fieldhouse yacht surveys

FAR HORIZON

Pre-Purchase Survey

Completed for
Tom Smith,
99 Taunton Road,
Bridgwater,
Somerset,
TA65 1AB
On 16th February 2013

Inside front cover

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LAW AND JURISDICTION

This document is to be construed under English Law and English Law shall be used in interpreting the document and for resolving all claims or disputes arising out of or connected with the document.

LIMITATIONS

Where access was restricted by fixed panels, linings etc, it was not possible to examine the vessel behind these and it cannot be stated that these areas are free from defects.

1 INTRODUCTION

1.1 The primary aim of this document is to report on the factual condition of FAR HORIZON at the time of the survey. Where the equipment has been inspected or tested and found to be in an unsatisfactory condition, recommendations for rectification, repair or replacement will be detailed in this report. These recommendations will be assigned one of the five categories detailed in Appendix 1 on page 31. For clarity, all recommendations will be printed in upper case and red font thus: RECOMMENDED.

1.2 Where reference is made to the condition, this must be considered in relation to the age of the vessel.

1.3 This survey was carried out in accordance with instructions received from Tom Smith of 99 Taunton Road, Bridgwater, Somerset.

1.4 The vessel was inspected whilst ashore in slings and also whilst afloat at Shepperton Marina, London, on 16th February 2013.

1.5 The survey was conducted by Nic Fieldhouse, Principal Surveyor of Fieldhouse Yacht Surveys.

1.6 The survey was carried out in accordance with agreed terms and conditions, and with relevant codes of practice published by the International Institute of Marine Surveying.

1.7 Those present during the survey were:

Eur Ing Nic Fieldhouse BEng (Hons) CEng MIMechE Affil-IIMS.	Marine Surveyor, Fieldhouse Yacht Surveys
Tom Smith	Client

2 SUMMARY / RECOMMENDATIONS

2.1 FAR HORIZON was seen to be a good example of an early 1990's Vrijbuiter Motor Cruiser. For the last ten years, she has been cared for by her current owner.

2.2 The hull of FAR HORIZON has been carefully maintained, with the current hull protection system in good order. The topsides were coated with a white paint system. This was examined and found to be in generally firm condition, carried out to a high standard and adhering well to the shell and with no sign of exfoliation. There was no sign of the paint coat crackling or flaking. This indicates that compatible paints had been used.

2.3 The hull below the waterline and the hull bottom was coated with epoxy paint. This was examined and found to be in generally firm condition, carried out to a high standard and adhering well to the shell and with no sign of exfoliation. There was minor evidence of flaking in some areas under the waterline, but this was between the top coat of epoxy and the layer underneath.

2.4 The superstructure was in sound condition. The paint was examined and found to be in generally firm condition, carried out to a high standard and adhering well to the plate.

2.5 FAR HORIZON was fitted with a Volvo Penta TAMD 41B six cylinder, fresh water cooled diesel engine, driving through a reduction gearbox. The engine and gearbox were found to be in serviceable condition and were very clean with no sign of leaking oil, external surface corrosion or overheating.

2.6 The vessel's electrical and mechanical systems were found to be in generally good working order and well maintained. The intruder alarm system requires mending.

2.7 The interior trim and furnishings of FAR HORIZON had similarly been well cared for and remained in clean condition with little sign of wear & tear.

2.8 There are three **type A2 recommendations** that must be addressed after the vessel is relaunched but MUST be repaired before the vessel is taken cruising or used for accommodation purposes:

2.8.1 Gas shut-off valves for the cooker hob and refrigerator were located in the sink unit beneath the sink and near to the appliances. Adjacent to these two shut-off valves were two redundant valves. One was suitably sealed by a terminating cap but the starboard-most valve was not terminated. It is RECOMMENDED (type A2 recommendation) that this valve is correctly sealed with a terminating cap (see paragraph 5.5.5.4).

2.8.2 It is RECOMMENDED (type A2 recommendation) that two buckets are stowed for the purpose of bailing water. These should be between 9 and 14 litres in capacity (see paragraph 6.1.1).

2.8.3 One dry powder extinguisher was attached to the inside of a cupboard door, just to the left of the cabin helm. This extinguisher had no visible expiration date and no pressure gauge. It is RECOMMENDED (type A2 recommendation) that this extinguisher is replaced. Additionally, the new extinguisher should be located in a prominent position in the aft cabin (see paragraph 6.3.2).

2.9 There are four **type C recommendations** that do NOT require immediate attention but are to be dealt with in a specified time period:

2.9.1 The hull plating was found to be corroding around the perimeter of the stainless steel anchor rubbing plate, located on the starboard bow. At present this defect is only cosmetic with minor rust streaks showing on the topside coating. It is RECOMMENDED (type C recommendation with an implementation time of two years)

that the stainless steel plate is removed, the corrosion treated and the affected area protected by a suitable paint system (see paragraph 5.1.3.2).

2.9.2 There were two locations on the hull where the paint coating had been damaged at the waterline, revealing the hull plating. It is RECOMMENDED (type C recommendation) that the corrosion is treated and the affected area protected by a suitable paint system. This should be performed within a 2 year period or within 1 year if the vessel is to be kept in a salt water environment (see paragraph 5.1.4.1).

2.9.3 The exterior surfaces of the rudder stock tube were not accessible for examination as the rudder stock was installed within the tube at the time of survey. The surfaces of the rudder stock tube that were internal to the vessel were inspected and found to be free of corrosion. It is RECOMMENDED (type C recommendation) that in the next five years, the rudder stock is removed and the stock tube is cleaned, any corrosion removed and then treated with an appropriate paint system (see paragraph 5.1.4.4).

2.9.4 The caulking compound on the wooden deck covering was found to be weathered and was losing adhesion to the adjacent planking. It is RECOMMENDED (type C recommendation, with an implementation time of two years) that the old caulking is cut out and replaced (see paragraph 5.3.2.1).

3 SCOPE

3.1 The vessel was inspected whilst ashore in slings and also whilst afloat. Whilst ashore on the hardstanding there was good, all-round access to the exterior of the hull. The only obstructions were those presented by the lifting slings. It was not possible to ascertain the condition of the hull plating in these areas.

3.2 Internal inspection was limited to the areas that are normally accessible directly or through lockers, inspection hatches, removable panels, etc. No part of the vessel was dismantled; no bolts were removed for inspection and no linings removed. Consequently, any part of the vessel, her equipment or fittings, which were unexposed or inaccessible, cannot be confirmed to be free from defect.

