Aidan Tuckett B.Sc.(Hons).

MARINE SURVEYOR
Accredited Member of the Yacht Designers and Surveyors Association

REPORT OF A CONDITION SURVEY CARRIED OUT ON THE VESSEL:

“[redacted]”

Accredited Member YDSA

12, Buxton Road, Brighton, BN1 5DE, EAST SUSSEX (01273) 563627
info@brightonmarinesurveys.co.uk
07765 35 2364

CONTENTS.

A. GENERAL NOTES

The following survey was carried out at Lymington Yacht Haven on [redacted] on behalf of:

[redacted]

Scope

The survey was carried out as a pre-purchase measure to assess the structural and material condition of the vessel. Where equipment was tested this is detailed in the text. References to condition are in relation to the vessel's age (i.e. good condition does not necessarily mean new).

Recommendations are restricted to:

(A) items which should be addressed before the vessel is used and/or which may affect insurability and;
(B) items which should be addressed in the near future order to prevent future problems.

Recommendations are printed in red for quick reference within the body of report and are also listed in the summary. They do not cover cosmetic or minor defects, although suggestions to address these may be included.

The survey is for the client above. No liability is extended to anyone else.

Limitations

The survey was mostly carried out afloat. The vessel was lifted ashore for an hour for the underwater hull to be inspected. Note sort haul outs limit the accuracy of moisture readings.

The engine was run for short periods under light load. Note some faults may only become evident after several hours running.

Parts of the vessel that were covered, unexposed or inaccessible due to fixed panels, mouldings etc. were not examined, so I cannot say these areas are free from defects other than where specified.

No fittings or fastenings were removed for examination other than where specified. Note it is not possible to detect some latent and hidden defects without destructive testing which is not possible without the owner's consent.

The mast was stepped so could only be inspected from deck level.
The sails were not set or examined as part of this survey.

Conditions

Conditions were dry and fair, air temperature 18°c, humidity 60% and dew point around 7° below ambient temperatures. These are good conditions for moisture meter readings. The

vessel was lifted for an hour at midday to inspect the underwater hull and carry out moisture checks on the GRP laminate.

The prospective purchaser was present throughout the survey.

SUMMARY

[redacted] Is a Malo 39, built in Sweden in 2002 by Malo Yachts, a low volume, high quality builder. The boat is one of 87 built to this design between 1994 and 2004, designed in house by Leif Angemark.

The design is a medium displacement cruiser, the interior of which can be customised for individual buyers. The workmanship is of a very high quality and the boat has clearly been individually built with minimum of production line processes. She has one owner from new and has been little used but well maintained. She shows no signs of hard or careless usage.

The brokers details were checked and are accurate.

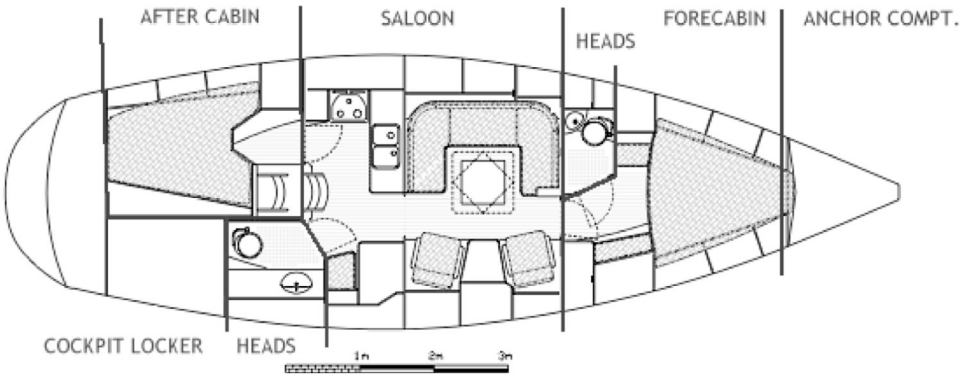
Numerous invoices for maintenance and minor repair work were also seen.

Some minor faults were picked up and these are detailed below. In particular the teak deck, whilst sound at present, should be well maintained given the numerous screws used to secure it into the balsa cored sandwich deck which provide potential pathways for moisture ingress to the balsa deck core. Any signs of separation of the caulking or other damage should not be left unattended.

Other points are those which could reasonably be expected for a boat of this size and number of systems.

We discussed options for increasing battery capacity and these are covered in the text.

Measurements for Part 1 registration were taken and the forms will be enclosed with this survey.



PLAN OF MALO 39 '[redacted]

Recommendations

Defects which should be rectified before vessel is used and/or which may affect insurability:

1. Replace the broken rod kicking strap (A).
2. Repair or replace the starboard stem head navigation lamp (A).
3. Carry sufficient life jackets and harnesses for all crew (A).
4. Cut a hole in (or remove) the rubber backed carpet in the gas locker which is blocking the drain hole (A).

