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Web site - www.abbeyyachts.co.uk
E-mail - info@abbeyyachts.co.uk

Tony Staton-Bevan FYDSA Qualified Yacht Surveyor
Lynda Staton-Bevan

Danes Cottage New Valley Road Milford-on-Sea Lymington Hampshire SO41 0SA Tel/Fax 01590 645755

VAT Reg. No. 411 5388 72

CONDITION SURVEY REPORT ON 'SPIRIT OF LUNDY'

Client. This survey was carried out on instructions received from Mr. K. Askew, of 27 Minstead Road, Bournemouth, BH10 5JY.

Any liability is under the jurisdiction of the UK courts, to the above client only and not to any future holder of this report.

Location. The vessel was inspected while she lay ashore at Universal Marina, Sarisbury Green, Southampton, on 28th & 31st March 2008.

Preparation for survey. No parts of the vessel were dismantled and no bolts were removed for inspection.

Inaccessible areas. I have not inspected any part of the vessel, her equipment or fittings, which are covered, unexposed or inaccessible and I am therefore unable to report that any such part is free from defect.

Sea trials. There are obvious limitations on the examination of a vessel and her equipment during a static condition survey and it is therefore advisable to take her out on sea trials prior to purchase, so the vessel and her equipment can be fully tested by the purchaser under sea conditions.

Recommendations The recommendations are intended to be only a guide to rectification work. More detailed information can be supplied, if required. To assist in evaluation of the various defects they are sub-divided as follows:

(S)	Structural and other serious defects which should be attended to immediately.
(D)	Defects which could deteriorate or affect the safety of the vessel.
R)	Replacement due to deterioration or failure.
(I)	Improvements or modifications suggested.
(M)	Items of maintenance or requiring investigation.
C)	Cosmetic defects.

SPECIFICATION

Class - Atlantic 40 Ketch

Believed built - 1978

British Registered - Official Number 376552 (documents unseen)

Engine - Mercedes diesel

CONSTRUCTION

Glass reinforced plastic (GRP) hull and deck mouldings. The hull moulding incorporates the long keel, with internal ballast.

The following was covered within the scope of this survey and any areas or items not specifically mentioned were not examined. The vessel and her equipment have not been checked for elements of design, suitability for any particular purpose, or compliance with any rules, regulation, law, standard or code.

Note - Where the terms serviceable or serviceable condition are used, this indicates an item is fit for its purpose at present, despite possible wear or deterioration. It may nevertheless require maintenance or replacement in due course, as part of a regular maintenance program, in order to keep the vessel in good seaworthy condition.

1 Hull - topsides

The topsides are understood to have been painted, over the original white gel coat. Ageing of the gel coat is showing through the paint, in the form of surface crazing. There is also evidence of a number of repairs, particularly on the stem, but no evidence of any significant structural damage.

Recommendation

1.1 ***(M)*** *The appearance of the topsides would be improved if they were repainted.*

2 Hull - below waterline

Blisters and blister craters are visible in the paint coatings throughout the underwater area. Where sample blisters were opened, a soft epoxy coating was exposed and minor blistering on the clear (unpigmented) gel coat underneath. As these epoxy coatings normally have a service life of up to around 10 years, it is not unusual to find it has softened and blistered, as it is understood to have been applied in 1990.

It is understood a sacrificial timber strip has been fitted along the base of the keel and this appears to be held in place with GRP laminate.

The hull was sounded with a hammer and no evidence of any significant voids, delamination or deterioration of the laminate was detected.

Small sample sections of the anti-fouling paint were removed at intervals around the hull. In these sections the soft layer of epoxy paint was exposed.

Moisture readings were taken using a Sovereign electronic moisture meter. In common with other meters, it does not measure the actual percentage of water within the hull, but indicates the presence of moisture on a comparative scale of 0 - 25. This scale equates to approximate moisture content, ranging from around zero to 2%, as measured by weight. Figures of 2-5 are normally considered "dry" and up to 15 acceptable, but over this blisters are more likely develop. On the exposed sections of epoxy paint, the meter registered between 16 and 18, indicating a medium to moderately high level of moisture.

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Note. With many GRP hulls it is possible that water ingress may eventually lead to the development of blisters. This risk can be reduced by storing the vessel ashore when out of commission and limiting any time spent in warm or fresh water.

