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'xxxxx'

Pre-Purchase Survey

Report Date: xxxxx 2018

Survey Date: xxxxx 2018

Place of Survey: Margarona Boat Yard, Preveza, Greece

Vessel name: xxxxxxxx

Vessel Type: Sailing Yacht

Builder: Moody

*Above taken from various sources, not checked.

Client

xxxxxxxxx

XXXXXXXX

Length Overall: 38' 0" /
Beam: 12' 10" /
Draft: 5' 11" /

Built year: 1995
Builder: Moody

HIN no: MPPGB119F595
Vessel no: Unknown
SSR: 131608

Engine Make: Volvo Penta
Engine Model: MD22L
Fuel Type: Diesel
Engine Power: 50HP

*Above taken from various sources, not checked.

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1. About the Survey and this Report

Terms & Conditions

This Survey was carried out under the Yacht Designers and Surveyors Association current Terms of business which were E-mailed to the client prior to the survey.

Limitations

- We have not inspected woodwork or any other parts of the structure which are covered, unexposed or inaccessible and we are, therefore, unable to report that any such part of the structure is free from defect.
- In some cases it is not possible to detect latent and hidden defects without destructive testing, not possible without the Owner's consent.
- Where repairs, further opening up or dismantling is required, additional decay, damage or necessary work may be uncovered.
- The engine, tanks and other normally installed mechanical equipment were in situ which limited inspection and examination in these areas.
- A Sovereign Quantum Marine Moisture Meter, a capacitance-type moisture meter was used. The calibration of the meter was checked on the day of the survey, prior to readings being taken. Readings are taken in the relative mode, which ranges from 0-100. The values are regarded as an index and do not represent moisture content as a percentage of the dry weight. Where appropriate both shallow and deep modes were employed. Direct comparisons with other meters, be they Sovereign or others are not valid.
- The vessel was not surveyed with respect to any particular code or standard or navigation body's rules or bylaws unless specifically stated. No documentation or compliance with any regulations has been checked as part of this survey. No guarantees or warranties are given or implied with respect to the vessels suitability or fitness for purpose.
- The vessel was inspected on the hard at Margarona Boat Yard, Preveza, Greece. Access to the hull was generally good except in areas where the boat was resting on posts. No comment could be made on the water tightness of the vessel.
- The vessel had been UHP water blasted to remove layers anti-fouling and coatings applied to the hull.
- This report carries no warranties regarding ownership of the vessel or any outstanding mortgage, charges or debts which there may be on the vessel.
- This report has been prepared for the use of the commissioning client and no liability is extended to others who may see it.

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.
- The survey is not a parts and labour guarantee and it should be noted that defects may exist in the vessel that the survey could not detect due to limitations of time, vessel presentation and the range of tests acceptable to the owner.
- Please note that where reference is made to condition in all cases this must be considered in relation to the vessels's age, for example: very good condition should not be taken to mean new condition.
- A general inspection of the engine, installation and systems will be made, but this is a visual inspection only and an item has only been operated if stated. It should be appreciated that some components may appear serviceable but be found defective when run under load and for a prolonged period.

Recommendations

Recommendations will be restricted to those defects which should be rectified before the vessel is used, (or within a given time span if specified, any items which may affect insurability).

Recommendations are listed at the end of each section, labelled with priorities as listed below:

- **Dangerous:** Items which must be repaired prior to the vessel being re-floated or used for habitation/navigation. Vessel deemed uninsurable with this issue.
- **Urgent:** Items which are not classed as dangerous, however, should be repaired preferably prior to the vessel being re-floated or used for habitation/navigation. Vessel deemed an increased risk for insurers with this issue.
- **Priority:** Items of repair should be carried out as soon as possible. Repair should be carried out no later than within six months. Vessel only insurable with restrictions or safety precautions.
- **Caution:** Items would require monitoring and further investigation. Repair may be required within the next twelve months.
- **Advisory:** Items are advised for safety or maintenance. These do not pose an insurance risk to the vessel.

Recommendations will be printed in blue, for quick reference. The recommendations are contained in the body of the 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.

Suggestions will be printed in italics as they do not constitute a requirement, and are not repeated in the conclusions. Suggestions are this surveyors opinion only and can be looked on as 'helpful advice' to preserve the craft for the long term or improve handling and comfort. Occasionally suggestions concern faulty items that may affect negotiations and in this case they will be listed after the recommendations at the end of the report.

Legislation & Ownership

Note: The inspection is not undertaken with any intention to ascertain that the vessel would comply with any rule or code of practice as may be required by any authority under whose jurisdiction the vessel may be operated. It carries no warranty regarding ownership of the vessel or any warranty regarding outstanding mortgages, charge or other debt there may be on the vessel.

V.A.T Status & Proof of Ownership

The original invoice for the vessel was not seen and therefore there was no evidence that United Kingdom V.A.T has been paid. There was no proof of ownership found on the vessel.

There was no evidence of when the vessel was built onboard at the time of survey. Vessels built prior to July 1998 do not have to adhere to the requirements of the Recreational Craft Directive.

