Marine Surveys UK

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Survey Report no: [redacted]

Name of Vessel: "[redacted]"

Type of Vessel: Freedom 27

At the request of:
[redacted]

This survey was carried out on [redacted] at Thornham Marina, Thornham Lane Emsworth, West Sussex PO10 8DD. The above named being a prospective purchaser of the vessel.

Limitations:

- Where access is restricted by fixed panels, linings etc. it was not possible to examine and I cannot say those areas are free from defects.
- This Report has been prepared for the use of Commissioning Client and no liability is extended to others who may see it.
- In some cases it is not possible to detect latent and hidden defects without destructive testing which is not possible without the Owner's consent.

Scope of Survey:

- This is a Pre-Purchase Survey and its purpose is to establish the structural and general condition of the vessel. Where items of equipment have been tested this will be stated in the text.
- Camera and Snake Endoscope electronic equipment was used in places to view normally inaccessible areas and the pictures analysed to identify any issues.
- A general inspection of the engine and installation will be made, but this is a visual inspection only without running the engine. It should be appreciated that some components may appear serviceable but found to be defective when the engine is run.
- The vessel was surveyed out of the water and tests carried out as described to ascertain any possible sources of water ingress, however, the vessel was not surveyed in the water and when launched, best practice is to thoroughly check for any leaks.

Recommendations:

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

Conditions of Survey:

Vessel was examined on hard standing, sitting on its keel and chocked with wood supports at the premises of Thornham Marina, having been ashore for a period which I believe from the broker to be 18 months.

No special conditions affected the survey other than as described in the text.

Information is reported in the Sections below, followed by Recommendations and Conclusions and valuation

Hull, Deck and Structure.

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4. Topsides above Waterline including Rubbing Strake etc.
5. Deck Moulding.
6. Coachroof.
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8. Hull/Deck Join.
9. Bulkheads and Structural Stiffening including Internal Mouldings.

Steering, Stern Gear, and Skin Fittings etc.

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1.Details of subject vessel:

Prelude, Freedom 27 is a difficult boat design to get information on. I have two designers listed, Gary Holt and James Williams. I understand, although normally American Built some models were built in the UK and I suspect this is one of these. The internet only talks about Freedom 28s with carbon rigs. She has an un-stayed alloy mast with pole for asymmetric jib or spinnaker.

Manufacturers information (not verified by measurement)

Length Overall:	28'8"
Length Waterline:	24'9"
Beam:	8'8"
Draft:	3'10"
Displacement:	2450KGS

Boat specific information

Registration Unknown

Hull # Not found

Year of build 1990 as specified by brokers details

2. Keel

The wing keel is made of iron, bolted to the hull with stainless steel studs and nuts. The keel fits into a locating area of the hull. The keel is coated in anti-foul over many layers of old anti-foul, primer, fairing paste and possibly epoxy. As such the keel surface is uneven and not fair. The keel was hammer tested and magnet tested for voids. This showed that the appearance is cosmetic only. There are no signs of weeping at the joint with the hull although as mentioned there is a coat of anti foul applied since it came from the water. The keel was not tested in tension. The joint was spike tested for gaps and none found. Inside, I could only access the forward keel studs as the cabin sole was screwed down. The nuts are tightened onto alloy plates which are showing some signs of corrosion. The nuts were hammer tested and the plates scrapped and found to be surface corrosion on the plates only and the nuts sound. There is fresh water lying in this area, probably rain water which I suspect is causing this to happen.

Suggestion - clean off alloy plates with wire brush and epoxy over nuts and studs. The cabin sole should be lifted to do the same to the remaining keel studs, plates and nuts.