Recommendation

2.1 *(D) Although there is no evidence of immediate urgency, it will be necessary to remove all the paint coatings and the gel coat in due course, in order that the hull may be fully dried out and coated with solvent-free epoxy paint, following the paint manufacturers instructions.*

3 Bow thruster

The Vetus bow thruster has been fitted slightly off-centre in the thruster tube, but if the build-up of anti-fouling paint is cleaned away, there is sufficient clearance.

No sacrificial anode is fitted.

When briefly tested, the trip turned the supply switch off.

Recommendation

3.1 *(D) Trace and cure the fault on the bow thruster. It would also be advisable to clean away the build-up of anti-fouling paint from within the thruster tube and to fit an anode.*

4 Rudder

The GRP rudder blade has suffered water ingress, which is common and although it remains serviceable at present, it should be treated at the same time as the hull.

There was a small amount of wear visible in the bottom bearing, but without dismantling, this and the top bearing appeared to be serviceable.

5 Stern gear

The three bladed bronze propeller was in serviceable condition.

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The tail end of the stainless steel propeller shaft was in serviceable condition.

The cutless rubber shaft bearing was in serviceable condition, with no significant wear visible.

The sacrificial anode fitted to the hull was about 20% wasted and serviceable.

The gland on the inboard end of the stern tube would need to be checked afloat, but rust was visible on the jubilee clips on the length of rubber hose which retain the gland on the stern tube.

Recommendation

5.1 *(D) Replace the jubilee clips on the length of rubber hose and at the same time, check the condition of the hose and the gland.*

6 Skin fittings

The through-hull skin fittings were in serviceable condition as viewed externally.

7 Deck and superstructure moulding

This GRP moulding incorporates the coachrooves, decks and cockpit and has a white painted finish and Treadmaster non-slip panels.

There are shallow depressions under both mast steps, which is fairly common on a vessel of this age. The one under the main mast is a result of distortion of the GRP structure under the base of the mast compression pole. (See "Internal Structure"). The mizzen mast has no compression pole and relies on the strengthening of the aft coachroof top. If it became necessary, it would be possible to fit a pole, without significantly affecting the accommodation in the aft cabin.

Rust staining was visible on the deck on the starboard quarter, which appears to have come from rusty components in the gas bottle locker.

Otherwise, apart from minor crazing, abrasions and blemishes in the paint and underlying gel coat, the moulding was in sound condition.

The Treadmaster panels were worn and will need to be replaced in due course, but the use of Treadmaster renovating paint could make them serviceable in the meantime.

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Recommendation

7.1 ***(M)*** *The appearance of the deck moulding would be improved if it were repainted.*

8 Hatches

Water ingress into the plywood forehatch and lazarette hatch has caused some deterioration, but they appear to be serviceable at present.

The remaining hatches appeared to be in serviceable condition, with no evidence of leakage during heavy rain.

Recommendation

8.1 ***(M)/(D)*** *Renovate the plywood hatches.*

9 Windscreen and windows

The windscreen was in serviceable condition, with no evidence of leakage, but there was corrosion around the fittings on the opening centre section. This section is also twisted and does not close securely on the seal.

There was no evidence of leakage from the windows, most of which have sliding opening sections. There was however evidence of some general deterioration. This includes a number of missing/sheared fastenings and opening sections which do not slide in the runners.

Recommendation

9.1 ***(D)*** *Remove, renovate, or replace the opening section of the windscreen.*

9.2 ***(D)*** *Renovate the windows and replace the missing fastenings.*

10 External woodwork

The bulwark capping is damaged forward of amidships on the starboard side and adjacent to the gate in the guard rail. Lesser damage was visible in similar areas on the

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port side.

Sections of the rest of the external woodwork are also in need of attention, but it was otherwise in serviceable condition.

Recommendation

10.1 ***(D)*** *Cut out the damaged sections of the bulwark capping and scarf in new sections. Carry out general refurbishment to the rest of the woodwork.*

11 Deck fittings

The fastenings were loose and one was missing in the forward port gate stanchion base and they were loose on the stanchion base aft of the gate.

There was a rusty fastening on the base for the forward port gate stanchion.