Defects which should be rectified in order to prevent future problems:

1. Fill gel coat chips in the stem (B)
2. Replace a split teak screw bung on the port side after deck which may let in moisture (B).
3. Refasten loose teak deck pieces around the forward edge of the anchor locker hatch (B).
4. Check the shaft bearing at the end of the season for any unusual wear (B)
5. Check the bonding cable connections between the anode and the engine (B)
6. Shorten the galley sink drain hose to remove a kinked section (B).
7. Repair the plastic opening handles for the cabin ventilators (B).
8. Tighten the guard wires (B)
9. Clean and lubricate the windlass clutch and pawl brake (B)
10. Adjust the gear lever so that it lies vertical in neutral (B).
11. Replace the broken white socket over the end of the boarding ladder tubing that rests against the hull (B)
12. Replace the flexible gas hose pipe (B).

C. VESSEL DATA

Length, breadth and depth checked for tonnage measurements, other dimensions taken from manufacturers details and not checked.

LENGTH OVERALL	:	12.24m
BEAM	:	3.77m
DRAFT	:	1.83m
DISPLACEMENT	:	8900 kgs (ballast 3500 kgs)
BUILT	:	2002 by Malo Yachts AB, Kungsviken, SE-473 99 Henån,Sweden
REGISTRATION	:	[redacted]
HIN	:	
CATEGORY	:	RCD A (Ocean going, 6 persons plus 1100kg stores)
YARD NUMBER	:	166
FUEL CAPACITY	:	275 litres
WATER CAPACITY	:	455 litres
ENGINE	:	Yanmar diesel 4JH3BE 56hp/41.2kw. Serial E24643
SAIL AREA	:	86m^2

TONNAGE MEASUREMENTS

LENGTH HULL	:	12.00m
BEAM	:	3.77m
INTERNAL DEPTH HULL	:	1.78m
TONNAGE	:	12.88t

USE OF MOISTURE METERS

A 'Sovereign Quantum' capacitance type moisture meter which measures both shallow and deep seated moisture is used to check for ingress of moisture into GRP laminates. References to moisture meter readings throughout the text are in relation to a relative scale of 0-100, not moisture content as a percentage of dry weight.

Readings of between 0-15 are considered dry; 16-20 low and no cause for concern; 21-30 medium carrying some risk of future defects, 30 - 45 show a high risk of moisture related defects being present (but not necessarily physically detectable), greater than 45 usually indicates visible laminate damage.

Whilst high moisture content (i.e. greater than 30) is not generally a structural defect in itself and should be expected in older boats, if moisture has been absorbed, the likelihood of problems occurring are higher. The actual state of the laminate cannot be completely guaranteed without destructive testing followed by chemical analysis. The opinions in this survey are based on all the evidence available at the time, but without destructive testing.

D. Hull, Deck and Structure.

D1. Keel.

The vessel has a lead keel, encapsulated within a bulb fin cast into the hull moulding. According to the manufacturer's literature it weighs 3500kg which gives a 40% ballast ratio, which is comparatively high for a sailing cruiser.

The moulding was hammer sounded on the outside and checked with a moisture meter. Small hollow sounding areas were noted on each side of the keel. On the starboard side this is about 0.5m up from the base midpoint. Moisture readings were 26 shallow and 40 deep. On the port side, about 1m up and midpoint, moisture meter readings were 28 shallow and 95 deep. Elsewhere on the keel, readings were around 25 deep and shallow. This suggests that some moisture has collected in voids. However given the high apparent quality of the hull laminate elsewhere, this is unlikely to lead to structural defects.

The fore foot and flat underside of the keel (shown) was examined with the boat in slings and no signs of damage or abrasion seen. The gap in the antifouling is presumably where the boat was previously chocked.

A shallow skeg extends aft from the keel to the stern tube. This was hammer sounded and no signs of voids or delamination found.

The keel is over laminated inside the boat and where seen in the bilge space, this lamination is solid and watertight.

D2. Hull below Waterline.

The entire hull moulding is a balsa cored, sandwich GRP construction. The gel coat has an epoxy coating which, from the alternate green and grey layers, will be 'International Gelshield' and was apparently applied from new.

A recent blue antifouling coat is adhering well and has no signs of fouling. There is some layering and minor flaking where previous coats have been overcoated. It may be necessary to remove old coatings within the next five years.

The entire underwater area was visually inspected and hammer sounded. No signs of osmotic blistering, delamination, voids or damage were found. The antifouling was removed back to the epoxy coating in several test areas. Moisture meter readings ranged between 22-24 shallow and 17-19 deep. These are low and suggest there has been no significant ingress of moisture into the gel coat or hull laminate and that the underwater hull is in good condition at this time.

A bow thruster tube forward was inspected and lightly hammer sounded both inside the hull and out and found to be securely laminated into the structure.

The rudder pivots on short skeg. This was hammer sounded and tested with a moisture meter and found to be in good condition with no signs of moisture ingress.

