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Pre Purchase Survey Report
56' Cruiser Stern
Steel Narrowboat

'Boat 2'

Prepared for:

Mrs Jane Smith
The Barn Conversion
2 Main Street
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Sent by email:

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Contents

Additional information enclosed; copy of standard Terms of Business

1 Introduction

1.1 Acting on instruction from Mrs Jane Smith, a pre purchase survey was carried out 30 January 2017 at Mercia Marina, Findern Lane, Willington, Derbyshire DE65 6DW on the narrowboat 'Boat 2', subject to the limitations below:

1.2 The report is issued on the understanding that Ovation Boat Surveys Ltd is legally bound to Mrs Jane Smith only and not to any subsequent holder of this report.

1.3 This survey report has been prepared for the named client and shall not be sold, transferred or gifted to any third party without the express permission of the undersigned surveyor.

1.4 This survey report may be shared with the broker, New & Used Boat Co., to aid the purchase by Mrs Jane Smith only, and may be used by Mrs Jane Smith for the purpose of vessel insurance or the arrangement of vessel finance, if required.

1.5 Copyright and intellectual rights of this report remain the property of the undersigned surveyor.

1.6 The vessel was seen in covered dry dock at the above address for examination of the hull.

1.7 No other person was present during the survey process.

2 Limitations and Condition of Survey

2.1 Your attention is drawn to terms of business as used by Ovation Boat Surveys Limited being standard terms of business as issued by the YDSA (March 2010 edition). Copy issued to Mrs Jane Smith on receipt of instruction to survey. Further copy enclosed.

2.2 The vessel was seen in covered dry dock with bostocks giving approximately 475mm clearance to the ground which enabled reasonable access to the base plate.

2.3 Good access was provided to the vessel's hull side.

2.4 The hull had not been pressure washed prior to the survey which can hamper the identification of possible faults.

2.5 Linings and floor coverings were all fixed in place and not removable. Covered, unexposed or inaccessible parts of the structure have not been inspected. No dismantling has been carried out except for the removal of normally removable panels and hatches. It therefore has to be appreciated that significant areas of the internal structure of the vessel remained unavailable for close examination due to fastened down cabin floors, bulkheads, linings, lockers and other fixed elements of construction.

2.6 Based on the inspection, total water integrity of the vessel cannot be confirmed.

2.7 Holding tanks have not been filled or pressure tested nor have contents been tested.

2.8 Observations are as made on the day of survey and unless stated, are made following visual / audible / light manual force and functional testing. Functional testing does not encompass full cycle testing. No ongoing guarantee or warranty is given or implied.

2.9 This survey does not cover planning for a service / maintenance programme although guidance maybe given in some areas.

2.10 Compliance with the Boat Safety Scheme does form part of this survey.

2.11 Compliance with the Recreational Craft Directive does not form part of this survey.

2.12 This is a survey on the vessel concerned. In general terms the vessel is to be used on the inland waterways of the United Kingdom. Suitability for any particular inland waterway is not confirmed within this survey.

2.13 Highlighted points are the express opinion of the undersigned surveyor against facts gathered during the survey.

2.14 **Hull Integrity Requirement**: Should be rectified immediately as hull integrity is compromised.
Hull Integrity Recommendation: Indicates hull integrity could be compromised in the event of an unforeseen circumstance.
Hull Integrity Advisory: Items that if not rectified may accelerate hull deterioration.
Recommendation: Items not related to the hull that you may wish to investigate further.
Boat Safety Scheme (BSS): Points that should be rectified for the vessel to meet compliance with the BSS.

3 General Description

3.1 'Boat 2', a cruiser stern narrowboat, reported by the broker as first registered in 1999 with shell manufacture and fit out by Heron Boats.

3.2 Canal River Trust (CRT) index number 54321; painted on the upper rear cabin side.

3.3 Riveted plate on the rear cabin bulkhead gives the HIN number as GBHBSHBZ52J99.

3.4 The vessel is a conventional flat bottom plate, all welded, steel narrowboat.

3.5 The swept bow includes a fabricated stem post, and stern with rounded counter.

3.6 The cabin sides (4mm) and cabin top (4mm) are of conventional welded steel plate construction with formed handrail to the cabin top.
Measured nominal principal dimensions:

3.7

Length:	17.01 metres (56')
Turn of Bow	530mm (21")
Start of Swim	710mm (28")
Skeg	740mm (29")

4 External - Hull, Deck and Cabin

4.1 General

Cabin

4.1.1 Exterior cabin top and sides are seen as generally painted to a good standard on visual inspection.
~ Some slight corrosive activity is present.