The guard wires across the gates are not long enough.

In view of the age of the vessel, the shroud and backstay plates should be removed for inspection and renewal if any corrosion or fatigue is found.

The port davit and to a lesser extent the starboard davit, are bent and distorted.

Recommendation

11.1 ***(M)/(D)*** *Reseal and tighten the loose stanchion base fastenings and replace the rusty and missing ones.*

11.2 ***(M)/(D)*** *Adjust the guard wires so that the sections across the gates fit properly.*

11.3 ***(M)/(D)*** *Straighten and rebuild the davits, as found necessary.*

12 Spars

The Sparlight gold anodised, aluminium alloy, deck stepped main and mizzen masts and booms were in serviceable condition as viewed from the deck, having suffered normal wear and tear. This includes some areas of corrosion, which do not appear to be serious. There was also a slight bend in the main mast at the spreaders, but it may be possible to eliminate this by re-tensioning the rigging.

The Hood Seafurl headsail reefing spar was in serviceable condition as viewed from the

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deck, but the sail was not hoisted.

The telescopic spinnaker pole appeared to be serviceable.

For a full assessment of the mast and rig, it would be necessary to have it unstepped and checked by a spar/rigging specialist.

Recommendation

12.1 ***(M)/(D)*** *Clean the areas of corrosion back to bare metal and apply primer and paint.*

12.2 ***(M)/(D)*** *Re-tension the standing rigging to eliminate the bend in the main mast.*

13 Rigging

The stainless steel 1 x 19 standing rigging appeared to be in serviceable condition as viewed from the deck and is understood to have been renewed in 2005.

The running rigging was showing signs of varying degrees of wear and UV deterioration, but appeared to be serviceable at present.

14 Sails

The following sails were superficially examined:

Cruising chute - stowed in a furling sock, but appeared to be in good serviceable condition

Mainsail, mizzen, genoa and other sails - range from fair to poor condition.

Recommendation

14.1 ***(M)/(D)*** *All the sails should be properly assessed on a sea trial and if necessary, taken to a sailmaker for attention.*

15 Engine

The Mercedes four cylinder diesel engine was not started or tested in any way and it is

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not possible to comment on its mechanical condition. Externally it was in fair condition.

The fuel tanks are obscured behind insulation, but there was rust on the connecting pipe fitted between the two.

Recommendation

15.1 ***(M)/(D)*** *It is strongly recommended that the engine and its installation are thoroughly checked over by a qualified marine engineer, paying particular attention to the points raised here. The rusty connection pipe will need to be replaced in the very near future.*

16 Steering

The rod and gear operated wheel steering turned freely, with very little resistance and the installation was satisfactory where visible. For a more thorough appraisal it would need to be dismantled.

No emergency tiller was seen, but the lazarette locker was not completely emptied.

17 Internal structure

The GRP structure under the base of the mast compression pole has been distorted, but appears to be otherwise secure at present.

The bunk top bearers have become detached from the hull under the aft port berth, but these are not structural.

Otherwise, the internal structure of the hull and deck mouldings, the main bulkheads, engine bearers and hull-to-deck joint, were in sound condition where visible, with no further evidence of significant movement or damage.

Recommendation

17.1 ***(D)*** *Although there is no evidence it requires immediate attention, in due course the structure under the base of the main mast compression pole should be cut away and rebuilt in solid GRP laminate, which cannot be compressed.*

17.2 ***(M)*** *Resecure the loose bunk top bearers under the aft port berth.*

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18 Internal fittings

The internal joinery, linings, upholstery and fittings were generally in good serviceable condition, but would benefit from some general refurbishment.

19 Ventilation

Ventilation is provided throughout the accommodation, but a hatch or window will need to be opened when using the gas cooker.

20 Sea toilets

The two Lavac sea toilets appeared to be serviceable, but will need to be tested afloat.

The operation of the holding tank was not tested.

21 Seacocks

All the seacocks were in need of attention, some showing evidence of leaks and corrosion, others were stiff and all have only single clips on the hoses.

Recommendation

21.1 ***(M)/(D)*** *Dismantle all the seacocks and examine for wear and corrosion. If satisfactory, grease and reassemble. Where excessive corrosion or wear is found, or the seacocks cannot be dismantled due to corrosion, they will need to be replaced.*

At the same time, check all hoses, pipework and jubilee clips for deterioration and replace as necessary, fitting double clips on all hoses..

