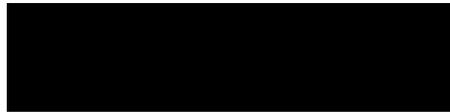


Name of Vessel:



Survey Commissioned by:



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SUMMARY

A structural and general condition survey was undertaken for [REDACTED] while she lay ashore at [REDACTED] Essex, on 24th November 2011.

The survey found no major structural damage to the hull, though there is minor impact damage to both the underbody and topsides at a number of location. The structural integrity of the hull is not compromised by the minor damage. The teak deck has been replaced but appears to be debonding.

Skin fittings, valves and hose attachments were inspected and tested for all accessible below waterline through hulls (note access to one through hull was not gained during the survey). Several valves are in need of service, but more importantly dezincification was found to be affecting the heads intake and the skin fitting, valve and hose tail should be replaced.

The anchor had a defective weld and should be replaced; a heavier anchor would be more suitable for the size of vessel, but it must not be too heavy for the existing winch. The stemhead fitting and roller also needs attention.

All hose clips securing the stern tube glands to the stern tubes should be removed for inspection as some exhibiting signs of corrosions; such clips should be replaced.

The gas system on the vessel has not been maintained and requires attention. The existing locker for gas bottles should be modified so that it becomes a self-draining gas locker. The gas hose should be replaced as should the regulator. It is advised that in the cabin copper pipe is used instead of gas hose.

In general the engines were well maintained; however two modifications should be made to the fuel system; shut-off valves should be installed near the fuel tanks and the existing fuel hose replaced with fuel hose specified to ISO 7840.

Recommendations made throughout the report are listed below; they should be carried out before the vessel is put into use. A number of other less serious defects were noted, which do not require action prior to the boat being relaunched and used. However, they should be included in a programme of maintenance.

List of Recommendations

1. *Remove for examination all hose clips associated with stern tube glands and replace all that exhibit signs of corrosion.*
2. *Gain access to sink skin fitting and carry out test listed at the head of this section.*
3. *Replace heads intake skin fitting, valve and hose tail.*
4. *Investigate security of exhaust hoses where they attach to skin fitting.*
5. *Replace anchor. A 10kg anchor is recommended for an 8m vessel.*
6. *Replace stern navigation light.*
7. *Secure join in hose used to discharge cabin bilge pump.*
8. *Install fire blanket in galley*
9. *Firmly secure automatic fire extinguisher in engine compartment.*
10. *Install shut off valves close to both fuel tanks.*
11. *Replace fuel hose with that specified to BS EN ISO 7840.*

12. *Construct gas locker that drains overboard.*
13. *Replace pressure regulator for gas bottle.*
14. *Replace out of date gas hose. It is strongly advised that the section inside the cabin is replaced with suitable copper piping that is protected by grommets where it passes through bulkheads and partitions.*
15. *Ensure gooseneck is secured in upright position on heads discharge. Ensure there is a gooseneck on the intake hose or other means of breaking a siphon.*

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1. About the Survey and this Report

This survey was carried out by Hugh Ellacott at the request of [REDACTED] who is the owner of [REDACTED]

Scope of Survey

This is an insurance survey and its purpose is to establish the structural and general condition of the vessel. Where items of equipment have been tested this is stated in the text.

Limitations

- The hull could not be inspected where the vessel lay on shores.
- Where access is restricted by fixed panels, linings etc. it was not possible to carry out an examination and I cannot say those areas are free from defects; in addition, it was not possible open the locker under the sink to inspect inside.
- In some cases it was not possible to detect latent and hidden defects without destructive testing.
- A general inspection of the engine and its installation was be made, but this was a visual inspection only without running engine. It should be appreciated that some components may appear serviceable but may be defective when the engine is run.
- No batteries were on board the vessel at the time of the survey so electrical and electronic equipment could not be tested.
- This report has been prepared for the use of the commissioning client and no liability is extended to others who may read or rely on it.

Conditions of Survey

The survey took place on 24th November 2011 while [REDACTED] was lying ashore at [REDACTED] Essex. The vessel had been ashore approximately 12 months at the time of the survey.

The weather on the day of the survey was mild for November. There was a heavy dew early in the day, but later in the day there was intermittent sunshine and a light breeze.