Surveying conditions

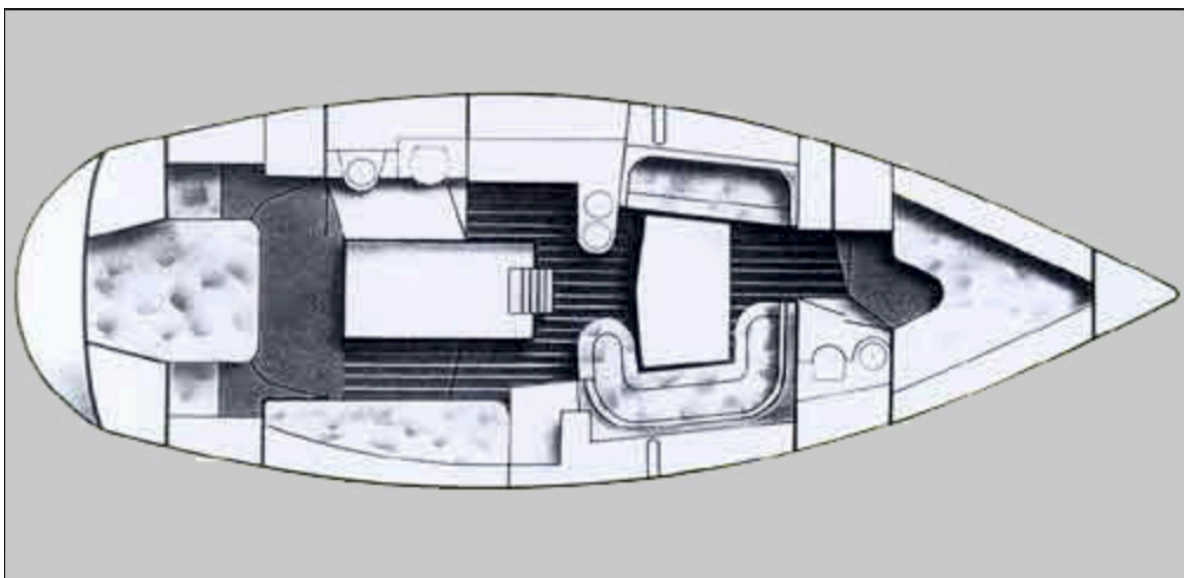
The conditions on the day the survey was conducted were good. The conditions when readings were taken were as follows.

- Air Temperature 26.7°C
- Humidity 14.2%
- Dew Point 4.7°C

The conditions were good for obtaining moisture readings within structural components of the vessel.

2. General Description - completed

'XXXXXX' was reported as being built in 1995 by Moody. The vessel, which was a highly successful production vessel of the cruising class, was built in the UK. She was a centre cockpit, displacement cruising yacht with a shoal draft keel. The vessel had a sloop rig with alloy mast and boom. The auxiliary engine was a Volvo diesel, with shaft and single propeller. The hull was of moulded GRP finished in white gel coat with blue waterline stripes.



The general condition of this particular vessel indicates that she has not been intensively sailed. She is of a known, tried and tested design and her previous owner/s have maintained her well. While the original build quality was to a high standard, there are a number of faults which must be rectified.

3. Keel

The vessel had a moderately shallow draft ballasted fin keel with a shoal bulb. The external bolt on ballast keel was of ferrous metal, tested with a magnet. The keel had been coated with the same blue anti-foal paint as the rest of the underwater hull, which was worn and in need of re application.

- The keel was visually inspected and found to be fair. Light hammer sounding did not reveal any areas of thick filler on the sides, leading or trailing edges.
- Some limited accessible surfaces on the bottom of the keel were examined and found to be fair with no indication of recent groundings.
- Externally, the curved section around the keel root (the keel to hull joint) was visually inspected and hammer tested with consistent, robust sounding returns. Particular attention was paid to the flatter sections of the hull just forward and aft of the keel where damage from grounds can be sustained - no indication of crazing or deformation, or delamination were found.
- Moisture readings close by the keel in the flat sections forward and aft on the hull were normal and not different to anywhere else on the underwater hull.
- With the vessel on the hard and the weight of the vessel resting on the keel root, a number of small gaps was noted around the keel root join.
- Externally there was evidence of corrosion and staining at the hull to keel join.
- The keel was through bolted into place. 7 keel bolts were located and inspected in the bilge. These were found beneath sole boards within the saloon and engine compartment.
- Two keel bolts forward of the saloon table, two beneath the saloon table, two aft of the saloon table, and the six bolts and associated nuts and washer plates were seen to be significantly corroded. (These were tested and determined to be magnetic and therefore not stainless steel)
- The one keel bolt found in the engine compartment had been covered in thick painted coating.
- The keel bilge was dry and clean with the exception of the rust around the keel bolts. There was a previous dirty water line seen to a height of 35 - 45mm. There were salt crystals in the bilge around the keel bolts.
- The keel bilge and surfaces around the keel bolts were inspected and hammer tested, and no evidence of delamination, de-bonding or movement were noted. The GRP laminate around the keel studs was found in good condition.
- Inspection of the laminate close to the keel bolts found no fractures in the longitudinal and transverse members, and no cracks in the surrounding joiner work. Hammer testing of the GRP structures and surfaces returned clear, robust and consistent soundings.
- The brown stainage to the bilge walls would indicate a long term sea water leak was present over an extended period **which** would promote keel bolt corrosion. There is the potential that some seepage of sea water has occurred through the limited breaches in the external coatings and fillers in the edges in the external coatings and fillers at the edges of the keel (detailed above). Regardless of its source, salt water in the bilge has

caused considerable corrosion of the keel bolt studs, nuts and washer-plates and potentially in hidden and inaccessible locations as well.

Recommendation - Dangerous: Drop the keel, remove and replace all the stud bolts securing the keel (including the nuts and washer-plates). Consult a materials specialist as to the metal type to use - it is not uncommon for mild steel bolts (often galvanised) to be used not because they are inexpensive, but because they are more galvanically compatible with iron keel studs than stainless steel or bronze. Re-bed, remount and tighten on the ballast keel. Refinish the seam around the keel root join to avoid any water ingress. The replacement process should be done by a skilled and qualified person, as it is very likely that if the old studs do not disengage and unscrew easily they may need to be milled out, requiring a machine shop. The shop should also check the condition of the threads in the casting to ensure that they can hold the required load. Once all is found, or made satisfactory and new studs are installed, the keel can be reinstalled on the boat. It is recommended that a quote is obtained for this work prior to its undertaking, or preferably have it done by the owner prior to proceeding with the purchase of the vessel.

