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Full Condition Survey

Fairline Phantom 37

(Yacht Name)

Berthon Marina, Lymington, UK

Wednesday 24th October 2018

Prepared on Behalf of the Purchaser

INTERNATIONAL INSTITUTE OF MARINE SURVEYING

CONTENTS

Summary

'[redacted]' is a Fairline Phantom 37 built in 1994 by Fairline Boats, Oundle, UK to a design by Bernard Olesinski. She was found to be in overall good condition showing evidence of having had regular use but requires maintenance to the engines, stern glands and the removal of long standing bilge water. She appears not to have been altered from her original design. The main summary of points is as follows:

1. The topsides, deck and superstructure are in overall good condition structurally with no signs of any major damage or repair. The internal structure where seen is clean and dry with no evidence of any movement.

2. The antifoul is generally smooth, adhering but overpainted and with small areas of detachment aft. The gel condition is good and the outer bottom laminates were tested for moisture content and the resulting readings were mainly in the lower scale, though standing bilge water recorded high readings.

3. The accommodation is in a used, but good and clean condition overall.

4. The domestic systems are in good condition overall but the shower drain is inoperable, the gas pipework in the locker is corroding and the toilet out seacock is showing signs of corrosion. The engine bilge pump is inoperable.

5. The electrical system is in a satisfactory and clean condition overall with both 12V and 240V switch panels operating and 240V sockets wired correctly. Certain helm gauges are inoperable.

6. The fuel system is dirty cosmetically and much of the hosing is pre RCD and not marked as ISO 7840 compliant but no leaks were noted.

7. The steering gear is generally sound but due to long standing bilge water in the lazarette, the trunks, glands and especially the copper hydraulic pipes are showing heavy surface corrosion.

8. The stern gear is generally sound with only minimal play in the cutlass bearings but both stern glands are leaking heavily.

9. The engines are in a poor cosmetic condition in areas and after the sea trial issues and signs of oil in the exhaust water it is recommended both engines are fully inspected and serviced by a competent Volvo Penta specialist. A second opinion on their condition is also recommended.

Structurally, she is a sound yacht but the engines and associated systems will need a proper inspection and servicing as a matter of priority. But with all maintenance issues addressed and with ongoing servicing, '[redacted]' should give good service for many years.

Within this report, any issues found are graded for your information according to severity as:

"Urgent Recommendation"	Must be done urgently before re-floating and certainly before any use is made of the vessel.
"Recommendation"	Should be done at the earlier of next docking or within twelve months or such other time scale as may be specified.
"Suggestion"	For information and consideration but not particularly significant to safety at this stage.
"Note"	For information only.

Circumstances

The survey was carried out on the 24th October 2018. '[redacted]' was inspected afloat and then in the hoist at Berthon Marina, Lymington. The weather at time of inspection was fine and dry, 17°C with light westerly winds. The survey was carried out on the instruction of [redacted] to ascertain the condition of the yacht and produce a report prior to purchase.

No fastenings were drawn and no paint was removed above the water line externally. Due to the good condition of the hull, only one area of paint was removed below the waterline to check coatings makeup. Moisture meter readings were taken to determine the moisture content of the hull laminate. The hull was examined externally above and below the water line and internally where accessible, elsewhere internal mouldings prevented examination. The cabin soles, bunk boards, hatches and portable joinery were removed as necessary to gain access to the interior of the vessel. The engine was not stripped, the tanks were not opened unless stated, nor their capacities checked. The batteries and the electrical systems were tested including interior and exterior lights. Equipment and interior fittings were tested as far as practicable and as described below.

Please note: This condition report is correct as per the date of survey stated above and as such, it cannot be guaranteed for any time after the survey was undertaken.

Description of the Yacht

'[redacted]' is an all glass fibre construction, deep 'V' planing hull with a fine entry and a transom stern, carrying her maximum beam aft of amidships.

She was built by Fairline Boats, Oundle, UK in 1994.