The cockpit drains via vertical tubes, laminated into the hull with no shut offs. They are well made but water be forced up them if the vessel pitches violently.

D3. Topsides above Waterline including Rubbing Strake etc.

The topsides have their original white gelcoat with a moulded blue gelcoat boot top and sheer line. There is a raised rubbing strake about 300mm below the deck edge which has an aluminium wear piece. This is secure and undamaged. There is a reverse transom with boarding steps and a small bathing platform moulded into the structure. As below the waterline, the topsides are GRP, balsa cored sandwich construction using chopped strand mat and woven rovings with polyester resins.

The entire area was visually examined, lightly hammer sounded and checked with a moisture meter. The moulding is good with no signs of imperfections or discontinuities by way of bulkheads or load bearing areas. No signs of voids or delamination were found. Moisture meter readings varied between 16 and 17 shallow and 13 to 15 deep which, taken with the above, show the hull lamination is in good condition at this time.

Two minor imperfections were found; there are small resin chips at the stem (see upper photo), the lower of which is through to the underlying laminate. This should filled (B) and will take about 1-2 hours. Charges are about £40 per hour for Brighton based GRP repairers. Any loose material should be ground out and the area made good with a white gel coat paste, secured with plastic tape whilst it sets.

On the port side, 4m forward of the stern, the blue sheer line is scratched (shown) and should be repaired with enamel.

No other signs of impact damage were found.

D4. Deck Moulding.

The deck is a single moulding with a balsa cored sandwich construction to increase strength and insulation. It is integral with the coachroof and cockpit. It is lowered forward of the cockpit area to create a raised toe rail which is teak capped. This is secure and in good condition. The deck was weight loaded and no signs of movement found. Moisture readings were taken of the laminate underneath inside lockers where possible and found to be satisfactory.

The entire deck has a teak swept plank covering which is caulked with a black Sikaflex type compound. The planks are secured by screws at about 300mm centres which go through into the underlying balsa cored GRP. These are covered and sealed with teak bungs. One is split on the port side after deck (shown overleaf) and should be gently prised out and replaced (B). Spare bungs were seen in the chart table drawers.

A further minor split was noted around the forward edge of the anchor locker hatch. This should be re-glued using 'Sikaflex 290' (B). No other signs of damage or loss of adhesion was found to the teak planking or caulking.

It is important that the watertight integrity of the teak deck is maintained. Any splits or lifting of the planks or caulking, or loss of screw bungs should be addressed immediately. Whilst there are no apparent problems at present, if water does seep into the underlying balsa core via the planking screws, this will lead to expensive repairs. It would be useful to carry a small tube of 'Sikaflex 290' onboard to seal any minor splits. 'Balcotan' one part wood glue is suitable for re-securing any lost screw bungs. The deck should be lightly scrubbed across the grain using salt or fresh water only. Mild washing up liquid should be used to deal with any light stains. It should not be pressure washed – this will lower the softer layers between the growth rings and cause the whole deck to wear more rapidly.

The deck scuppers are piped down to above waterline skin fittings to avoid topsides stains. They are secure and have effective strainers.

D5. Coachroof.

The coachroof is integral with the deck moulding and has a teak covering. No faults were found to the planks or caulking but the points made above on maintaining quality also apply. Teak handrails either side are securely fastened and in good condition.

The coachroof sides have a moulded blue gel coat stripe. They are in good condition with no signs of chips or damage. Moisture meter readings were taken where possible and found to be low, 15-17 shallow and 10-12 deep.

D6. Cockpit.

Integral with the deck moulding and similarly covered with teak planking on the sole and seat areas. This is all in good condition. No signs of movement or damage were found in high wear areas.

A GRP pedestal supports the wheel, compass and engine controls and is secure. A teak folding table folds out forward of this and is in good condition. Two drains aft lead directly down to below sea level via straight tubes. There are hatches port and starboard; to port this provides access into the after cabin and to starboard there is a deep bottomed locker which can also be accessed from the aft heads compartment. This contains the black water tank for the aftermost toilet and the diesel cabin heater. At the stern, a locker is divided to contain the gas bottles and provide general storage plus access to the emergency steering gear and manual bilge pump. All locker lids have gas struts which operate smoothly. The gaskets are in good condition. All have secure, padlock fastened hasps.

D7. Hull/Deck Join.

The hull has an inboard flange underneath which is an aluminium strip. The deck moulding through bolts onto this, the bolt heads being concealed beneath the teak rail cap. The external joint is covered by a teak rubbing rail. The joint has a semi flexible sealant. Where seen in the anchor and stern lockers, the joint is secure and in good condition with no signs of movement or leakage. The stanchions and mooring cleats are also through bolted to the aluminium strip

D8. Bulkheads and Structural Stiffening including Internal Mouldings.