Fig 2, 3, 4 Surface corrosion on keel stud plates

3. Hull below Waterline:

a) The hull below the waterline is of solid GRP construction utilising chopped strand matt and woven rovings. The vessel is sitting on its keel supported by wooden chocks with no signs of deflection in the hull. Underbody found in good condition with no signs of major impact or repair. The hull was lightly hammer sounded, (not heavy enough to damage the gel coat). This did not suggest any de-lamination or voids.

b) The vessel was found with quite a thick build up of old antifoulings which gives an uneven appearance across the hull. However there is no pressing need to remove this unless the smoothest of surface is required. No stress crazing evident around the root of the keel.

c) The Antifouling was removed in 12 areas at random approximately 100mm x 100mm. Where the antifoul and old surfaces came away to the gel coat, the gel was found in smooth condition. Some areas appeared to have a layer of intact epoxy or primer that did not easily come away and this was left in place. No signs of wicking or Osmotic blistering was evident where the surface was exposed or through the antifoul.

d) Moisture readings were taken where the antifouling was removed and close to skin fittings using a capacitance type moisture meter of Sovereign Quantum type, operating in both shallow and deep reading modes.
The meter was first checked for correct calibration.
The readings recorded below are from the meter operating in the shallow and also deep mode on the relative scale 0-100.
The readings are relative and **do not** express moisture content as a percentage of dry weight. High moisture content is not generally a structural defect, and is to be expected in older boats. However where some moisture has been absorbed the likelihood of moisture related problems occurring is higher, and the actual state of the laminate cannot be completely guaranteed without destructive testing followed by chemical analysis. The opinion given in this survey is based on all the evidence available at the time but without destructive testing.

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

Air Temperature:	**15.1°C**
Surface temperature:	**14.5°C**
Relative Humidity:	**53.2%**
Time ashore	**18 months**
In summary the weather conditions for obtaining moisture readings were excellent	

Readings were as follows:

Meter	Range below waterline.	Range above waterline.
Sovereign Quantum, Scale A, 0-100 Shallow mode	**13 - 21**	**10 – 14**
Deep Mode	**14 - 28**	**No significant increase**

The values recorded below the waterline show that there is some moisture present which is normal for a boat of this age. It is considered that there is a low to medium chance of moisture related defects occurring however, there is no other evidence to suggest this as mentioned above. Always storing the boat ashore out of season to allow some natural drying out to occur will contribute significantly to maintaining condition. The higher reading was localised around the head thru hull fitting.
Recommendation – remove head thru hull fitting and reseal. To be carried out within 2 years.

4. Topsides above Waterline including Rubbing Strake:

a) Top side moulding found very fair and finished in the original gel coat. The gel coat surface is in very good condition with little UV degrading.
b) No sign of major impact or repair evident. No stress crazing or cracking noted in way of bulkheads or other enforcing member.
c) Some minor damage to stem, which looks like impact damage.
Suggest – Grind out and minor gel coat repairs made.

Fig 5 Minor stem damage

d) Some minor repairs to transom edge and top sides are visible but only small
e) Two drying post fittings have been attached either side of the hull with stainless steel boats and plypads.
f) Topsides in sound structural condition and good cosmetic condition throughout.

5. Deck moulding:

a) The deck is of GRP with some areas of sandwich construction with end grain balsa core stiffening. Plywood is used underneath the deck inway of load bearing fittings. The whole deck was carefully tested underfoot and no sign of delaminating or other structural defect.
b) The deck was lightly hammer sounded and moisture tested with no significant defects found.
c) The original moulded non slip surface is in good condition and effective.
d) Deck in sound structural condition and good cosmetic condition.

6. Coachroof:

a) Integral with deck moulding and with some areas of sandwich construction. All found firm underfoot with no sign of delaminating or other structural defect. There are 3 small raised areas which are solid and have no moisture reading. I believe these to be mould defects. i.e have been on the boat since new and are not a problem

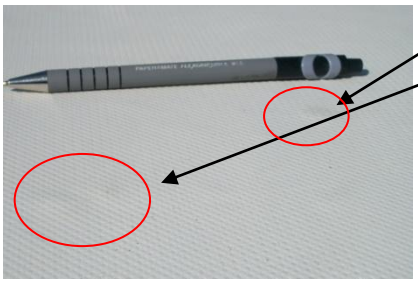

Fig 6 Small defects on coach roof.