The yacht's principle dimensions as supplied are set out below:

Length overall	11.71m
Length of waterline	n/a
Beam	3.73m
Draft	0.97m (approx.)
Displacement	8.40 tonnes (approx.)
Engines	2 x Volvo Penta TAMD-63 6-cylinder turbo diesel
Fuel capacity	909 litres (approx.)
Water capacity	459 litres (approx.)
Stern gear	Conventional shaft
HIN	FLN GB 254 L495

Hull *Hull:* All GRP construction with deep 'V' planing hull with fine entry bow and a transom stern, carrying her maximum beam aft of amidships. This is in good overall condition.	
Port Topside: This is in white GRP with two moulded knuckles in the topside moulding, twin decal stripes above the fender strip and twin waterline stripes. The topside is generally clean but dulled and there are rub marks in areas, especially midships and aft. There is also a collection of medium scratches at midships and various scuffs and breaks in the decal stripes. The fender consists of a black rubber strip in a securely fitted stainless steel runner and this is in good condition, though the underside sealant is dry, cracked and coming away in areas. There are fore and aft sling tags present.	**Suggestion** Maintain condition of topsides by polishing as part of the annual maintenance routine.
Starboard Topside: This is in white GRP with two moulded knuckles in the topside moulding, twin decal stripes above the fender strip and twin waterline stripes. The topside is generally clean but dulled, there are black rub / scuff marks forward of midships and rub marks aft. Below the bathing platform fender strip aft is a small stress crack. The fender consists of a black rubber strip in a securely fitted stainless steel runner and this is in good condition though the underside sealant is dry, cracked and coming away in areas. The bathing platform fender strip has a small dent in it above the stress crack. There are three sling tags present, 2 x aft and 1 x forward.	**Recommendation** Repair the gelcoat stress cracks. **Suggestion** Reset the sling tag positions.
Bow: This is clean with no issues noted.	
Transom: This is in white GRP in overall good cosmetic condition with an integrated GRP bathing platform. There is light gel damage and previous repairs to the port side bulwark by the transom gate and a chip in the gate step. There are sealant filled holes most likely from previous canopy studs and there is a small stress crack above the bathing platform fender strip on the starboard side with a corresponding dent in the stainless steel runner. The bathing platform fender has no rubber strip present. The teaks panels are weathered, the starboard side panel is detaching and the caulking from the starboard and centre panel is breaking away in areas.	**Recommendation** Repair the gelcoat stress cracks and various chips.
Attachments: There are the following installations: • There is a stainless steel, teak tread, folding ladder which rests in a moulding in the bathing platform with a hatch secured over the top. The hatch is slightly loose and there are areas of light surface corrosion on the ladder frame and some fixings. There are also stainless steel handles securely fitted. • There are two stainless steel fender cages, one per side with the port unit being slightly loose. • There are two 'Whittall' retractable, stainless steel davits securely fitted to the transom bulwark. The starboard side is seized / stuck.	**Recommendation** Reinstate the starboard davit.
Coatings: The antifoul is in blue and made up of various overpainted layers. This is adhering well overall but is detaching in some areas, especially aft and at the waterline. There is no epoxy resin applied which is recommended to enhance hull longevity. Consideration should be given to removing all antifoul back to bare GRP, apply an epoxy resin and apply fresh antifoul. *Gel Condition:* The gel was inspected and is smooth with no signs of blistering, delamination or any damage. Due to the antifoul thickness, a second inspection should be undertaken once the old antifoul coatings have been removed back to bare GRP.	**Recommendation** Remove the antifoul back to GRP and replace at the next service ashore. Consider the application of an epoxy resin like 'International' Gelshield to prolong hull life.

Hull Below Waterline:
Moisture readings were taken with a 'Protimeter' Aquant 2 meter at more than 80 positions over the outer bottom area and this produced readings of 130 – 160 in the main which is in the low scale. High readings of around were obtained around the length of the keel but as this area was still wet after lift out, this is to be expected. In addition, high readings of around 350 - 400 were also obtained further outboard on both sides aft but these correspond to areas of standing bilge water in way of the engine compartment, anodes and p bracket palms. The scale used is 0 – 160 (dry) / 161 – 200 (medium) / 201 – 999 (wet).

Recommendation
Remove all standing bilge water and allow all bilges to dry out and monitor for future ingress on a regular basis. Maintaining a dry bilge and regular wintering ashore will assist in maintaining the low moisture content of the hull mouldings.

Fig.1 – antifoul makeup showing the various layers.

Cathodic Protection
Anodes:
There are the following installations:

- 2 x bar anodes securely fitted outboard of the shafts.
- 2 x circular anodes securely fitted to the trim tabs.

Bonding:
The bonding was satisfactory throughout, though internally the securing bolts show heavy corrosion due to the presence of bilge water.

Wastage:
All anodes are wasted by approximately 10 - 15%.

Recommendation
Clean up the anodes, remove all bilge water replace the securing studs, and reconnect the bonding wires.