Methods

Moisture Measurements

All moisture measurements on the vessel were taken using a Sovereign Quantum Marine Moisture Meter, a capacitance-type moisture meter. The calibration of the meter was checked on the day of survey, prior to any readings being taken. Readings were taken in the relative mode, which ranges between 0-100. The values should be regarded as an index and **do not** represent moisture content as a percentage of dry weight. Where appropriate both shallow and deep reading modes were employed. Direct comparisons between readings taken with the Sovereign Quantum and other meters, including those made by Sovereign, are not valid.

The conditions prevailing when the readings were taken are given below.

- Air Temperature 12.9°C
- Relative Humidity 77.0%
- Dew Point 4.2°C above surface temperature

64) recorded ingress of water at this point. No action required except monitoring

- ❖ Minor impact damage 4m aft of stem on starboard side below lower spray rail. There is a chip in the gel coat which should be made good. Moisture measurements (shallow - 74, deep - 100) recorded ingress of water at this point. No action required except monitoring
- ❖ Minor delamination noted at aft end of root on P-bracket. P-brackets were aggressively tested and found to be secure. No action required except monitoring.
- ✓ Fixings for bathing platforms, rudder stock tubes and trim tabs aggressively tested and no flexing of transom noted.
- ✓ Twenty two randomly selected locations had moisture measurements as shown in the table below. Moisture readings are low for a hull of 35 years and are in part attributable to the vessel having been ashore for more than twelve months. No evidence of moisture-related defects, e.g. osmotic blisters, was noted during the visual inspection.

Mode	Range Below Waterline	Range Above Waterline
Shallow Mode	15 - 23	15 -17
Deep Mode	11 - 21	12 -19

Advice

Make good chip in gelcoat on starboard side of forefoot.

4. Topsides Above Waterline

- ✓ Topsides are finished in white gelcoat with a blue coachline above the antifouling; the transom is painted in midnight blue.
- ✓ Topsides hammer sounded, no defects identified..

Visual inspection identified the following defects.

- ❖ Minor repair and hairline crack that are only of cosmetic concern just below stemhead slightly to starboard. No action required
- ❖ Cracks noted just below starboard sheer approximately 1.5m aft of stem, hammer sounding did not identify any delamination. Moisture measurements (shallow - 100, deep - 16) recorded ingress of water at this point. No action required.
- ❖ Hairline cracks 500mm below starboard sheer and approximately 1.5m aft of stem, hammer sounding indicated minor localised delamination, which should be repaired. Moisture measurements (shallow - 78, deep - 16) recorded ingress of water at this point. No action required.
- ❖ Two repairs which are poorly faired amidships on starboard; hammer sounded and no delamination detected. No action required.
- ❖ Double crack in turn just below sheer running from transom on starboard side forward for 2m; hammer sounded and no delamination detected; moisture measurements were not elevated. No action required.
- ❖ Impact damage to port with considerable crazing approximately 2m aft of stem; hammer sounding detected no delamination, spike could not penetrate into laminate. Moisture measurements (shallow - 36, deep - 26) recorded ingress of water at this point. No action required.

- ❖ Other minor “blemishes” were noted elsewhere on topsides, including chips to angle in topside moulding immediately below rubbing strake; all of which were considered of no structural consequence.
- ✓ Attractive rubbing strake finished in teak; good condition; two small graving pieces have been let into port rubbing strake.

5. Deck

- ✓ Deck covered by teak. Straight laid.
- ✓ Caulking was soft but did not show evidence of debonding from teak.
- ❖ Teak deck hammer sounded and many areas where adhesion to subdeck identified.
- ✓ Butts of teak decking not staggered.
- ❖ Butts ends of teak lifting at three of four location where butts meet on deck.
- ❖ Teak appears to be a thin veneer of poor quality, it was not possible to ascertain if this is bonded to ply or directly to the deck moulding.
- ❖ Top rail of teak that had a short damaged section of approx. 500mm – port amidships.
- ✓ No flexing of deck identified or signs of delamination when point pressure applied.
- ✓ No moisture tests performed because of overlying damp teak.

6. Coachroof

- ✓ Coachroof hammer sounded and no defects detected.
- ✓ Hand rails to port and starboard aggressively tested and found to be secure.

7. Cockpit

- ✓ Cockpit deck and hatch covers constructed of teak-faced ply.
- ❖ Stress crazing in cockpit moulding aft of seats both to port and starboard.
- ❖ There were four locations on cockpit coaming fittings have been removed and the remaining bolt holes have not been filled; this is only of cosmetic concern.
- ✓ Cockpit cover in fair condition, very occasional broken stitches noted.

