (www.compassmarinesurveys.com).

Recommendations and suggestions defined:

Recommendation (Level A) - Items that should be addressed before vessel is used (or within a given period) and, or, which may affect insurability. They relate to defects with a high risk of failure and moderate to serious consequences for the safety of the crew and the vessel.

Recommendation (Level B) – These require attention in the near future or a given time span. They pose less imminent risk but are likely to cause problems in future, with moderate to serious consequences for the safety of the crew and, or, vessel.

Suggestions may also be made regarding items that may lead to impaired safety or value in the future. Some suggestions may only have consequences for appearance or comfort of crew. These can affect value.

Quotations should be obtained where recommendations or suggestions have been made, and any significant work checked by a competent person once carried out. Whether or not a recommendation is made or at what level, there is no guarantee that an aspect or component will not fail unexpectedly.

Conditions of Survey

This is a pre-sale full condition survey carried out for the vendor. The vessel was on the market. The vessel was examined ashore only. She had been ashore a number of weeks. The masts were stepped so could only be inspected from deck level. Any defects found above that level were seen using a high definition x20 optical zoom camera. This does not allow full examination aloft. The vessel was seen washed down and with new paint coatings. The survey included a visual inspection of the engine and installation when stationary only.

The report takes into account certain comments made by the Client/Owner and Mr A SXXX, a well-known and respected boatbuilder. The owner requested that no fastenings be exposed or removed and not to impair the pain coatings. Before the inspection began the hull around the shoring and keel was examined for evidence of distortion. None was seen. A valuation was not request. No special conditions affected the survey other than as mentioned in the text.

Scope

This full condition survey was carried out in accordance with my standard Terms of Business. Its purpose is to establish the structural and material condition of the vessel and systems.

- Where equipment was tested this is detailed in the text.
- References to condition are in relation to the vessel's age (i.e. good condition does not necessarily mean new).
- Mechanical condition of engine not covered under survey terms, only installation and visual condition inspected.
- The survey is not a parts and labour guarantee and it should be noted that defects may exist in the vessel that the survey could not detect due to the limitations of time, vessel presentation and the range of tests (excluding destructive testing or dismantling) acceptable to the owner.
- Some components may appear serviceable but are found defective when under load.
- Parts of the vessel that were covered, unexposed or inaccessible due to fixed panels, mouldings etc were not examined, so I cannot say these areas are free from defects other than where specified.
- No fittings or fastenings were removed for examination other than where specified.
- The survey carries with it no guarantee against faulty design or latent defects or suitability of the vessel for any particular purpose, nor any guarantee of compliance with any particular national or international rule, requirement, regulation, law, standard or code unless specifically stated in this report.

The survey is for the client with no liability to anyone else. The surveyor retains this report's international copyright.



Summary and recommendations

The vessel had been under the same ownership for approximately 20 years. She had been well maintained and generally in sound condition.

The hull, keel, deck, and steering were considered sound and mostly in good condition. There had been a build-up of paint which is satisfactory in some places and is flaking in others. There had been some damage caused by electro chemical decay (ECD). This has mostly been repaired, though timber around two garboard fastenings was affected and graving pieces are required. Other garboard fastenings should be exposed and checked.

The cause of the ECD is considered the anodes fitted to hull and the rudder hangings. Though bonding wires had been removed, the high moisture content in the wood will provide sufficient electrical connection for the decay to continue. Anodes on the rudder are considered to have contributed to the decay though they are offering some protection to the ferrous rudder hangings. Hangings are likely to have deteriorated since the lead keel was fitted (replacing an original iron keel according to sales particulars) and recent re-galvanizing (as reported by the owner) may have worsened the timber's decay and the difference in potential voltage between steel hangings and lead keel will have contributed to corrosion of the hangings. With anodes removed, once back afloat, checks should be made for stray current and the situation should be monitored to avoid any further issues. Bronze rudder hangings would be a valuable improvement.

Water had entered where the raised topsides start and though damage was minimal, a timely and durable repair will prevent more extensive work later. Deck sheathing had started to allow in water along the edges and again a timely repair is considered worthwhile to avoid more extensive work later.

Minor work is required to the stern-tube greaser pipe and steering. The rudder tube Base should be properly inspected internally once sealant around the base is removed.

One through-hull fitting requires replacement, another requires re-fastening and others require servicing and minor attention to hose and clips. The gas locker drain skin fitting should be enlarged when the water tank is removed for repainting.

The pushpit and pulpit fittings require tightening to the deck and portlight seals on four portlights need replacing.

In the standing rigging, the mix of talurit terminals and 1x19 wire is not recommended and, as there are some other issues, including two cracked swaged terminals and the standing rigging is believed eight years old, the standing rigging should be replaced now. Some glue lines in the relatively new main mast have begun to open and require repair to prevent more work later.

The engine was not run and only minor work is recommended to this and the fuel system, plus a service is suggested.

Unfortunately, no electrical items including navigation lights and equipment could be checked as batteries were completely discharged and shore power could not be connected.

Fire extinguishers were required and some relatively minor work was required to improve the gas system's safety. Relatively minor work is also needed to the WC and water tank.

The cosmetic appearance was generally good both externally and below decks and security was good.

Recommendations

Hull

Fastenings (Level A) – All garboard fastenings and a sample of plank to 'floor' fastenings should first be exposed, the surrounding timber examined and fastenings tightened (to check their holding in the hog). Where there is evidence of ECD, fastenings should be drawn for inspection and replaced if necessary. Where timber is degraded (eg those identified in Figure A1) fit graving pieces of half the thickness of the outer plank plus adequate stopping to minimise corrosion. Use of water based-epoxy as a primer will allow a strong repair even when the plank is still too wet for conventional epoxy.



Anti-fouling coatings (Level B) – In the course of maintenance, burn off and renew anti-fouling coatings.

Planking by engine inlet (Level B) – Fit graving piece to external plank around engine inlet.

Recommendation (Level B) – As soon as feasible, sister cracked frames where marked. Monitor frames nearby until repairs are completed.

Leaks at start of raised topsides (Level B) – As soon as feasible identify sources of leaks where raised topsides start and make appropriate durable repairs to prevent significant deterioration and recurrence.

Deck sheathing (Level B) – Repair edge of deck/coachroof sheathing ideally by removing toe rail and rubbing strake, cutting back existing sheathing and replacing with new epoxy and sheathing.

Steering, stern gear, skin fittings etc

Stern Gear (Level A) – Before re-launch, fit a new greaser pipe coupling.

Cathodic protection (Level A) – Remove anodes before re-launch, and then monitor ECD affected areas and rudder hangings annually. When afloat on her mooring/berth, check for AC and DC stray current.