7. Cockpit:

a) Integral with the deck moulding and of self draining type with 2 large drains aft. 2 Deep lockers to port and starboard joining under the cockpit sole, giving good access to the steering gear, fuel tank and gear cables. Both have securely hinged lids and positive method of closure.
b) An aftermarket steering wheel has been fitted and appears to have been refitted again as there are filled holes aft of the steering gear. The repair is sound but not finished cosmetically well. Some grey gel coat moulded with non slip would enhance this repair. There is an aft wooden cockpit grating made which covers this area and is in sound condition.

Fig 7 Repositioned steering

Fig 8 Teak ply coaming

Fig 9 Teak ply coaming detail

c) On both sides of the cockpit is a teak faced ply decorative panel. The Starboard one is delaminating and split at the forward end. This is held to the deck with screws. This is cosmetically poor and could cause splinters, also if the screws come loose water can ingress the balsa sandwich core and deteriorate over time. I suggest that this should be replaced or removed and the screw holes sealed / resealed.
d) There is a 5 cm star crack in the gel coat to the port of the tiller knuckle. This should be ground out and gel coated to stop water ingress and for cosmetic purposes.

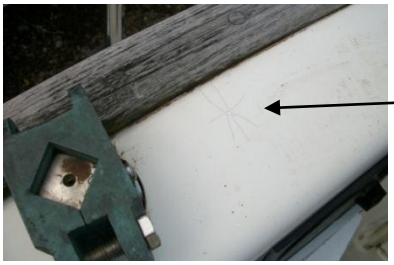

Fig 10 Repositioned steering

e) It should be noted that to fit the steering the rear of the cockpit has been cut and a wooden cover fitted where the steering arm protrudes. This has compromised the watertight integrity of the cabin, which will be no problem in anything except extreme weather conditions, continued swamping of the cockpit or inversion of the vessel.

Those areas of the above mouldings comprising deck, coach-roof and cockpit that are of sandwich construction were tested with deep reading moisture meter to identify any moisture ingress to the core material and except where noted above no high readings were noted.

8. Hull/Deck Join:

a) This is mechanical type, through bolted via the toe rail bolts with s/s washers and nyloc nuts. Access to this is very limited by linings etc but where seen found in good condition with no signs of leaks. No stains seen elsewhere in the linings to suggest leaks. Toe rail of aluminium extrusion all lying fair with no signs of distortion due to collision or straining of stanchions, these being set in bases bolted through toe rail. The anodising is intact and in good condition.

Fig 11 Hull and deck join and bonded

9. Bulkheads and Structural Stiffening including Internal Mouldings:

A number of components contribute to the overall structure.

a) The shell mouldings are robust in the first place.
b) Primary bulkheads are bonded to the hull and deck.
c) The keel area where seen is reinforced with a number of moulded floors formed over plywood (Floors are heavy transverse frames across the centreline but not continuing full height to deck level).
d) The furniture is bonded to the hull forming part of the structural role.

The structure was examined where possible and no stress cracks, fractures or failure of bonding was noted. The mast loadings are transferred to the hull via a GRP plate bonded to the hull, forward of the keel sitting on a bonded solid construction. No settlement or distortion noted at base or adjoining structures. The deck area which takes latitudinal mast stress could not be examined internally due to internal panels in place but there is no evidence to suggest any stress or failure.