The hull is stiffened by an internal moulding, a series of glassed in plywood bulkheads and webs, and by longitudinal, hollow bearers either side of the keel sump (the photo shows these bearers and the floor webs in the saloon bilge). Where accessible, all were seen to be well made, heavily over laminated and secure. The teak veneer has been removed where plywood bulkheads are laminated into the hull. The longitudinal bearers also act as pipe and cable conduits. The hull acquires considerable extra strength from the use of cored sandwich construction throughout the moulding.

Some minor cracking was noted in the resin flow coat along the edge of the forward bulkhead between the anchor locker and the forecabin. The bulkhead was hammer sounded and weight loaded and no movement found.

The deck mounted mast has a boxed in compression post. No settlement or distortion was noted around the base.

E. **<u>Steering, Stern Gear, and Skin Fittings etc.</u>**

E1. Rudder and Steering.

The rudder is a semi balanced solid GRP blade. It was lightly hammer sounded and no signs of delamination, voids or blistering found. It has low moisture readings of between 20-25 both shallow and deep. No signs of damage or splitting were seen underneath the rudder.

The rudder has bearings above the through hull gland and at the base of its support skeg. The support bolts for the lower bearing were hammer sounded and found secure. The support skeg appears to be solid and has low moisture content of 20-25 deep and shallow.

The rudder blade was heavily weight loaded with the wheel hard over and no signs of undue movement found. There is no vertical play in the bearing.

The rudder stock is a circular stainless steel section, approx 50mm diameter. This is concealed beneath fixed panels but appears from camera inspection to have a rod linkage from a rack and pinion at the wheel to a tiller arm. These appear sound and, when weight loaded showed no signs of undue movement.

The helm is controlled by 900mm diameter stainless steel leather covered wheel with 1¾ turns from stop to stop. The wheel is securely mounted on a fiberglass pedestal.

The stern locker contains two aluminium tubes which connect and slot over the rudder stock to provide an emergency tiller. This was tested and found to be effective.

E2. Stern Gear.

The vessel has a three blade 'Maxprop' self feathering propeller. This was found to operate smoothly and is secure on its shaft. The blades were hammer sounded and scraped and no signs of de-zincification found.

A spare folding propeller is stored in the cockpit locker and is in reasonable condition. It is understood this was replaced by the owner because it was not effective going astern.

The shaft is approximately 35mm diameter and of non magnetic stainless steel. It spins smoothly without binding. A scissors type rope cutter is securely fitted and is sharp and in good condition.

The shaft is sealed internally by an oil lubricated rubber seal with EP90 oil gravity fed from a container which is accessed underneath the uppermost companionway steps. The seal is securely clipped to a GRP pipe within the hull moulding.

Some vertical play was found on the cutlass bearing which may be significant given that invoices were seen for the entire stern bearing replacement last March and again for the cutlass bearing separately in May (when oil was reported leaking from the shaft). Without information on usage, it is difficult to speculate whether there may be a problem caused by misalignment. If rapid wear is noted by the end of the coming season, it would be advisable to check the alignment of the external shaft bearing (i.e to make sure it was not bolted onto the hull slightly out of line with the shaft such that it causes rapid wear of the cutlass bearing) (B).

E3. Cathodic Protection.

The propeller has a hub anode which is slightly eroded. A new hull anode has been fitted (invoice dated 23 March 2009). This is bonded to the shaft but has relatively high resistance. The bonding cable connections should be remade (B). The mounting studs are secure and in good condition.

E4. Below water line skin fittings and other through hull apertures.

All through hull skin fittings were closely examined for security. Bronze fittings were lightly hammer sounded and their valves checked for smooth operation. Hoses were tested for security and cable clips inspected.

From forward, there is an echo sounder transducer and blanked holder for a paddlewheel log impeller. Both are secure and accessed under the forecabin sole.

On the starboard side aft, there are two 15mm through hull fittings serving the sink outlet and sea toilet inlet, and a 40mm through hull sea toilet outlet. All are in good condition, have dezincification resistant (DZR) ball valves and reinforced hose which is securely clipped. Access is from the locker under the aft toilet cabin sink.

To port the galley sinks drains through a 50mm specialised skin fitting which combines with the coiled pipe refrigerator heat exchanger. This is in good condition. The valve is DZR

brass and works smoothly. The sink drain hose is compressed and may block (see kinked blue pipe in photo); if it were shortened by about 30mm it would lie smoothly (B).

The cockpit drains through straight moulded-in pipes with no seacocks.

The engine intake is through a gridded skin fitting on the port side of keel which has a DZR valve. This has 25mm reinforced hose which is securely clipped.

F. **Deck structures.**

F1. Main Companionway and other Accesses to Accommodation.

Access to the accommodation is through a teak louvered washboard and a sliding Perspex hatch. This runs on aluminium track into a hatch garage under the windscreen. The Perspex has some minor scratches and crazing. A good quality casement lock in the washboard works effectively.

There are two hatches which provide access to the fore cabin over the berths and the main saloon over the table. Both are 'Lewmar' models which were found to open smoothly and lock securely. Their gaskets are in good condition and there is no sign of leakage underneath. Both have developed slight crazing to their tinted Perspex glazing – these are superficial. The fore hatch has a fold down step to assist exit.

