

GENERAL CONDITION SURVEY FINDINGS

"COPY FOR WEB SITE"

This is to Certify that the undersigned carried out a survey on the above vessel at 2006 at the request of Mr....., for the purpose of reporting on the vessels condition subject to the limitations below. This Pre purchase survey is carried out on the understanding that I am legally liable to the above client only and not to any subsequent holder of the said report. Such liability must be constructed as a contract under British law and jurisdiction and any dispute arising hereunder shall be submitted to the exclusive jurisdiction of the courts of England and Wales.

CONDITIONS/FACTORS LIMITING SURVEY

The reason for the survey was to carry out a structural and mechanical evaluation of the vessel for pre-purchase, mortgage and or insurance purposes.
The vessel was ashore supported on chocks/slings. This allowing access to the hull bottom, apart from the chocking/sling positions.
Machinery installations, auxiliary and ancillary equipment, gas and other service systems, electronic equipment, pumping and plumbing, sanitation systems, navigational aids and other sundry items were visually inspected only. None of these items were dismantled nor were specific test applied except in the case of electrical systems where simple switch tests were used. The steering gear installation was given a simple 'hard over to hard over test' only.
Diesel engines and generator examined externally only.
All tanks were inspected where visible but not internally and they have not been pressure tested; their contents have not been tested for contamination.
Windows hatches and external doors have not been tested for water tightness.
Skin fittings and valves have not been dismantled.
The gas system was not tightness tested.
No testing of the hot water calorifer or freshwater system was undertaken.
No liability whatsoever is accepted for any injury, death or damages arising from those parts of the vessel to which access could not be gained at the time of the survey and on the strength of which I am unable to comment.
This survey is not undertaken with any intention to ascertain that the vessel would comply with any rule or code of practice as may be required by any authority under whose jurisdiction the vessel may be operated. Due to over coatings joiner work, installations alike, access to certain parts of the vessel were difficult or impossible and

therefore no responsibility can therefore be accepted for failure to discover or report on these defects which may exist in these areas.

The vessel was not tested for transverse or longitudinal metacentric stability or buoyancy and this report must not be taken to imply that the vessel has sufficient stability or buoyancy for the intended purpose. In this respect, it cannot be confirmed that the vessel meets the Essential Safety Requirements of the Eu Recreational Craft Directive 94/25/CE. It was not possible to ascertain the maximum allowable load of the vessel. It is the owners responsibility to ensure that basic stability information is placed on board the vessel *and understood* and that she is never overloaded.

This work was carried out in accordance with the following:

- a) Our Standard Contract of Employment.
- b) The code of Practice for Small Craft Surveys published by the International Institute of Marine Surveying.

Definition of terms & ratings.

1. The use of the word *appears/appeared* indicates that a very close inspection of that component/system/area was not possible due to constraints imposed upon the surveyor (e.g. no power available, inability to remove panels).
2. The use of the word *serviceable/adequate* indicates that particular system, component or item is sufficient for a specific requirement.
3. The use of the word *good condition* indicates that the component /system is nearly new with only minor cosmetic or structural discrepancies noted.
4. The use of the word *fair* indicates that the component/system is functional as is with minor repairs and should be monitored often to see if its condition deteriorates.
5. The use of the word *poor* indicates that the component/system is unsuitable as is and will need to be replaced or repaired for it to be considered functional.
6. *Readily accessible* means cable of being reached for operation, inspection or maintenance without removal of any craft structure or use of any tools or removal of any item.
7. *Urgent Recommendation* must be done urgently, preferably before re-floating and certainly before any use is made of the vessel.
8. *Recommendation* should be done at the earlier of next docking or within six months or such other time scale as may be specified.
9. *Suggestion / advisory comment* for information and consideration, or may be necessary to comply with waterways standards or regulations on inland waterways, but not of particular significance to safety or insurability at this stage.

VESSEL PARTICULARS

Name of vessel:

Hail Port: Gt Yarmouth.

Owner: C/O James Dickens Marine Ltd Yacht Brokers.

Official Number: SSR: PRIVATE.

Intended use: Recreational

Navigation Limits: Seagoing. Category B Offshore.

Date of Survey:2006.

Type: Pleasure Yacht.

Model Year: Broom 41.

Builder/designer: Brooms & Sons of Brundall, Norfolk, England.

Year of Built: 1996 Circa.

LOA: 12.52m **Beam:** 4.11m **Draft:** 2.33m **Air Draft:** Not observed.

Gross Tons: 21.51 tonnes.

Engine: Volvo TAMD63 320HP inboard diesels with shaft drives. (474.46Kw).