3.3 We have not inspected metalwork or other parts of the structure which are covered, unexposed or inaccessible and we are, therefore, unable to report that any such part of the structure is free from defect.

3.4 The vessel and her equipment were not assessed for design or suitability for any particular purpose, or compliance with any rules, regulation, standard or code.

3.5 Note that the terms “serviceable” or “serviceable condition”, as used in the report, means that the item remained usable, despite possible wear or deterioration. The item may nevertheless require maintenance or replacement in due course.

4 THE VESSEL

4.1 DETAILS

Name	FAR HORIZON
Hull ID number	12345 B.R. 1991
SSR number	993325
Built and fitted out by	Vrijbuiter, Holland
Model	44’
Type	Steel Motor Cruiser
Build date	1991
Engine manufacturer	Volvo Penta
Engine type	TAMD 41B
Engine power	165 HP

Table 1: Vessel Details

4.1.1 FAR HORIZON was seen to be a 44’ length hard chine, semi-displacement motor cruiser built by Vrijbuiter of Holland in 1991. The vessel layout consisted of a foredeck with side decks leading past the living accommodation to the aft deck. A bridge deck was positioned above the main saloon area.

4.1.2 The interior of the vessel consisted of a double berth with heads compartment in the forepeak. Aft of the forepeak is the main saloon, galley and navigation / helm area. The aft accommodation consisted of a double bed, various storage lockers, a heads compartment and shower / sink compartment.

4.1.2.1 The vessel was of all welded construction and the hull bottom and hull sides were built from a nominal 8mm mild steel plate. The plate seams were butt welded with flush seams and run from end to end.

4.1.3 The hull bottom, sides and topsides were treated with epoxy paint.

4.1.4 FAR HORIZON was powered by a Volvo Penta TAMD 41B six cylinder, fresh water cooled diesel engine producing 165 HP. The engine, generator, fuel & fresh water tanks and associated equipment were located under the sole boards in the main saloon area.

4.2 DIMENSIONS

Dimension	Metres	Feet / inches
Length maximum	13.14	43 ft 1 inch
Beam maximum	3.66	12 ft 0 inches
Draught	1.22	4 ft 0 inches

Table 2: Vessel Dimensions (Published data)

4.3 INSPECTED DOCUMENTATION

During the course of the survey, the following documents were inspected.

4.3.1 Environment Agency Licence

Registration number:	F0013678
Valid until:	31st December 2012.

4.3.2 British Waterways Boat Safety Scheme Certificate

Serial number:	987456
Date of examination:	14th September 2011
Valid until:	15th September 2015

5 THE SURVEY

5.1 HULL EXTERIOR

5.1.1 Material & Details of Construction

5.1.1.1 The vessel was of all welded construction and the hull bottom and hull sides were built from a nominal 8mm mild steel plate. The plate seams were butt welded with flush seams and run from end to end.

5.1.2 General Appearance

5.1.2.1 The hull was sighted from a distance fore and aft and visually inspected all round. Her lines were symmetrical, fair and true, with no signs of distortion or deformation.

5.1.3 Topsides

5.1.3.1 The topsides were coated with a white paint system. This was examined and found to be in generally firm condition, carried out to a high standard and adhering well to the shell and with no sign of exfoliation. There was no sign of the paint coat crackling or flaking. This indicates that compatible paints had been used.

5.1.3.2 The hull plating was found to be corroding around the perimeter of the stainless steel anchor rubbing plate, located on the starboard bow, as shown in Figure 1. Previous treatment of this area to prevent rusting has been partially successful, but the paint coating was seen to be bubbling, suggesting that corrosion is continuing under the paint. At present this defect is only cosmetic with minor rust streaks showing on the topside coating. It is RECOMMENDED (type C recommendation) that the stainless steel plate is removed, the corrosion treated and the affected area protected by a suitable paint system. The stainless steel plate should then be re-fastened, using a suitable mastic sealant to prevent water from penetrating the gap between the stainless steel plate and the hull. This should be performed within a 2 year period, to prevent the corrosion from progressing too far.

Figure 1: Corrosion around edge of anchor rubbing plate

5.1.3.3 The vessel was fitted all round at the deck edge with a rubbing strake constructed of welded mild steel tube. Additional protection to the rubbing strake on the hull sides was provided by a 'D' section stainless steel strip that was fastened to the tube by stainless steel machine screws. These were examined all round and found, apart from a few minor scuff and contact marks, to be in generally fair condition and well secured.

5.1.3.4 Protection to the edge of the bating platform was provided by two parallel rubbing strips, constructed from extruded aluminium and rubber. These were examined and found to be in fair condition and well secured.

5.1.3.5 The main engine exhaust gases and coolant exited the hull on the port and starboard sides at a point just above the waterline and then were ducted to the stern through stainless steel pipes that were welded to the hull. The forward end of the port exhaust pipe had suffered minor impact damage.

5.1.4 Hull Below the Waterline

5.1.4.1 The hull below the waterline and the hull bottom was coated with an epoxy paint. This was examined and found to be in generally firm condition, carried out to a high standard and adhering well to the shell and with no sign of exfoliation. There was minor evidence of flaking in some areas under the waterline, but this was between the top coat of epoxy and the layer underneath.

5.1.4.2 There were two locations on the hull where the paint coating had been damaged, revealing the hull plating. These are shown in Figure 2. It is RECOMMENDED (type C recommendation) that the corrosion is treated and the affected area protected by a suitable paint system. This should be performed within a 2 year period or within 1 year if the vessel is to be kept in a salt water environment.

Figure 2: Two locations of hull coating penetration

5.1.4.3 The hull plating was visually examined and found flat and with no sign of hog or sag. The welding of the plate seams and butts were specially examined and found to be well formed.

5.1.4.4 The exterior surfaces of the rudder stock tube were not accessible for examination as the rudder stock was installed within the tube at the time of survey. The surfaces of the rudder stock tube that were internal to the vessel were inspected and found to be free of corrosion. It is RECOMMENDED (type C recommendation) that in the next five years, the rudder stock is removed and the stock tube is cleaned, any corrosion removed and then treated with an appropriate paint system.

5.1.4.5 Bilge plates approximately 2.5m long and constructed from steel plate and round bar were welded to the hull on both sides. The condition of the bilge plate coating was the same as for the rest of the hull below the waterline. There was no evidence of distortion or impact damage.