The after cabin can be exited through an over bunk hatch which is made as a cockpit locker lid.

F2. Ports Windows etc.

There are four 'Lewmar Atlantic' opening ports on each side of the coachroof, all in good condition. They open and lock satisfactorily although several were found to be tight from lack of use. The rubber seals are in good condition with no signs of leakage beneath. The external alloy frames are un-corroded and sit tight against the hull. All are glazed with safety glass.

The helm is surrounded by a fixed aluminium framed safety glass windscreen. This is in good condition although the aluminium is beginning to show signs of corrosion around the internal seals at the corners at the corner posts on the insides. Cleaning with fresh water and light rubbing with a cloth dampened with WD40 will inhibit this.

There are two dorade box ventilators, one in the main cabin and the other forward. The plastic opening handles for both have become brittle and need replacing (B).

F3. Pulpit, Stanchions, Pushpit, Lifelines and Jackstays.

The pushpit and pulpit are both made of 30mm stainless steel tube. Welds are well made with no signs of cracking. Both bolt through the deck, hull mould and an aluminium reinforcing strip and are secure. Wire boarding gates at the bow and stern have quick release clips in good condition.

There are teak handrails port and starboard on the coach roof which are securely mounted

There are four 30mm stainless steel stanchions each side, secured in welded sockets bolted through the toe rail to aluminium backing plates. All are firm with no signs of movement.

There are two runs of 5mm 1x19 guard wire through the stanchions; the starboard bottom and port top wires are slack and should be tightened (B)

Two safety harness clips are fastened to port and starboard of the wheel in the cockpit and are both secure.

A 30mm nylon webbing jackstay is shackled to welded eyes on the pulpit and eye bolts on the cockpit coaming. It is secure and in good condition

There are stainless steel handrails either side of cockpit, both secure.

F4. Rigging Attachment Points.

The forestay stem head fitting is a substantial welded 8mm stainless steel plate fabrication, through bolted to the deck and carrying over and down the front of the stem by about 750mm. The nuts and washers can be seen within the anchor locker. These were hammer sounded and found secure although there is some crevice corrosion behind the washers.

There are two sets of shroud plates on each side. These have welded deck flanges and are through bolted to internal bulkheads, mostly hidden by linings. The port side forward shroud plate can be seen behind the forward toilet flushing tank.

The backstays attach to stainless steel chainplates, securely bolted to the transom.

All stays were loaded and no signs of movement seen to any of the securing points. There is no discolouration to the teak decking by way of the chainplate flanges which might indicate moisture beneath the fittings.

F5. Ground Tackle and Mooring Arrangements.

The anchor locker is accessed through a hinged hatch forward. This is in good condition and locks firmly. There is minor crazing to the deck on the inside of the locker.

There is a 1000w 'Lofrans' electric anchor windlass. This is securely mounted on a shelf bolted to the forward bulkhead. It was tested and worked satisfactorily both from the helm position and using a hand-held control.

The windlass has a manual pawl brake to prevent the chain running out when it is being used manually and which is seized. It also has a clutch on its the barrel which is stiff. This is due to corrosion between the barrel and its axle. It is recommended that all external windlass fittings be cleaned and lubricated (B).

There is approximately 25m of 9mm galvanised chain which is in fair condition and marked with cable ties at 5m intervals. The bitter end is secured to an eye plate.

A 20kg stainless steel Bruce anchor is self stowing within a slot and roller cut into the stem head such that the stock lies within the locker. The forestay stem fitting guards the hull moulding from damage. The anchor is secured to the chain by a stainless steel swivel which is in good condition. The entire arrangement is sufficient for this size of the boat although it would be advisable to also carry a kedge anchor for extended cruising.

There are six 400 mm aluminium alloy cleats, paired bow, midships and stern. All are secure with no sign of movement.

Adequate mooring ropes and fenders all seen in good condition and of a suitable size.

F6. Other Deck Gear and Fittings.

F7. Davits and Boarding Ladders..

There is a stainless steel stern boarding ladder which is retained by the boarding gate and which swings down smoothly and is adequately supported. It has two white rubber sockets which will bear against the hull moulding; one is broken and should be replaced (B).

G. **Rig.**

The vessel has a mast head sloop rig.

G1. Spars.

The mast is a deck stepped 'Seldon' anodised aluminium spar. It is straight and undamaged, with no dents or corrosion so far as could be seen from deck level. It has a butt join backed by an internal sleeve about 2.5m above deck level. There are two sets of spreaders. The standing rigging was loaded and no signs of undue movement seen at the spreader sockets. The deck step is secure and the drainage holes free of blockages. Sail and spinnaker pole tracks are securely riveted to the spar.

