PRE – PURCHASE SURVEY REPORT ON:
"Mous'le"
1990 Dehler 37 CWS
Sailing Yacht

Date of Inspection: 11/6/2013
Location of Inspection
Yacht Haven Marina , Cowes, IOW
Carried out by:

Anchor Marine Surveys
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This survey was commissioned by: Mr Ove Tjörnhed Innegårdsvägen 55 423 52 Sweden	Scope of Survey: This is a non-destructive pre-purchase survey and its purpose is to establish the structural and general condition of the vessel on behalf of the commissioning client.

Limitations:

(a) This report has been prepared for use of the commissioning client above and no liability is extended to others who may see it.
(b) Where access was restricted by fixed panels, linings, mouldings etc. and it was not possible to inspect the areas behind, I cannot say that these are free from defects.
(c) In some cases it is not possible to detect latent and hidden defects without destructive testing which is outside the scope of this survey.
(d) No fastenings, prop, shaft, keel bolts or rudder were removed or drawn for inspection unless stated in the report.
(e) No machinery was dismantled or stripped down for inspection.
(f) All tanks were inspected where visible but not internally and they were not pressure tested. Their contents were also not tested for contamination.
(g) The electrical installation was not examined in detail, merely switched on for testing.
(h) The vessel was not inspected beneath slings, shores or chocks and cannot be said to be free of defects under these items.
(i) Note: The term "serviceable" and "in serviceable condition" as used in this report mean that the items remain useable despite possible wear and deterioration. The item may nevertheless require maintenance and replacement in due course.
(j) This report does not comment on any compliance/non compliance to national/international regulations such as the Recreational Craft Directive or Marine Coastguard Agency Commercial Coding etc.

Recommendations

These will not be made concerning decorative or minor defects that have no significance on the vessel's value or its serviceability but these points will be mentioned in the body of the text. Recommendations will be confined to defects which affect the vessel's insurability, value or structural integrity. Recommendations will be graded into two sections - ones that should be rectified before the vessel is used or within a specified period of time as indicated in the text (Essential) and ones that affect the vessel's insurability, value or are costly to repair.
All recommendations will be made in red and italics for quick reference and will be listed again in the conclusions at the end of the report sections.

Advisory Notes

Advisory notes are for the commissioning client's information only. They do not affect the structural integrity or seaworthiness of the vessel at the time of inspection. *Advisory notes will be made in blue and italics for quick reference and will be listed again in the conclusions at the end of the report sections.*

Conditions of Survey

The vessel was examined at the Yacht Haven, Cowes, IOW. The vessel was initially found afloat on her marina berth where the majority of the survey was carried out. At midday the vessel was moved by the marina staff to the hoisting dock and lifted ashore, pressure washed and held in the slings for the underwater inspection. Once this was completed she was re-launched and moved back to her berth for completion of the survey. The weather was showery and overcast with a moderate wind.

Conventions:

Wherever numbered items are referred to, (e.g. stanchions), then these are counted from forward to aft.

HULL, DECK AND STRUCTURE

1. Details of Vessel (General Description, Dimensions, History, Registration etc.)

'Mous'le' was found to be a fibre reinforced plastic fin keel sloop of the Dehler 37 CWS class with an auxiliary diesel. The vessel was built in 1990 by Dehler Yachtbau GmbH to a Van De Stadt design.

Principle Dimensions:

HIN:		47002 BAU-NR
Sail No:		GBR5573T
Year Built:		1990
Keel Type:		Cast iron external keel
Construction Material:		FRP
LOA: *		36' 8" (11.20m)
LWL: *		29' 6" (9.00m)
Beam: *		11' 6" (3.50m)
Draft: *		6' 6" (2.00m)
Displacement: *		5,800 kg's
Ballast:*		2,400 kg's
Engine:		Yanmar 3YM30 (29hp)
Fuel Type:		Diesel

**Dimensions obtained from Brokers details and are not confirmed*

Registration:
The vessel displayed a Part 1 British Registry No. 908626 which was carved into a plate and attached to the forward bulkhead. The certificate was seen and was found to have an expiry date of May 2014.

RCD
The vessel was built prior to 16th June 1998. It therefore does not require a CE plate. However some proof that the vessel was within the EEC before and over this date should be sought if possible.

VAT
Vessels that are in use as private pleasure craft after 1 January 1985 will have been subject to VAT. Some proof that the vessel is VAT paid should be carried aboard at all times as part of the ships papers particularly if travelling abroad.

2. Keel

Description
The keel was an external cast iron deep fin keel with wedge bulb to the lower section. This was attached to the vessel with nine stainless steel studs, backing plates and nuts to the hull moulding. The keel was seen in tension with the hull whilst hanging in slings beneath the travel hoist. My comments below are based on inspecting the keel in this position only.

Observations, comments & tests
Externally

- The keel was sighted from various angles and found to be straight and true to the hull moulding.
- Light hammer sounding found the keel to be of a solid structure throughout with no significant voids or casting unevenness.
- Visual inspection revealed no separation or gaps along the join line.
- No significant impact damage was noted on the leading or bottom edge of the keel.
- No cracks or crazing were evident in the hull moulding around the vicinity of the keel root to hull join.
- No deflections to the hull moulding were evident around the keel to hull join.
- The coatings to the keel were found to be well adhered and in good condition having recently been applied.

Internally

- The area by way of the keel root was heavily reinforced with an internal top hat grid moulding bonded to the hull which created the transverse frames and longitudinal stringers to support the keel. The mouldings were hammer sounded for voids and delamination and none were found.

- No stress crazing, cracking or movement was found around the keel studs.
- The bilges were found dry and clean and the keel fixing studs, nuts and backing plates were bright and free from staining or corrosion.

3. Hull below the waterline

Description

The hull below the waterline was a mono hull design made from of a monolithic plate FRP laminate with a gelcoat skin.

Observations, comments & tests

In order to sample the hull skin below the waterline the antifouling was removed in random areas approximately two patches per meter length of 75mm x 75mm down to the skin.

Using a Sovereign Quantum Marine Moisture capacitance type meter on a relative scale of 0 - 100 (This is not a percentage scale) readings were taken at the sample points both on its shallow and deep reading modes. Random areas above the waterline were also taken as a comparison against the below water readings which are recorded in section 4 below.

Conditions prevailing at time of readings:

The weather was showery and overcast with a moderate wind. Consideration should be given to the fact that the vessel was found afloat and the readings were taken within 40 minutes of lifting ashore when the surface was seen to be dry. Sample areas also revealed the hull's skin had been over coated with an epoxy moisture barrier coating which is also known to elevate moisture meter readings.

Air temperature:	20.3°C
Surface Temperature:	17.5°C
Relative Humidity:	64.6%
Deg's above Dew Point	4.4°C

Meter readings were as follows:

Range on shallow mode	Range on deep mode
25 to 28	22 to 28

- Readings of the above level are considered to be medium and are at a level where moisture related defects could occur however they are regarded as being at an acceptable level considering the vessel's age and the conditions in which the readings were taken.
- The hull was visually inspected at the sample areas and no blisters or other moisture related defects were noted.
- A visual inspection of the hull underbody revealed no signs of major impact damage or repairs.
- The hull was lightly hammer sounded with not enough force to damage the gel coat and no voids or delamination was identified from the return soundings.
- The epoxy coating was found well adhered and in good order where seen in the exposed sample areas.
- The antifouling coatings to the hull were found to be well adhered and in good condition having recently been applied.

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3.1 - Advisory note: It is now known that laying up the vessel ashore out of season for two to three months allows the hull to dry reducing the risk of moisture reaching levels where moisture related problems can occur.

4. Topsides above waterline

Description

The topsides above the waterline were constructed of FRP cored laminate moulding with a raked stem and transom with a conventional sheer to the topsides. The skin was found finished in an off white/grey gelcoat with a painted white boot line running the full length of the hull.

Observations, comments & tests

- Moisture meter readings were taken on the topsides as a comparison against the under body. The meter readings were from 12 to 15 on the shallow scale and 11 to 13 on the deep. All these readings were well within acceptable levels and currently not of concern.