5.1.5 Hull Thickness Measurements

5.1.5.1 The hull below the waterline was subjected, where access allowed, to an ultrasonic thickness (UTS) examination.

5.1.5.2 A matrix of selected points was marked on the hull using chalk. These were located along the waterline and under the bottom in areas where the maximum corrosion may be expected. The marks were spaced approximately 0.5 metres apart along the length of the vessel. The hull thickness at these locations was measured ultrasonically. The instrument used was an independently calibrated Cygnus 2, with serial number 4319, last calibrated 12th June, 2009. With this machine it was not necessary to grind off the surface coatings as it is able to read through coatings up to 6 mm thick.

5.1.5.3 Accuracy of the instrument was checked at the time of the survey on a section of the vessel of known thickness (measured by vernier gauge). This location was the steel bar of the keel, just forward of the lower rudder bearing. The tolerance of the instrument readings are ± 0.1mm.

5.1.5.4 Table 3 shows the UTS measurements taken of the hull plating.

5.1.5.5 It should be noted that UTS measurements, however closely spaced, do not give any guidance as to the condition of the other side of the plate being surveyed where it was hidden behind interior fittings and linings. This means that the condition (existence of corrosion, rusting or pitting) of the other side of the plate cannot be guaranteed.

5.1.5.6 The thickness readings given in each case are in millimetres and it is emphasised that the readings shown give no guarantee that the same thicknesses apply to other parts of the shell.

5.1.5.7 Where measured, the thickness readings were found to be between 7.0 and 8.2mm. In consideration of the good condition of the hull coating, it is likely that the original plating thickness was 8.0 ± 0.1mm, suggesting that only minor surface corrosion of the hull plating has occurred.

Table 3: Ultrasonic Thickness Measurements of Hull Plating

		stern (waterline)																								stem
	Approx distance from stern (metres)	**0**	**0.2**	**0.4**	**1**	**1.5**	**2**	**2.5**	**3**	**3.5**	**4**	**4.5**	**5**	**5.5**	**6**	**6.5**	**7**	**7.5**	**8**	**8.5**	**9**	**9.5**	**10**	**10.5**	**11**	**11.5**
PORT	waterline	8.0 & 8.1	8.4	7.8	7.9	8.1	8.1	8.1		8.1	8.0	8.0	8.1	8.1	7.9	8.1	8.1	7.9	7.9	7.9	7.9	7.9	7.9	8.2	8.0	7.9
	bottom, 100mm from side		8.6	8.4	8.0	8.0	8.2	8.0	8.0	8.2	8.0	8.0	7.9	8.0	8.1	8.1	7.9	7.9	7.9	8.0	7.9	8.0	7.9	8.0	8.0	8.0
	bottom, 300mm from centreline		8.4	8.4	7.4	8.2	7.9	8.1	8.1	8.1	8.0	7.7		8.0		8.1	7.8	8.0	8.0	8.1	8.0	8.0	8.0	8.0		
	keel		7.6			7.9		7.9		7.7		8.0	8.0		7.9											
STARBOARD	keel		7.4		7.9		7.9	7.9	7.9	7.9	7.9		8.0	7.9	7.7											
	bottom, 300mm from centreline		7.7	8.0	7.9	8.0	8.0	8.1	8.1	7.7	8.0	7.9	7.9	8.1	7.9	8.0	8.1	7.9	8.0	8.0	8.0	7.9	7.9	7.9		
	bottom, 100mm from side		7.9	7.9	7.9	8.0	7.9	8.1	8.1	7.9	7.9	7.4	7.9	7.9	8.0	8.0	7.9	8.1	8.0	7.9	7.9	8.0	7.9	7.9	7.9	7.4
	waterline	7.0 & 7.2	7.3	8.0	7.8	7.9	7.9	7.9	7.9	7.9	8.0	8.1	7.8	7.9	7.8	7.9	8.0	8.1	8.1	8.2	8.2	7.2	8.1	7.9	7.9	7.8

5.1.6 Rudder, Skeg & Steering

5.1.6.1 The rudder was of semi-balanced double plate type, constructed of mild steel with the blade continuously welded to the mild steel rudder stock. It was found in generally good condition and free from damage, cracks or corrosion. The wear in the rudder bearing surfaces was found to be minimal with almost not discernible movement in the bearings.

5.1.6.2 The rudder was not dismounted in order to examine the part of the stock that was inside the hull, therefore no guarantee can be given that this was straight or in good condition.

5.1.6.3 The mild steel skeg was inspected and found to be free of distortion and corrosion, with the paint intact.

5.1.6.4 The steering was hydraulically operated, with a hydraulic push-pull cylinder attached to a short tiller arm on the end of the rudder stock. The hydraulic cylinder and tiller were located under the aft cabin berth. The cylinder, tiller and associated pipework was inspected and found to be free of wear, leakage or corrosion.

5.1.6.5 The steering was operated from the helm on the bridge deck or from the helm in the main saloon area. A change-over switch located next to the wheel in the saloon area allowed the vessel to be steered from one location at a time.

5.1.7 Skin Fittings, Valves and Seacocks

5.1.7.1 No skin fittings, seacocks or valves were dismantled as part of the survey but the following tests were performed:

- Examination from outside and inside the vessel
- All valves opened and closed to their full extent
- Where accessible, the fixing bolts and nuts were hammer tested
- The through-hull fittings, valves and seacock bodies were hammer tested
- The fittings were aggressively tested to assess their security of attachment to the hull
- Hose clips were inspected and hoses were aggressively tested

5.1.7.2 There was clear access inside the vessel to all valves and seacocks.

5.1.7.3 All fittings below the waterline were bronze or welded steel pipe (apart from the plastic speed impellor and depth transducer), were in serviceable condition and showed no signs of dezincification.

5.1.7.4 It was not possible to survey all the associated spigots and pipe work in detail. All that we were able to survey appeared in satisfactory condition with the connections in good order, secure and no evidence of water ingress or leakage.