10. Rudder and Steering:

a) The blade rudder consists of a moulded blade around a stainless steel stock. No splits or weeps noted around the edges and moisture readings on the blade are low.
b) The stock was confirmed stainless steel marine quality by checking with a magnet.
c) No movement was detectable between the blade and stock where it emerges from the top of the blade when the strength of one man was applied to the trailing edge of the blade with the wheel locked in position.

d) There is no undue play in the bearings
e) Rudder tube is GRP bonded into the hull and then again at the top of the cockpit. This has been cut to allow the hydraulic steering to be attached and the top and bottom rebounded to the cockpit coaming. The work appears sound and no movement is found in the tube. The cut is well above the waterline.
f) As previously mentioned an aftermarket Vetus wheel steering hydraulic unit has been fitted which operated very smoothly. It has been attached with s/s bolts through the cockpit floor, through a marine ply pad and s/s washers. I could not move the pedestal with full body weight applied, the attachment appears good.

Fig 12 Steering pedestal attachment

g) The Original tiller is aboard for emergency use and the knuckle joint is secure.

11. Stern Gear:

a) Volvo S120C sail drive with 2 blade propeller, heavily antifouled over plastic coating. It was lightly hammer tested and rang true.
b) No play detected in bearings
c) Rubber seal around sail drive on underside of hull intact and well secured.
d) Inside the yacht the rubber diaphragm looks sound, although the metal ring outside is showing signs of surface rust. Volvo Penta recommends that the diaphragm and seals are changed every 7 years. The parts cost about £150 and the labour about 7 hours. Service records should be checked to see when this was last replaced.

12. Cathodic Protection:

a) There is one anode on the sail drive which is in good condition and the engine being raw water cooled has replaceable internal anodes.

13. Skin Fittings and other through Hull Apertures:

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

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

Below Waterline:

a) Toilet outlet: Bronze thru hull with DZR ball valve. 2 clips on pipe. Currently shut and not possible to turn. It may well free up with cleaning from outside *Recommend freeing up before launch.*
b) Heads water inlet. Bronze thru hull, with DZR ball valve. Lot of green corrosion and stains. 2 clips on pipe and a 3rd clip around the valve. Not sure why. Stiff but works. *Recommend clean up and further investigation into why 3rd clip fitted.*

Fig 13 Toilet inlet 3rd clip

c) Heads Sink drain: yellow metal thru hull and DZR ball value. 2 clips on pipe.
d) Galley sink drain: Bronze thru hull, with DZR ball valve. 2 clips on pipe. Currently seized open. It may well free up with cleaning from outside *Recommend freeing up before launch.*
e) Log and depth thru hulls. Auto helm Plastic thru hulls. Both heavily antifouled. Suggest clean off depth fitting before launch.

Above Waterline:

f) Manual bilge pump bronze thru hulls, no valve, located just above waterline. 2 clips.
g) Exhaust thru hull is bronze with bronze 90 degree bend. 2 clips.
h) Cockpit drains. 2 bronze through hulls. Securely fitted 2 clips. Port clips corroded but sound. Suggest change in next 12 months

Fig 14 cockpit drain clips

i) Where attached to cockpit floor drain there are plastic extensions with 2 clips. Port drain has both clips fitted in same direction. Best practice is to have them in opposite direction. Suggest change around 1 clip. Also suggest care taken when storing fenders etc in lockers that plastic fittings are not damaged.

Fig 15 cockpit drain clips same direction

j) Fuel tank breather bronze thru hull . 2 clips and high on cockpit coaming

14. Main Companionway and other Access to Accommodation:

a) Main companionway access hatch is of solid GRP, in good condition and secure in its runner.
b) 3 Perspex / Plexi-glass wash boards in good condition. All 3 slide in place and remain in position without companionway hatch being closed except in inversion condition
c) Forehatch Canpa Plastic type material frame with Perspex. Securely hinged with positive method of closure. Hinge is at forward end. Seal in good condition with no sign of leaks. Size 500 x 500 is good means of secondary escape.

15. Ports, Windows etc.:

a) 4 fixed Port lights into saloon and forecabin marked Gary Enterprise of Florida. Stainless steel outside frame. All screws tight and secure. No signs of leaks
b) 2 Opening ports of same design.