Recommendation - Advisory: After exposing and rubbing down the affected corroded areas of the keel with a coarse grit disc, treat any rust and re-coat the with International 'Interprotect' or similar two pack epoxy product, designed for use on iron keels. After this repair is complete, a new application of anti-foul on the entire underwater hull should be carried out.

4. Hull below Waterline

The hull was of a solid GRP construction, made from a combination of chopped strand mat and woven rovings. A visual inspection of the hull found her to be true, with no obvious unfairness of the hull. The hull was hammer sounded, with areas of significant stress where one might expect the hull to flex given additional attention, and no voids were sounded, however, no guarantee can be given that such voids do not exist. The original gel coat had been covered in blue anti-fouling which had been sanded back in preparation for new anti-fouling to be applied. Visual inspection revealed no significant evidence of crazing, deflections or movement.

Over 50 moisture meter readings were taken over the underbody of the vessel. The table below shows the range of moisture readings taken.

Mode	Range Below Waterline	Range Above Waterline
Shallow Mode	17 - 20	11 - 19
Deep Mode	11 - 22	12 - 18

Moisture levels across the underbody of the hull are considered to be low to medium, and readings should be read in the context of the vessel having been out of the water for the last 12 mths, and sat on the hard standing in Greece for that time. There were no visible signs of osmosis or wicking noted.

For reference, readings of 18-25 are considered medium and at the top of this range to be approaching the point where the risk of moisture related defects developing becomes significant. Readings beyond 25 are considered high and at a level where the risk of moisture related defects is considerable, but not yet physically detectable. Readings above 30 indicate

high levels of moisture within the GRP laminate and will usually accompany physically detectable defects.

5. Topsides above Waterline

Topsides above the waterline were visually inspected and hammer sounded. Access internally was limited, however, where access to the hull topsides allowed via certain lockers, the construction was of solid laminate with cored sandwich longitudinal strengthening, (potentially balsa but this cannot be confirmed without further destructive testing) for lightweight and increased stiffness. From the ground level only, the topsides were visually inspected and the gel coat found to be in serviceable condition, with a high polished finish to the gel coat noted. Visual inspection from the ground level in high sunlight revealed two small areas where some previous damage had been repaired. These were located amidships of both port & starboard. Repairs had been carried out to an acceptable standard. No evidence of hard spots or delamination were noted.

6. Deck Moulding

The deck was visually inspected and hammer sounded and tested under the weight of the surveyor.

- The decks were of moulded GRP which were integral with the coach roof and cockpit.
- The deck areas were of a cored sandwich construction on some horizontal areas to increase the strength and insulation (note: the core material could not be determined without destructive testing, but was said to be end grain balsa), with metal backing pads where deck fittings were present, as seen in the anchor locker and stern lazarettes. (note: headliners limited inspection of the underside of the deck in the accommodation).
- Decks were covered with a non slip coating which did not allow for moisture readings to be taken. These were visually inspected and hammer sounded and tested under the weight of the surveyor and no areas of delamination noted. (note: it cannot be guaranteed that such voids do not exist).
- Area of stress such as around rigging attachment points showed no signs of flex or delamination.

7. Hull to Deck Join

The hull to deck join was visually inspected and hammer sounded.

- The deck edge rests atop of the edge of the hull topsides, which has an inboard flange.
- Where seen via the chain locker and via the aft port and starboard lockers, this join was secured with bonding paste and toe rail thoroughly bolted.
- The toe rail was visually inspected and found to be firmly attached.
- Where seen the bonding paste and fastenings remained in place and the join was deemed to be in a serviceable condition with no signs of leaking or splitting at the time of survey.

8. Coachroof

The coachroof was visually inspected, hammer sounded and tested under the weight of the surveyor and found to be firm.

- This was also covered with a non slip coating.
- A number of craze cracks were noted.

- Where possible moisture meter readings were the same as on the topside, which were satisfactory.
- A straight edge was used and no deflections or undulations were detected to the coach roof, including around the deck stepped mast.

9. Cockpit

The centre cockpit was visually inspected and hammer sounded. The cockpit was of moulded GRP and integral with the decks and cabin moulding. The cockpit gave way to the main accommodation companionway.

- The cockpit seats and sole had a teak overlay. Strips were inspected and found firm with caulking in tact.
- The cockpit sole was found to be firm under the weight of the surveyor.
- Limited signs of crazing or other damage were noted, with moisture meter readings satisfactory.
- Two cockpit drains 35mm in diameter were installed at the aft of the cockpit floor/sole, with additional drains at seat level.
- A white powder coated aluminium wheel pedestal was found securely bolted to the cockpit sole with no evidence of corrosion found beneath the coatings.

10. Hull Interior and Structural Stiffening

The structural stiffening of the vessel was visually inspected and hammer sounded. Internal stiffening was by means of GRP floors up to the turn of the bilge (these were only visible in certain locations under the sole boards in the bilge. Additionally longitudinal stringers were moulded into the hull in conjunction with semi structural internal mouldings. Numerous plywood bulkheads and structures were tabbed to the hull giving further stiffening, and where seen GRP tabbing was substantial and remained intact (*note: access was limited by coverings and sole boards*). Where internally accessible, the hull and stiffening members were hammer sounded and gauged for moisture content. Hammer sounds were consistent and indicated no delamination at the time of survey. No significant difference in moisture meter readings was noted from those taken externally of the hull - however only a limited number of areas could be sampled due to liners and screwed down panels.

11. Rudder & Steering

The rudder and steering mechanism were visually inspected, hammer sounded and moisture readings taken. No areas of delamination were detected, and moisture levels were at an acceptable level. The rudder was physically tested to port and starboard under the weight of the surveyor and did not yield.