Hull ID number: Hull number PRIVATE. (embossed on transom)

Broads Authority: Official number:.....

Yard Number: BA.....

The above information, including engine information is gathered from various sources, that is Brokers details, and neither confirmed nor guaranteed.



DESIGN AND CONSTRUCTION

A precise specification for the structural lay up was not available at the time of the survey and this cannot be confirmed. However the hull construction appeared to be of typical solid polyester laminate with fibreglass matt and woven roving. The internal hull structure consisted of cored fibre glass floor stringers, partitions, plywood bulkheads and joinery bonded to the hull, and deck moulding. There was accommodation for six persons, with two berths in a spacious fwd cabin, two in the dinette and a further double in the aft cabin. The semi displacement hull was medium to deep vee with a dead rise of approximately 16 degrees at the transom, honing up to 20 degrees amidships. The chine was toed-in slightly, and a knuckle in the topside appears to keep spray at bay.

The hull was fitted with a separate fibreglass reinforced plastic deck moulding and upper steering moulding position of similar construction bolted to the main hull with the bottom and sides of the hull strengthened internally by encapsulated stringers and encapsulated foam transverse bottom frames. The scantlings may be considered to be average and typical for this type and size of vessel. The vessel generally appeared to have been built to accepted recreational marine industry production standards and practices at the time of its construction, using commonly accepted materials.

EXTERNAL HULL EXAMINATION

The vessel was not tested for transverse or longitudinal metacentric stability or buoyancy. It was not possible to ascertain the maximum allowable load for the vessel. The vessel was found on blocks on a hard stand at the above site. There was good external access except in way of the keel blocks, shores and other supporting structures. There was reasonably good internal access except in way of fuel and water tanks and similar fitted items. The vessel was not 'stripped out' for survey she had been washed off and was in generally good clean condition. The vessel was viewed from a distance at various angles and no apparent or obvious signs of major longitudinal or transverse deformation or structural failure which might indicate earlier serious damage or poor repairs observed.

The side, bottom and transom panels were generally in good order, fair and free of obvious moulding and pigment defects but it was noted that there were a number of minor scratches and contact abrasions on the topsides. The stem and transom quarters were particularly examined and no significant contact gouges or abrasions noted. There was some ultra-violet light deterioration of the topside gelcoat surface but this to be of no structural consequence. The bottom and side panels of the hull were lightly hammer tested using an engineers ball hammer to test to see if there were any obvious voids in the lay up but none were discovered. This was particularly carried out at acute points of the hull form or at points of contra flexure where such voids may be expected. No guarantee can be given, however, that such voids do not exist. The hull was sounded all over by this means with no indications of soft spots being noted in the gelcoat and, judging by the general hard resonance, the structure appeared to have been solidly built to a good standard. The hull was especially examined at the points where the bulkheads were fitted and no sign of a hard spot in these areas were noted nor were there any signs of gel coat cracking indicating that the shell was 'hinging' seen.

The vessels bottom was cleaned of weed, crustaceans and other marine growth and the antifouling coating was found generally in a good condition, with the remaining adhering well to the shell suggesting compatible paints had been used. Where considered necessary in the circumstances at the time of the survey, paint coatings were removed from the shell (in sample areas only) in order to evaluate the local gel coat condition in those areas. This was done to allow the surveyor to form an overall impression of the general status of this. It should be noted however, that, unless a hull has been completely cleaned back to the bare gel coat prior to the survey, I cannot confirm the detailed condition of the shell gel coat surface, fastenings etc. My conclusion therefore based on the evidence of the sample areas examined. Where this process has exposed the gelcoat on the hull no osmotic defects or gelcoat damage was seen. The undersigned surveyor has made every effort to determine the presence of blisters short of destructive testing, and that blisters were not found. This, however, does not mean that blisters won't develop at a later date.

The following relative moisture meter readings have been obtained using a Sovereign Moisture Meter. Topsides 4%. Lower hull 5 to 8%. *Scale between 10% (relatively dry) and 60% (considered relatively wet).* The moisture metre readings were not considered unduly high.

INTERNAL STRUCTURE

The internal hull structure consisted of plywood bulkheads, foam cored stringers, floors, partitions and joinery bonded to the hull, and deck moulding. Most of the bonding was hidden by lining and cabinetry and could not be inspected. Where visible, the bondings, bulkheads and stringers appeared to be secure and free of defects and the laminates all appeared to be fully and satisfactorily 'wetted out'.

CANVAS

A blue coloured wheelhouse cover was found to be in a fair condition.

SUPERSTRUCTURE / COCKPIT/ FLYBRIDGE

Deck: Main deck and coachroof were cored FRP with moulded non-skid pattern.