5.1.7.5 Table 4 and Figure 3 below show the location and function of the through-hull penetrations.

No.	Above / below waterline	Function	Fitting material
1&2	Below	Anode, bolted to bracket	Magnesium
3&4	Below	Anode, welded to keel via bracket	Magnesium
5&6	Below	Anode, welded to hull via bracket	Magnesium
7	Below	Speed impellor	Plastic
8	Below	Engine coolant intake	Steel pipe, no seacock
9	Below	Depth transducer	Fitted in steel pipe
10	Below	Forward heads toilet inlet	Bronze
11	Above	Aft cabin, heads sink outlet	Bronze
12	Above	Vent, function not known	Stainless Steel
13	Above	Fresh water tank vent	Plastic
14	50mm above	Forward heads sink outlet	Plastic
15	Below	Aft cabin, heads toilet outlet	Bronze
16	Below	Aft cabin, heads toilet inlet	Bronze
17	Below	Diesel powered generator, cooling water inlet	Steel pipe, with quarter turn seacock
18	Below	Galley sink outlet	Steel pipe, no seacock
19	Below	Forward heads toilet inlet	Bronze
20	Above	Diesel powered generator, exhaust outlet	Not kown
21	Above	Eberspacher heating exhaust	Stainless Steel
22	Above	Anchor locker drain	Steel pipe
23	Above	Black water holding tank pump out	Brass
24	Above	Holding tank vent	Brass / chrome
25 & 26	Above	Engine exhaust gas & coolant vent	Stainless Steel

Table 4: Function and material of skin fittings

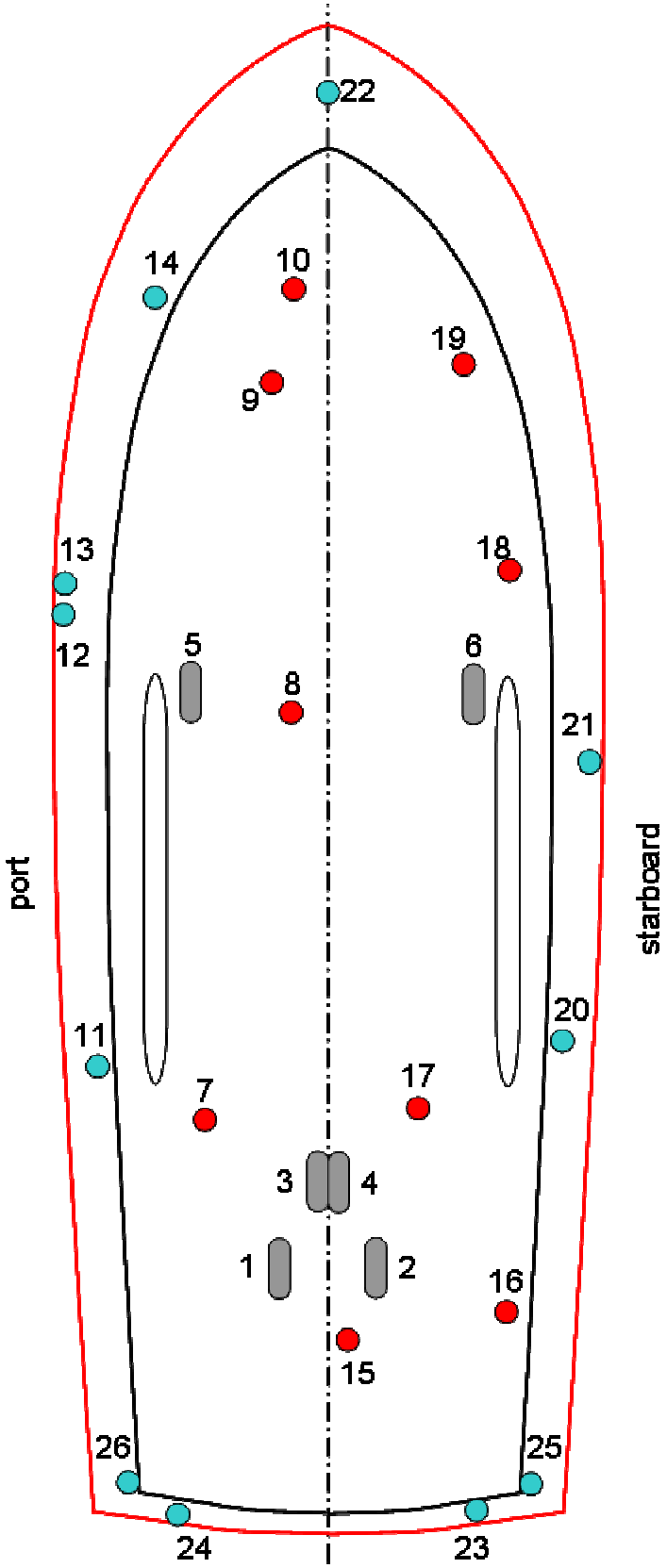

Figure 3: Location of skin fittings (plan view looking from above)

5.1.8 Anodes

5.1.8.1 Two Magnesium bar anodes were through-bolted and four were welded to the hull plating. The two through-bolted anodes were fitted to brackets that were welded to the hull, just forward of the propeller. Two welded-on anodes were attached to each side of the keel, nears to the propeller. A further two welded-on anodes were attached to the hull at the forward end of the bilge plates.

5.1.8.2 An anode was bolted to each of the bow thruster protection grilles. The material composition of these anodes could not be ascertained, but it is possible that they were made from zinc, which does not work as efficiently as zinc in fresh water.

5.1.8.3 The anodes were inspected and found to be approximately 30% consumed. The bolted anode fastenings were inspected and found to be in good condition. Note that the anodes should NOT be painted and should be renewed when about 80% consumed. The securing fastenings should also be examined at every slipping or dry docking and renewed if found to be wasted.

5.2 HULL INTERNAL STRUCTURE

5.2.1 General Appearance

5.2.1.1 Where accessible, the internal surfaces of hull plating were examined. The paint coating was found to be intact and free of cracking or flaking. The hull plating was inspected and found to be generally free of corrosion.

5.2.2 Secondary Supporting Structure

5.2.2.1 The framing and stringers were of mild steel welded angles. Forward of the keel a vertical steel plate was welded to the hull plating to give additional stiffness and strength.

5.2.3 Engine Beds

5.2.3.1 The engine beds were examined and found to be sturdily built and were free of signs of cracks or deformation.

5.3 DECK AND CABIN CONSTRUCTION

5.3.1 Cabin Construction

5.3.1.1 The deck cabin was constructed of mild steel and was examined all over and found in generally good order, reasonably well coated and generally free of rust.

5.3.2 Deck Covering

5.3.2.1 The fore deck, aft deck, bathing platform and bridge deck were covered in teak planking. This was inspected and found to be well secured to the underlying structure with stainless self-tapping screws. All screw heads were found to be covered with teak plugs, a few of which were missing from the anchor locker lid. The caulking compound was found to be weathered and was losing adhesion to the adjacent planking. If left un-treated for a number of years, moisture will penetrate under the planking and may cause lifting of the wood. It is RECOMMENDED (type C recommendation, with an implementation time of two years) that the old caulking is cut out and replaced.

5.3.2.2 The side decks were coated in non-slip grey paint. This paint was free of significant wear, cracking, flaking or deterioration.