All fixings hammer tested, check with magnet for material, confirmed as stainless steel and checked for cracks. Seals visually checked and carefully spike tested. All found to be in good condition.

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

a) Pulpit. Bolted to deck with stainless steel nuts and bolts with washers underneath. All tested with full body weight and visually checked. In good condition and secure.
b) Pushpit. Bolted to deck with stainless steel nuts and bolts with washers underneath. All tested with full body weight and visually checked. Port aft fixing slightly raised and on checking fixing underside slight deterioration in ply pad support. Suggest ply pad changed in next 12 months.

Fig 16 Push pit ply pad

c) Stanchions. In stainless steel set in alloy bases. The bases are designed so stanchions are slightly loose to avoid corrosion and easy draining. All tested with full body weight and visually checked. In good condition and secure.
d) Life lines. Of stainless steel wire. Plastic coating is mainly intact. Wires secure and correctly terminated with swaged fittings.
e) Jack Stay U bolts. 2 forward and two aft on coach roof. All tested with lever and found sound. Webbing on forward attachments is sound but has been exposed to weather for 18 months minimum and the stitching can degrade in UV. I would suggest changing before use.
f) 1 x life line attachment in cockpit. Smaller U Bolt, tested with lever. No backing plate. Suggest replace with bigger U bolt and backing plate.

17. Rigging Attachment Points:

Being an un-stayed mast the only rigging attachment point is the swivel for the asymmetric spar which is located on the pulpit, with stainless nut which was hammer tested and found secure.

18. Ground Tackle and Mooring Arrangements:

a) Main bower anchor. This is a Fortress FX11 alloy anchor with a long length of chain and 3 strand mooring warp. Chain not laid out and examined link by link and bitter end attachment not checked. The anchor swivel attaching the anchor to the chain is corroded. Suggest replace with new fixing.

Fig 17 Anchor fixing

b) No other anchors found.
c) Stemhead fitting is stainless steel secured through deck with s/s bolts. Hammer tested and no sign of damage. Single bower roller and has pin to prevent the chain jumping in rough conditions. One bolt is missing which should be replaced.

Fig 18 stem head bolt missing.

d) Vessel has aluminium cleats fore and aft of adequate size through bolted the laminate with plywood backing plates with s/s washers and nuts. All hammers tested, levered and found secure.
e) Bow mooring post. The vessel has a s/s mooring post fitted to the foredeck. This is adequately secured with s/s bolts and a metal pad, however a soft wood pad has also been fitted which is not treated and will rot causing the nuts to come loose. This should be replaced with marine grade plywood and securely sealed.

Fig 19 Soft wood pad under mooring post

f) There anchor locker lid has no means to keep closed except gravity and so may open and close in rough seas. The lid has a small crack in the centre aft. Suggestion. A simple bronze bold can be fitted. And the lid repaired by laminating underneath and filled with gel coat.

Fig 20 Anchor lid crack

19. Other Deck Gear and Fittings:

a) All found of adequate size and securely through bolted, although inspection from under limited by linings.
b) The following winches fitted were all tested as far as possible but not under load.
    a. Port Coach roof. Maxwell 2 speed Self tailing Chrome. Very stiff, needs service before use.
    b. Starboard coach roof, electric Quick winch. Not able to test as laid up for winter and no batteries.
c) Mainsheet traveller and jammer cleat secure and in working order except for Starboard end fitting which is loose and needs securing.
d) Deck hardware all of good quality and specification, and all are serviceable.

20. Davits and Boarding Ladders:

a) Vessel fitted with folding stainless steel boarding ladder with 4 steps extending below water line for easy boarding from water. No signs of wear and secure when pulled and climbed on.
b) 2 Beaching post supports have been fitted to either side of hull. The bolts and nuts are of adequate size. I would suggest the washers should be increased in size.

Fig 21 Beaching posts internal fitting

c) There is an outboard bracket securely attached to the transom that can be used for emergency propulsion with outboard attached.
d) Some of the washers used to attach ladder to the transom are mild steel and rusting. These should be replaced over next 24 months.