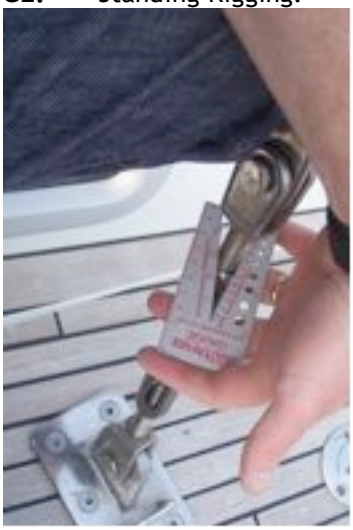
The mast has deck lights, all round white and tri-colour lights, VHF aerial, enclosed radar reflector, radar scanner, wind speed and direction indicators attached. All appear secure.

The boom is of similar manufacture and is in good condition. No undue play was noted at the gooseneck and the mainsheet fittings appear secure.

The kicking strap is a 'Seldon Rod Kicker'. It is secure at the base but the boom fitting has pulled out of the metal section and cracked as shown. The entire unit should be replaced (A) . The manufacturer's recommended price for a new strap is £274 for this type, or £418 for a gas strut model which removes the need for a backstay and allows the boom to be raised in light winds to put more shape into the sail. The unit can be owner fitted. It is secured with clevis pins top and bottom. SMR rigging in Brighton (01273 668904) can supply.

The manufacturer's website at http://www.seldenmast.com is an excellent source of information.

G2. Standing Rigging.



The vessel has paired lower shrouds and single uppers, a split backstay and a single forestay with roller furling. The rig is set up tight.

All stays are 10mm 1x19 stainless wire which appear to have been on the boat from new (2002). The shrouds appear to be secured by toggles to the mast (this was stepped so could not be closely examined). The lower ends have swaged terminals. All lie in a straight, fair line with no signs of restriction.

Some of the upper rigging terminals appear to have been wrapped with white electrical tape. This is not good practice because water retained against stainless steel will cause crevice corrosion. Stainless surfaces should be open to air or free flowing water to allow the chromium content to

oxidize and form the 'stainless' surface. The tape should be removed when the mast is next lowered (B).

The lower terminals have aluminium rigging screw covers, all in good condition. All were lifted to inspect the underlying terminals and all were found in good condition with no missing pins or split rings. The photo (previous page) is typical, showing 15mm rigging screw threads, secured with split pins and attached by forks to 10mm stainless welded chain plates.

Insurers advise that racing yachts should have their rig replaced every 8-10 years and cruising yachts 10-12 years. Although this vessel has not been heavily used, she has been kept in a fairly exposed marina where the rig will be stressed to some extent and so it would be advisable to look at replacement within the next 5 years.

G3. Running Rigging.

There are four cockpit coaming mounted winches; two 'Anderson 52' self tailing and two 'Anderson 28' self tailing. All work smoothly. Halyards are led back to port over the coachroof using deck organizers and a bank of rope clutches. All are secure and well positioned. The main sheets to a track mounted on a gantry over the cockpit. A deck mounted genoa track is secure and the cars can be positioned from the cockpit.

Running rigging is mostly 15mm terylene braided rope, all in new condition and reportedly replaced last year.

There is a 'Harken' roller furling jib system.

G4. Sails and Covers etc.

The sails were not inspected although the jib leech shows signs of UV degradation. There is a tear to mainsail boom cover which is generally worn and in need of replacement.

The cockpit has a canvas and clear plastic spray hood which I understand is being replaced ahead of the sale. One of the plastic windows is split.

H. Safety.

H1. Navigation Lights.

The vessel has 10w port and starboard stem head navigation lights. The port light was seen working; the starboard light is not and appears to have been damaged in a collision. Its bracket is also bent. This should be repaired or replaced (A). The stern light was seen working as was the combined masthead tri-colour and all round white anchor light.

The lights comply with current regulations for the vessel.

H2. Bilge Pumping Arrangements.

An electrical bilge pump is mounted in the bilge sump, accessed through the sole panel forward of the chart table. This has a float switch which is in working order. The unit is controlled from a three way switch (manual, auto and off) underneath the upper companionway steps, all of which work.

There is a manual diaphragm pump aft to port in the cockpit. This worked satisfactorily and has a suction point below the electric pump.

H3. Firefighting Equipment.

Two 2kg powder extinguishers are stowed in the stern locker and under the chart table. Neither have date markings but their gauge show they are up to pressure. A fire blanket is also stowed under the chart table. A hole into the engine space by the companionway allows a fire extinguisher to be deployed. A permanently installed halon gas substitute (such as FM200) with an automatic or toggle release mechanism would be more effective. Dry powder extinguishant will damage an engine if ingested whilst running.

H4. Lifesaving and Emergency Equipment.

An 'Avon Modula' 6 man liferaft is securely mounted to a bracket on the pushpit. The casing is undamaged. The next service is due in November 2009

An offshore flare pack is stowed in the cockpit locker/. All are in-date up to 2010 apart from the smoke canisters.

A Plastimo horse shoe lifebuoy is stowed forward.