5.3.3 Fore-deck Chain Locker and Anchor Windlass

5.3.3.1 The fore-deck chain locker was examined and found to have been coated with black epoxy paint which was in good condition. The steelwork appeared to be in good order and free of corrosion.

5.3.3.2 This locker housed the anchor chain. The locker lid was secured by steel hinges along the aft edge. The manually operated windlass was securely bolted to the locker lid. It should be noted that when the vessel is at anchor, all of the vessel snubbing loads are transferred through the windlass and into the locker lid hinges. It is good practise to release the load from the windlass when at anchor by securing the chain to a strong-point on the vessel, such as one of the fore-deck cleats.

5.3.4 Bridge Deck

5.3.4.1 The bridge deck helm was located centrally on the vessel. There were various controls for the starting & control of the engine and instruments for monitoring the engine. A binnacle compass and control for the bow thruster were also positioned close to the helm.

5.3.4.2 A lightly smoked polycarbonate screen was positioned forward of the controls. Additional shelter for the crew was provided by a beige coloured folding canvas awning, supported by a tubular stainless steel frame. All were inspected and found to in serviceable condition. There was some mildew staining on the canvas awning.

5.3.4.3 There were three white pivoting seats on this deck, one for the helm and one on either side. Aft of these were two wooden storage chests, both of which were found to be lockable and in good condition. A two-seater, vinyl covered settee was located at the aft end of the bridge, also in acceptable condition.

5.3.4.4 A storage space and gas storage locker was located beneath the steering binnacle. See section 5.5.5 for details of the gas system inspection.

5.3.5 Saloon Entrance

5.3.5.1 There were two sliding doors, one on each side of the saloon at the aft end of the side decks. These doors were lockable and closed correctly. A contact switch at each door provided switching signals to the vessel's alarm system, which was found to be out of operation at the time of survey.

5.3.6 Ports, Windows and Ventilation

5.3.6.1 There was one tempered glass & aluminium opening hatch in the aft cabin. The hatch opening was 450 x 450 mm, which was appropriately sized for escape in the event of an emergency. There was no evidence of water ingress around the hatch.

5.3.6.2 There was one timber and polycarbonate opening hatch in the fore peak. The dimensions of the opening were approximately 500 x 800 mm, which was appropriately sized for escape in the event of an emergency. There was no evidence of water ingress around the hatch.

5.3.6.3 There were a total of ten windows in the main saloon area. All were constructed from toughened glass in aluminium frames. The only evidence of water ingress was from the forward facing, opening window in the main saloon. Water ingress from this window has partially softened the wooden trim around the lower corners of the window.

5.3.6.4 There were four sets of sliding windows in the aft cabin area: One on each side of the aft cabin, one in the heads compartment and on in the shower compartment. All were constructed from toughened glass in aluminium frames. There was no evidence of water ingress around any of the windows.

5.3.6.5 The were six round port windows (non opening) in the hull sides in the fore peak area. There was no evidence of water ingress around any of the ports.

5.3.6.6 There was one roof vent in the forward heads compartment, exiting at a plastic dorado vent on the fore deck.

5.3.6.7 There was one cowled vent in the side of the hull, providing ventilation for the aft cabin heads compartment.

5.3.7 Deck Fittings and Equipment

5.3.7.1 The vessel's name was painted on both sides of the main saloon and on the vessel's stern.

5.3.7.2 There were two welded stainless steel mooring cleats on the aft deck. These were in good condition with a very good cosmetic finish and no signs of corrosion. A cast aluminium cleat was mounted along the aft edge of the aft deck at the vessel's centreline. This was in good condition and well secured to the deck.

5.3.7.3 There were two welded stainless steel mooring cleats on the fore deck. These were in good condition with a very good cosmetic finish and no signs of corrosion

5.3.7.4 All cleats were inspected and found to have no signs of hairline cracking and were without undue rope wear.

5.3.8 Guard Rails

5.3.8.1 The vessel was fitted tubular stainless steel guard rails. These were located around all the deck areas.

5.3.8.2 The guard rails on the fore deck were constructed from 25mm diameter stanchions, 33mm upper hand rails and 25mm lower hand rails.

5.3.8.3 The guard rails on the side decks and aft deck were constructed from 25mm diameter stanchions and 33mm hand rail. Additional protection on the aft deck was given by white canvas dodgers that were tethered to the rails and stanchions.

5.3.8.4 The guard rails on the bridge deck were constructed from 25mm diameter stanchions and 33mm hand rail.

5.3.8.5 All stanchions were directly welded to the vessel superstructure and were found to be free of damage or deformation.

5.3.9 Boarding Ladder

5.3.9.1 The tubular welded stainless steel boarding ladder was welded to two of the stanchions on the aft deck of FAR HORIZON. The ladder was adequately stiff and well secured to the vessel. The lower half of the ladder hinged down to a point well below the waterline, which is a useful feature for man overboard recovery.

5.4 PROPULSION

5.4.1 Engine & Transmission

5.4.2 FAR HORIZON was fitted with a Volvo Penta TAMD 41B six cylinder, fresh water cooled diesel engine, driving through a reduction gearbox. Engine speed control was via pivot control levers (one at the helm on the bridge deck and one from the helm in the main saloon. Forward and reverse gear was selected by a push-pull control linkage.

5.4.3 The engine hour meter indicated 2131 hours. It should be noted that this differed from the figure of 1900 quoted on the broker's website.

5.4.4 The engine starting method was by electric starter motor.

5.4.4.1 The engine stop pull handle was mounted near to the helm. It operated with full and free movement.

5.4.4.2 The engine was solidly mounted and bolted to adequate steel bearers securely attached to and forming part of the secondary supporting structure of the hull.

5.4.4.3 The engine and gear box were examined externally - without opening up - and found in generally good, clean condition and the installation as a whole appeared to be in good order. The machinery was superficially clean, free of rust and oil leaks. There was no obvious sign of cracking in any parts of the engine or gearbox. There was no evidence of overheating.

5.4.4.4 The exhaust was of the wet type and the manifold and pipe appeared to be sound, without breaks or fractures and there was no sign of carbon deposits indicating either gas or other leaks into the machinery space.

5.4.4.5 The final part of the survey inspection involved the movement of the vessel from the marina to its berth. This enabled further examination of the engine and its condition.

5.4.4.6 The engine started readily from cold without any excessive smoke.

5.4.4.7 When underway and under load, no fuming was noted in the engine space. No leaks from the fuel and exhaust systems were evident.