Skin fittings (Level A) – Replace aft cabin sink outlet gate valve with bronze or DZR ball valve and replace hose to this valve with a longer length of flexible hose and check skin fitting internally before re-using. Free log paddlewheel. Free-up the engine inlet ball valve. When water tank is removed replace gas locker drain skin fitting with larger diameter (see gas installation G2). Service all three forward seacocks (WC and galley sink). Fit handle and new flexible hose to galley sink outlet. Fit double clips to all below waterline tailpipes. Renew bronze fastenings in heads inlet, renew heads inlet and outlet clips. See also B.3. Wooden bungs should be located and secured with a line close to each through-hull fitting, including transducers. Check for stray current when afloat.

Rudder and steering (Level B) – Mouse shackles between steering cable talurits and rudder post tiller. Remove flexible sealant where rudder tube enters hog and shaft log, inspect and repair if necessary. Securely fasten rudder stop chain.

Deck, Cockpit Hatches, Portlights, Guardrails and Jackstays

Pulpit, pushpit and stanchions (Level A) – Tighten pulpit, pushpit and stanchion base fittings on the deck. Fit jackstays and safety rings.

Port light seals (Level B) – Replace seals in aft pair of port lights in both aft and main cabins.

Rig

Mizzen lowers chain plates (Level A) – Fit third fastening to each mizzen lower shroud chain plate.

Standing rigging (Level A) – Replace standing rigging including bobstay and bowsprit shrouds using either flexible 7x7 wire (and not 1x19) and talurit terminals or swaged terminals and 1x19 wire. Replace all cotter rings with split pins

Main mast (Level B) – Repair glue lines in main mast where some of these have begun to open and fully inspect mast and fittings while it is unstepped.

Staysail halyard (Level B) – Repair staysail halyard.

Bowsprit cleat (Level B) – Replace cracked cleat on bowsprit.

Engine fuel system, stern gear and cathodic protection

Engine (Level A) – Add double clips to the raw water hose and exhaust hose, replace clips and short length of exhaust hose at outlet.

Fuel systems (Level A) – Add second clip to diesel filler hose. Replace fuel filters and O ring seals and mark the date on the filter with permanent felt pen. Replace fuel hoses with BS 7840 A1 grade fuel hose.

Safety and other Equipment



Bilge pumps (Level A) – Check electric bilge pump once power is restored to the batteries.

Boarding ladder (Level A) – Fit or carry a boarding ladder extending 600mm below the water.

Navigation lights (Level A) – Check all navigation lights once power is restored to the batteries. Fit an anchor light.

Firefighting equipment (Level A) – Before she is used, replace the two fire extinguishers and add at least one, all to at least 13A/89B rating. Fire extinguishers should be serviced annually or replaced every five years.

Life-saving equipment (Level A) – Carry appropriate lifesaving equipment (consult RYA). including the following:

- A lifejacket for each crew-member with crutch straps and a spray hood each
- Safety harness for each crew member
- Flares including hand held white
- Hand bearing compass
- Radar reflector
- First Aid kit
- Other equipment is recommended for offshore passages

Navigation equipment (Level A) – Check navigation equipment when battery power is restored. Carry emergency VHF aerial.

Accommodation and on-board systems

Gas installation (Level A) – Fit new regulator inside the gas locker. Fit new flexible hose between bottle and regulator. Fit larger gas locker drain hose and skin fitting (19mm minimum). Replace copper pipe with a single length from the regulator to the cooker shut off valve. Cut a slightly larger hole in the bulkhead and fit rubber grommet where flexible hose passes through bulkhead.

Shore Power (Level A) – Perform drop-charge test on batteries once they are fully charge to assess their effectiveness at holding a charge. Test RCD.

WC (Level A) – Replace inlet hose clips and ensure all hoses have double clips.

Water tank (Level B) – Remove and repaint water tank.

WC (Level B) – Service WC outlet pump.

Security (Level B) – Fit locks to cockpit locker lids.

The full report should be read to obtain an accurate account of the vessel's condition.



Details of "XXXXXX"

Type of vessel: Double ended, centre cockpit, cutter yawl

Designer: Cardnell Brothers

Builder: Cardnell Brothers, Maylandsea, Essex.

Year: Built 1932 (sales details)

Serial no/ HIN: n/a.

Registration: UK Part 1: 164129

Small Ships: n/a

RCD Category: n/a.

Construction: Mahogany (double horizontal) planks on oak steamed frames fastened with copper roves and bronze hood end and garboard fastenings, glass sheathed pitch pine decks. Lead keel fastened with nickel bronze bolts, oak floors with bronze bolts, oak deck beams, breasthook (stem and stern).

Rig: Masthead Bermudan cutter yawl

Engine and transmission: Vetus Mitsubishi 22 HP, indirect cooled, Hurth gearbox.

Propulsion: Three bladed right handed bronze propeller on 1 ½" shaft

Dimensions (from sales particulars - not checked by me and so no guarantee of accuracy can be given).

Length on deck	32'	9.75m
Length Water Line	-	-
Beam:	8'3"	2.51m
Draft:	4'3"	1.29m
Displacement:	-	-
Ballast	5,511lbs	2.5 tonnes
Water capacity	-	-
Fuel capacity	-	-

A. Hull, deck and structure

A.1. Planking below Waterline

Carvel planking is of mahogany believed Honduran mahogany, an excellent planking material. Unusually, this design uses two substantial layers of planking laying horizontally along the hull, with each outer seam being fastened through the inner plank layer making a relatively strong, stiff and light hull.

The vessel had a build-up of soft antifouling coatings, which had begun flaking and cracking in places.

Recommendation (Level B) – In the course of maintenance, burn off and renew anti-fouling coatings.

Both plank layers were close-seamed with no caulking and, though built in 1932, seems were mostly tight and no flexible paying was seen in any seams.

At the hood ends there was no sign of movement or softening of timber. The garboard planks were lying tight and fair. Almost all of the seams were tight externally (and all seen tight internally) and those few that were not will tighten up when she returns to the water. In four areas, slight 'clinking' was seen on the otherwise smooth turn of the bilges. This occurs either when planks are too tight or when frames break. In this case, it is considered, this mild clinking is the result of broken frames that have been repaired (see A.4.).

The planking was hammer sounded externally and internally and random spiked internally and was found sound. The planking in the immediate vicinity (within one inch approx) of two screw fastenings on the starboard garboard strake

was seen to have been degraded by electro chemical decay (ECD) which can occur around noble fastenings and fittings and to which Honduran mahogany has relatively poor resistance.



Figure A-1 Electro chemical decay around garboard fastenings allowing bilge water to weep out past fastenings

Decay (ECD) was also noted around the engine inlet skin fitting. To ensure the plank's integrity and the skin fitting's security, fit a graving piece here.

Recommendation (Level B) – Fit graving piece to external plank around engine inlet.