Hull Openings and Fittings
Sea Water Coolant Inlets:
There are two, securely fitted bronze, forward facing grills located aft of midships and outboard of the keel. They have thick layers of antifoul paint present with the grill spaces narrowed, but free from debris. Both are showing signs of light dezincification and should be monitored or replaced at the next service ashore. Internally, these are fitted to secure, bronze body, ball valve seacocks which are seized open and showing signs of light surface corrosion.

Urgent Recommendation
Free up and service both seacocks.

Toilet Inlet: • The toilet inlet is located on the starboard side, forward of midships, outboard of the keel and is a secure, 22mm bronze fitting in good condition though there is excessive paint build up around the inlet. Internally, this is fitted to a secure, bronze body, ball valve seacock which operated satisfactorily. The seacock is showing signs of light surface corrosion. • The toilet outlet is located on the port side, forward of midships, outboard of the keel and is a secure, 40mm bronze fitting in good condition though there is excessive paint build up around the inlet. Internally, this is fitted to a secure, bronze body, ball valve seacock which operated satisfactorily though the seacock is showing signs of heavy surface corrosion. *Grey Water Outlets:* The galley and heads outlets are a mixture of plastic and bronze skin fittings located port and starboard in the topsides and these are all securely fitted. *Bilge Outlets:* Located aft and midships on both topsides are secure plastic skin fittings for the various bilge pump outlets. *Exhausts:* There are the following installations: • The engines at idle / low rpm exhaust through secure 48mm bronze fittings located above the waterline, aft on both sides. • The engines exhaust through GRP tunnels aft at / below the waterline on both sides. There is some oil residue in the starboard side exhaust tunnel. • The Eberspacher heater exhaust discharges via a chromed fitting secured aft on the starboard side aft.	**Recommendation** Service or replace the toilet discharge seacock.
Cockpit Drains: The cockpit and flybridge drain through openings in the lazarette hatch gulley corners and flybridge deck corners respectively, discharging via plastic skin fitting aft on each topside above the waterline. All fittings are secure but the elbows for the lazarette drains are lightly wet and this might be a cause of the fresh water in some of the lazarette bilges. *Scuppers:* The main deck / foredeck drains directly overboard. *Tank Vents:* There are secure, chromed, circular, tank vents located on the superstructure sides aft for the water and fuel tanks. Some of the gauze is missing on the vent bodies. *Transducer:* Located to starboard and aft is a thru hull paddle wheel speed over water transducer and located aft of midships on the centreline is a faired in thru hull depth transducer. **Stern Gear** *Propellers:* There are two, four blade, outward turning bronze propellers fitted in good condition. There were no signs of dezincification and hammer testing produced a good ring. *Shafts:* The propeller shafts are 38mm 'temet' stainless steel. They are in a serviceable condition and rotated satisfactorily when turned by hand. *Securing Arrangements:* Each propeller is secured to the shaft via a castle nut and split pin and both installations are secure.	**Recommendation** Service the drainage elbows and reseal to ensure they are watertight.

P Brackets: These are in bronze, secure and in a good condition where paint was scraped away. The palms are securely located but there are gap in the sealant on both units. Internally, the port palm bilge contained fresh water and the starboard palm bilge contained salt water with the fixings showing surface corrosion.  **Fig.2** – water in the P bracket palm bilges.	**Urgent Recommendation** Remove all bilge water, clean all fixings and reseal the palms externally.
Cutlass Bearings: There was a small amount of play detected in both cutlass bearings. *Stern Tubes:* The stern tubes are in GRP with inner bronze sleeves holding the bearings and these are secure.	**Recommendation** Monitor the play and replace at the next service ashore or when play worsens.
Stern Glands: The stuffing box, water cooled type stern glands are showing medium surface corrosion all over the body with the fixings showing medium surface corrosion. Both are leaking with the starboard unit heavily leaking and both will need a complete overhaul.	**Urgent Recommendation** Overhaul and service both stern glands.
Couplings: The flexible couplings were noted to be sound and secure but in a poor cosmetic state with many of the securing bolts and nuts showing surface corrosion.	
Steering Gear *Mechanism:* The rudders are turned via a hydraulic ram and tiller link arm operated from the twin helm power steering set up. The copper hydraulic pipes are showing heavy surface corrosion and these should be replaced at the earliest opportunity with modern hydraulic hoses.	**Urgent Recommendation** Replace all copper hydraulic hoses with modern flexible types.
Rudders: There are two unsupported, bronze blade rudders in good condition where the paint was scraped away.	

Stock:
These are in 40mm bronze and secure.

Trunk / Gland:
The trunks are in bronze and showing all over surface corrosion though no leaks or salt deposits were noted. The bearings are greased via two manual pumps and these are showing signs of surface corrosion.