- The original gelcoat surfaces were found dulled by UV damage and weathering and would benefit from a professional cut and polish.
- The topsides were lightly hammer sounded for voids and delamination. No large areas of voids or delamination were found.
- Visual inspection did reveal a number of scuffs, scores and minor repairs some of which could be removed with a professional cut and polish. The few slightly deep scores may require filling with matching gelcoat to return the surface skin to good condition.

4.1 - Advisory note: Consideration should be given to having the topsides professionally cut and polished to remove any dirt and marks and to restore the lustre to the gelcoat after which it would be advisable to apply several coats of marine wax polish to offer further UV protection to the gelcoat skin.

5. Deck, coach roof and cockpit moulding

Description

The deck, coach roof and cockpit were an integral FRP sandwich construction moulding utilising a core between an inner and outer laminate for stiffening. In flat panel areas and in load bearing areas the core was replaced with monolithic laminate or backing plates. All the deck walkway surfaces were found to have a non slip sheeting surface glued to the decks while the cockpit seat tops had a moulded non slip surface.

Observations, comments & tests

- Meaningful moisture readings were not possible due to the wet conditions at the time of the survey and should these be required a further visit on a dry day will be required.
- Hammer sounding returns did not reveal any evidence of significant voids and delamination.
- The entire deck, coach roof and cockpit walkways were found firm under foot with no significant flexing detected.
- Visual inspection of the decks, coach roof and cockpit did not reveal any concerning stress cracks however some light stress cracks were noted to locker lids and secondary mouldings none of which were of concern.
- The locker lids were found to be satisfactorily hinged and were seen to have a positive locking arrangement and adequate weather lips and gaskets.
- The deck coverings were found well adhered and in serviceable condition and all non slip surfaces were found in serviceable condition.
- Like the hull mouldings all moulded surfaces were dulled by UV damage and weathering and would benefit from a professional cut and polish.

5.1 - Advisory note: Consideration should be given to having the deck and coach roof mouldings professionally cut and polished to remove any dirt and marks and to restore the lustre to the gelcoat after which it would be advisable to apply several coats of marine wax polish to offer further UV protection to the gelcoat skin.

6. Hull/Deck joint

Description

The hull to deck joint was a biscuit tin type, bonded and mechanically fixed via an aluminium section overlaid with a rubber fender section. Where the deck and hull joint ran around the transom the joint was changed to a hand finished lip type.

Observations, comments & tests

- Where access permitted inside the cockpit and anchor lockers the joint appeared to be well bedded with no obvious staining or leaks.
- Externally the joint was covered by the rubber rub rail however this was seen to be tight with no evidence of separation.
- No repairs or damage were noted.

7. Bulkheads and structural stiffening including internal mouldings

Description

A number of components contributed to the overall structural stiffening of the vessel. The hull shell was internally reinforced with a GRP grid mould containing stringers and frames which was bonded and laminated to the inside of the hull. The deck was made up of a two piece moulding. The top section was of a core construction and the second a head liner bonded to the underside of the deck moulding. In addition to the

mouldings, bonded-in bulkheads, half bulkheads and secondary timber fit-out provided further rigidity and load bearing throughout the hull.

Observations, comments & tests

- Where access permitted all internal GRP frames and stringer mouldings were found to be well adhered to the hull with no evidence of movement or detachment.
- Light hammer sounding of the mouldings did not reveal any significant voids or delamination.
- All internal bulkheads were found to be well bonded to the hull.
- The aluminium mast post landed onto a dedicated reinforced GRP floor pad that in turn was linked to the structural floor grid. The floor pad and support post were found free from distortion and any cracks or stress crazing and considered of a suitable strength to support the rig loadings.

8. Rudder and steering

Description

The rudder consisted of a spade style moulded GRP blade wrapped around a metal stock and frame. The stock was located into a rudder tube bonded into the hull with a plastic bearing insert. The rudder tube exited at the rear of the cockpit moulding where the stock was fitted with a quadrant and tiller arm to which the steering linkage and autopilot were attached. The rudder was operated by a Whitlock pedestal wheel steering system which consisted of a stainless steel helm wheel turning rod linkage system attached to the stock.

Observations, comments & tests

- Moisture readings were taken at random areas over the rudder and the meter readings were as follows:

Range on shallow mode	Range on deep mode
30 to 52	40 to 63

The readings above would indicate that the moisture had entered the core of the rudder and are at a level where moisture related defects may occur. This is a common situation with rudders and partly to be expected due to their light composite construction.

Exterior

- The rudder was lightly hammer sounded for voids and delamination and no significant voids were identified.
- Force was applied to the blade to test the bearings for wear. Some slight wear was found in the bearings in all directions but they were still within acceptable limits.
- Vigorous force was applied to the rudder blade against its stops at either end of its normal arc of travel which gave no indication that any serious corrosion or failure was present in the structural tangs.
- The stock was mostly unsighted however no evidence of pitting was noticed around the neck of the stock where it entered the blade
- The rudder profile was found satisfactory and the rudder was found true to the keel.
- The antifouling was removed in six areas of 75 x 100 mm to inspect the underlying skin and no blisters or wicking was evident in the control areas.
- The joining seam at the leading and trailing edges of the blade was found to be free from cracks and separation.
- Coatings to the rudder were found well adhered but wasted and requiring to be renewed.
- The wheel and steering system was fully tested during the boat's move to the hoisting dock and all was found to be working properly.

Interior

- The rod linkage where access permitted was found in serviceable condition.
- The tiller arm was found secure to the stock and in serviceable condition.
- The rudder tube was found securely bonded to the hull with no evidence of cracking or separation.
- No evidence of leakage was noted around the seal or through hull fitting.

9. Stern gear

Description

The stern gear consisted of a 16" two bladed bronze alloy propeller attached to a 30mm stainless steel shaft held in place with stainless allen screws. The shaft exited the vessel via a GRP stern tube laminated to the inside of the hull. The shaft then passed through a P bracket containing a water lubricated bearing. The inboard end of the stern tube was fitted with a Volvo rubber stern gland which was secured to the GRP tube with a stainless clip. In addition to the stern gear an ambassador rope cutter was seen ready to be refitted to the shaft just in front of the propeller.

Observations, comments & tests

- The propeller was found in good order with no evidence of damage to the blade tips or pinking and pitting to the blade surface.
- The propeller was lightly sound tested and the ring revealed a good tone suggesting the bronze was still in good condition.
- Reasonable force was applied to the propeller which was found secure to the shaft and all securing screws were found tight.
- Force was applied to the P bracket and this was found free from movement and secure to the vessel however 3 – 4mm vertical play was noted between the shaft and water lubricated bearing which now needs to be replaced.
- The stainless shaft was free of any corrosion or staining and sighted as being straight when rotated. When tested with a magnet it was found to be non magnetic. This along with the other visual evidence would suggest that it was made of 316 stainless steel.
- The rope cutter was found in serviceable condition but does require refitting.

Internal

- The Volvo stern seal was found secure to the stern tube and in serviceable condition with no perishing evident.
- The seal was found free of leaks with no evidence of staining or salting to suggest leakage was occurring.
- The GRP shaft tube was found securely bonded and laminated to the hull with no evidence of detachment or cracking in the securing laminate.

9.1 - Recommendation: It is recommended that the water lubricated bearing held within the P bracket is renewed within the next three months or next time the vessel is lifted ashore.

10. Cathodic protection

Description

Cathodic protection was in the form of a single pear anode through bolted to the hull just forward of the propeller on the starboard side of the hull and three shaft anodes.

Observations, comments & tests

- The pear anode was found only 10% wasted however it was covered in calcium scale and will no longer be a fully effective anode unless the scaling is cleaned off.
- No continuity was found between the propeller, shaft and rope cutter and the pear anode and on further investigation it was found no internal bonding wires were fitted and the owner declared that this was a spare in case the shaft anodes fell off. I see no point in having an anode fitted to the vessel and not having this bonded to the stern gear.
- The anode studs were again hammer tested and found to be secure and tight to the hull.
- Two of the shaft anodes were found lightly wasted and one was new. All were secure to the shaft however the two older anodes were both covered in calcium deposits.

10.1 - Advisory note: Be advised galvanic protection to vessels varies from boat to boat and from location to location. As well as galvanic action, metal fittings below the waterline can be damaged by earth leakage from on board electrical instruments or from marina shore supplies. It is therefore advisable that regular checks are made on a vessel's anode condition to ensure that they still offer protection.