- Internal fastening to the quadrant were visually inspected and hammer sounded and found to be secure.
- Quadrant was visually inspected and found to be serviceable.
- Steering cables were visually inspected where accessible and found to be secure. No signs of significant wear was noted to the cables.
- An emergency tiller was found in the starboard lazarette and found to be significantly corroded beyond serviceability.

Recommendation - Priority: The emergency tiller should be suitably serviced and replaced if found to be beyond repair

12. Stern Gear

There was a three bladed golden metal propeller which was visually inspected and hammer tested. The blades and main housing had recently been cleaned back to golden metal.

- Two of the three blades were found to have slight excess movement on the pivot pins. All three blades were moved readily with grease seen present.
- The propeller and shaft anodes were both approximately 15% wasted.
- The blades were lightly hammered and scraped, with no signs of dezincification noted.
- The propeller shaft was found to be extremely stiff on turning, with signs of binding when turned by hand out of gear. No signs of pitting to the shaft or excess movement within the outer bearings were noted.
- The internal seal was inspected and found in serviceable condition - note: the manufacturer recommendation is for a replacement of the seal on a 5 yearly basis. It could not be established when the seal had last been replaced.
- The internal sea water coolant intake seacock displayed evidence of dezincification.

Recommendation - Priority: Service as necessary as noted above, including tightening the propeller components fully. Service and replace the Cutlass bearing, Coolant water intake spigot & seacock, and internal seal, if proved to be out of date, or date cannot be ascertained.

13. Skin Fittings and Through Hull Apertures

The following through hull fittings were inspected. Those situated below the water line were moderately accessible in the bilge through the lifting of sole boards & hatches. Those in the topsides at and above the waterline, were in a number of places only moderately accessible, through very small circular inspection hatches in cupboard back panels. Where accessible the through hulls were hammer sounded internally and externally to check for movement and corrosion, valves were checked for smooth operation and hoses and clips checked for security.

- a. Port and Starboard anchor locker drains above waterline, open drain holes with external 'eyebrow covers'.
- b. Forward of the keel: blanking caps in place and secure with no signs of water ingress. Depth and speed transducers seen in the bilge internally.

Port moving aft

- d. Fwd: 6m - Galley sink drain, At waterline, 25mm yellow metal ball valve seacock, ball valve functioned when turned by hand. Double jubilee clipped.
- e. Fwd: 7m - Heads in, Below waterline, 29mm grided, yellow metal ball valve seacock, ball valve functioned when turned by hand. Double jubilee clipped. - **Grill broken on the exterior, seacock displayed considerable evidence of dezincification.**
- f. Mid: 7.8m - Sink basin out, At waterline, 14mm yellow metal ball valve seacock, ball valve functioned when turned. Double jubilee clipped. **Seacock displayed considerable evidence of dezincification.**
- g. Mid: 7.9m - Shower waste, At waterline, 14mm yellow metal ball valve seacock, ball valve functioned when turned. Double jubilee clipped.

- h. Mid: 7.8m - Holding tank out, Below waterline. 38mm yellow metal ball valve seacock, ball valve functioned when turned. Double jubilee clipped. **Seacock displayed evidence of verdigris.**
- i. Mid: 7.9m - Heads out, Below waterline. 38mm yellow metal ball valve seacock, ball valve functioned when turned. Double jubilee clipped.
- j. Mid: 7.8m - Gas locker drain, Above waterline. 30mm hole integral to hull.
- k. Aft: 10.20 - Locker drain, Above waterline. 14mm hole integral to hull.
- l. Aft: 10.30 - Holding Tank vent, Above waterline 38mm plastic.

Starboard moving aft

- a. Fwd: 1.4m - Heads in, Below waterline. 29mm grided, yellow metal ball valve seacock, ball valve functioned when turned by hand. Double jubilee clipped. **Seacock displayed evidence of verdigris.**
- b. Fwd: 2.0m - Heads out, Below waterline. 38mm yellow metal ball valve seacock, ball valve functioned when turned. Double jubilee clipped.
- c. Fwd: 2.5m - Sink basin out, At waterline. 14mm yellow metal ball valve seacock, ball valve functioned when turned. Double jubilee clipped. **Seacock displayed considerable evidence of dezincification.**
- d. Mid: 7.1m - Engine intake, Below waterline. 38mm yellow metal ball valve seacock, ball valve functioned when turned. Double jubilee clipped. **Seacock displayed evidence of verdigris.**
- e. Mid: 7.4m - Cockpit drain, Below waterline. 38mm yellow metal ball valve and seacock, ball valve functioned when turned. Double jubilee clipped
- f. Aft: 10.2m - Locker drain, Above waterline. 14mm hole integral to hull
- g. Aft: 11.5m - Blower, Above waterline. 38mm plastic
- h. Aft: 11.6m - Exhaust, Below waterline. 38mm hole integral to hull. Double jubilee clipped.

Transom / quarters

- a: Eberpacher exhaust, Above waterline. 10mm chrome fitting.

Overall condition

While well installed with good hoses, which were mostly double clipped and with valves that opened and closed easily, the general condition of the below waterline skin fittings was poor, with considerable verdigris and signs of dezincification present externally, on many seacocks. The most prone sites for dangerous dezincification and corrosion, could not be accessed and tested for, on the inside of the fittings and valves. Given the age of these fittings they should be scheduled for replacement within a year and certainly prior to any passage.

Recommendation - Urgent: Scheduled replacement of all below water line, yellow metal skin fittings and valves within a year, ensure replacement with only high quality dezincification resistant (DZR), or composite plastic units, ensuring double clipping of all at or below waterline hose / fitting joins.

14. Cathodic Protection

There was a teardrop shaped, zinc anode attached to the hull on the port side by the propellor shaft. This was found to be 30% wasted. There were two disc shaped, zinc anodes attached to the propellor shaft. These were found to be 20% wasted. A cone shaped anode was found attached to the end of the propellor shaft behind the propellor, this was found to be 20% wasted.