Recommendation
Clean up and preserve both gland bodies.


Fig.3 – heavy surface corrosion to hydraulic pipes and trunk / gland body.

Bearing:
There was minimal play detected in the rudders.

Recommendation
Monitor the rudder bearings for worsening play.

Trim Tabs:
There are two stainless steel trim tabs securely attached to the transom. These are operated by single acting, hydraulic types and when pushed down to test the return spring, both operated normally though the port side would only partially extend. They are both heavily covered in various layers of rough antifoul

Recommendation
Check for correct operation of port trim tab during sea trial and service if found to be defective.

Bow Thruster:
This is an electric type with a plastic, three bladed propeller which has a lot of backlash present, around 1cm. Internally, the oil reservoir which is accessed from the top of the forward cabin bunk base is empty. The thruster operated satisfactorily.

Recommendation
Refill the reservoir and service the thruster to remove the backlash.

Emergency Steering:
There is no emergency steering system.

Deck and Superstructure

Deck:
The deck and flybridge deck is in white GRP with non-slip panels moulded into the horizontal surfaces. The surface is generally clean but there is a small chip in the port side deck aft and there are stress cracks around the chain locker hinges. There are no signs of any major damage or repair.

Superstructure:
The superstructure is in white GRP, the surface is generally clean with no signs of any major damage or repair. The radar arch is securely fitted but the stainless steel navigation mast is loose.

Urgent Recommendation
Secure the navigation mast.

Hull Deck Joint:
This was accessible in only a few places and is a 'biscuit tin' type joint with the deck laid over the top, sealed and with the fender connected around the join. Where visible, there were no signs of any movement.

Inner Tray:
There is a GRP deck tray incorporating module and accommodation bases bonded to the hull. There are no signs of any movement or stress cracks where seen.

Floors / Stiffening:
There are GRP floors, moulded stringers and various supports bonded to the hull and deck tray to give extra stiffness to the structure. Where seen, there were no signs of any movement.

Fig.4 - structure showing deck tray, stringers, floors and extra supports bonded.

Bulkheads:
There are main and partial bulkheads of marine wood bonded to the hull and deck tray.

Hatches, Windows and Port Lights
Main Hatch:
The main hatch consists of a full height, white painted, aluminium framed, twin outboard sliding door unit with toughened glass panels. This is securely fitted to the superstructure with no signs of any movement. The seals are good and the doors open smoothly. There is an external and internal lock, both doors have individual locking pins and all were operable. The external handles have lost the majority of their paint and are rough in appearance and feel. No leaks were noted.

Fore Hatch:
There is a 'Bowmar' 510mm square, aft hinged, aluminium framed fore hatch with clean acrylic glazing securely fitted over the forward cabin. This has two internal lockable handles, two rotary friction stays and the seal is sound. The hatch cover does not slide all the way back into the housing.

Windows:
The windscreen and side windows are securely fitted to the superstructure and are of white painted, aluminium frames with securely fitted toughened glass. The glass seals are generally good throughout. There are two sliding side windows with locks, one per side and these operated satisfactorily though they were initially stiff to slide and the internal 'fur' runners are drying and cracked internally. There were no signs of any leaks. The flybridge acrylic glazing is securely fitted but is crazing at the upper and lower edges on both sides.