8. Hull to Deck Join

- ✓ Hull deck join can be seen in cockpit and is of mechanical type fastened with bolts which has been overlaminated with GRP.
- ✓ Three types of fastenings seen; stainless steel, mild steel and some glassed over fastenings. The stainless steel fastenings appear to have been added later and were probably used when the rubbing strake was renovated.
- ✓ Six of the fastenings were selected at random, hammer tested and found to be secure.
- ❖ The join was reinforced with glass tape on the internal surface. A considerable length had delaminated in the cockpit on both sides of the vessel. Delamination was also noted in some areas of cabin, e.g. hanging locker above port side worktop, but no failure was noted in lockers above galley (starboard).
- ❖ Headlining in hanging lockers had serious water damage, water ingress may be through poorly sealed hull/deck join.

Advice

Cut back areas where GRP "tabbing" over hull / deck join has delaminated and reapply tabbing. Investigate source of water ingress in cabin.

9. Bulkheads and Structural Stiffening including Internal Mouldings

- ✓ Forward of the aft cabin bulkhead, four stringers (top hat construction) provide structural strengthening to the hull. Where access allowed, e.g. port hand locker opposite galley, stringers were hammer tested and no defects were detected.
- ✓ Engines mounted on three strong fore and aft girders constructed from GRP. Hammer tested where access possible – no defects detected.
- ✓ No access beneath floors of lockers in cabin.
- ✓ No access to locker beneath sink.
- ❖ **Timber of forward bulkhead in forepeak is in very poor condition due to water ingress; it appears that the timber is a lining and there is an underlying GRP bulkhead. Its condition should be ascertained when the lining is replaced.**
- ✓ There was no access to chain locker.
- ❖ **Plywood bulkhead at aft end of chain locker spike tested and found to be sound. Minor delamination noted to glass bonding on port side. Preferable if this is made good.**
- ✓ Minor delamination of bonding between hull and starboard bulkhead aft of cabin; delamination not considered sufficient to compromise structural integrity. Moisture measurements in plywood bulkhead recorded high readings (shallow - 66, deep - 75). Spike testing did not find any deterioration of plywood.
- ✓ No access to port side aft cabin bulkhead.
- ❖ **The sole in the cabin is supported by plywood bearings glassed onto the hull; the bonding has failed in a number of location and plywood is showing early signs of deterioration. The plywood's function is support of the sole rather than structural although it will provide some structural stiffening.**

Advice

Investigate water ingress affecting forward bulkhead in forepeak and the condition of underlying bulkhead.

Make good minor delamination in bonding of plywood bulkhead at aft end of chain locker.

Cut back delaminated GRP bonding securing plywood sole bearers below cabin sole.

Make good plywood with wood hardener and rebond bearers to hull. Finally coat with bilge paint.

10. Rudder and Steering

- ✓ Twin rudders coated with antifouling.
- ✓ Rudders of yellow metal, which was assumed to be manganese bronze.
- ✓ No visible evidence of dezincification following scraping back to shiny metal.
- ✓ Lower bush not visible in rudder shaft tube.
- ✓ Rudder is operated by means of hydraulics.
- ✓ Rudders aggressively tested and found to be secure.
- ✓ Steering wheel turn smoothly through full movement from hard starboard to hard port.

- ❖ Hammer sounding found minor delamination in port and starboard backing pads that provide structural support to the transom where rudder tubes and bathing platform are through fastens. Moisture readings indicate that there has been localised moisture ingress. At the time of the survey little structural strength is considered to have been lost.

Advice

Backing pads supporting fittings on transom should be monitored annually for any further deterioration.

11. Stern Gear

- ✓ Propeller shafts non magnetic and therefore assumed to be of marine grade.
- ✓ Propellers four bladed and previous owner stated they were new at time of survey; their condition was in keeping with this ascertain.
- ✓ Propellers of yellow metal assumed to be manganese bronze.
- ✓ Propeller nuts secured with tab washers.
- ✓ No visual of corrosion seen between shaft and propeller.
- ✓ Very little play in shafts.
- ✓ Both propellers turned freely through 360 degrees.
- ✓ P-brackets aggressively tested and found to be secure.
- ✓ Nuts securing stern glands hammer tested and did not yield.
- ✓ Tradition stuffing glands attached to prop shaft tubes using heavy duty rubber hose.
- ✓ Bolts securing glands hammer tested and found to be secure.
- ❖ **Rubber hose secured with two hose clips at each join, some clips showed significant signs of corrosions.**
- ✓ Trim tabs operated by Bennett V351 hydraulic power unit; tabs and unit not tested.