10.2 - Recommendation: It is recommended that the pear anode and the two older shaft anodes are cleaned back to bare metal so exposing the zinc (Anode) to the water (Electrolyte). In addition to this the pear anode should be properly bonded to the stern gear and P bracket.

11. Skin Fittings and other through hull apertures

Description below waterline

All through hull fittings below the waterline were of a flange type with internal retaining nuts of an unknown yellow metal type with the exception of the navigation instrument transducers which were of reinforced plastic. Attached to these were conventional ball valves with hose tails and piping.

The following through hull valves below or on the waterline were identified and tested.

No	*Use*	*Thru Hull Material*	*Condition*		*Valve Type/ Material*	*Condition*	*How clipped/ Condition*
S1	Depth sounder	Plastic	Serviceable		N/A	Serviceable	N/A
S2	Water maker inlet	Yellow metal	Serviceable		DZR / Ball valve	Serviceable	Double clips to pipe / Serviceable
S3	Heads inlet	Yellow metal	Serviceable		DZR / Ball valve	Serviceable	Double clips to pipe / Serviceable
S4	Heads outlet	Yellow metal	Serviceable		DZR / Ball valve	Serviceable	Double clips to pipe / Serviceable
S5	Heads sink outlet	Yellow metal	Serviceable		DZR / Ball valve	Serviceable	Double clips to pipe / Serviceable
S6	Water inlet via sail drive	Yellow metal	Serviceable		DZR / Ball valve	Serviceable	Single clipped to pipe / Serviceable
S7	Generator Inlet	Yellow metal	Serviceable		DZR / Ball valve	Serviceable	Double clips to pipe / Serviceable
S8	Generator out	Yellow metal	Serviceable		DZR / Ball valve	Serviceable	Double clips to pipe / Serviceable
P1	Speed Log	Plastic	Serviceable		N/A	Serviceable	N/A
P2	Galley Sink outlet	Yellow metal	Light pinking requires replacement in next 12 months		DZR / Ball valve	Serviceable	Double clips to pipe / Serviceable

Observations, comments & tests

- All valves were tested to successfully open and close with no evidence of significant tightening to the movement.
- Vigorous force was applied to the valve assemblies and adjacent pipe work and all were found to be secure.
- All pipe work attached to the valve hose tails was found to be securely fastened with double worm drive clips and all were in serviceable condition.
- All exterior flanges were scraped back to bare metal and inspected and all were found secure and in serviceable order however some light pinking was noted to the galley outlet flange and this should be changed next time the vessel is laid up for the winter.

11.1 - Advisory note: It is advised that all sea valves should be regularly operated and serviced to maintain them in good working order. A vessel should not go to sea with a seized valve in the open position and it would also be advisable to locate via a leash line a correctly sized wood plug beside each of the through hull valves in case of an emergency.

11.2 - Recommendation: On the grounds of safety it is recommended that the galley outlet skin fitting which was found with some light pinking should be renewed along with its attached valve within the next twelve months.

Description above waterline

Through hull fittings above the waterline were all of a flange type with internal barbed tails.

Observations, comments & tests

- All through hull fittings found above the waterline and not mentioned in the table above were found secure and in serviceable condition.
- All pipe work was securely fitted and clipped

12. Main companionway

Description

The main companionway closure consisted of two smoked glazed acrylic wash boards held in place by U shaped aluminium side runners. A sliding acrylic hatch pulled across the top of the wash boards securing them in place. The hatch and wash board were then secured in place with a stainless latch secured by a marine padlock operated by a key.

Observations, comments & tests

- The sliding acrylic hatch was found to be in serviceable condition.
- The latch could be operated from inside the cabin and from the cockpit which was found to be in serviceable condition.
- The washboard was found in serviceable condition and to securely fit the frame.
- The main companionway was considered to be in serviceable condition and offered adequate security to unwanted entry and flooding while at sea.

13. Hatches, Ports and windows

Description

Four Lewmar hatches - two large and two small were found fitted to the coach roof and foredeck and all were of an aluminium framed type with acrylic glazing. In addition to the hatches the coach roof sides and cockpit sides were fitted with seven lewmar opening ports again of an aluminium framed type. Windows consisted of two coach roof side windows. All were of an aluminium framed type with acrylic glazing. Additional fixed ventilation was provided by a mushroom vent fitted to the centre of the hatch above the saloon.

Observations, comments & tests

Hatches

- The locking mechanism and hinges were tested and found to be in working order.
- The frames were lying tight to the decks.
- Sealing gaskets were intact and free from evidence of leaks but they were not water tested.
- The aluminium anodising was found to be in serviceable condition.
- The acrylic glazing did show some cosmetic UV crazing but was tested to support the weight of a twelve stone adult and regarded as serviceable.

Ports

- The locking mechanism was tested and found to be in working order however the two ports hidden behind the louvres on the coach roof sides were found to be very stiff and could do with lubricating.
- The frames were lying tight to the coach roof sides and cockpit seating.
- Sealing gaskets were intact and free from evidence of leaks but were dirty and should be cleaned to prevent leaks from developing.
- The aluminium anodising was found to be in serviceable condition but not totally free from some light oxidation.
- The acrylic glazing on some of the ports was found to be heavily UV crazed and while reasonable force was used to test these and all were found serviceable their strength will have been compromised and consideration should be given to renewing the glazing prior to any long ocean journey being contemplated.

Windows

- The frames were lying tight to the coach roof and topsides.
- The aluminium anodising was found to be in serviceable condition but not totally free from some light oxidation.
- The acrylic glazing did show some slight cosmetic UV grazing but none was of concern.
- No evidence of leakage was noted internally.

Ventilation

- The ventilation unit found fitted to the coach roof hatch was found secure and in serviceable order.

13.1 - Recommendation: Due to the heavy UV crazing found on some of the ports glazing it is recommended that the glazing is replaced prior to any long ocean passage being undertaken. In the meantime a plywood blanking panel and a method to secure it in place should be carried aboard when the vessel is used outside sheltered waters.

14. Pulpits, stanchions, lifelines

Description

The pulpit and pushpits were of stainless steel with feet that slotted into sockets that were moulded into the toe rail moulding. The stanchions were again made of stainless steel with the same method of securing them to the decks. The twin lifelines were of 1 x 19 PVC coated stainless steel wire and attached to the pulpit with swaged forked terminals and with eyes and lashings to the pushpit.

Observations, comments & tests

- The pulpit and pushpit were found in serviceable condition with no visible damage.
- All stanchion bases were found secure and in serviceable condition.
- All lifelines were found to be serviceable however some damage to the PVC coatings was noted where the lifelines passed through the stanchions. However no broken strands were noted and the lifelines were tested to support a 12 stone person without failing.
- The lifeline attachment points at the pulpit were found to be correctly attached and all secure.
- The fixings to the pushpit were found to be secure.
- All stanchions were found secure in their bases.

15. Rigging attachment points

Description

The forestay terminated onto a stainless steel bow stem plate with a chain plate running partly down the stem. This was through bolted to the hull and to the deck. The cap and lower shrouds terminated onto a stainless steel deck plates that was bolted through the deck to an internal chain plates attached to support knees laminated in to the hull sides so passing all the rig loadings throughout the hull. The back stay and adjuster terminated on to stainless steel chain plates attached to the transom.

Observations, comments & tests

Cap and lower shroud attachment points

- No crazing, cracks or deflection was found around any of the attachment points.
- No defects were found in the stainless fittings however the welds were not polished smooth and without dye testing it was not possible to see if cracks had developed along the HEA of the weld.
- No stress crazing or cracking was noted in the load bearing areas below
- No evidence of seepage was found around the fittings from below.

Forestay Attachment

- No crazing or deflection was found around the fitting
- No cracks or defects were found in the stainless fittings
- All bolts were tight and secure
- Some face staining was noted in the lower two stem head chain plate fixings.

Backstay Attachment:

- No crazing or deflection was found around the fitting
- No cracks or defects were found in the stainless chain plate
- All bolts were seen tight and secure.
- No seepage was found around the fitting

15.1 - Advisory note: Be advised that due to the continued load working on rigging attachment points these should be routinely inspected for any signs of staining, movement, leakage and cracks and appropriately repaired should any defect be found. Consideration should be given - when the mast is next un-stepped - to having the welds on the cap shroud stainless deck plates polished smooth so that a visual inspection can identify any defects more easily.