Where accessible, bonding cables were identified on certain key components (steering quadrant and gear, internal engine / propellor shaft), however, seacock skin fittings were not bonded.

Recommendation - Advice: All anodes should be inspected when the vessel is next hauled out and replaced as appropriate in order to avoid destructive galvanic action to key components.

15. Access to Accommodation

There are three ways of access down below: via the main companionway, which has an acrylic washboard and a sliding hatch; and via two ~ 600mm sq, alloy framed, acrylic hatches on the fwd and aft cabin top, over the sleeping cabins (note – none of the hatches or port lights were hose tested for water tightness).

- A wooden washboard with vent, and sliding hatch were seen and in good order with no crazing marks or signs of UV degradation.
- Together they had a latch locking mechanism - security was basic.
- The top sliding hatch moved with ease on its rails.
- The forward and aft hatches open fully. The seals were found in good order, with no signs of leaks below. The forward hatch was missing its locking catches.

Recommendation - Urgent: The forward cabin hatches should have the catches replaced.

Recommendation - Advisory: Upgrading locking security for the main companionway.

Suggestion: Hose testing portholes & hatches to determine water tightness, and change seals as necessary.

16. Ports, Windows and Ventilation

There were two Lewmar opening hatches with opening frames on the forward coachroof and two Lewmar ~ 600mm sq, alloy framed, acrylic hatches on the fwd and aft cabin top, over the sleeping cabins. Along both sides of the cabin and the aft cabin, there were a number of opening Lewmar portholes with locking mechanisms.

- The acrylic was slightly crazed though in serviceable condition, seals intact but slightly hard in areas, no signs of leakage below.
- There were two rubber cowles firmly mounted to the couch roof just forward of the main companionway - no signs of leakage below.

Recommendation - Advise: Complete a general hose testing of all the hatches and portholes, replace seals as necessary.

17. Stanchions

There was a two-rail pulpit and pushpit at the bow and stern and five stainless steel stanchions each side, all in stainless steel 22mm tubing.

- The stanchions and structures were visually inspected and weight tested and were found to be robustly attached, except for the starboard aft pushpit.
- There were two runs of 4mm stainless steel guard wires. These were inspected and corrosion seen, with sections of sheathing missing.
- Teak handrails on the coach roof are firm, although slightly weathered.

Recommendation - Priority: The starboard aft push pit should be re-bedded and tightened up.

Recommendation - Caution: Replace the two runs of guard wires along the entire length of the vessel.

18. Rigging Attachment Points

Rigging attachment points were visually inspected and hammer sounded, and by way of loading the stays sideways under the weight of the surveyor, checked for movement.

- There were two shroud attachment points, port and starboard, in the form of stainless steel through deck chain plates with integral stainless deck caps.
- Examination above deck indicated the chain plate arrangement to be well made and secure. There was no deformation and very limited crazing of the GRP around the immediate area where the chain plates entered the deck, nor any deformation or indentation of stress on the decks or wider radius.
- Below decks, visual inspection was limited to the starboard chain plate only, via a small opening in the furniture.
- The forestay was secured with a chain plate tang, through bolted to the stem. This was hammer tested and found secure. Inspection internally via the chain locker and the fixings were found secure.
- The combination, alloy anchor roller and deck plate were securely attached to the stem.
- The split backstay was attached to the stern chain plates, which were through bolted to the transom. These were hammer tested internally and externally, and found secure.

19. Mooring Arrangements

- There was an 18 Kilo, galvanised spade anchor on deck, not attached to the chain at the time of survey.
- A pile of 8mm galvanised chain was noted in the chain locker. Full length unknown. Visible links on the top of the pile were seen to be serviceable.
- There were paired, 250mm stainless steel cleats at the bow, amidships & astern. These were hammer sounded and found secure.
- Multiple mooring lines and fenders were seen onboard.

Recommendation - Advisory: Laying the bow anchor chain out on the dock for a full inspection. Ensure shackles are wired shut and the bitter end properly secured.

20. Deck Gear and other Fittings

- There was a hard dodger at the companionway. The acrylic was slightly crazed though in serviceable condition.

- A hinged stainless steel swimming/boarding ladder was securely fastened to the transom.
- Multiple stainless steel fender carriers were attached to the pushpit.

21. Mast & Spars

The mast boom & vang were aluminium alloy extrusions by Kemp. The mast was rigged in a Bermudian sloop fashion, with a masthead length forestay and deck stepped. Below decks there was a compression post to bear the force of the mast and step on the cabin top.

The mast had 'in mast furling' and two sets of slightly swept back spreaders. The spars, boom and rigging were visually inspected from the deck level only and observations much above eye level were distant and could not be supported by any testing.

- The deck mounted, alloy mast step was firmly through bolted to the cabin top, hammer tested with no movement seen.
- There was no crazing or compression indentation seen to the GRP deck around the step. Hammer soundings were robust and consistent.
- Wiring for the mast-head electronics exited the forward side of the mast base and then through deck gaskets to the accommodation.
- Sighting up the mast, the mast was seen to be in column.
- There was a spinnaker pole track with an adjustable car and pole stowed on the mast. The riveted collar had become detached, and in need of re-riveting.
- Air-foil shaped spreaders attached to the mast with cast alloy fittings, no undue movement seen when the rigging was loaded side to side under the weight of the surveyor, but as with other fittings at height, detailed attachment points were not visible from deck level.
- The aluminium gooseneck was secure on the mast when swung tested from side to side.
- Mast mounted halyards and furling winches and associated rope clutches and cleats were firmly attached.
- The boom was straight and in good order, outhaul rigged for in-mast furling and lead back to the cockpit via a deck organiser turning block, firmly attached to the coach roof.
- Kemp vang, along with blocks and tackle were firmly attached.