Recommendation

Remove for examination all hose clips associated with stern tube glands and replace all that exhibit signs of corrosion.

12. Cathodic Protection

- ✓ Two anodes fastened to transom, appeared new and not wasted.
- ✓ Fastenings hammer tested and found to be secure.
- ✓ Electrical continuity confirmed between anodes and trim tabs, outboard sections of rudder tubes and transom fitting for engine exhausts.
- ✓ Anodes fitted aft of propeller nut one to each shaft. 10% wasted and did not need replacement at the time of the survey.

13. Skin Fittings and Other Through Hull Apertures

No skin fittings or their valves were dismantled as part of this survey. Instead the following tests were carried out to all skin fittings listed below, as appropriate.

- Visual examination inside and outside the vessel.
- All valves were opened and closed through the full extend

- All fixing bolts were hammer tested where accessible
 - The bodies of all valves and seacocks were tested with a hammer
 - All metal fittings were aggressively tested for security of attachment to the hull (plastic fittings, e.g. log housings, were also tested but with less vigour)
 - Hoses were tested for security and hose clips were visually examined as far as access would allow.
-
- ❖ Starboard amidships approx. 50mm above waterline. The sink discharges through this skin fitting. Outside the hull the skin fitting appeared in good condition but it was not possible to access this skin fitting inside the vessel and it should be examined as a matter of priority.
 - ✓ Starboard engine raw water intake, secure, closed and opened.
 - ❖ Port amidships, heads intake. The skin fitting showed evidence of dezincification and should be replaced. Internally the valve appeared to be made of mild steel, the valve could not be operated and it should also be replaced.
 - ❖ Port amidships, heads discharge; the valve was a traditional seacock, but it could not be operated. The valve needs to be serviced so it moves freely.
 - ❖ Port engine raw water intake, the valve was very stiff and did not move through 90 degrees. The valve needs to be serviced so it moves freely.
 - ❖ Port transom approx. 100mm above waterline, breathers for rocker covers; made of plastic and it would be preferable that skin fittings this close to waterline are made of corrosion resistant metal.
 - ❖ Port transom on waterline; engine exhaust discharges; there is some corrosion where the transom fitting meets the exhaust hose. Security of the hose should be investigated.
 - ✓ Two drain holes with screw-in plugs located at low point on transom; both pairs of screws hammer tested and found to be secure; plugs turned freely in their threads. PLUGS WERE FOUND NOT TIGHTEN FULLY AND SHOULD BE SCREWED HOME SECURELY BEFORE LAUNCH.
 - ✓ Log and depth sounder transducer securely fixed to hull on port side.

 - ❖ There are five starboard side skin fittings and three port side skin fittings. Three are employed as bilge pump discharges, one discharges overflow from the freshwater tank, some are sealed with mastic, but others need be blanked off, e.g. the skin fitting on the starboard quarter is attached to a severed hose.

Recommendations

Gain access to sink skin fitting and carry out test listed at the head of this section.

Replace heads intake skin fitting, valve and hose tail.

Investigate security of exhaust hoses where they attach to skin fitting.

Advice

Service all seacocks that cannot be fully open and closed or are very stiff.

Consider replacing plastic skin fittings for rocker cover breathers with metal ones.

Blank off all unused skin fittings in topsides.

14. Cabin Access, Hatches, Windows and Ports

- ✓ Forward hatch appears to be a replacement; it is sound and can be locked shut from inside the accommodation.
- ✓ Four windows on either side of coachroof, all with safety glass kite mark.
- ✓ Forward window did not have kite mark and appeared to be perspex.
- ✓ All windows tested with firm hand pressure and withstood test.
- ✓ Frames appear to be extruded aluminium fastened with stainless steel screws. Approximately 10 screws were selected at random, hammer tested and found to be secure.
- ❖ **Water damage noted to cabin linings adjacent to windows indicating leaks may be present; window frames should be resealed.**
- ✓ Windscreen constructed with aluminium frames with stainless steel fastenings.