A.2. Keel, centreline structure and floors

Externally - The centerline structure, stem, wood keel, horn timber and deadwood (believed to be of oak but none exposed), were all found hard and sound where tested with no significant signs of movement. The lead ballast keel was lying tight and fair to the wood keel and, other than those mentioned above, no significant weeps or stains were seen (though bilges contained a significant amount of water). Sales particulars and the builder who carried out the work said the lead keel had replaced the original iron keel. No invoice was seen to confirm this.

Internally – The apron, hog, and horn timber (all believed of oak) were all found in good hard condition where tested. The structural floors (also oak), also found hard. The floors had been reinforced by way of the keel bolts. There has been electro chemical decay to the horn timber around the shaft log by way of stern tube, around the copper grease pipe where it enters the horn timber and shaft log and around garboard fastenings in the vicinity. A new facing piece had been fitted to the shaft log, with new members either side of the log: a sound repair. The base of the rudder tube and adjoining timber was covered with black flexible sealant preventing visual inspection or hammer testing. This should be removed and the tube and timber inspected (see also B.1.). Repairs to the garboard were not exposed under the antifouling but some new fastenings were seen.

Keel fixings – Eight 1" diameter bronze keel bolts and nuts with 4" washers were seen set on the floors, all in excellent visual condition and rang true. None were drawn. Pairs of bronze bolts also fasten the hog to the wood keel along its length at approximately 16" centres, in good condition. The timber along the centreline including in way of keel bolts and other bronze fastenings was found hard where accessible. A recommendation relating to the ECD has been made in section B.3.

A.3. Topside planking, rubbing strake etc

The topside planking was of the same mahogany as below the waterline, hammer sounding found this in good condition. The hull has kept its shape with no distortion noted. All seams were tight (internally and externally), no clinking was seen and no movement or softness was seen at the hood ends. The sheer was sweet and fair with no distortion in way of chain plates. A teak rubbing strake was securely fastened and in good condition.



A.4. Frames

These were of steamed oak and approx. 8" centres. A number had cracked and been satisfactorily repaired by 'sistering'. Two un-sistered cracked frames were noted in the main cabin under the bunks, another under the galley sink, a fourth under the aft cabin bunk and a fifth under the aft cabin sink unit. Frame heels and tops were hard.

Recommendation (Level B) – As soon as feasible sister cracked frames where marked. Monitor frames nearby until repairs are completed.

A.5. Bulkheads and stringers

The masts are deck stepped and the deck in both cases was fair in way of the mast step indicating no compression. The mahogany primary bulkheads and secondary partitions were all found in good condition. There were two bulkheads approx. 15" apart under the mast. These were adjacent to the two chain plates on each side and to the start of the raised topsides. Water has been entering on both sides and a small area of the raised topside and coachroof coaming is now soft and the raised topsides, bulkhead, beam shelf and deck in this area are at risk.

Recommendation (Level B) – As soon as feasible, identify sources of leaks where raised topsides start and make appropriate durable repairs to prevent significant deterioration and recurrence.

Two bilge stringers were seen, in fair condition. These were of mahogany and were in sound condition where seen.

A.6. Deck and Coachroof

Externally – The vessel had a small aft deck, side decks running forward level with the main mast, and raised topsides forming a large fore deck. The raised topsides and the coachroof coamings were of mahogany, both of a single board. There were some small splits around port holes but this is not of any consequence as long as varnish coatings remain intact. In places, the bright work was in need of rubbing down and re-varnishing.

The coachroofs, raised forward deck, side decks and aft deck were all sheathed plywood over pitch pine planking. The deck and coach roof were hammer sounded and almost all timber found in good condition and hard except two areas by the toe rail on the starboard side where the GRP sheathing (otherwise intact) had flaked and was letting in water. Only a small area (a few square inches) of plywood is considered to have been damaged by this and a timely repair will save much work and expense. The paint coating to the decks and coachroof was otherwise in good condition. Beading quadrants etc were tight. The teak hand rails on both coachroofs aggressively swigged and found firm. Trim and capping all in good order.

Recommendation (Level B) – Repair edge of deck/coachroof sheathing ideally by removing toe rail and rubbing strake, cutting back existing sheathing and replacing with new epoxy and sheathing.

Internal – The deck supporting structure is of conventional construction with full beams under forward and aft decks and halfbeams at side decks, and carlines all of oak. Beam shelf believed to be of Douglas Fir or possibly Sitka Spruce. These were found in fair condition with no signs of straining or rot, though as mentioned, there were signs of water ingress by way of the main bulkheads. Below the mast step the bulkhead is placed between deck beams with an additional beam over the bulkhead. This has been reinforced with a sister along its middle section and is in good order.

A.7. Cockpit

The cockpit coamings were of mahogany. Locker lids and cockpit sole were of payed teak faced plywood (in good condition). The sole support structures were sound though some deterioration was noted to the aft beam where water has settled. There are coaming lockers on either side under the side decks, lids in good condition. The cockpit is not self-draining and continued use of the vessel's canvas cover to keep rainwater out while allowing ventilation will help to preserve the structure.



A.8. Aft cabin

Coamings of mahogany, all in fair condition. Conventional support structure of oak deck beams and half beams and pitch pine deck planks (epoxy sheathed) all in good condition where accessible

A.9. Fastenings

The owner requested that no fastenings be removed or exposed.

- a) The plank to frame and plank to plank fastenings were copper roves. No significant softening of timber was found though there were signs of ECD around fastenings seen internally (see photo below). A number of fastenings were hammer sounded internally and found in serviceable condition. Frames were tight to planks where seen. The ECD is considered linked to the use of an anode and bonding or to stray current from the vessels electrical system. In a number of areas roves should be cleaned up and monitored after removal of the anodes (see B.3).
- b) Garboard fastenings were seen to be bronze screws. None were removed. The planks were lying tight and fair. Evidence of ECD around two of these fastenings was described in A.1. The damage is not significant but fastenings may be beginning to lose their hold on the strake. As none were tested, it is not known if the fastenings are holding well in the hog, though no problems are suspected.
- c) Plank to floor fastenings were not seen or sampled. When anti-fouling is burnt off these should be inspected and sampled.
- d) At the hood ends no fastenings were removed and there was no sign of any fastenings through stopping/paint coating or of planking movement.
- e) Centreline bolts including keel bolts (see A2) were of bronze. Those tested rang true.
- f) Deck planking fastening was not seen nor tested under the sheathing but hammer sounding the deck did not indicated any failure of fastenings.

Recommendation (Level A) – All garboard fastenings and a sample of plank to ‘floor’ fastenings should first be exposed, the surrounding timber examined and fastenings tightened (to check their holding in the hog). Where there is evidence of ECD, fastenings should be drawn for inspection and renewed if necessary. Where timber is degraded (eg those identified in Figure A1) fit graving pieces of half the thickness of the outer plank plus adequate stopping to minimise corrosion. Use of water based-epoxy as a primer will allow a strong repair even when the plank is still too wet for conventional epoxy.