Note. As a safety precaution, all seacocks should be maintained in good working order and all should be left in the "closed" position when not in use.

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22 Fresh water

A pressure operated electric pump provides water from the steel water tanks to the hot and cold water outlets at the sink, forward wash basin and shower and aft wash basin. There was only a small residue of water left in the tanks and the system could not be fully tested. The faucets are showing signs of wear, but appear to be serviceable.

Hot water is provided by a calorifier, fitted in the engine compartment, where the water is heated by the engine cooling water, or by an immersion heater from the shore power. Due to the lack of water, this was not tested,

23 Gas installation

The gas bottles are stowed on the aft deck in a ventilated box.

Copper tubing with flexible tails supply the gimbaled gas cooker, which was found to be in working order during a short test.

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

Recommendation

23.1 ***(M)*** *For a full appraisal of the installation, a qualified gas installer must be employed.*

24 Electrics

The 7 batteries are stowed in the engine compartment, but are not properly secured.

Most of the switches are original and very basic. There have been additions to the wiring, but some of this has not been installed in a wholly professional manner.

The electrical equipment was switch tested, but no detailed inspections or specialist tests were carried out.

The port light in the forward cabin was not working.

The remainder of the interior lights were working.

The chart light in the cockpit was not working.

The fan in the aft cabin was not working.

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The port and stern navigation lights were working, but not the starboard light.

The masthead tri-colour light was not working.

The masthead anchor light was working.

The steaming light was working.

The deck flood light was not working.

The shore power was connected and providing power to the battery charger, but was not further tested.

The remainder of the electrical equipment is detailed under "Equipment".

Recommendation

24.1 *(M)/(D) The whole of the electrical installation will need to be updated and improved. In the meantime, trace and cure the faults on the malfunctioning lights and the fan.*

25 Bilge pumping arrangements

A manual diaphragm type bilge pump is fitted in the cockpit.

An electric bilge pump is fitted in the engine compartment.

Both pumps were working, but it was not possible to fully test them as there was insufficient bilge water.

26 Fire fighting equipment

Three old, date expired fire extinguishers are fitted and are unlikely to be serviceable.

A fire blanket is fitted at the galley and appeared to be serviceable.

Recommendation

26.1 *(I) New fire extinguishers must be fitted, so that there is one in each cabin. One must also be fitted in a cockpit locker, for use if all the crew are on deck, with a fire in the accommodation.*

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27 Equipment

The following major items of equipment were found on board. They were superficially examined and switch tested where appropriate:

45lb CQR anchor and chain - appeared to be serviceable, except that it is bent and the chain is no longer self-stowing now that a bow thruster has been fitted.

Kedge anchor - serviceable condition.

SL capstan type electric windlass - working intermittently from foredeck and helm position, probably due to bad contacts on the switches/wiring.

Sestrel binnacle compass - appeared to be serviceable, despite there being a bubble in the fluid.

Neco autopilot - functioning, but not fully tested.

Horn - not working.

Walker wind speed and direction instruments - functioning, but not fully tested.

Autohelm depth - no power.

Magellan Nav DLX 10 GPS - no power.

Oregon weather station - functioning, but not fully tested.

Icom IC-M80 VHF radio - no power obtained.

Icom IC-728 HF transceiver - no power obtained.

NASA Navtex - no power obtained.

Radio/CD/cassette player - no power obtained.

Refrigerator - no power obtained.

Freezer - understood not to be serviceable.

Gas alarm - disconnected.

Hydrovane wind vane self-steering - not tested.

Wind generator - not tested.

Cockpit canopy - the windows have perished.

Liferaft - condition unknown as service overdue.

Dinghy and outboard - not tested.

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28 Conclusions

At 30 years old and after many thousands of miles covered, 'Spirit of Lundy' is showing her age. Although her basic structure remains sound apart from the points raised here, she will greatly benefit from a complete refit to include the recommendations in this report, as well as general upgrading and improvements. Once completed and with regular maintenance in the future she should continue to provide good service.

31st March 2008

TONY STATON-BEVAN FYDSA