15. Stanchions

- ✓ Pulpit tested and found to be secure.
- ❖ **Feet of pulpit do not lie fair to deck and visual inspection suggest that the sealant between the deck and the feet has failed.**
- ❖ **Stanchions around cockpit is secure; there is crazing in gelcoat around many of the feet require resealing of mastic.**

Advice

Reseal feet of pulpit and stanchions around cockpit.

16. Ground Tackle and Mooring Arrangements

- ❖ **Stemhead roller and fitting loose. Eight nuts of which two were missing and several others were loose.**
- ❖ **Danforth anchor requires replacement as a weld is pulling apart.**
- ❖ **There was no means of stopping anchor jumping out of stemhead fitting, though there was a secondary chain securing the anchor when not in use.**
- ❖ **Shackles on anchor/chains were not moused.**
- ✓ Anchor chain was not inspected
- ✓ Eight deck cleats in total, all tested with crowbar and found to be secure.
- ✓ Winch was powered by electric motor - not tested.
- ❖ **A few bolts securing pad for winch were slightly loose and require tightening.**

Recommendations

Replace anchor. A 10kg anchor is recommended for an 8m vessel.

Advice

Refasten stemhead fitting, though replacement should be considered.

Mouse shackles securing anchor.

Tighten bolts securing timber pad under electric winch.

17. Boarding Ladder and Swimming Platforms

- ✓ Boarding ladder at transom was secure.

- ❖ Swimming platforms on either side of ladder secure, but a split noted on a teak slat on port platform.

18. Navigation Lights

- ✓ Steaming, port, starboard, stern navigation lights were present.
- ✓ Navigation lights not tested.
- ❖ Stern light glass was broken.
- ✓ Two horns identified, neither were tested.

Recommendations

Replace stern navigation light.

19. Bilge Pumping Arrangements

- ✓ Hand operated bilge pump on starboard side of cockpit; its pick up was not identified. Lever was operated and moved freely, but it could not be ascertained whether the pump works.
- ❖ Second electric bilge pump located in engine compartment to aft; it is operated by a float switch and dirty water from engine bilges could therefore be inadvertently discharge overboard.
- ❖ An electric bilge pump was located under the sole board in the cabin, it was manually operated, i.e. there was no float switch. It was not tested. It discharges to starboard. The discharge hose has been joined with what appears to be electrical tape. A secure join should be made in the discharge hose.

Recommendations

Secure join in hose used to discharge cabin bilge pump.

Advice

The arrangement of the engine bilge means it is difficult to segregate oily water from the bilge pump. It is advised that oil absorbent pillows or mats should be employed to prevent oil being discharge overboard.

20. Firefighting and Emergency Equipment

- ✓ 2kg dry powder fire extinguisher in cabin, pressure gauge showed in green sector.
- ❖ No fire blanket in galley.
- ❖ 1kg dry powder automatic fire extinguisher in engine compartment, pressure gauge showed in green sector. The engine compartment fire extinguisher is not securely mounted.
- ✓ No other emergency equipment onboard at time of survey.

Recommendations

Install fire blanket in galley

Firmly secure automatic fire extinguisher in engine compartment.

Advice

Though fire extinguisher pressure gauges still show in green zone, they both appear old and consideration should be given to their replacement.

21. Engine and Installation

- ✓ The vessel has twin Ford Sabre engines rated at 180 BHP (according to broker information). No engine serial numbers identified.
- ✓ The engines were not started.
- ✓ Oil checked under filler caps for dirt and emulsion; none found.
- ✓ Oil dipsticks checked to reveal correct oil level; no untoward odour, colour or emulsion seen in oil.
- ✓ Fluid in heat exchangers clean but levels slightly down.
- ✓ Engine bolts hammer tested and found to be secure.
- ✓ Effective testing of engine mounts not possible with such heavy engines in confined space.
- ✓ Clean appearance of engines suggestive of good maintenance.
- ✓ Hoses were securely clipped and no defects identified.
- ✓ Morse lever controls found to operate smoothly and actuate arms on injection pumps. Operation of gear change not seen.
- ✓ Engine stops operate smoothly, but obviously not tested on running engines.
- ❖ **Salt noted oozing from starboard engine water cooler.**
- ❖ **Corrosion noted to chromed tube close to where raw water is injected into exhaust.**
- ❖ **Small ineffectual stainless steel oil trays located under each engine. They will not retain oil and bilge pump may discharge oil water overboard.**