B. Steering, Stern gear, skins fittings etc

B.1. Rudder and steering

- a) The rudder was built up of hardwood, all sound with no sign through the paint coating of any movement.
- b) An upper and a lower ferrous gudgeon were through-bolted. The top one was welded to the stainless steel stock. The lower one was fastened with a locking pintle to a ferrous double gudgeon fastened to the deadwood. All tight and secure. The rudder was tested with body weight and found firm on the stock.
- c) The rudder tube was galvanised steel. Internally, the base of the rudder tube and adjoining timber was covered with flexible sealant preventing visual inspection or hammer testing. This should be removed to facilitated inspection.
- d) The top of the steel rudder stock was square ended with a galvanised forged steel tiller below the aft deck accessed through a locker in the aft cabin. A galvanised bracket secured the top of the rudder tube and stock laterally to a deck beam. All sound and secure.
- e) Cable (7X19 galvanized wire) was shackled via talurit terminals to the tiller. The cables run below the deck to the port side (starboard cable via block on starboard quarter), round a block with two sheaves along under the deck to the forward bulkhead in the aft cabin, round another block, down to the bunk top and up at a diagonal until level with the wheel. The cable is tightened with a bottle screw above the bunk and elastic cord to a block close to the tiller also helps to keep the cable tight, all in fair condition. The shackles to the tiller should be moused.
- f) A chain between a deck beam and the tiller provides a rudder stop. The means of fastening this to the beam was not adequate to provide a very secure fastening. A through-bolted fitting and shackle would achieve this.



- g) The auto helm operated directly on the wheel and the rudder position sensor was fastened via a wooden block and U bolts to the tiller. All secure.
- h) There is no provision for an emergency tiller. It would not be feasible to reach a tiller if fitted in the stern locker.

Recommendation (Level B) – Mouse shackles between steering cable talurits and tiller . Remove flexible sealant where rudder tube enters hog/shaft log, inspect and repair if necessary. Securely fastened rudder stop chain.

Suggestion - Consider fitting a means of operating the rudder in the event of cable failure.

B.2. Stern Gear

- A three-bladed bronze right handed propeller, in good condition, was secure (with nut and split pin) on the 1½ “ non-magnetic stainless propeller shaft. The shaft showed no signs of crevice corrosion.
- There was a water lubricated stern gland secure to the hull, presumed to contain a white metal water bearing. No lateral movement of the shaft was detected here.
- The bronze stern tube was grease-filled. Almost the entire tube is inside the log and cannot be seen or inspected. The copper grease pipe passes into the log and cannot be seen where it is secured to the tube. This requires a new fitting to join two lengths of pipe which were seen parted. A grease pump was fitted in the port cockpit locker.
- Inboard of the stern tube was a stuffing box. Given the position of the bolts which tighten the gland onto the packing, the packing is fairly recent and is considered in serviceable, possibly good, condition.

Recommendation (Level A) – Before re-launch, fit a new greaser pipe coupling.

B.3. Cathodic protection and stray current

For galvanic protection a single zinc main hull anode was fitted to port and slightly aft of the engine. Electrical bonding had been removed. Two anodes were also fitted to gudgeons on the rudder. These were considered to have contributed to the electro chemical decay and will continue to do so even without the bonding wire as wet mahogany will provide sufficient electrical conductivity.

Given the corroded bronze fastening on the heads inlet (see B4 below), stray AC or DC current is suspected as well as the effects of the anodes.

Recommendation (Level A) – Remove anodes before re-launch, and then monitor ECD affected areas and rudder hangings annually. When afloat on her mooring/berth, check for AC and DC stray current.

B.4. Skin Fittings and through hull apertures

Note: Ball valves and gate valves are usually separate from both skin fitting and tailpipe. Seacocks are a single unit with an external flange fastened to the hull. All three type were on this vessel. No skin fittings, tailpipes or valves were dismantled as part of this survey.

The location, function and condition of all through hull fittings, ball valves and tailpipes and other through-hull apertures was as follows (working forward from the stern). Antifouling was scraped off part of each skin fitting for external inspection.

- Aft cabin sink outlet – Below the aft cabin bunk, a gate valve found open and very stiff. While firm to the hull these commonly seize and it was badly corroded (although secure to the hull when vigorously tested) and should be renewed along with two new jubilee clips. The hose is of rigid type and was not connected to the sink drain. The hose should be replaced with a flexible reinforced hose of slightly longer length. Skin fitting was secure with no signs of corrosion externally.
- Log transducer – Aft and to starboard of the engine was the nylon log transducer. The fitting was secure to the hull when lightly hammer tested externally. The paddle wheel was fouling and not rotating freely.
- Engine raw water inlet – In engine compartment aft of engine on port side and below static waterline, the raw water inlet skin fitting and DZR ball valve was in serviceable condition though very stiff with some corrosion

- visible. The valve should be freed up. Skin fitting was secure, though the external strainer prevented inspection of the skin fitting behind. The fitting was secure to the hull when vigorously tested. Internally there was another strainer and only a single clip. Double clips should be used below the waterline. The hose was in good condition.
4. Exhaust –Stainless steel through-hull exhaust fitting on the starboard side of the hull by way of the cockpit. Secure externally and internally. The short length of hose between silencer and outlet was perished.
 5. Electric bilge pump outlet - The outlet for the electric bilge pump was also on the starboard topsides above the exhaust and the static waterline. This was a small nylon fitting firm to the hull. Single clip firm and in fair visual condition though not tested and hose secure and in fair condition.
 6. Manual Bilge pump outlet - The outlet for the manual bilge pump was just forward of the electric pump outlet also on the starboard topsides above the static waterline The nylon skin fitting was firm to the hull. Hose secured to tailpipe by a single clip secure and in fair condition and hose in serviceable condition.
 7. Gas locker drain – Behind the water tank on the port side just above static waterline. There was no access internally where it was neither seen nor reached. A recommendation is made in section G.4. to remove and repaint the water tank and G.2 to enlarge gas drain when the tank is removed. At that time the valve and skin fitting should be carefully checked.
 8. Echo sounder – Forward of the engine on the starboard side below the main cabin bunk was the nylon depth transducer secure to the hull. Fairing block secure externally.
 9. Galley sink outlet – Below the galley sink on the starboard side, below the static waterline. The skin fitting (seen externally where antifouling was scraped off), fastenings (hammer tested), seacock and tailpipe, all believed bronze, were in fair condition, secure to the hull when vigorously tested. Hose clip secure. Hose serviceable though clear, this hose type can become stiff and brittle and should be replaced. The seacock was not operated as the handle was not seen.
 10. Heads inlet – To starboard of the heads and below the static waterline. The skin fitting, seacock and tailpipe, believed bronze were in serviceable condition, secure to the hull when vigorously tested, opened and closed fully though stiff. Hose clips loose and corroded. Hose serviceable. Bronze fastenings externally were badly corroded with red copper oxide indicating electrolytic or galvanic activity. This is either related to the anode (though out of the line of sight and some distance from them) or stray current from this vessel, the adjacent vessel(s) or underwater cable. The fastenings should be replaced.