Portlights: There are five elliptical, openable, chrome trimmed portlights located throughout the accommodation. These are all securely fitted with secure clip handles and clean seals though the seals are beginning to dry. *Engine Hatch:* The engine hatches are located in the saloon and require the removal of the starboard sofa bed / seating to lift fully. These are serviceable with stainless steel stays. *Lazarette Hatch:* There is a GRP hatch located in the cockpit deck to access the lazarette and steering gear compartment. The hatch is supported by a compression ram but the aft hinge is a little loose. **Hand Rails and Stanchions** *Pulpit:* There is a 25mm diameter stainless steel tube pulpit installation at the bow, running aft to become railings on both sides. This is secure but the aft section of the side railings are a tad loose. There are 25mm stainless steel railings securely fitted on the cockpit aft coamings and these also support the cockpit cover frame. *Handrails:* There are 19mm stainless steel tube handrails fitted to the superstructure sides and these are all secure. **Ground Tackle and Mooring Arrangements** *Anchor:* There is a good condition, galvanised, fluke style anchor of approximately 10kg securely fitted at the bow stem. There is a securing chain from the windlass holding the anchor in place. *Chain:* The main anchor cable consists of 8mm galvanised steel chain with the bitter end connected to a length of cuttable rope secured to a strong point on the chain locker base. The stainless steel securing shackles to the anchor have their pins wired against accidental unscrewing. *Windlass:* There is a 'Lofrans' electric, horizontal winch securely fitted at the bow with cable gypsy and warping drum. This was tested locally via the foot controls and from both helm positions and operated satisfactorily. *Stem Head:* There is a fabricated, stainless steel stem head securely mounted at the bow with a single nylon roller and securing hoop. *Cleats:* There are six 310mm anodised aluminium cleats mounted port and starboard and two rope fairleads forward. All are sound, secure and suitable. **Ventilation** *Accommodation:* The main hatch, forehatch and opening portlights serve the accommodation and heads. There is an electric 'ECS' fan located above the galley and this operated satisfactorily in all settings. *Machinery:* The engine compartment has twin extraction fans fitted forward and outboard in the engine compartment and operated satisfactorily, though the starboard side aft trunking connection to the engine is hanging loose.	R**ecommendation** Regularly clean all of the hatch and portlight seals to ensure good watertight connections are maintained. **Recommendation** Regularly treat the hatch, portlight hinges and handles with a silicone spray to prevent degradation of the plastic. **Recommendation** Reattach the engine ventilation trunking.

Tanks: These are vented to atmosphere through fittings in the superstructure aft on both sides. *Stowages:* These are vented by atmosphere and it is recommended to never overfill any storage locker to avoid a potential build-up of moisture and also to allow natural ventilation.	
Interior Joinery and Furnishings *Inner Modules:* These are incorporated into the deck tray matrix and where inspected, there were no signs of movement. *Deck:* The deck and some unit sides is covered in a pale blue coloured carpet and glued to the underlying deck though there are sections which lift away to access sole boards.	
Linings: There are white vinyl deckhead and side panel linings and these are in good, clean condition overall though there are small signs of sagging and detachment in the forward cabin around the fore hatch and in the starboard cabin aft at the bulkhead. There are pale blue vinyl panels in the saloon but there is light detachment port side aft below the window.	**Recommendation** Reattach the areas of loose and sagging vinyl linings.
Soft Furnishings: There are patterned seat cushions fitted in the saloon and soft mattress in the cabins – all are in a used but good condition. In the cockpit and flybridge, all cushions are of white vinyl with blue pipping and are in a good and clean condition overall but with some minor markings and tears.	
Gas and Domestic Installation *Locker / Bottle(s):* This is located in the cockpit port aft seat locker and contains two 4.5kg 'Calor' butane bottles, one being empty. The locker drains directly overboard but current items in the locker are blocking it. The drain hole external elbow has heavy surface corrosion.	**Urgent Recommendation** Replace the corroded elbow.
Regulator / Hose: The regulator is securely fitted and in a serviceable condition with a 'Caslow' butane reader. The black gas hose is BS 3212 compliant, clean, dated 09/2012 but the connection to the copper pipework shows surface corrosion.	
Pipework / Cut Off Valve: The copper pipework is covered in a plastic lining but where seen is showing heavy surface corrosion, especially where it exists the locker. There is a cut off valve to the oven accessed from under the galley sink and this is operable. *Cooker:* There is a 'Ceran' Princess, 240V halogen, single hob unit securely fitted at the galley and operated satisfactorily. *Refrigerator:* Located at the galley is an 'Isotherm' 12V fridge with freezer compartment and this operated satisfactorily via both 12V and 240V circuits.	**Urgent Recommendation** The entire gas line needs to be professionally inspected and serviced by an authorised gas engineer conversant with the requirements of BS 5482 Part III.
Heater: The cabin is heated via an 'Eberspacher' diesel heater and this is located in the lazarette on the extreme starboard aft upper corner and this is in good condition. Initially, the heater did not operate but later attempts were successful. The take-off from the starboard fuel tank is heavily corroded	**Urgent Recommendation** Replace the fuel tank take off.

Calorifier:
Located in the lazarette, forward on the port side is securely fitted calorifier unit heated by the port engine cooling circuit and via a 240V element. The hoses and wiring are all in good condition where seen and no leaks were noted. Access and visibility is limited but where seen this was in good condition with no leaks noted.

Fig.5 – the diesel heater take-off from the starboard fuel tank is heavily corroded.

Fresh Water Installation
Deck Filler:
There is a chromed, screw type deck filler securely fitted through the aft end of the port topside shoulder. This seal is good and the securing chain is connected.