Fig 22 Mild steel rust.

21. Spars:

Mast

The mast was stepped so inspection is restricted to fittings and area to head height. Proctor spun alloy tapered unstayed mast, anodised, no signs of corrosion around base or fittings. No damage or distortion to the extrusion was noted. The mast passes through the deck and should turn in a bearing at the deck and at the base. I was not able to turn this as sealant had been applied around the deck to stop water leaks while laid up. All fittings at this level secure and in good condition. Area at about 2m above deck height was Duck tapped to frap halyards so could not see halyard exits.
Below deck vinyl cover removed and no signs corrosion.

Boom

a) Silver anodised in similar condition to mast.
b) Main sheet and kicking strap attachment points secure.
c) Goose neck riveted to mast and bushes tight

Boom Vang

a) Solid boom vang by Kemp, attached to mast with 6 S/S bolts. All fixing checked and no signs of corrosion or wear.

Asymmetric spar

a) Proctor one piece, no signs corrosion or wear.

22. Standing Rigging:

None on this type of design

23. Running Rigging:

Majority still in boom and mast and so exposed to weather for past 18 months minimum. All dirty, with frayed ends on some. A good hose down and whip ends should suffice however all should be individually checked once clean.

24. Sails and Covers etc:

Examined on board in bags rolled out in places. No visible signs of tears and when tested in places for degrading none found.

a) Genoa – White Mylar, some black spots like mould that may wash out. Not much resin left in cloth. Hank on pistons working were checked. Made by Copp Sails of Chichester. Would need to see set to give full opinion.
b) Main sail. Viewed unfurled in bag. Similar age and condition to Genoa.
c) Spray hood, dodgers, Fawn coloured canvas material, again checked not attached, some black spots, need laundering for best appearance and then checked.
d) Sail covers Arun sails, fawn colour, worn through in places from abrasion.
e) Spinnaker found in bag in heads along with unidentified red cover. Again, would need to be hoisted or checked by sail loft for full condition report.

25. Navigation Lights:

Vessel fitted with
a) Bicolour Port and starboard Bow light
b) Stern light
c) Steaming light
d) Tricolour mast head – could not see if anchor light fitted

Lights could not be made to work due to batteries being removed. Bow and stern lights were secure.

26. Bilge Pumping Arrangements:

a) Manual Whale bilge pump fitted in cockpit with Whale bilge strainer in saloon.

27. Fire-fighting Equipment:

a) There were the following fire-fighting appliances found onboard.
    a. Fire blanket in galley
    b. 1kg Powder Extinguisher, gauge showed Green on gauge, fitted by engine.(29398 written in marker pen on bottom which could be date fitted)
    c. 1kg Powder Extinguisher, gauge showed Green on gauge, fitted in Starboard cockpit locker.
    d. 1kg Foam Extinguisher fitted in Starboard cockpit locker expires 02/12

There are no regulations covering this vessel in private use. The Boat safety scheme recommends 2 Fire extinguishers of Powder type 1kg each for this type of vessel. I would suggest that at least two extinguishers of known expiry date are fitted on board and that the engine compartment has a plugged hole where the extinguisher can be discharged.

28. Lifesaving and Emergency Equipment:

a) I found aboard 1 x Horseshoe life buoy, 1 Danbuoy light with no batteries and emergency tiller.

The RNLI operate an excellent free inspection and advice service concerning levels of safety equipment (SEA Check) and can be contacted on 08003280600 or via the RNLI website, www.rnli.org.uk.
The RYA also publish a booklet, G16, "The Boat Safety Handbook" and this specifies levels of Safety Equipment for different categories of use and it is *Recommended this vessel be equipped to the level appropriate to proposed use.*
Booklet is obtainable from nautical bookshops or direct from the RYA, www.rya.org.uk.