Wheelhouse/coachroof: Moulded cored fibreglass.

The deck and superstructure were formed from one fibre reinforced plastic moulding, apparently of the same grade and construction as the main hull though this could not be confirmed. This was specially examined and found generally weather tight, free of moulding and pigment defects and it also appeared to be satisfactory secured to the hull moulding. Where it was possible to examine the deck fastenings these were found adequate, in generally good order and the unit was well secured. The deck and superstructure unit was particularly examined for star crazes in highly stressed areas and under the side stanchion feet for stress crazing but none of these defects were found. The deck was tested in a number of places with the Surveyors weight and no undue flexing of the structure noted.

HULL/SUPERSTRUCTURE JOINT

The joint was formed at the gunwale. It was secured by steel through fixings, and was concealed on the exterior by 60mm x 20mm fender strake with a rubber insert, which was found to be in a good condition and firmly attached. Where it was accessible on the interior the joint was secure and showed no evidence of leakage.

BILGE AND ACCESS / BILGE PUMP INSTALLATION

Electric pumps: Three 12 volt DC electric pumps and float switches.

Manual pump: Two Whale gusher type.

The vessel was subdivided by non watertight screen bulkheads. Oil and water separation was not provided for. The engine bay hatches and traps located below the flooring allow access to the bilge. Various other traps were accessible through out. Generally the bilge areas were clean and dry.

The electric bilge pumps with an estimated pumping capacity of 4500 GPH and associated float switch units were found secured, along with pipe work and security clamps and pumped overboard via thru hulls above the waterline. The float switches should remain operable when the vessel is left unattended, this was not tested. The pumps were switch operated from the helm position and the two forward pump switches at the helm position were considered defective.

The two manual pump systems had been competently installed and although it was not possible to survey all the associated pipework in detail such as I was able to inspect appeared satisfactory with the connections and worm drives clamps in a serviceable condition.

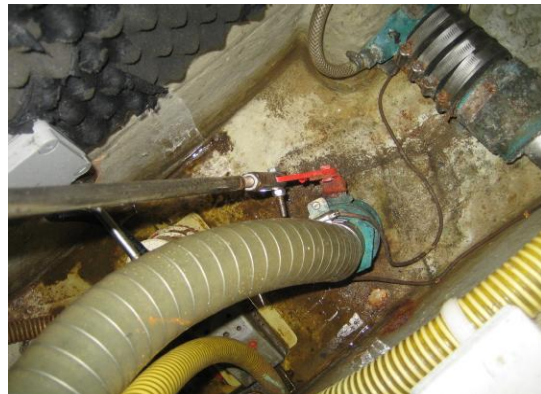
Recommendation

1. Restore and rectify the switch faults on the two defective bilge pumps and test all associated float switches with all power turned off. (They should remain operable when the vessel is left unattended).
2. Fixed bilge pumps fitted within oil tight areas are acceptable provided: A bilge water filter capable of a 5ppm discharge level is installed in the outlet.

SEA VALVES / SKIN FITTINGS

Note: The engines cooling water seacocks were not accessible during this inspection.

The skin fittings were not drawn or opened for inspection but were examined in situ externally by hammer and scrape testing. The fittings were of the gun metal ball valve type with bronze skin fittings and appeared to be in a serviceable condition, with no obvious signs of water ingress in way of seals or glands, however some corrosion and salt crustation was noted around the engines seacocks and they appeared to be seized.



Although it was not possible to survey all the associated pipework in detail such as I was able to inspect appeared satisfactory with the connections and worm drives clamps in a serviceable condition.

The topsides and transom were fitted with a number of non-ferrous and plastic skin fittings, all of which appeared to be sound where examined externally and were considered to be a reasonable height above the water line.

Recommendation

1. Service / ease and adjust the engine sea cocks.

DECK FITTINGS

A pulpit safety rail was firmly fitted around the anchor platform with railings extending aft. There were also stainless steel hand rails secured around the transom areas. The bathing platform and boarding ladder were firmly secured thus allowing a person in the water to re-board the vessel unassisted. Various bar mooring cleats were firmly fixed to the deck. As far as possible to establish with out dismantling the remaining fittings were securely fastened and suitable for the cruiser.

ELECTRICAL INSTALLATION

Ship's system voltage: 12V/ 240Volt.

Batteries: Four multicell heavy duty lead-acid batteries.

Generator: Engine alternators/battery charger/Genset.