[Recommendation - Advisory: Connections and wires are protected where they enter the mast.](#)

[Recommendation - Priority: Riveted spinnaker collar be re-riveted to spinnaker pole.](#)

22. Standing Rigging

The vessel had a single forestay, a split backstay, upper cap and D1 shrouds and lowers. All in stainless rigging wire. Shrouds were inspected from deck level only. Seen at a distance the mast attachment points aloft could not be observed.

- Standing rigging was in 8mm and 10mm, 1x19 wire and connected by swaged fittings to bottle screws.
- All but the D1 deck fittings lay in a straight line up to their mast terminals with no bending or distortion and were able to articulate smoothly where seen.
- Toggle fixings were not seen between the shroud bottle screws and chain plates, although they may be in place under the stainless steel deck caps.
- The rigging screws all had properly spread split pins in place.

- The lower 2M of each shroud was covered with plastic sail protectors, which when lifted showed the wire beneath to be thick with dirt. The lower swages were inspected, some limited surface tarnish was seen around the base of the wire and the top of the swage where the wire inserts.
- General visual inspection from deck level only, indicated the shrouds to be of serviceable condition for coastal cruising in normal conditions.
- The condition of the forestay could not be fully inspected as it was covered by the roller reefing foil.
- The split backstay was properly toggled to the stainless steel attachment points securely through bolted to the transom with internal backing blocks.
- An unidentified jib furler was installed, forestay properly toggled and pinned to its chain plate furler.

Recommendation - Advisory: Regularly checking all rigging clevis pins and bottle screws to insure they are securely pinned.

Recommendation - Advisory: Have the rigging inspected by a rigger, serviced and updated as necessary.

Note: Many insurers will not cover standing rigging older than a certain age (normally 7 to 10 years) and put the onus on the owner to prove age. No documentation was seen to verify standing rigging age.

23. Running Rigging

Running rigging was examined visually and fittings were tested manually. These were not tested as part of a sea trial or under load, and findings are by no means a full indication of functionality while under way at sea.

- Sheets and Halyards were mostly 10mm and 12mm braided polyester, all were slightly worn but serviceable where seen from deck level.
- Jib furler line, blocks and clutch cleat were seen to be serviceable.
- The mainsail halyard was inspected and seen to be serviceable.
- The main sheet had tackle from the end of the boom to a block forward of the traveller. This was hammer tested and found secure.
- Paired winches were mounted on the cockpit coaming Lewmar #16, Four Primary #48, and paired #30, all self tailing. All winches were seen to function, some in need of servicing.
- Alloy Genoa / Jib tracks with two cars through bolted on the deck, hammer sounded and inspected. No signs of stress or movement were seen. (*Note: headliners limited inspection of fittings below decks*)
- Various sail control lines (mainsail outhaul, mainsail curler, kicker, topping lift) lead back through deck organisers, and Lewmar #30 self tailing winches firmly in place.
- Multiple turning blocks and running rigging fittings were noted.

Recommendation - Advisory: Check the state of halyards where they pass over turning blocks and mast sheaves.

Recommendation - Advisory: Servicing of all the winches.

24. Sails and Covers

A main sail was seen furled within the mast. No Genoa/Jib was seen on the vessel at the time of survey. No other sails were seen.

- The main sail was not unfurled as part of the survey, and no comment can be passed on the condition, as no sea trial was completed.
- No specific sail, cockpit, winches, or steering pedestal covers were seen on board at the time of survey.

[Recommendation - Advisory: Have sails professionally serviced on an annual basis.](#)

25. Navigation Lights

- The masthead Tricolor light and anchor light were seen to work when switch tested.
- The stern light worked.
- The port bow light did not work, the starboard bow light did work.
- The steaming light worked
- The deck light worked.

[Recommendation - Priority: Replace the port light, and ensure it to be working prior to navigation.](#)

26. Bilge Pumping Arrangement

One manual bilge pump was installed beneath the cockpit sole, the handle was not located. There was no water in the bilge to test the pump.

An 1100 GPH electric bilge pump was found beneath the cabin sole floor, with a second 500 GPH electric bilge pump found within the engine bay. The units could be heard working, however, there was no water in bilge to test the pumps.

[Recommendation - Priority: Prove all bilge pumps in manual and automatic mode are working, as appropriate, prior to leaving harbour.](#)

27. Firefighting Equipment

There were four 2kg powder fire extinguishers in the accommodation and a larger unit installed in the engine compartment - all out of date

No smoke or carbon monoxide alarms were seen.

A fire blanket was located in the galley.

[Recommendation - Priority - Update fire extinguishers and provide smoke/carbon monoxide alarms.](#)

28. Lifesaving, Emergency and other Equipment

- No throwing device was seen
- A fog horn was seen hanging by the companionway
- No hand held VHF was seen onboard
- No Jack lines were seen onboard
- No John buoy was seen onboard
- A number of life jackets were seen onboard
- A 6 man life raft was seen onboard - out of date May 2007

- No EPIRB was seen onboard
- An offshore flare pack was stowed beneath the saloon seating - dated April 2009
- A 'grab bag' was stowed beneath the saloon seating
- Three piece emergency tiller was stowed in the starboard side lazarette - Not serviceable

Recommendation - Priority: The life raft should be serviced or replaced prior to the vessel being used for navigation.

Recommendation - Priority: The emergency tiller should be suitably serviced and replaced if found to be beyond repair.

Recommendation - Advisory: Check and add safety equipment prior to navigation. The BSS (Boat Safety Scheme), RYA or RNLI can advise on appropriate safety equipment. Recommend checking the websites below and adding additional equipment as appropriate.

www.rnli.org.uk

www.boatsafetyscheme.org

www.rya.org.uk

29. Engine Installation

The vessels auxiliary engine was a Volvo Penta MD22L, 50 hp, naturally aspirated diesel. The engine was visually inspected only and no comment can be made as to the serviceability of the engine as it was not seen running.