No life jackets or harnesses were seen – these must be carried (A). The RNLI operate 'Sea Check', a free boat safety inspection service which can advise on appropriate safety equipment. See
http://www.rnli.org.uk/what_we_do/sea_and_beach_safety/sea_safety/sea_check

I. <u>Engine.</u>

I1. Engine and Installation.

The vessel has a Yanmar 4JH3B engine. This has a standard control panel to starboard of helm. There is no hour counter. There is a single lever control which is securely attached and works smoothly. The neutral détente is about 45° forward of vertical (shown) which is confusing and potentially hazardous if someone unused to the boat brings her alongside. It should be adjusted so that the lever lies vertical in neutral (B).

The engine was started to take the boat from its pontoon to the travel hoist and back and also whilst tied up. It started from cold at the first attempt and ran with minimal smoking. A check on the fuel, exhaust and water cooling pipework while running showed no signs of any drips or leaks. Oil and water temperature indicators rose smoothly and stayed steady. The warning lights (temperature, charge and oil pressure) and tachometer all work.

Although the prop is self feathering, the ahead to astern engagement was tested and found to be effective with no noticeable lag.

The following checks were also carried out.

- The engine oil is clean and up to level.
- The gear box oil is clean and up to level.
- The water pump and alternator drive belt is in good condition and tight.
- There are no signs of emulsified oil inside the rocker box cover.
- The secondary coolant is up to level and has an antifreeze solution.

The engine primary seawater cooling flows to a clear filter which can be accessed beneath the cabin sole next to the chart table, then flows up to a swan neck which has a non-return valve and from there to the heat exchanger.

The oil drain fitting at base of engine sump was checked and found secure.

The exhaust is flexible rubber hose with stainless steel clips, all securely bolted and in good condition. The exhaust skin fitting is in good condition and the hose well secured to this with a bolted stainless steel hose clamp.

The engine is mounted on flexible bearers which are securely bolted to the internal hull moulding. There is an Aquadrive flexible coupling which links to a thrust bearing which is securely bolted to a glassed-in plywood web.

Engine access is good via hinged companionway steps and a panel underneath the bunk in the stern cabin. The companionway step hatches are tight in their frames, probably due to some swelling in the joinery. The binding surfaces can be sanded off and coated with oil to prevent further swelling.

The bow thruster was tested and found to work effectively. The motor is properly encased under the forecabin bunks with no equipment or material stowed close by. This should be guarded against as damage to cables coupled with high electrical loads have been known to cause fires in these units.

The brokers report the engine has been regularly serviced. Invoices were seen for servicing and winterizing in 2008.

I2. Fuel System.

The fuel tank is mounted beneath the bunk in the aft cabin. It is welded aluminium alloy construction and contains 275 litres. A primary stage fuel water separator is mounted beneath the top companionway steps and is connected to the tank and engine by black flexible hose to BS7840 which is in good condition where visible.

No leaks or other signs of damage were seen in any part of the fuel system.

The fuel level indicator over the chart table appears to be in working order.

J. Accommodation and on Board Systems.

J1. Accommodation General.

The boat is upholstered and carpeted in blue fabrics, all of which are in very good condition. Internal joinery is to a high standard using satin finished, teak veneered ply and solid teak for bulkheads, furniture, doors and trim. The deck head has white formica panels, all permanently secured and the cabin sole is holly and teak veneered boards, some of which can be lifted for bilge inspection. All doors have lift off brass hinges and are cut with ventilation gaps at the top. There are some minor scuffs and scratch marks at the base in the companionway area but otherwise the joinery is in very good condition.

A handrail runs along the cabin overhead lining.

The bunks all have lee clothes

J2. Gas Installation.

Two 7kg gas bottles are stowed to starboard in the stern locker. The bottom of the gas locker is lined with a rubber backed carpet to prevent rattling and rust stains (shown). However this also blocks the drainage hole of the gas locker and it is recommended a hole is cut in the carpet (A).

The bottle connector is stiff to operate and may need lubricating.

The flexible hose is not marked to any recognised standards or dated. It is in good condition. It is not marked to BS3212 as required under the Recreational Craft Directive. Normal practice is to replace gas hose every 5 years and given this is unknown quality and probably original it would be advisable to replace it (B).

The hose runs to a bubble detector which was tested and showed no signs of leaks. From there it runs through copper piping to a stop cock under the cooker which operates smoothly.

A flexible section connects the gas supply to a gimbaled two burner cooker and oven. This is secure and in good condition. The oven door and gimbal mechanism can be locked. The burners have flame failure devices which were tested satisfactorily. The electronic ignition system is in working order.

No obvious hazards were identified throughout the gas installation and the system is considered fit for use. Note current gas safety standards were revised in 2001 and most insurance companies will require gas systems to comply with these standards. Www.calormarineshop.co.uk has further details.

J3. Fresh Water Tanks and Delivery.