16. Ground Tackle and Mooring Arrangements

Description

The ground tackle was found mounted on the twin stainless steel bow rollers which were an integral part of the stem head fitting and in the anchor chain locker integrated into the deck moulding. This consisted of a

15kg galvanised steel Spade bower anchor with an unknown length of 10mm galvanised steel chain. In addition to the bower anchor a Danforth style kedge anchor with chain and line was found in a cockpit locker. Mounted on deck in line with the bow roller was also found a Lofrans Project 1000w electric windlass with foot deck controls. Mooring bits consisted of six permanently fixed 10" aluminium mooring cleats which were found fitted to a moulded toe rail top both fore, centre & aft of the vessel.

Observations, comments & tests

- The bower anchor (15kg) was considered to be of a suitable minimum weight for this type of vessel for sheltered waters and found to be in serviceable condition however the galvanising had mostly been worn away and corrosion was starting to develop on the underlying mild steel.
- The chain was found attached to the anchor with a stainless steel joiner. This was found secure and the pins tight.
- The bower anchor chain was sample inspected and found to be in serviceable condition however like the anchor the galvanising had been worn away with use and the chain was starting to corrode.
- The bitter end was seen to be shackled and lashed to an anchor point inside the locker.
- The full scope of the chain was not run out and measured and this should be done at handover prior to using the anchor. The chain length is estimated to be around 40 meters which is of a suitable length for offshore use.
- The anchor windlass was found securely mounted and was tested and found to operate both up and down however the down solenoid switch was intermittent and requires further investigation as to the reason why.
- The anchor locker hatch was found to be in serviceable condition and securely held in position with a latch. The locker itself was of a suitable size and well drained.
- All cleats were found securely mounted and in serviceable condition.
- A good selection of suitable fenders and warps were found aboard.

16.1 - Advisory note: It is advised that the full scope of the chain and line should be run out to be checked and its length noted prior to anchoring. In addition to this consideration should be given to having aboard additional warp to add to the chain for deep water anchoring in some parts of the world.

16.2 - Advisory note: Be advised the down solenoid switch found on the deck only worked intermittently and while this did not prevent the anchor from being deployed it does require further investigation as to why this happens and to reinstate it to a full working condition. In addition to this consideration should be given to refurbishing both the anchor and chain where the galvanising has been worn away before more serious corrosion sets in.

17. Other deck gear and fittings

Description

Other deck gear and fittings consisted of turning blocks around the base of the mast diverting the halyards back to the cockpit. The main sheet track with car and tackle was located in the middle of the cockpit. Genoa tracks with cars were secured to the side decks. Jib self tacking gear and track were mounted in front of the mast. Stainless steel hand rails were running along the coach roof top. 1 x Lewmar 43 self tailing halyard electric winch with rope stoppers was located centrally in the cockpit and two Harken 44, two speed, self tailing primary sheet winches on top of the cockpit coamings along with two lewmar ST30 spinnaker winches.

Observations, comments & tests

- All winches were rotated by hand and were secure to their mounts however they were all in need of an annual service.
- A degree of wear and tear plus UV degrading was found on most of the blocks and sheaves however all rotated freely by hand and were visually in serviceable condition.
- Genoa tracks were secure and tight to the decks
- Genoa cars both on the port and starboard were free moving up and down the track.
- The main sheet and jib self tacking tracks, cars and tackle were found in serviceable order.
- Rope jammers were free moving but were not fully tested under load
- All fittings were secure to their mounts.

17.1- Advisory note: It is advised that all the winches and rope stoppers require their annual service before being fully relied upon.

18. Boarding ladder

Description

A three rung hinged tubular stainless steel boarding ladder was secured to the boarding platform. The ladder when deployed rested against a stainless rail fastened to the bathing platform.

Observations, comments & tests

- The ladder was tested with my weight (12 stone) and found to be strongly attached and suitable for purpose.
- When in a deployed position the ladder was found to just reach to an adequate depth to board the vessel from the water.

19. Spars

Description

The spars consisted of a twin spreader fractional rigged Seldon anodised aluminium mast with a matching boom. The mast was stepped at the time of the survey and was inspected at deck level only and my comments below are restricted to a position 2m above the deck. It is understood from records held with the broker that the spars were renewed in the winter of 2006/7.

Observations, comments & tests

Mast

- The aluminium anodising was found to be in serviceable condition.
- No distortion or cracks in the mast section were found.
- No significant corrosion was found around stainless fittings.
- The goose neck fitting was a cast alloy fitting and attached to the mast with monel rivets. This was found in serviceable condition.
- The kicker attachment point was found in serviceable condition.
- The heel step was found secure and free from cracks and distortion.

Boom

- The anodising was found to be in serviceable condition.
- No distortion or cracks were found in the boom section.
- The main and kicker attachment points were found in good condition
- The boom end fittings were found in serviceable condition

Other

- The rod kicker tackle was found in serviceable condition with no visible defects.
- The Furlex 200S head sail reefing mechanism was found in serviceable order and the foil was sighted as being straight. The furling system operated successfully when tested with the sail attached while moored to the pontoon.

19.1 - Advisory note: It is advised that the masts should be inspected aloft routinely by a professional rigger and un-stepped at least every ten years for a complete overhaul.

20. Standing Rigging

Description

The standing rigging was of 8mm and 10mm 1 x 19 stainless steel wires with swaged terminals. The rigging was inspected at deck level only and my comments below are restricted to a position 2m above the deck.

Observations, comments & tests

- The rigging screws were of an open chrome plated bronze type which were all found in serviceable condition.
- All retaining pins were found securely in place and taped over.
- No significant staining or broken strands were noted around the neck of the terminals
- The articulation of the rigging terminations was found acceptable.
- The rigging tension was not tested by a meter but was found to be tight except for the check stays which had been set up slack to assist pre-bend.

20.1- Advisory note: It is advised that standing rigging should be inspected aloft routinely by a professional rigger and un-stepped at least every ten years for a complete overhaul. Standing rigging does not deteriorate significantly with age alone but does age with use. It is therefore difficult to ascertain from a visual

perspective how much use and stress loadings the rigging has had and as a precaution some insurance companies ask for the standing rigging to be inspected after ten years and professional riggers sometimes use this as an excuse to replace the standing rigging irrespective of its condition. Swaged rigging terminals and wire can be electronically tested and confirmed fit for purpose with a Maidsure rig tester (See http://www.maidsure.org.uk).

20.2 - Recommendation: It is recommended that due to the unknown condition of the standing rigging aloft it should be fully inspected by a professional and confirmed fit for purpose within the next three months or prior to any long passages.

21. Running Rigging

All running rigging was of a synthetic braided type. Inspection was at deck level only and none of the lines were tested for breaking load.

Observations, comments & tests

- All control lines that were visible were considered in serviceable condition however some were dirty and the colour markings UV faded.
- All halyards that were visible were considered in serviceable condition and like the control lines dirty and UV faded.

21.1 - Advisory note: Be advised the control lines and halyards were dirty and starting to UV degrade. While they are still regarded as being serviceable they would benefit from being run through the spars and fully inspected in their unsighted areas, washed and reinstated.

22. Sails & Covers

Description

The sails were hoisted but not laid out for detailed inspection but were inspected in random areas for their general condition while set. To help grade the condition of the sails & covers each were given a mark out 10, 1 being unserviceable, 5 being serviceable for coastal cruising given the vessel's age and 10 being new. Sails are not certified free from defects or for performance and durability.

Observations, comments & tests

Main sail North – 6
Self tacking Jib North – 6
Code 0 – 6
Spinnaker – 5
Storm Jib – 7
Tri-sail – 7
Spare Jib - 4
Spray hood - 7
Headsail cover – 5
Boom cover – 6
Aft cockpit enclosure – 7 (Not erected)

23. Navigation lights

The vessel was fitted with the following navigation lights: bi-colour light on the pulpit, stern light on the transom, steaming light on the front of the mast and a tri-colour anchor light at the mast head.