The batteries were installed aft of the engines and were properly secured and covered over. The battery terminals were clean and tidy and there was no evidence of over-filling. The batteries were considered adequately ventilated for the charging facilities installed onboard and the batteries appeared to be in reasonably good condition

The vessel was fitted with electronic master isolator switches. They were considered to be installed as close to the batteries as practicable and the switches at the DC panel were checked to see if they functioned correctly and found in good order, but it was not possible to check to see if the switches were adequately current rated.

The system was fitted with a marine type breaker panel correctly installed. The breakers, wiring and associated equipment where accessible were found in good order and generally operational, with none of the wiring found to run in the bilge area and clear of any source of direct heat or fuel or gas piping. The wiring was PVC insulated, and in the limited places for inspection, the wiring was adequately clipped up and fitted where necessary with bulkhead glands and crimped end fittings and all found in good order. The cable sizes all appeared to be adequate for the circuits examined and the DC cables were all of the multi-strand type.

The navigational lights were tested and were not operating from the switch panel and this should not be overlooked. A 240 Volt AC system was also installed onboard, with associated RCD trip units incorporated. A splash proof fixed shore power socket arrangement was installed on the aft deck, this was not adequately connected to the EU type adaptor plug and this should not be overlooked.

Recommendation

1. Trace and rectify navigational lighting circuit faults.
2. Clearly label the battery isolator switches position.
3. Secure the shore power connection socket.

ENGINE INSTALLATION / GENERATOR.

Main engines: make: Volvo **model:** TAMD63 **no. cyls:** 6, **hp:** 320HP.

Type: Diesel

Engine cooling: Closed fresh water/raw water heat exchangers.

Reduction gear: Hydraulic drive.

Engine hours: 400.

Engine bed: Mild steel.

Pan under engine: No.

Generator: Fisher Panda 4.2 Kw. (not verified).

Note: Inspection of the engines was restricted to installation only and the above details are not guaranteed.

A visual inspection of the engines, filters and related connections showed no signs of abuse and a good maintenance regime became apparent. The stringers that support the engine mounts were steel and in turn they were secured to the hull and appeared to be free of stress. The main flexible engine mountings were secure and in a good condition. The crankcase and gearbox oils were checked and appeared to be clean and at the correct levels. The water cooling caps were lifted and no signs of oil emulsification was noted inside.



During the test run a simple audio test was carried out, no undue knocks were noted in the bearings or running gear and no undue noise, piston slap, or bearing failure was noted and such simple running tests as we were able to effect indicated that the machinery appeared to be functioning correctly. It was not possible to check the compression of the engines nor was it practicable to remove injectors and check the actual cylinder pressures, however the machinery was superficially clean, free of significant rust and excessive oil leaks and appeared to be in a serviceable condition, however, it is always strongly recommended that the engines are further examined and tested by a competent Marine Engineer familiar with this type of machinery prior to purchase.

Engine throttle and gear controls were adequately secured and were tried and found in a good, smooth operational condition.

NAUTICAL EQUIPMENT

The vessel was fitted with the following nautical equipment which appeared to be in a serviceable condition.

Depth & Speed Gauges. Auto pilot. Compass. Radar. VHF. GPS.

AIR CONDITIONING / HEAT.

A diesel driven warm air heater was secured below the saloon and was switch operated from the thermostat/control unit in the saloon. Various ventilator cowlings were positioned through out with associated trunking linking the system. Inspected and switch operated, the system appeared functional and in a serviceable condition. The units fuel piping was in a good condition and properly secured at regular intervals. The exhaust pipe was properly lagged and adequately supported and properly fitted with the appropriate exhaust cowling at the thru hull position.

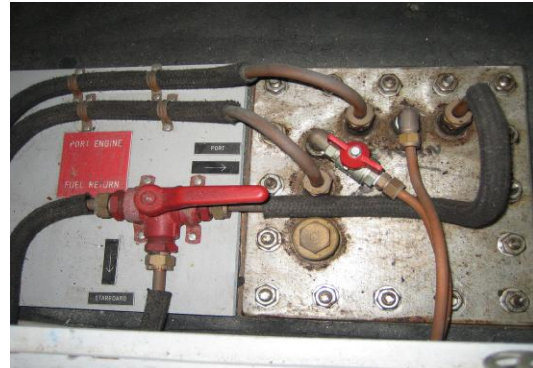
FUEL TANKS AND FUEL SYSTEM

Fuel type: Diesel

Tanks: 300 gallons estimated.

Material: Steel.

Manufacturer's label: None.