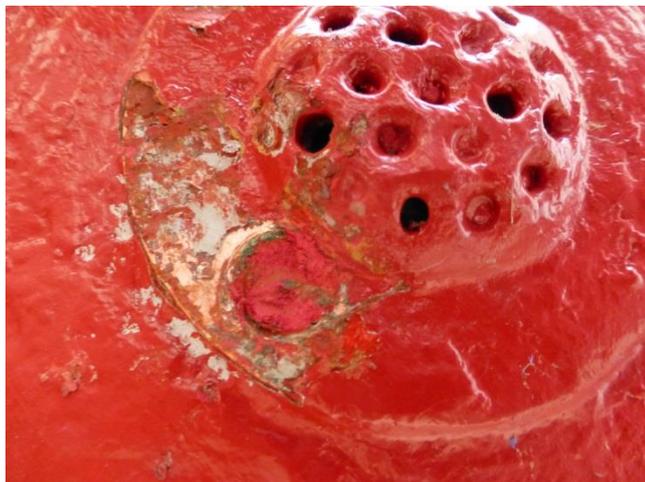


Figure B-1 Heads inlet fastening corroded

11. Heads outlet – To port of the heads and below the static waterline. The skin fitting, seacock, fastenings (hammer tested) and tailpipe were in serviceable condition, all believed bronze, secure to the hull when hammer tested, opened and closed though stiff. Hose clips secure but corroded. Hose serviceable.

No wooden bungs were seen by skin fittings. Wooden bungs should be located and secured with a line close to each through-hull fitting, including exhaust and transducers.



Recommendation (Level A) – Replace aft cabin sink outlet gate valve with bronze or DZR ball valve and replace hose to this valve with a longer length of flexible hose and check skin fitting internally before re-using. Free log paddlewheel. Free-up the engine inlet ball valve. When water tank is removed replace gas locker drain skin fitting with larger diameter (see gas installation G2). Service all three forward seacocks (WC and galley sink). Fit handle and new flexible hose to galley sink outlet. Fit double clips to all below waterline tailpipes. Renew bronze fastenings in heads inlet, renew heads inlet and outlet clips. See also B.3. Wooden bungs should be located and secured with a line close to each through-hull fitting, including transducers. Check for stray current when afloat.

Suggestion – Sealant (or light GRP laminate) around the internal flange or nut of the log and depth transducer fittings will help to prevent flooding in the possible event of the fitting parting due to over-tightening or other cause (this is recommended by some manufacturers).

C. On deck

C.1. Main companionway and other accesses to accommodation

- a) Cockpit to main cabin: conventional hinged doors built up of mahogany, all found in satisfactory condition and lockable. There is no bridge deck and the cockpit is not self-draining.
- b) Cockpit to aft cabin: conventional sliding hatch of teak and hinged doors built up of mahogany, all in satisfactory condition and lockable. The bottom of the doors is level with the cockpit seating.
- c) Forehatch built-up of teak, securely hinged with positive method of closure and in good condition with small ob-long deck prism inset, secure and in good condition.
- d) Hatch on aft cabin coachroof built up of teak securely hinged with positive method of closure and in good condition and with reinforced glass lights.

C.2. Ports and windows

- a) These were of glass set in 4" opening bronze frames, four in the main and the aft cabin and two in the galley. All tight and secure to the coamings, all seals in good condition except the two aft lights in both the aft cabin and the main cabin which had perished and needed replacing.
- b) Main cabin two round deck lights on coach roof in good condition and secure.

Recommendation (Level B) – Replace seals in aft pair of port lights in both aft and main cabins.

C.3. Pulpit, stanchions, pushpit guardrails and jackstays

Pulpit and pushpit these were of stainless steel screw fastened directly to the deck, all in good order though some were slightly loose on the deck and needed tightening/reinforcing. Stanchions (stainless steel) set in base fittings, fastened with split pins and screw fastened to the deck. Some stanchion bases were loose on the deck and needed tightening. Guard rails were plastic coated steel wire with talurit terminals, lashed to the pulpit and pushpit. All secure. No jackstays or safety line rings were seen.

Recommendation (Level A) – Tighten pulpit, pushpit and stanchion base fittings on the deck. Fit jackstays and safety rings.

D. The Rig

D.1. Rigging attachment points

- a) The main shrouds (caps and lowers) attached to bronze chain plates fastened to the hull with bolts through planks and frames by way of the two main bulkheads. On both sides, both chain plates have at times allowed in water and a graving piece was seen internally on the reinforcement for the starboard cap chain plate. A recommendation regarding the source of the water has been made in section A.5.



- b) The forestay was attached to the top of an enclosed bronze gammon iron fitting fastened to the top of the stem, all secure. The jibstay was attached to the bronze crane iron on the end of the bowsprit. The bobstay was attached via an eye bolt through-bolted to the stem with a block to tension jibstay and bobstay, all in good condition and stem hard around bobstay eyebolt.
- c) The backstay was split and each side was attached to a galvanised chain plate on each quarter, securely bolted through planking and beamshelf with backing plates.
- d) The forward mizzen lower shrouds were attached to galvanised chain plates on the coachroof coaming. These had three holes for fastenings, though only two fastenings had been fitted on each side. Otherwise all tight and secure.
- e) The aft mizzen lower and mizzen cap shrouds were attached to galvanised chain plates bolted through the planking, all tight and secure.

Recommendation (Level A) – Fit third fastening to each mizzen lower shroud chain plate.

D.2. Standing Rigging

- a) The forestay and jibstay were not seen inside the foils. Bobstay was 1 x 19 with a talurit terminal, which is not recommended as the wire is not sufficiently flexible and this damages the thimbles or wire. These should be renewed with either 1x19 stainless wire and swaged terminals **or** 7x7 wire with talurit terminals.
- b) Main cap shrouds and backstay were 7x7 onto talurit terminals.
- c) Main lowers were 1x19 onto swaged terminals. Both swaged terminals were cracked.
- d) Mizzen shrouds were 1 x 19 onto talurit terminals.
- e) All bottle screws were bronze and all had split pins except the starboard mizzen cap and forward lower shroud.
- f) All bottle screws were shackled to the chain plates. All except the mizzen cap had cotter rings through the clevis pins. Some cotter rings (eg starboard mizzen cap shroud) had opened and were at risk of coming out altogether. Cotter rings are prone to this and should be replaced with split pins.
- g) Alignment was fair and articulation was good.
- h) Bowsprit shrouds of 1 x 19 with talurit terminals.