29. Engine and Installation:

Engine is a Volvo 2001 raw water cooled No. 230[redacted] fitted with S120C Saildrive
a) The engine is generally clean and has new oil and secondary fuel filters fitted.
b) There are signs of calcification around the head gasket, water pump and anodes. These may not be leaks but from when the engine was serviced. This should all be cleaned off and checked again when the engine is running.
c) Beds are of glass fibre bonded over wood formers and secure.

d) Mounts are steel on rubber, all found secure with nuts top and bottom and tight.
e) Engine oil level was correct and clean and inspection under oil filler reveals no signs of water.
f) Exhaust silencer is mounted behind the fuel tank with a second one in the transom void. All double clips on hoses and system appears sound.
g) Gearbox is part of saildrive unit. Oil is clean and correct level. It is engine oil which was specified by Volvo originally but they now recommend ATF Oil instead.
h) Engine Morse control was tested and works. The rear is exposed in the locker so care should be taken when stowing the locker that equipment does not jam it. Alternatively a cover can be bought and fitted.

30. Fuel System:

a) Stainless steel tank fitted under cockpit floor. There is slight surface corrosion on the base which when tested with a spike was sound. This should be periodically checked.

Fig 23 Fuel tank underside check

b) There is no Fuel shut off valve in the system although there is one fitted to the tank not in use. The fuel feed is a copper fitting direct onto the tank to the primary fuel filter. Ideally the feed should have a valve fitted so that in case of a fire it could be closed off and this should be remotely operated from the cockpit but this is only law on commercial craft.
c) Primary filter Glass bowl type mounted in engine compartment, glass is dirty but fuel appears clean.
d) The hoses are correct SAE rating as supplied by Volvo. No signs of leaks.

31. Accommodation General:

Kept clean, airy and light, good size galley. Upholstery in good condition. Lee cloths fitted in forward berths. There is a fresh water leak evidenced by water collecting in the bilge and around the mast base. I suggest that the water tank is removed, that area dried out and then check around mast base for leaks from deck, although there is no evidence of water running down the mast. It is possibly a leak from a water tank fitting although the base of all the berths and heads in the saloon show evidence of water ingress from below normally associated with wet bilge.

Fig 24 / 25 water ingress

f the either Boat safety scheme or

Recommendations will be made where there is an obvious serious safety issue and these must be carried out before use. Suggestions will also be made where appropriate to enhance safety criteria, particularly with systems where there is no mandatory requirement to conform to a standard. It must be understood however that some Insurance companies require a declaration from the assured that the gas system conforms to ***current*** standards and if that is the case here upgrading may be required as a condition of the insurance policy.

Sources of further information:

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

Gas Observation and action table

Item	**Result**	**Action required.** ***(R) Recommendation to be carried out before use.*** **(S) Suggestion only**
Condition and efficiency of self draining bottle storage	Gas canister in mounted in forward anchor locker which drains outboard	
Age and condition of flexible hose	Hose is BS3212 dated April 1994 and in good condition. It is correctly terminated with swaged clips	*(R) The hose being 17 years old it should be replaced*
Age and condition of regulator	No date, surface corrosion and operates.	(S) Replace with new and keep as spare.
Condition of copper pipe where accessible	Green in anchor locker but when scrapped solid.	
Is pipework adequately supported and not under stress where accessible?	Clipped in locker and supported behind linings in boat.	
Are all appliances fitted with flame failure devices on all burners, and did these work properly under test?	Flame failure device fitted oven only not 2 burners or rings on Plastimo Atlantic Cooker. Not able to test	*(R) Keep gas turned off at bottle while not in use particularly if children aboard.* You might consider upgrading to a new cooker with FF devices.
Are any appliances requiring flues properly fitted with same?	n/a	
Is a gas alarm fitted?	No	(S) Consider fitting gas alarm
Is each appliance fitted with an isolating tap	Yes.	
If fitted did leak bubble tester function?	No	(S) Consider fitting bubble tester in order to provide convenient regular leak testing

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

33. Fresh Water Tanks and Delivery.
a) 1 x 50 litre flexible tank fitted forward.
b) Aluminium deck filler
c) Water is delivered to the galley sink via a Whale pump
d) Second Whale pump in the heads
e) The water tank is currently full and both pumps were tested. The heads pump worked, the galley I could not get to draw. The water smells very bad and is brown coming out of the heads pump. Suggest sterilisation of tank and flush out. Products are readily available from the chandlery.
f) All Clips and hoses were checked and found secure.
g) There is a freshwater changeable filter fitted in the galley.