4.1.2 Two covered cabin top storage boxes, sighted but not inspected.

4.1.3 Cabin side steps; working correctly and found secure when applying a force.

Hull

4.1.4 The hull above the waterline is painted; scuff marks are consistent with normal boating activity. No major dints are observed. Blacking above the waterline and gloss paintwork is patchy.

4.1.5 The hull, at and below the waterline, was sample thickness tested using a Tritex multigauge 5600 ultrasonic thickness gauge. Any defects found are noted below along with suggestions and recommendations.

4.2 **Base plate**

4.2.1 Found with a covering of the protective paint, light covering of detritus and minimal rust blisters.

4.2.2 Sample thickness ranged 9.6 – 9.9mm.

4.2.3 Corrosive activity to the base plate is seen as minimal.

4.2.4 A good all round sacrificial edge is provided.

4.2.5 For the best protection the maintenance programme should continue providing the base plate with the protective paint system; longevity will be helped.

4.3 **Uxter**

4.3.1 Found painted, with a light covering of detritus and no rust blisters.

4.3.2 Sample thickness readings ranged 9.4 – 9.9mm.

4.3.3 Any corrosive activity is seen as minimal.

4.3.4 A satisfactory sacrificial edge is provided.

4.4 **Hull sides**

4.4.1 Found painted, with a light covering of detritus and no active rust blisters.

4.4.2 Thickness readings, taken at metre intervals along the waterline and chine, ranged 5.8 – 6.1mm.

4.4.3 Sample areas cleared finds no concerning corrosive activity.

4.4.4 Guards, on, above and below the waterline, are fully welded to the top and bottom edge.

4.4.5 The vessel would benefit from a fresh application of correctly applied protective paint. Some of the current paint is not well adhered.

4.4.6 ***Hull Integrity Recommendation:***

- *After good preparation correctly apply a good quality protective paint system to the vessel's hull. A two pack epoxy system is preferred.*

4.4.7 The bow thruster tube, approximately 280mm diameter, has fixed guards either end of the tube; viewing access is limited. From that sighted some rust blisters are sighted. The bow thruster should be accessed to enable an assessment and the application of the protective paint system. The tube should remain accessible.

4.4.8 ***Hull Integrity Recommendation:***

- *Access the bow thruster tube; after assuring good condition apply the protective paint system.*

4.5 **Cathodic protection**

4.5.1 The vessel has three sets of main anodes. Progressive wastage indicates these being added over a number of years. Collectively a good material mass is being provided with a new set not required at this time.

4.6 **Hull Apertures**

4.6.1 Distance above the waterline has been recorded as seen on the day of survey. Measurements should be reassessed with tanks and storage spaces full.

4.6.2 Any internal pipework and fittings to apertures below 250mm to the waterline should be routinely checked for sound, good condition. Any push fit pipework should be replaced with screwed, glued or clamped fittings. Required weedhatch height is no less than 150mm.

4.6.3 The weedhatch would not disengage. Height above the waterline is in excess of 150mm. Within the vessel the weedhatch turret is found painted and considered sound on hammer testing.

4.6.4 ***Hull Integrity Advisory:***

- *Access the weedhatch; ensure good condition, and provide an effective seal.*

4.7 **Rudder and steering**

4.7.1 'T' section skeg, welded to the base plate. A leading edge could be provided.

4.7.2 Thick walled bottom bearing found without play.

4.7.3 Rudder blade (10mm) with wash deflection plates, welded to the rudder post.

4.7.4 The rudder tube is welded to the counter. With the rudder post in place, access for viewing the rudder tube is restricted.

~ With the rudder tube passing through the diesel tank it is not directly connecting with the vessel's interior.

~ The routine maintenance programme should include the rudder tube receiving good preparation and an application of the protective paint system.