Tank:
There are twin tanks moulding into the structure located outboard and aft both sides in the lazarette. The inlet and vent hoses are in clear reinforced hose and securely clipped. There is a link / balancing hose between both tanks and this is in clear reinforced hose and securely double clipped. There were no signs of any leaks.

Pump / Accumulator:
There is a 'Shurflow' 12V pump securely fixed to the lazarette deck on the starboard side, though the securing screws are only half in and the outlet fitting is showing areas of surface corrosion. This operated satisfactorily and there were no leaks noted. There is an accumulator fitted in the circuit and this showed no leaks.

Pipework:
The pipework is run in grey plastic snap-fit pipe, securely fitted to the tap installations and no leaks were evident.

Recommendation
Water tanks should be cleaned annually we also recommend super chlorination and flushing prior to use each season.

Taps: There are the following installations: • A hot and cold, stainless steel style mixer tap and a hot and cold shower mixer in the heads which is very tight to operate with poor water flow. • A hot and cold, stainless steel mixer tap at the galley. • A hot and cold plastic shower unit in the transom. All of these are secure and there are no signs of any leaks.	**Recommendation** Service the heads shower mixer and descale the shower head.
Sewage and Bilge Installation *Sink Drains:* The galley and heads sinks drain directly overboard.	
Shower / Sink Sump: There is an 'Atwood' V750 automatic shower drain sump box located under the galley floor. This is inoperable, there is no top cover plate attached and there is long standing bilge water present.	**Urgent Recommendation** Service the shower sump and replace the top cover.
Pipework: This is in clear reinforced hose and securely single clipped.	
Toilet: There is a 'Jabsco' china bowl, manual flush toilet fitted in the heads. This is secure and operated satisfactorily.	
Toilet Pipework: This is run in a selection of reinforced hose throughout and double clipped and no leaks were noted. This should be in sanitary grade hose, especially the discharge hosing.	**Recommendation** Replace the discharge pipe with sanitary grade hose.
Electric Bilge Pumps: There are three bilge pumps installed, one under the starboard bunk aft end, one in the engine compartment aft end and one in lazarette aft end. These are all operable except the engine compartment unit which is seized and trips out fuse when activated from the helm. The lazarette unit does not have an external float valve. It is recommended that the forward unit be located to where the bilge water collects.	**Urgent Recommendation** Service or replace the engine compartment bilge pump.
Manual Bilge Pump: There is a 'Henderson' pump located in the cockpit port side with switches for the three main areas. This operated satisfactorily as the engine compartment was successfully drained.	
Pipework: This is run in reinforced hose, securely single clipped, is suitable where visible and discharges to the starboard and port aft topside fittings.	
Electrical Installation *Batteries:* There are three batteries on board dealing with domestic systems and engine start: • 3 x 'Powermax' 12V 120Ah batteries securely fitted within with a purpose built box with vent hose. All batteries are parallel connected and have clean and tight terminals.	
Isolators: Located on the forward bulkhead in the lazarette are three key type isolators, two for the engines and one for the main domestic systems and all operated satisfactorily.	
Charger: Securely fitted in the lazarette, outboard on the starboard side is a 'Sterling Power Products' Pro Charge D 12V 50A charger which was operable at the time of survey.	

Shore Power / RCD Unit: The shore power plug is located on the starboard transom bulwark with the cabling linking to the RCD breaker on the 230V switch panel by the helm. This operated satisfactorily. *Switch Panels:* The 12V DC and 230V AC switch panels are located by the helm. This is well laid out and was operable at the time of survey though the polarity light was not lit despite power being available. *Wiring:* Where visible, the main wiring has been installed in accordance with good engineering practice. *Galvanic Isolator:* None seen on board at the time of survey and this is advised if regularly connecting to marina shore supplies. *Lights:* There are various switched lights throughout the accommodation. All operated satisfactorily in the saloon and cockpit. *Navigation Lights:* There are superstructure mounted port and starboard navigation lights, an all-round light and a steaming light on the navigation mast and a stern light mounted to the aft end of the flybridge. All are securely fitted and operated satisfactorily.	**Recommendation** Install a galvanic isolator to protect the yachts when plugged in to shore supplies.
Fuel Installation *Deck Filler:* There are twin, chromed screw type deck fillers securely fitted through the side decks, one per side. The seals and the securing chains are good. *Tanks:* There are twin stainless steel fuel tanks fitted, one per side outboard in the engine compartment. Visibility and access was limited but where seen, the securing straps were serviceable though some of the connections have surface corrosion on them. The inlet and vent hoses are securely clipped on the starboard tank but the port tank could not be accessed. *Fuel Shut Off Valves:* There are twin pull shut off handles located in the cockpit port side superstructure locker. The starboard handle only partially pulled out. There are another set of valves located in the fuel lines forward in the engine compartment but these are tie wrapped open. There is a fuel line link valve located under the cut off valves and this is operable. *Distribution:* This is in a serviceable condition and is in accordance to good engineering practice where seen but the installation is dirty throughout. *Pipework:* The pipework is in a dirty condition with many of the hoses seeming to be original equipment and not marked as ISO 7840 compliant, though some updating has occurred to the port engine and this is marked correctly. *Pre-filters / Filters:* There are twin 'Separ' fuel / water separators located on the engine compartment aft bulkhead. These have solid bowls, a drain tap fitted and are in a poor cosmetic condition with staining on the bodies. The fuel lines are securely single clipped and the installations are secure. There are twin standard fuel filters connected to each engine and there were no leaks noted..	**Urgent Recommendation** Ensure all fuel lines and hoses are ISO 7840 compliant.