- Engine hours were noted as 3827.
- The engine was installed in a bay beneath the main cockpit with good access from sides & aft.
- The engine was flexibly mounted, fastened to bedding plates bolted to the GRP bearers. All mounts were inspected and found to be serviceable.
- Exhaust injection bend was visually inspected with no evidence of leaks.
- No signs of oil leaks beneath the engine, and the sump and bilge found clean at time of survey.
- The oil was up to the correct level.
- The water pump and alternator belt were checked - tension good.
- External surfaces were clean with only small areas where paint coatings had worn.
- The coolant in the heat exchange reservoir was in need of topping up.
- The flexible exhaust system ran from a nylon lift boxing and from there it was looped up to the aft.

Recommendation - Advice: The heat exchange reservoir be topped up prior to navigation.

30. Engine Controls and Running Checks

- Ignition controls and indicators were installed on a Volvo control board on the port side of the helm, including ignition key & button, coolant temperature, oil pressure and charging gauge.
- The engine was not started as part of the survey as the vessel was out of the water at the time of survey.
- Morse type gear shift and throttle actuator were seen to function properly.

31. Fuel System

The stainless steel fuel tank was fastened under the cockpit companionway. Only the top of the tank was accessible through a hatch in the work surface.

- No signs of corrosion were seen, tank hose attachments were seen in good order.
- Fuel line delivery cut off valve in place and accessible.

- The fuel line was not seen travelling through a pre filter prior to the engine mounted filter. All hoses were appropriately marked, well clipped in place and in good condition. No signs of leaks from the fuel system were seen.

32. General Accommodation

The vessel was laid out with a forward v-berth cabin, and heads to starboard. Moving aft, a saloon with settees and fold away table. To starboard, a navigation station with storage aft. To port, a Galley with master heads behind and master sleeping cabin with centreline double berth aft.

- Doors, draws and lockers all opened smoothly with catches working.
- Varnished surfaces had been well maintained with very few marks, bumps or scratches.
- Soft furnishings were upholstered in quality fabrics and all in good serviceable condition with little evidence of wear.
- The headliners and topside liners were in good condition with no evidence of leaks or condensation
- The veneered sole boards retained an unblemished varnished finish.

33. Gas Installation

A full gas installation inspection can only be carried out by a suitably qualified gas operative registered with Gas Safe. Please note this survey is not any kind of gas safety certificate. This is only obtainable in the UK after comprehensive pressure testing and assessment by a qualified person listed on the Gas Safe Register www.gassaferegister.co.uk

- A dedicated gas bottle storage locker, was found flush in the port side deck. The hinged locker hatch had a tight top with closing latch and drained overboard on the starboard quarter. The closing latch was not serviceable and detached from the locker top on opening.
- An older model regulator was noted. No gas cylinders were seen. The regulator was attached to a rubber gas line, via a gas grade hose, and was securely clipped in place.
- The hose was serviceable, but not dated (in the UK these must be replaced every 5 years)
- Where seen the copper delivery pipe was appropriately clipped to avoid vibration stress. *(Note: there was limited access to the pipe which was behind liners)*
- An inline gas stopcock was located within one of the galley cupboards.
- A gas sensor was noted in the gas locker. With gas alarm seen in the galley.

Recommendation - Advisory: Gas locker latch be re attached to the locker top and made serviceable.

Recommendation - Advisory: Having the gas system checked by a qualified gas systems engineer.

34. Fresh Water System

There was one fresh water tank installed under the port side settee, and one under the starboard side settee. The tanks were visually inspected and hammer sounded with hose attachments in good serviceable condition. The water pressure pump and accumulator tank were accessible and found to be serviceable.

- The water pressure pump was seen to work with no leaks noted and water delivered to the taps. Both showers worked when tested.
- A hot water calorifier was seen in the space under the master aft berth, powered by AC shore power and engine coolant circuit. *(Note: Neither was tested as the vessel was on the hard, and not connect to shore power.)*

35. Heads

A standard manual Jabsco sea toilet was installed in both aft and forward head compartments. These were not tested as the vessel was out of the water at the time of survey.

- The plumbing hoses were of a sanitary odour resistant type, and attached with double hose clamps.
- Both heads had diverter valves to allow for waste to go to the sea or to the holding tank. A holding tank was found installed and with pipework attached in the port lazarette.
- Forward and aft head sinks drained overboard.

[Recommendation - Advisory: Thorough servicing as rubber gaskets, valves and seals wear out quite rapidly on these types of toilets.](#)

36. Electrical Installation

The electric installation was found to have been done to the high standard of a reputable boat builder.

- Four SuperBatt 12 volt 130Ah, batteries were securely installed and securely fastened down in a purpose built GRP moulding with lid under the aft berth.
- A fifth Banner 12 volt 115Ah engine starter battery was seen next to the GRP housing, and not securely installed or fastened.
- A sixth spare 12 volt 130Ah, battery was seen beside the engine starter battery. This was also not securely fastened.
- Battery connecting leads are of proper quality and appropriate gauge wire.
- 12 volt isolation switches for house and start batteries situated by the nav station.
- Battery charging via: Sterling Power 12 volt / 30 amp AC/DC charger securely installed in the engine bay with dedicated circuit breaker.
- An engine mounted 12 volt alternator, was visually inspected, and found secure.
- Two small solar panels were mounted to the pushpit rail and a solar panel charge regulator was seen mounted to the side of the GRP battery housing.
- AC & DC distribution panel was present over the chart table. Access behind the panel was not possible. There were no signs of corrosion noted on the fascia.
- Appropriate three prong 16amp 230v shore power plug situated high on the port side transom, with 230 volt RCD switch installed on the distribution panel. The plug cover was not security attached to its arm.