Standing rigging only seen at deck level. According to the owner (not verified) It is now eight years old and would normally be replaced after ten years. Given the cracked swage terminals and the inappropriate mix of 1x19 wire and talurit terminals, the standing rigging should be replaced.

Recommendation (Level A) – Replace standing rigging including bobstay and bowsprit shrouds using either flexible 7x7 wire (not 1x19) and talurit terminals or swaged terminals and 1x19 wire. Replace all cotter rings with split pins

D.3. Masts and Spars

These include single spreader main mast, boom, bow sprit, single spreader mizzen mast and boom and spinnaker pole. The masts were deck-stepped.

- a) The hollow spruce main mast was reported new in 2008 (by A Sxxx's yard), in good order though some of the glue lines have started to open up and should be repaired with a narrow blade and epoxy. The masts were stepped and so were only inspected to head height. Both should be unstepped for full inspection.
- b) The main boom was not so new, is believed solid spruce and in good condition. Kicker was seen below in good order.
- c) Mizzen mast and boom are believed solid and of spruce in good condition where seen.
- d) Bowsprit was on the centreline, of solid spruce, tenoned into the bronze heel fitting and all in good condition.
- e) Spinnaker pole also believed of spruce and in good condition.

All spar fittings accessible from deck level were secure and serviceable (see also winches below). The spreader angle on the main and mizzen was considered satisfactory.

Recommendation (Level B) – Repair glue lines in main mast where some of these have begun to open and fully inspect mast and fittings when unstepped.

D.4. Running Rigging and Reefing

- a) Running rigging only seen at deck level. The nylon staysail halyard thimble was broken and needed replacing.
- b) Halyards ran free. The jib halyard was of wire and rope and the splice was not seen.



- c) Other running rigging seen was generally in serviceable condition and a mix of three strand and braided polyester. However it was not recent and not fully inspected.
- d) Roller reefing on the forestay (Plastimo 608 S) and jibstay (CDI). The systems were not operated as sails were not bent on. Main/Mizzen slab reefing not seen/operated, sails were not bent on.

Recommendation (Level B) – Repair staysail halyard.

D.5. Sails and covers

No sails were seen. The deck cover stretched the length of the main boom (just aft of the cockpit) and was in very good condition.

D.6. Winches, clutches and other deck gear

- a) Two Lewmar 16 self-tailing jib sheet winches in fair condition and secure to cockpit coaming. Sheet travellers fast on the toe rails. Cars in fair condition.
- b) Two Tufnol staysail sheet winches secure on aft of main cabin coachroof and in fair condition. Sheet travellers fast on the coachroof. Cars in fair condition.
- c) Two Tufnol halyard winches on the main mast serviceable and secure.
- d) Main sheet removed, seen below in good order.
- e) Tufnol winch on bowsprit to tension jibstay in fair condition. Teak cleat on bowsprit was cracked.
- f) Stainless steel Highfield levers to tension the bowsprit shrouds in serviceable condition and secure.

Recommendation (Level B) - Replace cracked cleat on bowsprit.

E. Engine, fuel system, stern gear and cathodic protection

E.1. Engine and installation

A Vetus Mitsubishi M310 three cylinder 25HP (max rating) diesel engine, indirect cooled and driving a Hurth reduction gearbox (model not seen), engine hours 886.9. The engine was not seen running or under load and there were some areas of surface corrosion.

- a) Engine bearers were sound, carrying a galvanised frame to which the mountings were bolted. This was in good condition and mountings were fair: none lifted excessively under the crow bar test.
- b) No significant oil leak was seen. The sump was in fair condition. There was no evidence of water in the oil or in the rocker cover cap or on the dip stick. The oil was black. No date was seen on the filter. The level was almost full. A hand pump was fitted to remove oil from the sump.
- c) Transmission oil was clear and the level satisfactory. The casing was in fair condition.
- d) No water leaks were visible, however the vessel had been ashore for some weeks. Raw water hoses were reinforced and serviceable. There was only a single clip to the hose where it was attached to the raw water pump and to the ball valve. Double clips should be used where tailpipes allow. There was no siphon loop on the raw water inlet, therefore siphoning is possible though considered unlikely in this case as the engine was well above the level of the inlet. The raw water pump was located at the forward portside of the engine. The impeller was not inspected. The coolant pump was not seen or inspected. The belt condition and tension was satisfactory. It is suggested spare belts are carried and the belt is regularly renewed. The cylinder block was examined as far as possible with very restricted access on the both sidea and no cracks or evidence of weeping were seen. No emulsified oil was seen on the lid of the heat exchanger or in the coolant.
- e) The exhaust elbow was sound to the hammer. These do corrode from the inside and need to be replaced periodically. Failure not only results in loss of cooling but also fills the engine compartment/cabin with exhaust gases. The exhaust hose was in fair condition where inspected aft of the engine. There was an anti-siphon loop (under the cockpit seating). A Vetus water trap (to prevent water entering) was mounted aft of the engine above the gearbox. Servicable single clips were used, these should be double clips. There was also a silencer under the starboard side deck and a short length of exhaust hose to the outlet fitting on the hull. Here the hose has started to deteriorate and clips had also corroded. Hose and clips should be replaced. A blower was fitted in the engine compartment with the inlet on deck. This was not tested as batteries were discharged.



- f) The engine controls operated freely and were securely connected to the diesel pump and gear box. The stop solenoid operated. **Note** that some insurance underwriters will not cover claims resulting from failed engine controls when these have not been serviced and maintained.
- g) The alternator rating was not seen and it was not seen operating. It was in satisfactory visual condition.

Recommendation (Level A) – Add double clips to the raw water hose and exhaust hose, replace clips and short length of exhaust hose at outlet.

Suggestion – Have the engine professionally serviced. Rub down, prime and re-coat corroded areas.

E.2. Fuel System

- a) The polythene fuel tank was located on the starboard side of the engine. No attachment points were seen or tested as access was very restricted. Parts of the tank seen suggested it was in good condition.
- b) The flush filler unit on the side deck was stainless steel with cap connected by chain to base. The seal in the cap was in serviceable condition. The fitting was flush to the deck. The filler hose was in good condition and secure to the filler unit though only a single clip was used on the filler end of the hoses (tank end not seen). Vent for the fuel tank not seen presumed under cockpit seat/side deck.
- c) Copper pipe was fitted between the tanks and the shut off valve on the primary filters and from these filters to forward end of engine. Copper pipe was in fair condition where seen. A short length of flexible black hose was fitted between the end of the copper pipe and the lift pump on the port side of the forward end of the engine. This is not considered ISO 7840 A1 compliant. The hose, where seen, was in fair condition. The fuel return from the diesel pump was a short length of clear braided hose, not recommended for fuel. The fuel hoses should be replaced with ISO 7840 A1 compliant fuel hose as this is rated for use in engine compartments in case of fire.
- d) The primary filter did not have an inspection bowl and was mounted on the starboard side of the engine. The primary filter was upstream of the lift pump. The secondary filter was on forward side at the top of the engine to starboard. No dates were seen on the fuel filters.