The vessel was fitted with two free standing fuel oil tanks of welded steel construction which were examined as far as practical (but not pressure tested) and found externally in a good condition. There was no corrosion visible to the accessible parts of the tanks. The tanks were not filled up and it was not possible to check fully their oil tight integrity and this is not guaranteed. There was no obvious signs of leakage from the connections or fittings. The material of construction was considered suitable for the fuel contained therein and appeared to comply with the 30 minute fire resistant requirement of BS 476/20 and the tanks appeared to be properly secured and no sign of movement was observed.

The tanks filling pipe material where accessible was suitable for the fuel used, and was in a good condition and firmly clamped. The filling pipes were taken to deck level and were so arranged that it was not possible for fuel to overflow into the vessels hull or bilge.

The flexible fuel piping ran clear of the bilges and was properly secured and supported. The piping was showing no signs of deterioration. The fuel was drawn from the top of the tanks, with the correct stop cocks installed for each engine.

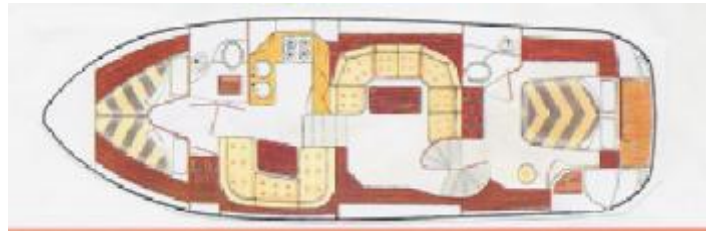
The fixed copper fuel piping was visibly inspected where accessible and found to be in a good condition and adequately secured.

The fuel shut off cocks position below the saloon steps was clearly labelled for the emergency services. The fuel filters/water separators were of the marine type and appeared to be the non corrodible, fire resistant type and in a good condition.

The fuel vent pipes were fixed copper and the openings were furnished with effective wire gauze diaphragm type flame arrestors.

INTERIOR/ ACCOMODATION

The interior was found to be in a good cosmetic condition, and provides six berths in three cabins. The saloon, and berths were fully lined and fitted out to a good standard. The upholstered sections were in a fair condition. Bulkheads and joiner work showed reasonable care and maintenance. The furniture was constructed from hardwood framing. The floors were carpet covered and the majority of the drawers and locker doors appeared functional.



STEERING GEAR

Rudders: Balanced/spade. Purging type hydraulic.

Material: Bronze.

Rudder stock: Bronze.

Bronze tiller levers were fitted to the rudder posts and were linked to the ships wheel by hydraulic assistance. The hydraulic pipework and associated equipment were visibly inspected where access was available and found in good order. The rudders were closely inspected and found to be in a good condition with no wear noted at the rudder tube positions and the rudders could be rotated from stopper to stopper and were tried hard over and the steering was found to be free and in a smooth operating condition.

FIRE FIGHTING EQUIPMENT.

The vessel carried various fire extinguishers. There was no evidence on board the vessel that any of the extinguishers had been recently serviced and we draw your attention to this. All fire extinguishers should be regularly serviced by a recognised competent person and also be weighed annually and the weights and dates recorded. The engine room Halon extinguishers will need to be replaced with an ozone friendly type.

A fire blanket was correctly fitted in the galley away from the cooker.

Recommendation

1. Fit two more 5A/34B dry powder extinguishers (*one in the aft cabin and one in the fore cabin*) carrying approved certifying marks. Extinguishers should be kept in readily accessible positions adjacent to fire risk points, and should be properly maintained in good condition for immediate use.
2. Safely dispose of the engine room Halon fire extinguisher and replace it for an FM 200 (*Halon free*) type.

DOMESTIC WATER INSTALLATION

Tanks: Not observed.

Capacity: Not observed.

Pumps: 3.8 pressure pump.

Dockside connection: No

Pressure regulator: Accumulator tank.

Water heater: Calorifier/immersion heater.

The vessel was fitted with a freshwater tank which was not accessible/inspected during this inspection. The tank was not filled up due to winterising and therefore it was not possible to check fully the systems watertight integrity and this is not guaranteed although no signs of leakage from the joints or fittings were noted.



The plumbing was of the plastic flexible piping and fitted with a pressure pump and was examined as far as practicable and found generally in good order with the worm drive clamps in a good condition. The hot water calorifer tank was found adequately secured (*two screws loose on one strap*) with the associated hot water hoses found in a good condition with no visible deterioration and linked to the exhaust side of the port engine.

GALLEY /GAS INSTALLATION

Stove: Marine type.

Cylinders: Two 1.7Kg Gaz/Butane.

Gas Locker: 1 x GRP bin/locker.