5.4.4.8 Ahead and reverse gears engaged normally.

5.4.5 Fuel System

5.4.5.1 The main fuel tank was made from welded mild steel and was formed partly by the hull plates. A stop tap was correctly fitted to the outlet pipe of the tank.

5.4.5.2 The fuel filler cap was located on the port side deck and was found to be suitably labelled.

5.4.5.3 Access to the fuel tank was limited. The visible parts of the fuel tank were clean and free of damage and corrosion.

5.4.5.4 The fuel filters, fuel lines and connections were in sound condition.

5.4.5.5 The fuel piping ran clear of the bilges and appeared to be in good condition with no signs of corrosion or mechanical damage.

5.4.6 Stern Gear

5.4.6.1 The left handed, fixed pitch, three-bladed propeller was made from Manganese

Bronze. Diameter was 510mm.

5.4.6.2 The propeller was examined and found in generally good condition with no damage to either the tips or the leading and trailing edges and there was no sign of corrosion or dezincification in the metal. The propeller blades were also individually sighted for obvious signs of deformation and none was found. It was not possible to check the condition of the shaft key and keyway.

5.4.6.3 The propeller blade was secured by a Manganese Bronze nut and stainless steel split pin. All were inspected and found to be free of damage or corrosion.

5.4.6.4 The exposed section of the mild steel propeller shaft was in good condition and as far as could be ascertained, the alignment appeared to be correct.

5.4.6.5 The stern gland, which was of the bolted gland type, was examined - without opening up - and found in generally good condition with very little wear. The gland was grease lubricated and there was no sign of excessive leakage.

5.4.6.6 A rope cutter was fitted just forward of the propeller. It was constructed from stainless steel and was the single-piece type, commonly fitted where the gap between the propeller and shaft bearing is small, which does not permit the installation of the more efficient two-part cutter.

5.5 SYSTEMS AND SERVICES

5.5.1 Anchor and Chain

5.5.1.1 The main anchor was stowed on the starboard bow, with the anchor's shank pulled up into the hawse pipe. An air filled plastic ring protected the anchor rubbing plate from the anchor (see Figure 1).

5.5.1.2 The anchor was a Danforth type, made from galvanised mild steel and painted with a silver-grey paint. There was no visible marking on the anchor to indicate its mass.

5.5.1.3 The anchor was attached to a length of chain. The anchor chain was made from short plain linked galvanised steel. Dimensions of the chain were 8mm x 40mm x 27mm. The chain was found to be in good condition and was attached to the anchor locker bulkhead by a threaded stud.

5.5.2 Bow Thruster

5.5.2.1 FAR HORIZON was fitted with an electrically powered Vetus bow thruster and was controlled from the bridge deck or from the helm in the main saloon. The bow thruster was powered by two 120Ah lead-acid batteries located in a vented compartment beneath the fore peak berth. The two 12 volt batteries were connected in series to give 24 volts supply to the bow thruster. The bow thruster was tested and was found to function correctly.

5.5.2.2 The bow thruster was protected from debris ingress by two fabricated steel grilles, each one attached to the hull on the end of the thruster tube. An anode was bolted to each of the grilles. The material composition of these anodes could not be ascertained, but it is possible that they were made from zinc, which does not work as efficiently as zinc in fresh water.

Fresh Water System

5.5.2.3 At the time of survey the fresh water system was drained down and therefore could not be tested.

5.5.2.4 The fresh water filler cap was located on the port side deck and was found to be suitably labelled.

5.5.2.5 There were two welded stainless steel fresh water tanks. These were located in the main saloon, below the sole boards and above the fuel tank. Where accessible, they were inspected externally and were found to be free of corrosion and adequately secured. The tanks were fitted with stop taps.

5.5.2.6 The water pump was located next to the starboard water tank. Water was supplied via reinforced plastic hose to the aft cabin shower & sink, forepeak sink, and galley sink.

5.5.2.7 Hot water was provided by a 55 litre (12.1 imperial gallons) calorifier located starboard of the main engine. The calorifier is heated by the main engine cooling water.

5.5.2.8 Where accessible, the fresh water system was inspected and found to be in serviceable condition and full working order. Pipes and joins were inspected and found to be free from deterioration, damage, distortion, kinking and signs of leakage.

5.5.3 Black Water System

5.5.3.1 Black water from the aft cabin toilet was stored in a stainless steel tank located under the double bed in the aft cabin. The vent for the tank included a charcoal filter.

5.5.3.2 The level of the black water tank was indicated by a gauge installed in the forward side of the cabin bed.

5.5.3.3 Where accessible, the black water system was inspected and found to be in serviceable condition and full working order. Pipes and joins were inspected and found to be free from deterioration, damage, distortion, kinking and signs of leakage.

5.5.4 Heating System

5.5.4.1 FAR HORIZON had an Eberspächer heating system installed. The heating unit, warm air distribution and exhaust gas piping were inspected and found to be adequately installed.

5.5.5 LPG Installation

5.5.5.1 The gas storage locker was located beneath the steering binnacle on the bridge deck. A total of three 7kg butane gas cylinders were located in the bridge deck locker. The locker door was correctly labelled with a ‘gas shut off’ sign. The cylinder connected to the pressure regulator and one other cylinder were secured to the locker sides by a webbing strap. The third cylinder was loosely stowed and should be tied down securely.

5.5.5.2 One 7kg gas cylinder on the starboard side was connected via a pressure regulator to a flexible rubber hose. This cylinder provides fuel for the four-burner galley hob and refrigerator. The hose was inspected and found to be free from damage, cracking or deterioration.

5.5.5.3 Copper tubing led the supply down to the galley area. Inspection of the copper tubing was limited to parts that were not hidden behind the cabin lining. Where visible, it was found to be well supported and free from corrosion, damage, kinking or distortion.

5.5.5.4 Gas shut-off valves for the cooker hob and refrigerator were located in the sink unit beneath the sink and near to the appliances. Adjacent to these two shut-off valves were two redundant valves. One was suitably sealed by a terminating cap but the starboard-most valve was not terminated. It is RECOMMENDED (type A2 recommendation) that this valve is correctly sealed with a terminating cap.

5.5.5.5 The installation was not further inspected or pressure tested for leaks.

5.5.5.6 Note that this survey is not any kind of gas safety certificate. This is only obtainable after comprehensive pressure testing and assessment by a qualified person listed on the gas safety register. See http://www.gassaferegister.co.uk for further details.

5.5.5.7 A four burner gas hob was found in the galley area, on the starboard side of the main saloon.

5.5.6 Security System

5.5.6.1 The burglar alarm operates a siren mounted in a storage space under the port side deck. The alarm is operated by two door detectors, one on each of the exterior access doors. The alarm system was not tested during the survey. The current owner stated that it was currently out of operation.