Recommendation (Level A) – Add second clip to diesel filler hose. Replace fuel filters and O ring seals and mark the date on the filter with permanent felt pen. Replace fuel hoses with BS 7840 A1 grade fuel hose.

F. Safety and other Equipment

F.1. Ground tackle and mooring arrangements

- a) Main anchor – This was a 35lb CQR plough anchor attached to the chain via a galvanised shackle with an un-moused pin all in fair condition. All moving parts were free and the anchor was not excessively worn or slack at the pivot between neck and shank. The anchor's weight and type are considered adequate for the vessel. There was provision to secure the anchor to the deck. There was a single roller on either side of the gammon fitting in fair condition.
- b) Main anchor cable – There was 78m of 8mm chain in fair condition. The chain was considered adequate size and length. The bitter end was not seen below the chain. This should be tied fast and readily cut with a knife in an emergency. An aft facing hawse pipe was fitted to the fore deck, secure and in good condition.
- c) Kedge Anchor – A fisherman's anchor with a removable stock was seen in the after cabin with a short length of chain. All in good condition and of adequate size, though a length of warp was needed. A second smaller fisherman' anchor with a removable stock, a length of chain and warp was seen in the port cockpit locker, in fair condition.
- d) Windlass – There was no windlass, though a switch and cable for a windlass were seen.
- e) Mooring cleats and fair leads – There were four bronze mooring cleats, two in the bow, two in the stern. Backing plates were seen where bolt fastenings were to the deck and not through deck beams. All in good condition and secure to the deck. There were two bronze fairleads in the bow, two just forward of the main mast and two in the stern. A Sampson post was fitted on the aft deck. All in good condition and secure to the deck
- f) Fenders - Five fenders seen in fair condition and serviceable, though soft.



F.2. Bilge pumping arrangements

- a) Manual pump - There was a large manual bilge pump fitted in the starboard cockpit locker with a handle stowed beside it. The pump was tested and operated effectively. Its capacity is not known but is considered adequate based on its size. The strum box was secure below the engine. Where seen the hose was in fair condition and secure.
- b) Electric pump - There was a Jabsco electric pump rated at 36 litres per minute. It could not be operated as the batteries had no power. The strum box was secure below the engine. No automatic float switch was seen.
- c) Hoses - Hoses were in serviceable condition. The outlets for both pumps were on the starboard topsides by way of the cockpit. The hoses were not looped below the deck. As the manual pump was level with the outlet, this is of no concern. The hose for the electric pump, however, should be looped below the deck to reduce the risk of siphoning.

Recommendation (Level A) – Check electric bilge pump once power is restored to the batteries

F.3. Davits and Boarding Ladders

There were no davits and no boarding ladder.

Recommendation (Level A) – Fit or carry a boarding ladder extending 600mm below the water.

F.4. Navigation Lights

The navigation lights could not be tested as the batteries were fully discharged. They were as follows:

- 25W white stern light fitting on pushpit – approved fitting – Bulb wattage not checked.
- 25W red and green bi-colour light fitting on pulpit - approved fitting. Bulb wattage not checked.
- A tricolour on the main mast – wattage not checked.
- Steaming on main mast. Bulb wattage not checked
- Deck light on main mast.

It is thought that with the addition of an anchor light, the vessel's navigation lights will conform to the Collision Avoidance Regulations though bulb wattage was not checked.

Recommendation (Level A) – Check all navigation lights once power is restored to the batteries. Fit an anchor light.

F.5. Firefighting equipment

a) Fire extinguishers – 1 x 1 kg BC dry powder, rated 34B/C secure by main companionway. No service record seen. Gauge showed adequate pressure. Manufacture date 2013. A second extinguisher was seen in the cockpit locker, thought to be decades old and should not be relied on. Fire extinguishers should be serviced annually (plus a discharge test at five years and replacement after ten) or replaced every five years. Both fire extinguishers were in need of replacement. For a vessel of this size, the RYA recommends fitting at least one fire extinguisher with a minimum fire rating of 13A/89B **at each** exit to the open deck from each accommodation space: in this case, one in the main cabin, one in the galley and one in the aft cabin. An automatic extinguisher in the engine compartment is suggested.

b) Smoke alarms – No smoke alarm was seen in the galley or engine compartment. Consideration should be given to fitting these.

c) Fire Blanket – A fire blanket complying to BS6575 1985 was seen in the galley. This standard was superseded in 1997 and replaced by BSEN 1869. Consider replacing the fire blanket.

Recommendation (Level A) - Before she is used, replace the fire extinguishers and add at least one, both to at least 13A/89B rating.

Suggestion - Consideration should be given to fitting a smoke alarm in the galley and engine compartment, replacing the fire blanket and fitting an automatic fire extinguisher in the engine compartment.

Additional information can be obtained from the RYA website:

<http://www.rya.org.uk/infoadvice/safteytips/Equipment/Pages/fire.aspx>



F.6. Lifesaving equipment

The following lifesaving equipment seen aboard:

- An automatic XM inflatable lifebuoy with line, drogue and light seen on the pushpit, not tested or inspected
- No dan buoy was seen aboard (although included in sales particulars)
- No flares were seen aboard (although included in sales particulars)
- 4 lifejackets seen without crutch straps or spray hoods.

Recommendation (Level A) – Carry appropriate lifesaving equipment (consult RYA) including the following:

- **A lifejacket for each crew-member with crutch straps and a spray hood each**
- **Safety harness for each crew member**
- **Flares including hand held white**
- **Hand bearing compass**
- **Radar reflector**
- **First Aid kit**
- **Other equipment is recommended for offshore passages**

More information can be obtained from the RYA.

<http://www.rya.org.uk/infoadvice/safetyinfo/Pages/pvequipment.aspx>

The RNLI operate free inspection and advice service concerning levels of safety equipment (SEA Check) and can be contacted on 08003280600 or via <https://rnli.org/Pages/All%20forms/142-enquiry-sea-check.aspx>

F.7. Navigation equipment

The following were seen aboard. None were operated as batteries were fully discharged.

- Plastimo Contest 130 helmsman's compass at wheelhouse steering position – checked with a hand bearing compass and found to be reading approximately the same. When deflected the card returned to the same place.
- Smiths log/speed in cockpit.
- Seafarer 700 Depth plus repeater in cockpit.
- Raytheon ST6001 autopilot controls in cockpit. Fluxgate compass for the autohelm seen fitted on bulkhead to port of the aft cabin hatch. Drive motor was secure by wheel.
- Swiftech M168 VHF. This was not a DSC radio. An aerial was seen at the top of the main mast.
- Clocks, and barometer– not tested

Day shapes were seen aboard (steaming triangle and anchor ball). No emergency VHF aerial. A Navtex aerial (though no receiver was seen).