4.7.5 Top bearing found with no concerning movement.

4.7.6 Traditional style swan's neck with brass tiller bar, tiller pin and wood handle, found in good order.

4.8 **Propeller and stern gear**

4.8.1 Three bladed, yellow metal propeller with retaining nut and split pin.

~ Weight testing the stern tube bearing found no concerning wear movement.

~ The propeller shaft rotated freely by hand and is considered straight and true.

~ The propshaft was not withdrawn for inspection.

4.9 **Internal access to hull**

4.9.1 No access to the base plate was located from within the main cabin area. An access point should be provided, in at least the rear main cabin space, to allow assessment and the removal of collected water.

4.9.2 **Hull Integrity Advisory:**

- *Provide access to the base plate in the rear cabin area to allow assessment and the removal of collected water.*

4.9.3 The bow thruster area is covered by a bolted access panel. The area has not been assessed. No bilge pump is provided in this area.

4.9.4 The engine bay area is found comparatively well painted. The bilge area is found free of water. The stern tube bearing is not seen dripping water.

4.10 **Front & Rear deck**

4.10.1 Front deck with hardwood cratch with large clear panel. The hardwood cratch would benefit from some maintenance.

~ The cratch cover was not fully inspected or tested. The cover has some torn areas.

4.10.2 The front deck area is seen as generally well painted. Solid rubber matting below the open grit matting is allowing moisture to be retained which is causing some corrosive activity. The solid matting could be removed.

4.10.3 Steel rear deck area; found clean, tidy and well painted.

4.10.4 Deck boards over the engine bay area; found in good order.

4.10.5 Rear cabin steel double doors and steel top slide, all with wood inner linings; found in good order. Water ingress into the cabin space from around the slide is present.

4.10.6 Rear pram cover observed in good condition but not fully tested.

4.11 **Mooring and fender arrangements**

4.11.1 Forward 'T' stud with fair leads found secure.

4.11.2 Aft dollies, found secure.

4.11.3 Cabin top centre ring with fair leads found secure.

4.11.4 Inset in the gunnel fender anchor points, found complete.

4.11.5 Front and rear fender with welded on cleats, chains & shackles found complete.

4.11.6 A cut through safety chain link is provided to the forward fender as a safety measure to guard against being hung-up on lock gates.

5 Engine and Electrical Supply

5.1 **Engine and installation**

5.1.1 The inspection of the engine is limited to the inspections as listed. It is not a full marine engine test. No guarantee or warranty is given or implied. The services of a marine engineer will be required if a detailed inspection and test is required.

5.1.2 As confidence builds, when first using 'Boat 2' for long periods, make regular visual checks within the engine bay to hoses etc and frequently check oil and coolant levels.

5.1.3 The Lister, Canal Star, four cylinder, water cooled diesel engine with PRM gearbox and propshaft coupling, was visually observed with and without the engine running.

5.1.4 Engine oil is comparatively black and thick in texture.

5.1.5 No signs of water under the rockerbox filler cap.

5.1.6 Header tank with a good quantity of water.

5.1.7 Skin cooling tank on the port swim.

5.1.8 Drip tray area found dry.

5.1.9 The Morse control lever is worn.
5.1.10 The engine started with comparative ease, a little smoky which quickly cleared. The engine was operated for approximately 50 minutes with no concerns raised.
5.1.11 Noise from the engine indicates the drive plate requires replacement.
5.1.12 A diesel isolation label is required.
5.1.13 ***Boat Safety Scheme:***

- *Fit a diesel isolation label in clear, open view.*

5.1.14 Particularly if engine maintenance history is unknown it is recommended to undertake a full engine service and assessment.
5.1.15 ***Recommendation:***

- *Undertake a full engine service and assessment. Replace the suspected worn drive plate.*

5.2 Electrical 12 volt system (DC)

5.2.1 The inspection of the electrical system is limited to the inspections as listed. It is not a full marine electrical system test. The services of a marine electrician will be required if a detailed inspection and test is required.
5.2.2 One starter battery and four 6 volt Trojan domestic batteries are located on the port uxter plate. The Trojan batteries have not been designed for the provided battery box with the current arrangement not allowing the battery lid to fit. Battery terminal protection is required.
5.2.3 The bow thruster battery, located above the bow thruster, is provided with poor restraint and terminal protection.
5.2.4 ***Boat Safety Scheme:***

- *Provide the starter, domestic and bow thruster battery with terminal protection.*
- *Provide restraint to the bow thruster battery.*