Observations, comments & tests

- All lights were tested for operation and the stern light failed to illuminate. The tri-colour and anchor light was also not seen working however this was probably due to the bright light conditions at the time of the inspection and these should be further checked in dark conditions.
- The lights at deck level were inspected closely and were found secure and the lens in good order. Mast mounted lights were viewed from a distance and seen secure however inspection of the lens was not possible.
- With all lights in working condition and used correctly they would comply with international collision regulations for a vessel used at night while under command.

23.1 - Recommendation: It is recommended that the stern navigation light is reinstated to a working condition before a night journey is undertaken and the tri-colour and anchor lights are further investigated as to their serviceability in dark conditions prior to a night journey being undertaken.

24. Bilge pumping arrangements

Description

The vessel was fitted with a fixed manual diaphragm pump of unknown capacity which was situated on the side of the aft cockpit seating. The heads toilet could also be used as an emergency pump as this had been fitted with Y valves and a length of flexible hose so that the pump could be used to bilge water rather than empty the heads.

Observations, comments & tests

- The handle for the fixed manual pump was found integral to the pump and the rubber diaphragm was seen to be complete with no evidence of perishing. The pump was tested and suction could be heard but it was not proven with water due to a dry bilge.
- The pipe work was found to be in serviceable condition and the end of the pipe fitted with a strum box which was correctly secured in place within the bilge.
- The pipe work and Y valves for the secondary pump were found in serviceable condition

24.1 - Advisory note: Be advised while the bilge pumping system is considered to meet the RCD requirements it would be best practice to install a high capacity 12v electrical bilge pump with a high water alarm as this would offer a more practical way of maintaining buoyancy in the event of a major flooding incident.

25. Fire fighting equipment

Description

Four 1kg EN3 ABC dry powder fire extinguishers were found aboard, one in each of the cabin spaces. In addition to these a fire blanket was found near to the galley and an automatic safe gas extinguisher in the engine compartment.

Observations, comments & tests

- All the extinguishers were gauged and these indicated that the propellant was serviceable however no service records were found and the two in the aft cabin areas had an expiry date of 2009. All fire extinguishers should be routinely serviced and if the vessel was being used commercially then an annual inspection is required. In private use it is normally every five years unless otherwise stated by the manufacturer. It therefore has to be assumed that they are out of service and all now require servicing to confirm that they are fit for purpose.
- A suitable fire blanket was found aboard
- The automatic engine room fire extinguisher was found in serviceable condition and securely fitted.

25.1 - Recommendation: It is recommended that all the fire extinguishers are serviced or renewed before being relied upon.

26. Lifesaving equipment and emergency equipment

Description

Pleasure craft not in commercial use of less than 13.7 meters in length are not covered by any statutory requirements as far as life saving equipment is concerned, but must comply with SOLAS V regulations. Details of these can be downloaded from anchor marine surveys web site at http://www.anchormarinesurveys.co.uk/downloads.php

Observations, comments & tests

a. A radar reflector was seen securely attached to the starboard side cap shroud at the top of the mast.
b. The life sling was found in serviceable condition.
c. The Plastimo Offshore 4 person liferaft #11245B0054 was found out of service with its next service date marked as being June 2012.
d. All flares found aboard were date expired and should be disposed of though the local coast guard station.

26.1 - Advisory note: Be advised that it is the responsibility of the skipper/owner to make sure the vessel is fully equipped with suitable in-date safety equipment for the type of use being contemplated and the number of people aboard prior to going to sea. A guide list of suitable equipment is provided as an annexe to this report.

27. Engine and installation

Description

The engine fitted was a 3 cylinder Yanmar 3YM30 (29hp)# E113311 diesel with indirect cooling and reported to have been installed new in 2006. This was coupled to a forward, neutral and reverse gearbox. The engine was started and used to move the vessel to the hoisting dock and my comments below are based on a visual inspection only and the operation of the unit to this point.

Observations, comments & tests

Installation

- No service records or documentation was found aboard at the time of the survey and where possible these should be obtained from the vendor.
- Engine access was found to be good with removable wooden panels on the front and sides of the engine.
- The engine was found in good cosmetic condition with no corrosion noted.
- The bilges below the engine were noted as being clean.
- The engine bed was of a GRP moulded type and no crazing, movement or defects were noted.
- The engine mount bolts were hammer tested and found to be sound.
- The engine mounts were tested and found to be tight and the rubber bonding intact.
- The sound insulation was found to be of a non oil absorbent type and securely attached to the casing however it could not be identified as an approved type but is thought to be so.

Lubrication

- The dip stick indicated the oil in the engine to be at the correct level with no evidence of water being present within the oil however it was black and it is evident from its appearance that it is due to be changed.
- The engine filler cap was removed and no evidence of emulsification could be found on the underside of the rocker cover or filler cap.
- No significant oil leaks were noted.

Exhaust

- The flexible exhaust hose was found in serviceable condition
- The rubber water trap was found secure and free from evidence of leaks or damage.
- The exhaust elbow was found in serviceable condition with no evidence of leaks

Cooling

- The raw water pump face plate was found undisturbed and free from salting.
- No evidence of leakage was found in the closed water system and unions.
- The heat exchanger ends were serviceable and there was no evidence of overheating.
- The sea water inlet filter and piping was found to be in serviceable condition.

Electrical

- The control panel was found to be in visually serviceable condition
- The alternator belt was found to be tight and in serviceable condition.
- The 12v alternator was found securely mounted and the connections secure and well made.

Gearbox

- The gear box oil was found at the correct level and free from emulsification and no oil leaks were noted around the gearbox
- No corrosion was noted around the gearbox casing.

Operation

- The engine was started from cold and immediately started. The engine instantly settled to an even revolution and ran smoothly without any excessive smoking. A strong water flow was noted from the exhaust suggesting that the raw water pump was in good order. The engine ran normally throughout the boat movement to and from the hoisting dock with no indications of over heating, smoking or uneven running.

27.1 - Advisory note: It is important to obtain from the owner and keep safely all service records and warranty books to provide proof of the service history of the engine for selling on.

28. Fuel System

Description

Three fuel tanks were found in total. Two plastic tanks up forward under the forward berth and one stainless steel tank aft. Supplies from the tanks was mostly via flexible piping through to the filter in the engine compartment and then onto the engine. Isolation valves allowed for the supply to be controlled.

Observations, comments & tests

- All flexible fuel hoses were identified as being to ISO 7840 standards.
- The filter was found in serviceable order and free from leaks.
- The isolation valves were found to be in serviceable condition.
- The tanks were found firmly secured and in serviceable condition.
- The tank filler pipe and filler were found in serviceable condition and correctly labelled
- No leaks were currently noted within the system.
- Not all of the supply line run was visible and a full under standing of how the system operated should be obtained from the vendor.

28.1 - Advisory note: Be advised that to prevent problems with water getting into the fuel from condensation which in turn allows the fuel bug to develop, it is best practice to always fill the tank when laying up the vessel over winter and also to use fuel treatment conditioner when filling the tank.

29. Accommodation in general

Description

The accommodation was found as standard to the Dehler 37 CWS with no modification made from the manufacturer's design. Cosmetically the interior of the vessel was in only in fair condition having been heavily used in the past.

Observations, comments & tests

- No internal structural defects were noted to the secondary wood fit out.
- No tide marks or water damage were noted in any of the bulkheads however it should be noted that this may have been masked by the fact the bulkheads and wood panelling had all been over painted.
- All doors and their furniture were found to fit their frames however some of the catches were sticky and could do with lubricating and some of the hinges to the doors had worked loose and need tightening and in particular the top hinge to the heads door.
- Soft furnishings were found in serviceable condition.
- All head linings were found securely attached and in serviceable order
- Floor coverings were found in serviceable condition throughout.

30. Gas Installation

Description

The gas bottle stowage was situated in a dedicated locker within the aft section of the cockpit. The locker contained a single unknown gas cylinder. Flexible gas piping connected the cylinder to the regulator within the locker. Flexible piping was then fed through the sides of the gas box and onto the cooker.

Observations, comments & tests

General

- The system was not broken into and pressure tested which is outside the scope of this survey and should be done by an approved gas safe registered engineer.