5.5.7 Power Generation

5.5.7.1 A Mase Mariner 3500 diesel powered generator was installed under the main saloon sole, aft of the main engine and on the starboard side. The generator was suitably installed on a steel frame that was welded to the hull plating. The generator provides 220 volts ac power to charge the vessel's batteries or to power items such as the microwave oven.

5.5.7.2 The control panel for the generator was located on the side of the main saloon seating, on the starboard side of the saloon and just next to the starboard door to the side deck. The control panel was provided with lights to show low oil pressure and high water temperature. The panel indicated that the generator had been run for 257 hours.

5.5.7.3 The generator started easily from cold and without excessive smoking.

5.5.8 Electrical System

5.5.8.1 FAR HORIZON was fitted with a 12 volt dc, 24 volt dc and 220 volt ac electrical system.

5.5.8.2 220 volt ac power was provided by the Mase generator, from cable-fed shore power or from the vessel's 12 volt batteries (through the Victron inverter). A changeover switch just forward of and to the port of the helm in the main saloon allowed the 220 volt ac power to be switched between generator and shore power.

5.5.8.3 A shore power inlet socket was found on the port side deck, attached to the side of the main saloon.

5.5.8.4 To port of the helm in the main saloon, a Victron 12/1500/50, 1.5kW inverter was found.

5.5.8.5 Ac power was fed to the vessel's 230 volt sockets, microwave oven and refrigerator.

5.5.8.6 12 and 24 volt dc power was provided by five 12 volt batteries, located aft and to port of the main engine, under the saloon sole. The batteries were securely attached to adjacent structure. The batteries were connected to the vessel's distribution system via isolating switches. Domestic power was then distributed via a switch panel. This panel had twelve fused switches and was labelled for the following: navigation lights, anchor, wipers, water, vent, bilge, shower, main lights, font lights, fridge, radio, depth, V.H.F, gas, heating.

5.5.8.7 Two 'windscreen wipers' were installed on the port & starboard forward facing windows. They were tested and the starboard unit was found to be out of operation.

5.5.8.8 Battery charging was also provided by the main engine's two alternators.

5.5.8.9 The electrical system appeared to be designed to minimise the risk of fire and electric shock and was found to be in good order.

5.5.8.10 The wiring that could be seen appeared to be serviceable.

5.5.8.11 The engine control panel was provided with suitable instruments and alarms for effective engine condition monitoring.

5.5.9 Navigation Lights

5.5.9.1 A transom mounted stern light was adequately attached to the stern. Red and green lights were mounted on the sides of the main cabin. These lights were tested and found to function correctly. The starboard light was found to contain moisture on the inside surface of the lens. A steaming light unit was mounted on the front side of the bridge deck.

5.5.10 Navigation Equipment

5.5.10.1 FAR HORIZON was equipped with the following equipment:

Plastimo Olympic 135 bulkhead mounted compasses, positioned to starboard of the helm on the bridge deck.

Simrad Robertson Ap20 Autopilot.

Garmin GPS map 551.

Magellan GPS 315 hand-held GPS.

Lowrance LHR-80 VHF/GPS hand-held marine radio.

VHF Radio (non DSC), Type C402 'Sailor', made by S.P. Radio, Denmark. The current owner stated that the performance of this radio was not good, and suggested that the co-axial cable was not properly terminated.

Clipper Depth gauge.

Speed & distance log.

5.5.10.2 The equipment appeared to be in serviceable condition but was not tested.

5.6 ACCOMMODATION AND DÉCOR

5.6.1 Main Saloon

5.6.1.1 The main living space within FAR HORIZON consisted of the main saloon, helm & navigation area and galley.

5.6.1.2 The interior of this area was finished with oak ply panelling and solid oak cupboard & seat frames. The woodwork was found to be in good condition and free of splits or damage.

5.6.1.3 The soft furnishings were examined and found in generally good order, clean and free of damp & mildew.

5.6.1.4 The curtains were clean and in good condition.

5.6.1.5 The non-fixed and folding saloon table was constructed from oak plywood and solid oak framework. The table was found to be in good condition and free of splits, stains or damage.

5.6.1.6 The saloon contained a television with integral VHS video cassette player, located in one of the corner units.

5.6.1.7 The two sliding doors that gave access to the interior accommodation were at the aft end of the saloon and on either side of the vessel. The steps that lead up to each of these were removed in order to provide access into the spaces under the side decks. Inspection of these spaces found that there were two areas where moisture ingress had caused the wood panelling of the saloon to rot. Figure 4 shows one such area, located beneath the door from the saloon to the port side deck. A similar defect was found on the starboard side. The source of the water ingress that has lead to this rot was not ascertained, but it is likely that it has been caused by rainwater seeping around the door frames and sill. To prevent further deterioration of the interior panelling, the cause of the water ingress should be determined and appropriate steps taken to seal against further ingress.

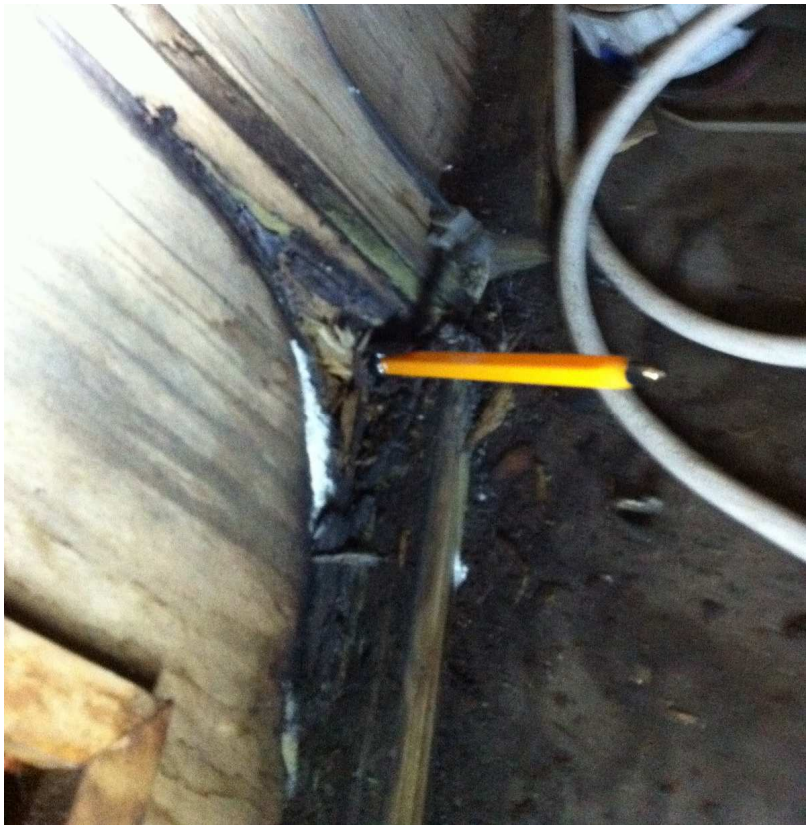

Figure 4: Wet rot – port side, beneath exterior access door in saloon

5.6.2 Galley

5.6.2.1 The galley was equipped with a four burner gas hob. A Panasonic microwave oven (220 volts ac) was located under the worktop located amidships, between the galley and the helm.