[Recommendation - Priority: Securely fasten both the engine starter & spare battery and provide a cover to protect against accidental shorting.](#)

[Recommendation - Advisory: The 230v shore power plug cover be refastened to its arm.](#)

37. Electronic and Navigation Equipment

The following equipment was switch tested. *(Note: switch testing is not a test of operational functionality)*

- All 12 volt cabin lights worked.
- JVC FM Stereo radio/CD seen to turn on
- ICOM IC-M401Euro radio, seen to turn on
- Autohelm - Radar screen, seen to turn on

- Autohelm - Navcentre, chart plotter, seen to turn on
- YAESU - FRG-100 Receiver - seen to turn on
- Nav 4 Navtex - not seen working
- Magnetronic DCC4000 - Battery Control System
- Autohelm - ST7000 - head unit, seen to turn on
- Autohelm - Tridata, noted
- Autohelm - Wind, seen to turn on
- Autohelm - Navdata, seen to turn on

38. Heating and Refrigeration

A Frigoboot, 12 volt refrigeration compressor unit was seen securely installed under the galley sink. The unit was securely installed under the galley sink. The top loading galley cool box was heard and felt to work and was cool to touch, when the compressor was turned on.

An Eberspacher diesel heater was installed beneath the aft bunk. The heater control was situated at the navigation station. This was switch tested and found to blow only cold air (did not pass through the full start up ignition sequence). Heating ducting was sighted reaching most of the cabins, however, was found not particularly accessible for inspection.

39. Dingy and other Equipment

No inflatable dingy was seen onboard the vessel at the time of survey.

40. Conclusion

A Pre-Purchase survey was carried out on xxxxx while she was on the hard in Preveza, Greece.

The vessel was of the Moody 38 design, which is a very successful, cruising class built in the UK.

This particular vessel, xxxxx has not been intensively sailed, and she is of a known and tested design and her current owner has maintained her well. While original quality was to a high standard, there is a short list of faults, which must be rectified.

Issues requiring immediate consideration include corrosion to keel bolts & studs, and old through hull skin fittings.

Additionally, as per the list of recommendations, there are a number of items and systems requiring close monitoring and precautionary remediation. Quotes for all works should be obtained and considered carefully prior to purchase.

Rolf Thuncke

Greenwich Yacht Surveys
5th May 2018

Recommendations

Recommendation - Dangerous: Drop the keel, remove and replace all the stud bolts securing the keel (including the nuts and washer-plates). Consult a materials specialist as to the metal type to use - it is not uncommon for mild steel bolts (often galvanised) to be used not because they are inexpensive, but because they are more galvanically compatible with iron keel stubs than stainless steel or bronze. Re-bed, remount and tighten on the ballast keel. Refinish the seam around the keel root joint to avoid water ingress. The replacement process should be done by a skilled and qualified person, meaning very likely that if the old studs do not disengage and unscrew easily they may need to be milled out, requiring a machine shop. The shop should also check the condition of the threads in the casting to ensure that they can hold the required load. Once all is found or made satisfactory and new studs are installed the keel can be reinstalled on the boat. Be sure to obtain a quote for this work or preferably have it done by the owner prior to proceeding with the purchase.

Recommendation - Advisory: After exposing and rubbing down the affected corroded areas of the keel with a coarse grit disc, treat any rust and re-coat the with International 'Interprotect' or similar two pack epoxy product designed for use on iron keels. After this repair is complete, a new application of anti-foul on the entire underwater hull should be carried out.

Recommendation - Priority: The emergency tiller should be suitable serviced and replaced if found to be beyond repair

Recommendation - Priority: Service as necessary including tightening propeller components fully. Cutlass bearing, Coolant water intake spigot & seacock, Internal seal if proved to be out of date.

Recommendation - Advice: All anodes should be inspected when the vessel is next hauled out and replaced as appropriate in order to avoid destructive galvanic action to key components.

Recommendation - Urgent: The forward cabin hatches should have the catches replaced.

Recommendation - Advise: Upgrading locking security for the main companionway.

Recommendation - Advise: Complete a general hose testing of all the hatches and port lights, replace seals as necessary.

Recommendation - Priority: The starboard aft push pit should be re-bedded and tighten up.

Recommendation - Caution: Replace the two runs of guard wires along the entire length of the vessel.

Recommendation - Advise: Laying the bow anchor chain out on the dock for a full inspection. Ensure shackles are wired shut and the bitter end properly secured.

Recommendation - Advise: Connections and wires are protected where they enter the mast.

Recommendation - Priority: Riveted spinnaker collar be re-riveted to spinnaker pole.

Recommendation - Advise: Regularly checking all rigging clevis pins and bottle screws to insure they are securely pinned.

Recommendation - Advise: Have the rigging inspected by a rigger, serviced and updated as necessary.

Recommendation - Advise: Check the state of halyards where they pass over turning blocks and mast sheaves

Recommendation - Advise: Servicing all the winches

Recommendation - Advise: Have sails professionally serviced on an annual basis.

Recommendation - Priority: Replace the port light, and see to be working prior to navigation.

Recommendation - Priority: The emergency tiller should be suitable serviced and replaced if found to be beyond repair

Recommendation - Advise: The heat exchange reservoir be topped up prior to navigation.

Recommendation - Advise: Gas locker latch be re attached to the locker top and made serviceable.

Recommendation - Advise: Having the gas system checked by a qualified gas systems engineer.

Recommendation - Priority: Securely fasten both the engine starter & spare battery and provide a cover to protect against accidental shorting.

Recommendation - Advise: The 230v shore power plug cover be refastened to its arm.

Appendix I - Photographs

Removed for preserve client confidentiality.