22. Fuel System

- ✓ Two fuel tanks located aft of engines; constructed of GRP and securely retained.
- ❖ **Deck fillers not labelled, although nearby water filler is labelled.**
- ❖ **No fuel shut-off valves close to tank take-off.**
- ❖ **General purpose hose (marked ISO 1307) has been used for fuel lines and not fuel hose specified to BS EN ISO 7840.**
- ✓ Fuel lines well secured.
- ✓ Primary fuel filters have plastic sight bowls, but are not located in engine compartment.
- ✓ Breathers located high on transom for both fuel tanks, it was not noted whether breathers incorporated spark arrestors and this should be checked.
- ❖ **Chromed splash protectors for the fuel tank breathers were not securely fastened. The port one was loose and was put in a tray of small parts in the cabin.**

Recommendations

Install shut off valves close to both fuel tanks.

Replace fuel hose with that specified to BS EN ISO 7840.

Advice

Label diesel filter points

Secure splash guards for fuel tank breathers.

23. Gas Installation

The gas system was examined with the aim of finding visually identifiable deficiencies in the gas system. There may be other defects in the system that cannot be found by visual examination. The visual examination does not constitute any kind of gas safety certificate, which is only obtainable in the UK after comprehensive pressure testing and assessment by a qualified person registered by Gas Safe (www.gassaferegister.co.uk).

- ✓ Gas locker is located on starboard side of cockpit immediately aft of bulkhead.
- ❖ Gas locker is not gas tight; low level vent for cabin actually opens into locker.
- ❖ Gas hose manufactured in France and marked as requiring replacement prior to 1993.
- ❖ The regulator appears to of similar vintage as the gas hose.
- ✓ A single 2.75kg butane bottle was present in the locker. There is space for a second bottle.
- ✓ Gas hose is used to supply hob in galley. No measures have been taken to prevent chafing where it passes through bulkheads and locker partitions.
- ❖ There is a two ring hob with grill in galley that was not tested, but was well secured. It did not appear to have a flame failure device.

Recommendations

Construct gas locker that drains overboard.

Replace pressure regulator for gas bottle.

Replace out of date gas hose. It is strongly advised that the section inside the cabin is replaced with suitable copper piping that is protected by grommets where it passes through bulkheads and partitions.

Advice

As cooker appears not to be fitted with a fail failure device, installing a gas alarm in the cabin would be advisable.

24. Fresh Water and Sanitation

- ✓ Water tank was stored in plastic tank located above fuel tanks. The water tank was designed for use as a fuel tank.
- ✓ Overflow discharges overboard.
- ❖ The delivery hoses were transparent; it is preferable if they were opaque to prevent "greening".

25. Heads

- ✓ Electric sea toilet installed - not tested
- ✓ No holding tank present.
- ❖ Gooseneck on heads discharge was located in locker forward of heads and had fallen down.
- ❖ Access did not allow confirmation that a gooseneck is present on intake hose.

Recommendations

Ensure gooseneck is secured in upright position on heads discharge. Ensure there is a gooseneck on the intake hose or other means of breaking a siphon.

26. Electrical Installation

230/240 volt AC

- ❖ 12 volt automotive type battery charger located under counter top in galley. Automotive battery chargers do not isolate the 12v and mains circuits and have a greater potential to cause stray currents and electrolytic decay.
- ✓ No other mains equipment identified aboard vessel.

12/24 volt DC

- ✓ No batteries on board at time of survey
- ✓ Battery compartment has space for two batteries and is located aft of access into accommodation.
- ✓ Battery isolation switch located on partial bulkhead forward of engine compartment.
- ✓ Electrical panel located in heads on main port bulkhead; it was not examined in detail, but wiring appeared to be of an acceptable standard.
- ❖ Winch had a Merlin Gerin breaker rated at 10kA at 400 volts AC. It should be replaced with a suitably rated 12v DC breaker.

Electronic equipment (not tested) included:

- Seafarer 700 Depth Sounder
- Electronics Laboratories Ltd, Type RT100, VHF radio
- Clarion CRH300, radio cassette player

Advice

Install marine battery charger if required.

Provide appropriately rated breaker for electric winch.

27. Heating, Ventilation and Refrigeration

- ✓ Four Vetus vents provide good ventilation to accommodation.
- ✓ The vessel has no heating or refrigeration.



Hugh Ellacott, 28/11/11