Bottle Storage

- The bottle was found in cosmetically poor condition being covered in salt and early corrosion.
- The gas bottle was found securely held in position within the locker confines.
- The gas bottle locker was found to be correctly self draining to the atmosphere.
- Three spare cylinders were found stowed in the cockpit. The two camping gas 907 bottles were found in very poor condition and should be removed from the boat as soon as possible. The third aluminium bottle was found in serviceable condition.

Supply Pipe

- The flexible hose from the bottle regulator to the fixed piping was found to be not of a BS 3212/2 standard as required in the UK.
- The use of more than 1m of flexible LPG hose is not permitted within the BS standards.
- No suitable pressure test point was found within the system.

Regulator

- The regulator was found in serviceable cosmetic condition however it was not of the updated marine type. New legislation now requires regulators used in a salt water environment to be to the EN12864 Annex M ISO standards

Isolation Valve

- No in line isolation valve was found near to the appliance.

Appliance

- The cooker was found in visually serviceable condition with flame detection devices on all burners.
- The gimbals on the cooker were found in serviceable order and the cooker secured within the gimbals.

30.1- Advisory note: Please be advised that a boat currently not in use on the inland waterways or in commercial use is not required to comply with specific standards for gas systems however insurers in the UK do know insist that the system does conform to one of the current standards. It is recommended that before the system is used that you check with your insurers for their requirements. If none is suggested then the standards set by the Boat Safety Scheme is a good guide to follow which should be acceptable to most insurers. Details of the standards can be obtained from the British Safety Scheme at www.boatsafetyscheme.com In addition to their minimum requirements it would be best practice to install a gas detector and a bubble tester for additional safety and to have the system checked as being safe by a Gas Safe registered engineer before the system is used.

30.2 - Recommendation: The current gas system does not comply to any of the UK or RCD accepted standards and as such it is recommended that the entire system is updated to at least meet the requirements of the RCD and then inspected by a Gas Safe registered LPG engineer as being safe to use .

30.3 - Recommendation: It is recommended that the two badly corroded camping gas bottles are removed from the boat and suitably disposed of and all other bottles cleaned of all salt deposits.

30.4 - Advisory note: Be advised the two existing aluminium bottles found aboard will not be able to be refilled in Europe once empty.

31. Fresh water tanks and delivery

Description

Two plastic tanks were found under the port and starboard saloon berths. Plastic piping with clip connectors supplied the pressurised water pump which provided water to the galley and heads outlets. Hot water was supplied by a calorifier plumbed to the engine cooling system.

Observations, comments & tests

- All piping was satisfactorily clipped and secure
- The electric pressure water pump was tested and found in serviceable order
- The tanks were securely fixed down and where access was available were found in serviceable condition.
- No leaks were identified throughout the system.
- All internal taps and shower heads were found in serviceable condition.
- The calorifier was found in cosmetically good condition with no leaks identified and was tested to produce hot water from the engine.

32. Heads

Description

The heads compartment had a manual Lavac marine toilet that discharged either into a holding tank or directly overboard with the use of Y valves

Observations, comments & tests

- The seat and bowls of both heads were in serviceable condition.
- The heads were well fixed down and secure.
- No significant staining was found around the clips and all were clean and bright.
- All piping was found to be reinforced piping and in serviceable condition.
- Suitable anti-siphon loops were found within the plumbing.
- The heads pumping arrangement was fully tested and found serviceable.

33. Electrical installation

Description

A total of four batteries were found aboard - One Odessey PC635 AGM (133 CCA)dedicated engine starting battery mounted behind the companionway steps. While the domestic supply consisted of three Master Volt 160ah AGM batteries located in the aft cabin, two under the berth and one at the bottom of the hanging cupboard.

The power supply was controlled by isolating switches found under the companionway steps which supplied power to a 12v distribution panel with switches located at the chart table and to the engine. A further isolation switch was found on the face of the starboard aft bunk face however it could not be fully identified what this controlled and clarification from the vendor should be sought.

In addition to the 12v DC system a 220v AC shore support system was found with cabin outlets. Power entered the vessel via a plug and socket mounted at the rear of the cockpit which then lead to an RCD consumer unit and subsequently onto the outlets and AC devices.

Charging of the batteries was provided by a number of sources - engine alternator, generator, solar panels and AC battery charger.

Observations, comments & tests

- The wiring and power installation was found to be highly modified for distant cruising and as a consequence no guarantee can be given that the systems are correctly fused or that the wiring is of the correct size to carry the required loadings however from a visual prospective the installation was found well thought out and installed neatly.
- All batteries were tested and voltage recorded was between 12.6 to 12.7v suggesting that they were charged and in serviceable order however they were not drop tested and their performance cannot be fully warranted.
- All cables were securely clamped to the battery terminals
- All batteries were found secured in place with straps.
- Ventilation to the batteries was found satisfactory.
- The battery isolating switches were found serviceable.
- All interior lights except for the port saloon spot light were tested as working.
- The 220v ring main and outlets were visually inspected for defects and none were found.
- The battery charger was seen to be neatly installed and in good cosmetic condition and proven serviceable.
- The mains inlet socket was secure and in visually serviceable condition.
- The main shore line supply lead was found in serviceable condition.
- The solar panels were found in good order and seen to be producing charge.

33.1 - Advisory note: Be advised not all of AC devices were proven serviceable due to a lack of a suitable shore supply at the time of the inspection and it will therefore be necessary to test these devices during a sea trial when the vessel can be plugged into a supply prior to completion of the sale.

33.2 - Advisory note: Be advised the port saloon spot light failed to illuminate and will require a replacement bulb.

34. Electronic and navigation equipment

Description

The electronic navigation equipment found aboard was located in two areas, in the cockpit at the helm and down below at the navigation table.

Observations, comments & tests

- The Silva bulkhead compass was found correctly filled with fluid and the night light to be correctly working.
- VHF (Raymarine Ray240E with twin hand sets)– Switched on and transmissions were successfully sent and received from the marina by the cockpit hand set.
- Wind (Raymarine ST60) – Switched on and correctly indicated wind direction.
- Log (Raymarine ST60+) - Switched on and indicated a reading when paddle spun by hand.
- Depth (Raymarine ST40 & ST60+ Graphic) – Switched on and indicated a depth output.

- GPS /chart plotter / radar / AIS (Raymarine E120 chart table E80 helm) – Switched on and successfully displayed a fix and chart position, AIS and radar display.
- Auto Pilot (Raymarine ST6000+ dual heads) – Switched on and successfully powered the helm + and – 10° however it was not tested to steer a course under way which should be done during a sea trial.
- Navtex (Furuno NX300D) – Switched on and successfully displayed a menu however no navigation information was displayed during the inspection and this requires further investigation.
- EPIRB – (McMurdo) – Found in good order and within service date however not tested.
- Stereo – (Sony) - Switched on and successfully operated as a radio

34.1 - Advisory note: While navigation equipment was switched on to test if operable calibration and accuracy of the equipment is not warranted and is outside of the scope of this survey. It is advised that the compass should be swung and the equipment correctly calibrated before being relied upon.

35. Refrigeration

Description

A cabinet refrigeration unit was found mounted below the galley work surface. This had been modified by having clear acrylic panels fitted to the inside to prevent loss of cooled air when opening the fridge door.

Observations, comments & tests

The refrigeration unit was switched on and the plate was found to cool after a short period.

35.1 - Advisory note: Be advised cabinet style refrigeration units are known to be very hungry on power consumption and if further extended offshore cruising is being considered then upgrading this refrigeration unit with a water cooled holding plate chest refrigeration unit would greatly reduce the overall power consumption.

36. Heating

Description

An Eberspacher Airtronic D4 warm air diesel heater was found installed. The main unit was found mounted under the port saloon berth with the timer control unit in the cabin. Ducting then provided warm air to the three outlets within the cabin spaces. Unusually the unit was supplied with a removable exhaust chimney which needed to be fitted to the port side deck when the unit was in use.

Observations, comments & tests

- The unit was switched on and after a short period started up and successfully provided warm air to the outlets.
- All ducting and outlets were found in serviceable condition.
- The exhaust system with its removable chimney does restrict the use of the unit while under way as no swan neck could be installed within the exhaust pipe. Also its positioning could allow for fumes to enter the cabin areas via the companion way and port side ports which are contrary to the manufacturer's installation guidelines.
- As the unit was installed within the main cabin confines it was found to be noisy and also contravened the manufacturer's fitting instructions as the air intake should be from outside of the compartment.