Machinery

Engine:

The engine details are:

Make	Volvo Penta TAMD-63 6-cylinder turbo diesels
Rating	370hp @ 2.800 rpm
Serial No. Port	n/a
Seral No. Stbd	n/a
Engine hours	980 (approx.)

The engines are in an overall poor cosmetic condition consistent with their age. The last recorded service was in October 2017 but it is recommended that both engines and stern glands have a thorough inspection and full service full service undertaken by a competent Volvo Penta specialist at the earliest opportunity.

Recommendation
Undertake a full inspection and servicing of both engines.

Fig.6 – Volvo Penta TAMD-63 6-cylinder turbo diesel engines.

Bearers and Mounts:

Each engine is firmly secured to lengthwise strong GRP beams via four engine mounts. These are in a serviceable condition overall but the port outboard aft and starboard outboard aft mounts are showing strong surface corrosion. The port outboard forward mount could not be seen.

Recommendation
Clean off and preserve all mounts with 'Tectyl' or similar.

Gearbox:

The gearbox details are:

Make	ZF IRM220A.1
Ratio	1.533:1
Serial No. Port	94-14142
Serial No. Stbd	94-13953

Strainers: There are twin strainers located forward in the engine compartment and these are secure though they have all over surface corrosion on the bodies. The hoses are of clear, reinforced hose and securely double clipped but both seacocks are seized open and access to them is difficult. *Hoses:* These are all in a serviceable condition with no signs of cracking evident where seen and suitably single clipped but they should still be inspected as part of a more thorough service.	**Suggestion** Clean off all strainers.
Cooling / Heat Exchangers: The engines are cooled indirectly by seawater supplied by an engine driven impeller type pump. Both heat exchangers are generally clean with no evidence of any salt deposits around the end caps. The coolant was tested with the following results: • Port engine having protection to -20°C and clear. • Starboard engine having protection to -16°C and partly cloudy. The starboard engine expansion pipe is missing from the cap which will mean coolant spilling onto the engine as opposed to the bilge.	**Recommendation** Reinstate the expansion tube to the bilge.
Lubricants: • The engine lubricants are semi carboned, viscous and at full level on both dipsticks. • The gearbox lubricants are clear and full on both dipsticks. The oil breather pipe and cap on the starboard engine is loose and the air filters have oil present.	**Recommendation** Reattach the cap and service the filters / breathers.
Fluid Tight: There is fresh coolant under the port engine, though the coolant was full in the header. There are various areas of oily water in the bilges which appear old. *Exhausts:* The exhaust gases from the engines travel through the manifolds, turbos and risers to securely fitted tub mufflers in the lazarette via exhaust grade hose and securely double clipped, though the clips are showing corrosion. The low rpm take off elbows on the muffler tops are showing corrosion at the bases and the connections of the following exhaust grade hose to the moulded exits are showing corrosion. The join between the exhaust manifolds and the turbos are showing heavy surface corrosion. The exhaust wash contains a film of oil and there is oil in the starboard exhaust tunnel which might indicate a turbo oil leak.	**Recommendation** Remove all bilge water and clean the bilges to aid in future monitoring of any leaks. **Recommendation** Clean off the top elbow corrosion and monitor and replace all exhaust trunking clips.
Controls: There is a twin lever engine control outboard at the helm and this operated satisfactorily during the abandoned sea trial.	
Ancillaries: The engines are fitted with a 12V alternators which supplies charge to the yacht's batteries when the engine is running but these could not be seen as access was very limited to this section of the engines. The port engine voltmeter alarm indicated low charge and this could be either a poor battery or poor alternator and needs to be investigated.	**Recommendation** Investigate cause of port engine low battery charging.
Hydraulic Systems *Trim Tabs:* The trim tab control and reservoir installation is located port aft in the lazarette steering compartment and is in a secure and good condition. The fluid reservoir level is correct and all connections to the trim tabs are secure and there is no evidence of any leaks.	