A three burner stove was securely mounted in the galley and appeared to be in a serviceable condition. The system was powered by liquid petroleum gas. The gas was supplied from two small cylinders situated in a vented GRP gas locker located on the aft deck. The locker was adequately vented overboard. The locker was examined all over and found to be in a good condition, and dedicated for its use, with no danger of leaking LPG spilling inboard. There was good access to the main shut off valves. (*these should be clearly labelled*).

The regulator was of the non-externally-manually adjustable type and properly secured to the locker sidings. **Note:** The extent of any LPG cylinder movement must not cause any pulling of pipework or hose connections. Cylinders must be secured so that the possibility of cylinders damaging low-pressure regulators, pipework or other LPG system components is minimised.

The cylinders flexible gas pipe connections were of minimum practical length, and conformed to BS EN 3212, they were dated 1995, they are therefore beyond their

recommended life of five years and should be replaced.

The copper supply tubing was visually inspected where accessible and appeared to be in a good condition and properly secured. The pipework appeared to be protected, to minimise the possibility of damage where it penetrated bulkheads.



The GRP, timber and soft furnishings nearby the source of heat were specially examined and no sign of heat damage, charring or scorching was noted.

Recommendation

1. Cylinders must be secured so that the possibility of cylinders damaging low-pressure regulators, pipework or other LPG system components is minimised.
2. The flexible neoprene gas cylinder connections were dated 1995, they are therefore beyond their recommended life of five years and should be replaced.
3. Clearly label the main and appliance gas shut off valve locations. (*example image shown above*).

GROUND TACKLE

Anchor: 18Kg Bruce anchor. (*estimated only*).

Anchor windlass: Electric winch.

The anchor was found in its dedicated position over the stem head fitting, with approximately 15 Fathoms of 32 x 25 x 8mm galvanised plain link chain cable, the length of which was not measured. A statistically significant number of links were measured for wear. It should be noted that the Classification Societies will allow up to 11% wear down in the links ends before requiring renewal of the chain. The inboard end of the chain appeared to be securely attached to the vessel, although this is not guaranteed. The size of the anchor did comply with the recommendations of the RYA Yacht Safety Document number C8/02. The vessel should also carry at least a 9Kg backup kedge anchor. The vessel was fitted with an electric windlass. The arrangements were such that it could be considered to be a strong point in accordance with the EU Recreational Craft Directive. It was considered to be capable of adequately accepting mooring, anchoring or towing loads. The winch was switch tested from the steering and fore deck positions and proved effective in the *hauling* direction only. The fenders were examined and found to be sufficient in number. The mooring ropes were found in a good condition.

Recommendation

1. The vessel should carry at least a 9Kg backup kedge anchor and warp.
2. Rectify the circuit fault on the 'down haul' operation on the anchor winch.

HATCHES AND PORTS

Hatches: Emergency escape hatches forward and aft.

Portholes: Six Alloy framed construction.

Windows superstructure: Alloy drain framed/safety glass.

The forward and aft hatches were examined and found to be secure, generally watertight and in a good condition. The hatches dimensions comply with the EU Essential Safety Requirements as a visible means of escape from the accommodation areas.

The wheelhouse was fitted aft with a sliding door of Perspex construction. This was examined and found to be in a good condition, secure and lockable. The hatches and access doors appeared to be strong enough to withstand the point of load of a normal beings weight and the load to be expected from the water in the sea areas for which the vessel was apparently designed. The hatches and similar openings were of such a size and placed in such a position that it was considered that they would not be likely to allow serious down flooding of the vessel.

The windows and seals which were aluminium framed with safety glass, and were examined and found to be in a serviceable condition. It was not possible to water test these items and the drains will require cleaning through. A few areas of sealant were visible on the exterior, presumably an indication of an attempt to cure leakage.

Discoloration to internal woodworks in the main saloon were evident on the interior also. The windows and shuttles appeared to be strong enough to withstand the water pressures likely to be encountered within sea areas for which the vessel was apparently classified.



Advisory comment

1. To stop windows leaking you have to use a non-hardening caulking so that the caulking can move with the expansion. To deal with this problem, you have to remove the frames, rebed them and refasten them less tightly than they were previously installed.

VENTILATION

There was no fixed ventilation noticeable in the galley / saloon area. The responsibility for the safety of anybody onboard your boat lies with the owner or skipper. I advise strongly that boats have enough fixed ventilation to feed all the appliances on board that use LPG, or other carbon-based fuels. Inadequate ventilation will starve the burners of vital oxygen resulting in poor burning and that can produce highly toxic carbon monoxide. The ventilation requirement can be calculated by using the formula

below. It takes account of the number and type of appliances as well as the people on board.