36.1 - Recommendation: Due to the installation not conforming to the manufacturer's instructions as to a safe installation, it is recommended that the unit be re-located to a safe position and correctly installed according to the manufacturer's guidelines which can be found at http://www.eberspacher.com/download-centre/technical-documents/air-heaters.html

37. Generator

A master volt whisper 3.5kva generator was found installed at the rear of the starboard hand aft cabin. This was enclosed within a GRP hood and then further sound insulated behind a plywood panel. The controls for the generator were found beside the chart table.

Installation

- No service records or documentation was found aboard at the time of the survey and where possible these should be obtained from the vendor.
- Access to the casement was found to be good with removable a wooden panel on thumb screws giving access to the casement clips.

- The engine was found in good cosmetic condition with no corrosion noted.
- The tray / mount below the engine were noted as being clean.
- The engine mounts were tested and found to be tight and the rubber bonding intact.

Lubrication

- The dip stick indicated the oil in the engine to be at the correct level with no evidence of water being present within the
- The engine filler cap was removed and no evidence of emulsification could be found on the underside of the rocker cover or filler cap.
- No significant oil leaks were noted.

Exhaust

- The flexible exhaust hose and clips were found in serviceable condition
- The exhaust swan neck was found to have rust bulbs developing on the surface which does indicate that it may be corroding from the inside. Its access was restricted so a full inspection was not possible and further investigations should be made to its serviceability.

Cooling

- The raw water pump face plate was found free from salting.
- No evidence of leakage was found in the closed water system and unions.
- The internal sea water inlet filter was found in serviceable condition.

Electrical

- The control panel was found to be in visually good serviceable condition and correctly started and stopped the engine.
- All wiring was seen to be neatly installed and in good order.

Operation

- The engine was started from cold and immediately started. The engine instantly settled to an even revolution and ran smoothly without any excessive smoking.
- The instrumentation indicated the generator to be producing a correct power output.

37.1 - Advisory note: Be advised the cast metal exhaust swan neck was found with corrosion developing on the surface and it would be advisable to disassemble this unit and check for any internal corrosion. Should the unit still be serviceable then the surface will require cleaning back to bright metal and over coated with a heat resistant primer and top coat paint before re-assembly.

38. Summary of Advisory Notes & Recommendations

Ref	*Advisory Notes*
3.1	*It is now known that laying up the vessel ashore out of season for two to three months allows the hull to dry reducing the risk of moisture reaching levels where moisture related problems can occur.*
4.1	*Consideration should be given to having the topsides professionally cut and polished to remove any dirt and marks and to restore the lustre to the gelcoat after which it would be advisable to apply several coats of marine wax polish to offer further UV protection to the gelcoat skin.*
5.1	*Consideration should be given to having the deck and coach roof mouldings professionally cut and polished to remove any dirt and marks and to restore the lustre to the gelcoat after which it would be advisable to apply several coats of marine wax polish to offer further UV protection to the gelcoat skin.*
10.1	*Be advised galvanic protection to vessels varies from boat to boat and from location to location. As well as galvanic action, metal fittings below the waterline can be damaged by earth leakage from on board electrical instruments or from marina shore supplies. It is therefore advisable that regular checks are made on a vessel's anode condition to ensure that they still offer protection.*
11.1	*It is advised that all sea valves should be regularly operated and serviced to maintain them in good working order. A vessel should not go to sea with a seized valve in the open position and it would also be advisable to locate via a leash line a correctly sized wood plug beside each of the through hull valves in case of an emergency.*
15.1	*Be advised that due to the continued load working on rigging attachment points these should be routinely inspected for any signs of staining, movement, leakage and cracks and appropriately repaired should any defect be found. Consideration should be given when the mast is next un-stepped to having the welds on the cap shroud stainless deck plates polished smooth so that a visual inspection can identify any defects more easily.*
16.1	*It is advised that the full scope of the chain and line should be run out to be checked and its length noted prior to anchoring. In addition to this consideration should be given to having aboard additional warp to add to the chain for deep water anchoring in some parts of the world.*
16.2	*Be advised the down solenoid switch found on the deck only worked intermittently and while this did*

	not prevent the anchor from being deployed it does require further investigation as to why this happens and to reinstate it to a full working condition. In addition to this consideration should be given to refurbishing both the anchor and chain where the galvanising has been worn away before more serious corrosion sets in.
17.1	*It is advised that all the winches and rope stoppers require their annual service before being fully relied upon.*
19.1	*It is advised that the masts should be inspected aloft routinely by a professional rigger and un-stepped at least every ten years for a complete overhaul.*
20.1	*It is advised that standing rigging should be inspected aloft routinely by a professional rigger and un-stepped at least every ten years for a complete overhaul. Standing rigging does not deteriorate significantly with age alone but does age with use. It is therefore difficult to ascertain from a visual perspective how much use and stress loadings the rigging has had and as a precaution some insurance companies ask for the standing rigging to be inspected after ten years and professional riggers sometimes use this as an excuse to replace the standing rigging irrespective of its condition. Swaged rigging terminals and wire can be electronically tested and confirmed fit for purpose with a Maidsure rig tester (See http://www.maidsure.org.uk).*
21.1	*Be advised the control lines and halyards were dirty and starting to UV degrade. While they are still regarded as being serviceable they would benefit from being run through the spars and fully inspected in their unsighted areas, washed and reinstated.*
24.1	*Be advised while the bilge pumping system is considered to meet the RCD requirements it would be best practice to install a high capacity 12v electrical bilge pump with a high water alarm as this would offer a more practical way of maintaining buoyancy in the event of a major flooding incident.*
26.1	*Be advised that it is the responsibility of the skipper/owner to make sure the vessel is fully equipped with suitable in-date safety equipment for the type of use being contemplated and the number of people aboard prior to going to sea. A guide list of suitable equipment is provided as an annexe to this report.*
27.1	*It is important to obtain from the owner and keep safely all service records and warranty books to provide proof of the service history of the engine for selling on.*
28.1	*Be advised that to prevent problems with water getting into the fuel from condensation which in turn allows the fuel bug to develop, it is best practice to always fill the tank when laying up the vessel over winter and also to use fuel treatment conditioner when filling the tank.*
30.1	*Please be advised that a boat currently not in use on the inland waterways or in commercial use is not required to comply with specific standards for gas systems however insurers in the UK do know insist that the system does conform to one of the current standards. It is recommended that before the system is used that you check with your insurers for their requirements. If none is suggested then the standards set by the Boat Safety Scheme is a good guide to follow which should be acceptable to most insurers. Details of the standards can be obtained from the British Safety Scheme at www.boatsafetyscheme.com In addition to their minimum requirements it would be best practice to install a gas detector and a bubble tester for additional safety and to have the system checked as being safe by a Gas Safe registered engineer before the system is used.*
30.4	*Be advised the two existing aluminium bottles found aboard will not be able to be refilled in Europe once empty.*
33.1	*Be advised not all of the AC devices were proven serviceable due to a lack of a suitable shore supply at the time of the inspection and it will therefore be necessary to test these devices during a sea trial when the vessel can be plugged into a supply prior to completion of the sale.*
33.2	*Be advised the port saloon spot light failed to illuminate and will require a replacement bulb.*
34.1	*While navigation equipment was switched on to test if operable calibration and accuracy of the equipment is not warranted and is outside of the scope of this survey. It is advised that the compass should be swung and the equipment correctly calibrated before being relied upon*
35.1	*Be advised cabinet style refrigeration units are known to be very hungry on power consumption and if further extended offshore cruising is being considered then upgrading this refrigeration unit to a water cooled holding plate chest refrigeration unit would greatly reduce the overall power consumption.*
37.1	*Be advised the cast metal exhaust swan neck was found with corrosion developing on the surface and it would be advisable to disassemble this unit and check for any internal corrosion. Should the unit still be serviceable then the surface will require cleaning back to bright metal and over coated with a heat resistant primer and top coat paint before re-assembly.*