34. Heads:
a) Toilet is a Par Jabsco Brydon Boy appears to work correctly but tested without water. No signs of leaks.

35. Electrical Installation:
a) Two batteries have been removed. Boxes left with securing straps.
b) A battery switch over (isolator) is fitted along with a manual changeover switch.
c) A solar changing panel is fitted to the coach roof with an electronic isolator system by the engine.
d) There is a basic distribution panel with switches for nav, lights , electric winch breaker
e) All seemed well wired and terminals good.
f) It will all need testing with batteries aboard.
g) Shore power is fitted with correct socket at companionway. This wires directly to 2 x 2 240v 13 amp domestic plug sockets. There is no circuit breaker fitted.

Recommendation – A circuit breaker should be fitted by a competent electrician before the shore power is used.

36. Electronic and Navigation Equipment:
a) There is an electronic compasses fitted which could not be tested. The screen looks white but may be ok.
b) Stowe wind instrument, Autohelm Bidata depth, log & Dataline fitted but not tested. The Bidata head unit has been fitted over an old Stowe unit which I would suggest want removing.
c) No interior lights could be tested.
d) There are brackets and wires for VHF radio but not fitted or aboard.

37. Heating and refrigeration
No ice box or refrigeration

RECOMMENDATIONS and CONCLUSIONS:

Maintenance Overview:
Cosmetic maintenance: The vessel has been generally well maintained. Some modifications have been made which are generally OK but have limitations. I would suggest these were fitted by the owner rather than a boat yard. These are noted above.

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

Hull and Through Hulls section 3 & 13

- Toilet outlet: Bronze thru hull. Currently shut and not possible to turn. It may well free up with cleaning from outside *Recommend freeing up before launch.*
  Remove head thru hull fitting and reseal. To be carried within 2 years due to higher moisture reading in hull.
- Heads water inlet. Bronze thru hull, with DZR ball valve. Lot of green corrosion and stains. 2 clips on pipe and a 3rd clip around the valve. Not sure why. Stiff but works. *Recommend clean up and further investigation into why 3rd clip fitted. Possible crack in DZR?.*
- Galley sink drain: Bronze thru hull. Currently seized open. It may well free up with cleaning from outside *Recommend freeing up before launch.*

Lifesaving and Emergency Equipment: Section 28

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

Gas Installation Section 32

Age and condition of flexible hose	Hose is BS3212 dated April 1994 and in good condition. It is correctly terminated with swaged clips	*(R) The hose being 17 years old it should be replaced before gas used*
Are all appliances fitted with flame failure devices on all burners, and did these work properly under test?	Flame failure device fitted oven only not 2 burners or rings on Plastimo Atlantic Cooker	*(R) Keep gas turned off at bottle while not in use particularly if children aboard.*

Electrical Installation Section 35

- Shore power is fitted with correct socket at companionway. This wires directly to 2 x 2 240v 13 amp domestic plug sockets. There is no circuit breaker fitted.
  Recommendation – A circuit breaker should be fitted by a competent electrician before the shore power is used.

Conclusions:

For a 1990 boat the fixtures, fitting and structure are all in good condition as noted in the report. There are no signs of major damage or abuse. The owner has carried out sensible modifications that are well intentioned

but require some finishing off to make long lasting and secure. Most of these are covered by suggestions rather than recommendations but should be carried out in a timely manner.