Minimum effective area (mm²) = [2200xU]+[650xP]+[440xF]
U = total input rating (kW) for all appliances (including cookers) without flues
P = number of people for which the compartment is designed
F = input rating (kW) for all open or closed flue appliances

STERN GEAR

Propellers: Fixed, bronze, 3-blade, 24"x 29".

Propeller shaft: Stainless steel, 52mm.

Struts/P bracket: Single arm cast bronze/P bracket.

Bearing: Rubber cutlass.

Thru hulls: Bolted gland type x 2.

Ground plate lightning protection: n/a

The stern gear was examined externally-without opening up-and was found in a good /serviceable condition. The propellers dimensions were not checked for matching with the machinery power and revolution output. The propellers showed no sign of corrosion and the propeller blades were individually sighted for obvious signs of deformation with no tip



damage noted. It was not possible to check the condition of the keys and keyways, however they were a snug fit to their shafts and properly secured by bronze locking nuts and steel split pins. When the shafts were rotated by hand they were free. The stern gland/stuffing boxes were secure and bolted tight.

Note: The vessel was ashore and it was not possible to confirm whether the stern glands were leaking or when they had been last repacked and this should not be overlooked when the vessel is slipped. The P brackets and cutlass bearings were secure and in a good condition with no sign of corrosion or dezincification to the metal.

The propeller shafts were not drawn for inspection nor the tail ends examined. However no signs of surface flaking, fatigue or fretting corrosion to the shafts could be seen. The propellers were not removed from the shafts nor the cones examined.

The drive flanged to shaft coupling was examined on the interior and where accessible the bolts hammer tested and these appeared sound and well tight. It was not practicable to 'break' the coupling and test the alignment.

ANODES

The vessel was fitted with two hull anodes, and two trim tab anodes. These were attached by way of steel bolting. The bolts were showing no signs of corrosion and the anodes were new. The hull anodes were, inside the hull properly bonded to the engines stern gear seat, P brackets etc and to various overboard discharges by a clearly marked multi stranded earth wire of about 4mm square. The bonding was examined as far as practicable limitations of access allowed and was found generally in a fair condition.

Advisory comment:

If it is necessary at some time for the vessel to change from salt to fresh water *as in this case*, or visa versa then it should be borne in mind that this will have a deleterious effect on the anodes fitted.

Magnesium or aluminium anodes (which are suitable for fresh water) have a much higher driving potential than anodes

manufactured from zinc. If a vessel fitted with magnesium or aluminium anodes passes into salt water for anything longer than about seven days, the anodes will waist away very quickly.

Vessels which are fitted with magnesium or aluminium anodes moving into a salt water environment for longer than a week should be, therefore fitted with a replacement zinc anodic system.

Conversely vessels fitted with zinc anodes(suitable for use in salt water) will find over a period exceeding about seven days that the metal will be coated with an impervious off-white crust of zinc salt which will very effectively prevent it working even when returned to salt water. After any trip into a fresh water environment a vessel fitted with zinc anodes should have these thoroughly scaled back to bright metal. If proceeding into fresh water for longer than about seven days a vessel should be fitted with replacement magnesium or aluminium anodes.



HEADS/SHOWER INSTALLATION

Head: One electric flush toilet and one dry bowl manual.

Holding tank: Stainless steel.

Sump: Shower sump drain pumps.

The heads were fully lined and fitted with Marine type sea toilets, sink units and showers. The heads were plumbed in reinforced hoses found in a good condition. The heads flushed directly to the holding tank found properly secured and in a good condition, and/or overboard via a diverter valve thru drain pump. The shower water drain pumps were not switch tested. Although it was not possible to survey all the associated pipework in detail such as I was able to inspect appeared satisfactory with the connections and worm drives clamps in a serviceable condition.

LIFE SAVING EQUIPMENT

Personal Flotation Devices: Various buoyancy aids.

Flares: Coastal pack.

Life ring/horse shoe: None observed.

Life sling: None observed.

Life raft: 1 x life raft. (service date 2005).

Inflatable rib and 15HP outboard engine.



Recommendation

1. I recommend that the owner obtains a copy of the Royal Yachting Association booklet C8/02 "Boat Safety Handbook" and use their recommendations as a checklist when outfitting the vessel with equipment suitable for the type of cruising and size of crew intended.

TRIM TABS

The aluminium bladed trim tabs were secured to the lower transom on the exterior and operate through pneumatic struts that were controlled by hydraulic pump. When operated they help get the vessel up into a planing position when underway. They are especially helpful when there is a large number of people in the cockpit, or for any reason the boat is very heavily loaded. They are also helpful to push the bow of the vessel down when running into a head sea. Although not fully tested under load, the system appeared to have been competently installed and was in a serviceable condition.