There is a pressurised fresh water system fed by a two tanks, one under the cockpit locker to starboard (not to port as shown in the owner's handbook – this is the fuel tank) and one under the saloon settee to port. Total capacity is 455 litres. Outlets in the galley and two head compartments (showers and sinks) were tested and all found working. The water is clean and has no odour.

An engine calorifier mounted aft and to and starboard of engine. This was tested when engine was running after about 10 minutes and found to be effective. It also has an electrical immersion heater, assumed 240v, which was not tested.

The shower drains have push button pumps which work.

J4. Heads.

The forward toilet is set up solely as a freshwater toilet with a holding tank for use in canals or enclosed basins. The holding tank is behind the heads compartment moulding, partially accessible through lockers in the heads compartment. The toilet is well secured and the pipe work is reinforced hose, all double clipped. A separate flushing tank is filled with a blue sanitary fluid. The holding tank appears to discharge to an above waterline skin fitting in addition to the deck pump out point which is unusual – toilet discharges are usually below waterlines. It may be only intended for tank rinsing purposes.

The after toilet is a standard manual sea toilet which is well mounted and works satisfactorily. It also has a holding tank which is in the starboard cockpit locker. The outlet sea cock has a T piece above with a separate valve allowing discharge into the holding tank

or directly overboard. These are difficult to access, being tight against the locker front. The discharge pipe is well looped up to prevent siphoning.

J5. Electrical Installation.

The vessel has two Varta 140AH service batteries stowed in a dedicated GRP box under the forward saloon berth and a Varta 75AH engine starting battery boxed in the after cabin under the berth.

An invoice was seen for the replacement of the 2 x 140AH batteries in June 2008.

All cable connections are well made and labeled and secure. The boxes are lidded and secured down by heavy duty ratchet straps. Of these, the aftermost one on the service battery is slightly bent and hard to adjust. It can be twisted back into shape with pliers.

All batteries were tested when the survey began and found to have charges of between 12.4v on the service batteries and 12.1v on the starter battery which is satisfactory. This rose to 13.1v on the service batteries and 13.9v on the engine starting battery which shows that the alternator and charging system are in good order.

A check on the battery cells showed the acid level is well above the plates.

An 'Adverc' smart charger is fitted alongside the service batteries. There is a 240v circuit breaker beneath the companionway which was not tested.

There are three battery isolator switches to the base of the forward settee for the service batteries (presume to use each separately and both together), and a separate isolator switch to the base of the bunk in the stern cabin. All are in working order. The stern cabin panel also has a link over switch to allow engine starting from the service batteries.

A 12v switch panel over the chart table controls services - all switches were seen working and have indicator bulbs.

The cabin has a mix of brass shaded lights using 5w filament bulbs and overhead two pin halogen lights. All are in working order. A 240v circuit breaker for shore supply is beneath the top steps and there are 240v sockets in the cabin.

We discussed the possibility of extra generating capacity. The seawater fridge has a 0.8A compressor, using say 20AH over 24 hours. With 3 cabin lights on for an evening coming to about 6AH, an anchor light drawing 5AH and a stereo 5AH, this is about 40AH use in a day. At 50% maximum desirable discharge, the service batteries will provide this for 3 days and the 80A engine alternator will need about 4 hours running to replace that energy. The relationship is not straight line and this is only approximate, but if you are away from shore power and not motoring for more than three days on a regular basis, you will need a solar panel or a wind generator depending on the weather you expect. A good quality oil lamp would cut usage and be in keeping with the rest of the cabin.

J6. Electronic and Navigation Equipment.

The following Raymarine cockpit instruments were powered up and seen operating.

From left, wind direction and speed indicator; close hauled apparent wind indicator; log; depth sounder.

The course over ground indicator was powered up but not set to operate.

Raymarine ST6001 Autopilot tested and seen working
Raymarine combined radar and GPS chart plotter seen operating.
Raymarine VHF DSC Radio, heard working on receive and briefly tested on transmit.

Navtex weather forecast receiver working

A Plastimo 150mm diameter globe compasse 'Olympic 135' model is fitted in front of helm. This has a plastic cover, the glass is clear and the fluid has no bubbles. It revolves smoothly and returns to same direction when deviated with a magnet.

The autohelm, windlass control and bow thruster controls are in close proximity to the compass so it may be advisable to swing the compass (compare it against the GPS motoring on N, NE, E etc.. headings) and draw up a deviation table.

Note 'Ofcom' supply ship's radio VHF free of charge at
http://www.ofcom.org.uk/licensing/applications08/elt/

J7. Heating and refrigeration.

There is a seawater cooled refrigerator. The compressor is in the under sink locker to the left and is secure. The cooling pipe shares a skin fitting with the sink drain (see E4). The fridge was switched on, the compressor heard working and the plates felt to cool effectively.

An Eberspacher diesel heater is installed in the cockpit locker. This was switched on and found to work satisfactorily. The installation is secure and the exhaust is in good condition.

Aidan Tuckett
AMYDSA

21 April 2009