Fire Fighting Equipment *Engines:* There is an automatic 15kg, FM200 clean agent extinguisher indicating fully charged and located over the engines supported by fore and aft aluminium supports. The next service was due in January 2017 and there is corrosion on the body. There are 'Seafire' engine override switches at both helms and the lower helm unit operated satisfactorily though the status light is not lit and the flybridge unit switch is broken. *Accommodation:* There is a 1kg, ABC, dry powder extinguisher reading full and manufactured in August 2015 by the galley. *Galley:* There is a fire blanket located at the galley.	**Recommendation** Service all extinguishers and the engine override units.
Smoke / CO Alarm: None fitted. *Gas Alarm:* There is a 'Pilot' gas alarm located at the galley and this operated satisfactorily with the 'test' button pressed.	**Recommendation** Install a smoke / CO alarm in the galley and cabins.
Lifesaving Appliances *Life Jackets:* There is a 'Seasafe Systems' 150N gas inflatable life jacket located in the forward cabin and is unused though dated 2009 *Flares:* None seen aboard on board at the time of survey. *Life Raft:* None seen aboard on board at the time of survey. *Life Buoys:* There is a plastic life ring located on the aft of the flybridge bulwark.	**Urgent Recommendation** Ensure there are sufficient life jackets on board for all. A selection of flares suitable for the expected cruising range should be carried. A useful guide is RYA publication C8. **Recommendation** Consider the installation of a life raft for the level of expected persons aboard.
Ancillary Equipment *Cover:* There is a navy blue coloured full cockpit cover installed. This is in good condition and the frame is secure though there is some moulding / staining on the internal surfaces. *Compass:* There is a 'Plastimo' Horizon 135 compass located at the lower helm position and a 'Plastimo' Offshore 100 located at the flybridge helm. *Radar / GPS / Chartplotter:* There is a 'Raymarine' radome fitted to the radar arch and this displays via a 'Raymarine' RL70c Pathfinder multi-data display unit. There is also a 'Sea Me' reflector unit located on the navigation mast. The unit operated satisfactorily. *Autopilot:* There are 'Raymarine' Autohelm ST6000 units located at both helms and a Navdata display at the flybridge helm. These were not tested due to the sea trial being abandoned. *Log:* There is a 'B&G' Network Quad display at both helms which operated satisfactorily. *Echo Sounder:* There is a 'B&G' Network Quad display at both helms which operated satisfactorily.	

VHF: There is a 'Shipmate' RS 8300 VHF unit with speaker located at the lower helm with a repeater port at the flybridge helm. This powered up but was not operable.	**Urgent Recommendation** Ensure the VHF is operable.
Windscreen Wipers: There are three wipers and these operated satisfactorily but the outboard washer jets are broken though they are all operable.	**Recommendation** Replace the outboard washer jets.
Horn: The horn is partially operable but requires servicing to make a sound.	**Recommendation** Service the horn.
Searchlight: There is an automatic searchlight located on the navigation mast but the controls could not be located.	
Clock / Barometer: There are 'Plastimo' units located above the windscreen but neither are operable.	**Recommendation** Service both units.
Entertainment: There is a 'Sendai' radio / CD player located outboard of the helm with a removable front with two 'Philips' speaker in the saloon and two 'Sony' speakers on the flybridge. The unit does not operate. There is a 'Glomex' TV receiver on the navigation mast.	**Recommendation** Service the AV unit.

Statement

This report is a true and accurate description of '[redacted]' as far as could be ascertained at the time of the survey, but no guarantee is given or implied. We have not inspected equipment, woodwork or other parts of the structure, which are not included within this report or were covered, unexposed or inaccessible and we are therefore unable to report that any such part is free from defect.

The potential purchaser should satisfy themselves that all systems which could not be tested or inspected at the time of survey are operable.

The yacht has not been examined for compliance with any code, rule or craft directives and no opinion as to such compliance is expressed or implied.

This report is provided for the sole use of the instructing client named within this survey report and no liability of any nature will be accepted by the surveyor to any third party.

This report is submitted without prejudice.

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