5.6.2.2 The round, dark brown enamel sink was supplied with hot & cold water by a monobloc tap.

5.6.2.3 The work surfaces were made from granite-effect melamine and the cupboards made from oak and oak veneered wood.

5.6.2.4 An Electrolux refrigerator was located under the cooker hob. This unit was powered by 12 volts dc, 220 volts ac or butane gas.

5.6.2.5 The fixtures and fittings of the galley were inspected and were found to be in good condition and generally free from damage.

5.6.3 Aft Cabin

5.6.3.1 The aft cabin was accessed from the main cabin via a set of steps leading downwards. It was found to contain a double bed, various storage cupboards, the aft heads compartment and shower compartment.

5.6.3.2 The aft cabin furniture was found to be in good condition and free of damage or stains. The curtains were clean and in good condition.

5.6.3.3 A television and DVD player were found in the aft cabin.

5.6.4 Heads, Aft Cabin

5.6.4.1 The aft heads compartment was situated in the aft cabin and on the starboard side of the vessel. The sides of the compartment were finished with oak veneered panelling.

5.6.4.2 The electric flushing toilet was clean and in full working order. The toilet pump was located within the toilet plinth.

5.6.5 Shower Compartment, Aft Cabin

5.6.5.1 The aft cabin shower and sink compartment was located opposite the heads compartment, on the port side of the vessel.

5.6.5.2 The compartment featured a white sink unit sink unit with monobloc hot & cold chrome plated mixer tap. The sink unit was installed on top of an oak panelled set of storage cupboards.

5.6.5.3 The sides of the compartment were finished with oak veneered panelling and the floor was covered by a white shower tray. The chrome mixer and shower head were mounted on the forward bulkhead of the cubicle.

5.6.5.4 The shower compartment was inspected and found to function normally and was clean and generally free from wear or damage.

5.6.6 Forepeak

5.6.6.1 The forepeak was accessed via steps leading down from the main saloon. It was fitted with a tapered double bunk.

5.6.6.2 The forepeak furniture was found to be in good condition and free of damage or stains. The curtains were clean and in good condition.

5.6.7 Heads, Forepeak Cabin

5.6.7.1 The forepeak heads was located on the port side of the vessel, just aft of the forepeak berth. The sides of the compartment were finished with white panelling and the ceiling was covered in soft wood planking. Natural light was provided by one of the three round port windows (non opening) located on the port hull side.

5.6.7.2 The Lavac toilet was clean and in full working order.

5.6.7.3 A white sink unit sink unit with monobloc hot & cold white coloured mixer tap was

located against the hull side. The sink unit was installed on top of an oak panelled set of storage cupboards.

5.6.7.4 The heads compartment was inspected and found to be clean and generally free from wear or damage.

6 SAFETY EQUIPMENT

6.1 BAILING / BILGE PUMPING

An automatic bilge pump and float switch were located in the underfloor space in the aft cabin area.

6.1.1 It is RECOMMENDED (type A2 recommendation) that two buckets are stowed for the purpose of bailing water. These should be between 9 and 14 litres in capacity.

6.2 SIGNALLING EQUIPMENT

6.2.1 An electrically operated air horn was installed on FAR HORIZON. This was tested and found to function correctly.

6.3 FIRE FIGHTING EQUIPMENT

6.3.1 A total of three dry powder fire extinguishers were found on board. There were two dry powder extinguishers located on the aft end of the table located between the interior helm and the galley. The expiration date could not be located but the pressure gauge on each extinguisher indicated that they were correctly pressurised.

6.3.2 A third dry powder extinguisher was attached to the inside of a cupboard door, just to the left of the cabin helm. This extinguisher had no visible expiration date and no pressure gauge. It is RECOMMENDED (type A2 recommendation) that this extinguisher is replaced. Additionally, the new extinguisher should be located in a prominent position in the aft cabin.

6.3.3 A fire blanket was found located near to the galley sink, was clearly accessible and was located within easy reach of the cooker.

6.4 LIFEJACKETS

6.4.1 Two 150N, gas inflating Crewsaver lifejackets were found hanging in a cupboard in the aft cabin. They were inspected externally and found to be clean and free of mildew.

6.5 MAN OVERBOARD RECOVERY EQUIPMENT

6.5.1 Two hard plastic life rings were fitted to the guardrails on the bridge deck. The port side life ring was secured to the rail by an excessive number of turns of a line. This line should be removed and replaced by an easily removable elastic cord.

Appendix 1. Types of Recommendations Used in This Report

The recommendations detailed within the body of this report are presented in five categories and are classified as follows:

Type A1 Structural, mechanical or other defects requiring IMMEDIATE attention i.e. those affecting structural strength, seaworthiness or safety which MUST be repaired BEFORE the vessel is relaunched at this time.

Type A2 Structural, mechanical or other defects affecting strength, seaworthiness or safety which may be repaired after the vessel is relaunched but MUST be repaired before the vessel is cruised.

Type B Defects not affecting strength, seaworthiness or safety but which, by their nature, should be dealt with before putting the vessel afloat.

Type C Structural, mechanical or other defects NOT requiring immediate attention but are to be dealt with within a specified time period.

Type D Non-essential or cosmetic defects whose repair may be left to the Owner's convenience. All suggestions are, unless noted otherwise, of this type.

These recommendations are intended to be only a guide to necessary rectification work. Both type A and type B recommendations cover urgent remedial work to be carried out as soon as practical. Type C recommendations cover significant remedial works to be carried out within the specified time period. It should also be noted that, in some instances, defects are noted within this report without a covering recommendation. In such cases either no action is necessary or the remedy is self-evident.

Appendix 2. Photographs of FAR HORIZON