SUMMARY / OBSERVATIONS

Copy..... appeared to be a standard production version of a Broom 41 Pleasure Yacht, no unusual modifications or changes were observed and she was found to be in a good structural and good mechanical condition overall and the vessel had been constructed to a high standard out of good quality materials. The vessel's fuel system, gas system and electrical circuits have all been particularly well maintained and in my opinion she is an attractive well built cruiser which, with on-going maintenance, will give good service for many years to come.

With the recommendations related to industry standards and other safety issues implemented, the vessel should be suited for her intended purpose of seagoing cruising. Recommendations concerning maintenance and upgrades should be considered normal maintenance or improvements to be done by a prudent owner and are not intended to detract from the vessel's overall condition or value.

The ultimate responsibility for the maintenance and safe operation of this vessel lies with the owner and master.

1. *Urgent Recommendation* must be done urgently, preferably before re-floating and certainly before any use is made of the vessel.
2. *Recommendation* should be done at the earlier of next docking or within six months or such other time scale as may be specified.
3. *Suggestion / advisory comment* for information and consideration, or may be necessary to comply with waterways standards or regulations on inland waterways, but not of particular significance to safety or insurability at this stage.

Urgent recommendations.

1. The vessel should carry at least a 9Kg backup kedge anchor and associated warp.
2. Restore and rectify the switch faults on the two defective bilge pumps and test all associated float switches with all power turned off.

Recommendations

1. Service / ease and adjust the engines cooling water sea cocks. (seized).
2. Trace and rectify the navigational lighting circuit faults.
3. Clearly label the battery isolator switches position. (aft cabin)
4. Secure the shore power socket connection. (aft deck).
5. Fit two more 5A/34B dry powder extinguishers (one in the aft cabin and one in the fore cabin) carrying approved certifying marks. Extinguishers should be kept in readily accessible positions adjacent to fire risk points, and should be properly maintained in good condition for immediate use.
6. Safely dispose of the engine room Halon fire extinguisher and replace it with an FM 200 (Halon free) type.
7. Gas cylinders must be secured so that the possibility of cylinders damaging low-pressure regulators, pipework or other LPG system components is minimised.
8. The gas cylinders flexible neoprene connections were dated 1995, they are therefore beyond their recommended life of five years and should be replaced.
9. Clearly label the main and appliance gas shut off valve locations.
10. Rectify the circuit fault on the 'down haul' operation on the anchor winch.
11. I recommend that the owner obtains a copy of the Royal Yachting Association booklet C8/02 "Boat Safety Handbook" and use their recommendations as a checklist when outfitting the vessel with further safety equipment suitable for the type of cruising and size of crew intended.
12. Fixed bilge pumps fitted within oil tight areas are acceptable provided: A bilge water filter capable of a 5ppm discharge level is installed in the outlet.

Advisory comment

1. Its good practice to take the vessel out of the water over the winter period and store her in the dry, out of thus reduce the possibility of osmotically induced gel coat blistering.
2. To stop windows leaking you have to use a non-hardening caulking so that the caulking can move with the expansion. To deal with this problem, you have to remove the frames, rebed them and refasten them less tightly than they were previously installed.

Valuation

The Fair Market Value given herein is defined as the highest price that can be obtained by a willing seller from a willing buyer, with neither being compelled to sell or buy, and the subject vessel having been offered on the open market for a reasonable time. The guidelines used for the valuation are as provided by industry pricing guides. Estimates based on currently listed asking prices, along with market conditions were also considered.

Fair Market Value: *(in Pounds Sterling)* **£180,000.00 (One hundred and eighty thousand pounds).**

SURVEY PRACTICE STATEMENT.

This survey report is for the benefit of Mr PRIVATE and is not transferable except for the named Owner's purpose and may not be used for other purposes and may not be relied upon by any other person without written consent by the surveyor. The surveyor warrants that this report is a true and unbiased opinion of the vessel, based upon a visual inspection on the date of the survey. The findings, opinions and conclusions are based upon the best professional judgment of the undersigned surveyor. If this survey does not discuss a specific item, equipment or machinery, it is not covered by this survey. While every effort has been made to conduct a thorough survey, there can be no guarantee or warranty, express or implied, as to the condition or suitability of the vessel and her equipment or machinery. This survey makes no representation and does not purport to describe any condition which may have changed since the date of the survey and the recommendations herein are limited to those that, in the opinion of this surveyor, are reasonably necessary and appropriate, based upon the conditions and circumstances as they existed at the time of the survey.

Respectfully submitted,

SignedSM TRUSS AssocIIMS INSIGHT