Recommendation (Level A) – Check navigation equipment when battery power is restored. Carry emergency VHF aerial.

F.8. Other inventory items

- Mooring lines** - Various mooring lines seen in serviceable condition.
- Ensign and pole** –not seen.
- Dinghy** – plus seat, paddles and pump seen. Dinghy had been repaired in a number of places. Not inflated.
- Outboard bracket** – On pushpit.

Outboard was not seen though one is listed on the sales details.

G. Accommodation and on-board systems

G.1. Accommodation General

Overall the accommodation was in fair to good condition. Upholstery, not seen. The teak cabin sole boards were in fair condition.



The layout is unusual with galley immediately aft of forepeak/heads. Two hanging lockers aft of the galley. Two single bunks in main cabin. Double berth and seat in aft cabin.

Ventilation was good with opening hatches and opening lights in all cabins and three bronze mushroom ventilators (seized or very stiff, but tight and secure) in coachroof over the galley and main cabin.

G.2. Gas Installation

This is not a gas safety check or certificate, that is only obtainable after assessment by a qualified person listed on the Gas safe register www.gassaferegister.co.uk. The gas was not turned on nor was any gas appliance tested as it was not considered sufficiently safe.

- a) Bottle storage: One butane bottle in an open topped, plywood gas locker in the starboard cockpit locker. This drained overboard through a flexible hose to the port side just above the waterline. Bottle was secure. The vent overboard was approximately 10mm diameter and should be larger. 19mm is considered a minimum. Skin fitting and hose attachment not seen internally as this was behind the water tank. A second unsecure bottle was seen in the same cockpit locker, outside the gas locker. Fitted directly to the bottle, there was a pressure gauge facilitating leak detection.
- b) Regulator position and condition: The large Calor regulator and cut off valve were outside the gas locker. Both should be in the locker with no flexible hose outside. The regulator was corroded external. The regulator should be replaced with one fitted inside the gas locker, with flexible hose to or from it to allow movement of the bottle. Flexible hose to be attached to a male fitting fastened to the gas locker side with copper pipe beyond. This may mean enlarging the gas locker which would not be difficult.
- c) Flexible hose: No date was seen though the condition was poor. This hose is expected to have a five year service life. There were single clips on the hose. The hose should be replaced when above work is done.
- d) Copper gas pipe on low pressure side to cooker: Fair to poor condition where seen. Replace when other work is done (see above and below).
- e) Connections and flexible hose to cooker: A 'T' fitting was seen under the starboard main cabin bunk to a cut off valve for a gas heater (removed). The T fitting should be removed and replaced with a single length of copper pipe from the regulator to the flexible hose at the galley. Shut off valve seen in hanging locker aft of the cooker, clearly visible and accessible. As recommended, the valve was not a needle type. The flexible hose from shut of valve to cooker was not armoured and the hose was not fouling on the cooker. No date seen on hose but in fair condition. Where the hose passes through the bulkhead insulation tape has been applied to minimise chaff damage. A rubber grommet would be more effective.
- f) Cooker and other appliances: Nelson Spinflo cooker condition was fair though flame failure devices not tested. Cooker not gimbaled. There was an opening hatch above the galley. No other appliances and none requiring flues.
- g) Leak detectors: No gas alarm nor leak bubble tester was seen though a pressure gauge seen on the high pressure side would facilitate leak detection. Consider fitting a gas alarm.

Recommendation (Level A) – Fit new regulator inside the gas locker. Fit new flexible hose between bottle and regulator. Fit larger gas locker drain hose and skin fitting (19mm minimum). Replace copper pipe with a single length from the regulator to the cooker shut off valve. Cut a slightly larger hole in the bulkhead and fit rubber grommet where flexible hose passes through bulkhead.

Suggestion – Consider replacing flexible hose to the cooker.

G.3. Electrical installation

- a) Batteries and charging – There were two 12v DC batteries to starboard of the engine (amp hrs not seen). There was a volt meter on the instrument panel in the main cabin. Batteries were secure. A four-way isolating switch was seen below main companionway. Both batteries were fully discharged and could not be tested. Charging from the engine was by a single alternator (rating not seen) and a Sealey 240v charger. It is likely that the batteries will not fully recover and provision may need to be made for their replaced.
- b) Circuit protection – 12v DC circuits had switches on a panel starboard of companionway. All switches operated but could not be tested.



c) Cabin lighting –Numerous cabin lights. None seen working due to lack of power.

d) 240 volt shore power – 240v AC shore power was fitted with an RCD and three MCBs for battery charger and two ring mains: forward and aft cabins. The ring mains had sockets in aft cabin, main cabin, and galley. The RCD trip was not tested as power could not be connected. There was no galvanic isolator. The system was earthed.

Recommendation (Level A) – Perform drop-charge test on batteries once they are fully charge to assess their effectiveness at holding a charge. Test RCD.

G.4. Fresh water tanks and delivery

The galvanised steel tank was to port of the engine. Access was very limited without removing fastened panels. The water filler unit, cap and seal on the port fore deck were secure and seal serviceable. The tank vent and filler hose were not seen internally. The tank was corroded especially around the outlet and should be removed and recoated. This would also facilitate enlargement of the gas drain skin fitting. Freshwater delivery was by copper pipe in fair condition where seen. Delivery was to two foot pumps in galley and aft cabin. Both pumps operated effectively.

Recommendation (Level B) – Remove and repaint water tank.

G.5. Heads

The Baby Blake manual sea toilet securely mounted with direct overboard discharge was in fair condition though outlet pump seized and needs freeing/servicing. Hoses in fair condition, outlet clips were sound to the hammer, inlet clips corroded and loose. Single clips on pump end of both inlet and outlet, where these should have double clips. No anti-siphon loops, though seacocks well below WC and seacocks are on the centreline so siphoning is unlikely.

Recommendation (Level A) – Replace inlet hose clips and ensure all hoses have double clips.

Recommendation (Level B) – Service WC outlet pump.

G.6. Heating and refrigeration

No heating or refrigeration

H. Security

Insurers may not honour claims arising from theft if insufficient measures have been taken. For details, policy wording, insurers and the Financial Ombudsman Service should be consulted. **Main cabin and aft cabin access** – Secure and lockable with barrel locks on both sets of doors. **Deck hatches** –Lockable and adequate. **Cockpit lockers** – Fit means of locking these.

Recommendation (Level B) – Fit locks to cockpit locker lids.

I. Declaration

This report is as true and accurate a description of the vessel as could be ascertained at the time of the survey, but no guarantee is given or implied.

Andrew Edmond (18th April 2014)