Ref	*Recommendations*
9.1	*It is recommended that the water lubricated bearing held within the P bracket is renewed within the*

	next three months or next time the vessel is lifted ashore.
10.2	*It is recommended that the pear anode and the two older shaft anodes are cleaned back to bare metal so exposing the zinc (Anode) to the water (Electrolyte). In addition to this the pear anode should be properly bonded to the stern gear and P bracket.*
11.2	*On the grounds of safety it is recommended that the galley outlet skin fitting which was found with some light pinking should be renewed along with its attached valve within the next twelve months.*
13.1	*Due to the heavy UV crazing found on some of the port's glazing it is recommended that the glazing is replaced prior to any long ocean passage being undertaken. In the meantime a plywood blanking panel and a method to secure it in place should be carried aboard when the vessel is used outside sheltered waters.*
20.2	*It is recommended that due to the unknown condition of the standing rigging aloft it should be fully inspected by a professional and confirmed fit for purpose within the next three months or prior to any long passages.*
23.1	*It is recommended that the stern navigation light is reinstated to a working condition before a night journey is undertaken and the tri-colour and anchor lights are further investigated as to there serviceability in dark conditions prior to a night journey being under taken.*
25.1	*It is recommended that all the fire extinguishers are serviced or renewed before being relied upon.*
30.2	*The current gas system does not comply with any of the UK or RCD accepted standards and as such it is recommended that the entire system is updated to at least meet the requirements of the RCD and then inspected by a Gas Safe registered LPG engineer as being safe to use .*
30.3	*It is recommended that the two badly corroded camping gas bottles are removed from the boat and suitably disposed of and all other bottles cleaned of all salt deposits.*
36.1	*Due to the installation not conforming to the manufacturer's instructions as to a safe installation, it is recommended that the unit be re-located to a safe position and correctly installed according to the manufacturer's guidelines which can be found at http://www.eberspacher.com/download-centre/technical-documents/air-heaters.html*

36. Conclusion

On conclusion of the survey inspection it was evident that "Mous'le" is a well equipped example of the model that has been fully equipped for world cruising. She is cosmetically well used and a little rough in areas which one would expect from a well used vessel however her equipment has been well maintained and she was found structurally in sound condition. The majority of the recommendations above are due to items date expiring or requiring some maintenance or renewal due to ageing but provided the recommendations above are completed, as well as the advice offered in this report fully considered, she should offer many years of sound service in the future.

Signed

Tim Barker

VALUATION

Vessels Name:	"Mous'le"
Make & Model:	Dehler 37 CWS
Hin #:	470002 BAU-NR
Year Built:	1990

To establish a valuation, the overall condition and inventory and any other aspects that might affect the value have been taken into account. A comparison has been made with other vessels of a similar type and style recently sold and advertised. From an average of sold and advertised prices, deductions and additions have been made for the defects and/or level of equipment noted in the survey report.

Based on the recent pre-purchase survey an estimate of a fair market value with unencumbered title is assessed as being in the region of £37,000 to £39,000

This valuation is based upon opinions only and not a representation of fact, nor does it carry any guarantees of the particulars of information on which the opinions are based. In preparation of this valuation, the undersigned accepts liability to the instructing client only and to no other party.

APPENDIX ONE – SAFETY EQUIPMENT LIST

It is recommended by the RYA and RNLI that a number of safety items are carried aboard a vessel. The information below is a guide to the minimum safety equipment that should be carried aboard and is dependant on LOA, the area in which you are cruising and the risk of being caught out in heavy weather. A bullet (•) recommends that the item be carried, but the number, method or contents is left to the judgment of the skipper.

RCD Category	***Type of use***	***Description***
A	Ocean	Ocean passages of any length. LOA is likely to be longer than 10m.
B	Offshore	Yachts which make offshore passages of 50–500M around the UK and NW Europe. LOA is likely to be 8–13.7m
C	Inshore	Coastal cruises by day/night, within 10M of land and 4 hours of a port of refuge. LOA is likely to be less than 8m
D	Sheltered	In estuaries, inshore or inland waters, day only. Within 1 hour of a port of refuge. LOA is likely to be less than 6m

Means of propulsion (Sailing yachts only)	**CATEGORY**	**A**	**B**	**C**	**D**
Number of anchors, with appropriate lengths/diameter of warp & chain or chain only		2+	2	2	1
Bailing and bilge pumping					
Buckets of 9–14 ltrs capacity with lanyard and strongly secured handle		2	2	2	
Hand bilge pumps discharging overboard and operable with all hatches closed		2	2	1	
Softwood bungs attached adjacent to all through-hull fittings (able to be closed)		•	•	•	•
Detection equipment					
Radar reflector properly mounted and with as large a radar cross-section as is reasonable		•	•	•	•
Fixed nav lights complying with IRPCS. 4.3 Foghorn. 4.4 Powerful torch ('steamer scarer')		•	•	•	
Motoring cone (sail only); anchor ball and light		•	•	•	•
Pyrotechnics (in date)					
Hand-held red flares	)	6	4	4	2
Buoyant orange smoke signals to	) SOLAS standards	2	2		
Red parachute rockets	)	12	4	2	
Hand-held orange smoke signals				2	2
Hand-held white flares (not available world-wide)		4	4	4	
Fire fighting equipment					
Fire blanket (BS EN 1869) for all yachts with cooking equipment		•	•	•	•
For yachts with a galley or carrying engine fuel: multi-purpose					
extinguishers of minimum fire rating 5A/34B to BS EN 3		3	2	1	1
Additionally, for yachts with both a galley and carrying engine fuel:					
multi-purpose extinguishers of minimum fire rating 5A/34B to BS EN 3		1	1	1	1
Additionally, for yachts with engines over 25hp, a fixed automatic or					
semi-automatic fire fighting system to discharge into the engine space		•	•	•	•
Personal safety equipment for each crew member					
Warm clothing, oilskins, seaboots and hat		•	•	•	•
Lifejacket or buoyancy aid (BS EN 395) 100 Newtons					1
Lifejacket (BS EN 396) 150 Newtons		1	1	1	
Lifejacket light. 7.5 Spray face cover		1	1		
Safety harness (for yachts with enclosed wheelhouse, one harness each for 50% of the crew)		1	1	1	
Immersion suit – per crew member		1			
Jackstays and cockpit clip-on strong points		•	•	•	
Liferaft					
Liferaft, designed solely for saving life, sufficient to carry all on board		1	1	1	
Emergency grab bag (see text for contents)		1	1	1	
Man overboard recovery equipment					
Horseshoe lifebelts fitted with drogue and self-igniting light		2	2	1	
Buoyant sling on floating line – may replace 1 horseshoe lifebelt if 2 are carried		1	1		
Buoyant heaving line, at least 30m long, with quoit		1	1	1	
Boarding ladder capable of rapid and secure attachment		1	1	1	
Dan buoy with a large flag		1	1		
Radio					
Radio receiver able to receive shipping forecasts on 198 kHz and local radio station forecasts		1	1	1	1
VHF Marine band radio telephone. 10.9 Waterproof hand-held VHF radio		1	1	1	1
Digital Selective Calling (DSC) controller to R&TTE directive standards. 10.6 Navtex		1	1	1	
Marine band HF/SSB radio and/or global SatCom system.		1			
406 MHz EPIRB. 10.7 SART		1			
Emergency VHF radio aerial with prepared deck mounting		1	1		

Navigational equipment				
Charts, tide tables and navigational publications of the cruising area and adjacent areas	•	•	•	
Steering compass, able to be lit at night.	1	1	1	1
Hand-bearing compass	•	•	•	
Navigational drawing instruments. 11.6 Barometer. 11.7 Lead line & echo sounder	1	1	1	
Radio navigation system, eg GPS. 11.9 Watch or clock	1	1	1	1
Distance measuring log. 11.11 Binoculars	1	1	1	
Sextant and tables	1			
First aid kit and manual (see Chapter 8, 8.27 and 8.31)	1	1	1	1
General equipment				
Emergency tiller on all wheel-steered vessels	1	1	1	1
Towing warp. 13.10 Bosun’s chair (sit harness BS EN 813 1997)	1	1	1	
Mooring warps and fenders	•	•	•	•
Waterproof torch	3	2	2	1
Rigid or inflatable tender	•	•	•	
Repair tools.13.7 Spares for engine & electrics and bosun’s bag of shackles and twine	•	•	•	•
Emergency water supply, isolated from main tanks	•	•		
Emergency repair materials	•	•		