5.2.5 It should be verified that all cables from the starter / domestic batteries on the starboard uxter plate pass through the battery isolator. If allowed to by-pass the isolator they need to be provided in-line fuses close to the batteries.
5.2.6 Electric cable passing through the steel deck above the bow thruster is not correctly sleeved.
5.2.7 ***Boat Safety Scheme:***

- *Confirm cabling bypassing battery isolator is allowed to do so. If allowed, provide in-line fuses close to the battery.*
- *Sleeve electric cables passing through the steel deck above the bow thruster.*

5.2.8 Batteries were found holding a good charge and being provided with a charge with the engine running.
5.2.9 The ongoing condition of the batteries cannot be guaranteed and, in any event, should be considered as consumable items.
5.2.10 The bilge pump was heard to operate.
5.2.11 The tunnel light, navigation lights and tail light were seen to operate.
5.2.12 The horn was heard to operate.
5.2.13 Most internal lighting was seen working. A cabin top light in the bedroom and a rear bulkhead side light in the dinette failed to work.

5.2.14 The larger under worktop Shoreline fridge was heard operating and the inside light was lit. The smaller unit was heard to operate; it does not have an internal light.
5.2.15 Any 12 volt sockets, cigarette style sockets, TV and radio equipment have not been tested.
5.2.16 A switch panel to operate the bow thruster was not identified.
5.2.17 ***Recommendation:***

- *Verify the correct operation of the bow thruster.*

5.3 **Electrical 230 volt system (AC)**

5.3.1 A 230 volt supply is provided by shoreline socket with short lead located on the rear starboard bulkhead and Victron 3kw inverter with combined 120 amp battery charger.
5.3.2 A combined 30 miliamp RCD (Residual Current Device) and 16 amp MCB (Miniature Circuit Breaker) is provided.
5.3.3 A Galvanic isolator is sighted.
5.3.4 Power is confirmed to a random selection of sockets tested whilst using both the inverter and shoreline.
5.3.5 Whilst connected by a shoreline connection battery charging is confirmed.
5.3.6 The bow thruster battery is charged by a Sterling 30 amp battery charger located at the base of the forward, starboard corner cupboard in the lounge. The charger is confirmed as supplying a charge to the battery.

5.4 **Gas system**

5.4.1 Forward gas locker, containing two 13kg propane gas bottles connected to an automatic changeover, bulkhead mounted regulator.
5.4.2 Gas pipework runs down the underside of the port gunnel into the galley where it 'T's to supply, via individual isolation valves, a Vanette 4000/2 hob and Vanette GG 7000 oven / grill, before continuing to the rear galley area to supply, via an isolator, an Alde balanced flue gas boiler.
5.4.3 The gas locker is reasonably well painted, with some corrosive activity to the lower sides.
5.4.4 Holes in the gas locker bulkhead next to the gas pipe bulkhead fitting need to be appropriately sealed.
5.4.5 The gas locker lid hinges are failing.
5.4.6 No gas bottle restraint is being utilized.
5.4.7 On testing the gas system a large leak is detected; indicated as the regulator.
5.4.8 The air intake pipe to the Alde has failed and needs replacing.
5.4.9 A blue stable flame pattern with all burners running is not confirmed.
5.4.10 ***Boat Safety Scheme:***

- *Appropriately seal holes found in the gas locker bulkhead next to the gas pipe bulkhead fitting.*
- *Provide and use gas bottle restraint.*
- *Provide a leak free gas system.*
- *Ensure a blue stable flame pattern with all burners operating.*

6 Cabin Interior and Equipment

6.1 Cabin general and décor

6.1.1 The interior is seen as constructed to a good standard. Veneer lined MDF has been used for much of the construction. MDF, unless well sealed, does not cope well with the introduction of moisture / water as evidenced in a number of locations.

6.1.2 Internal doors and drawers were found to operate without concern.

6.1.3 During the time of survey no areas of the underlying sole gave concern when walked upon.

6.1.4 Rockwool insulation is confirmed being sighted around the inner skin fittings.

6.1.5 General layout within cabin area leading from the front:

Lounge:
Galley:
Dinette:
Shower room:
Rear sleeping area:

6.2 Fresh water plumbing and delivery

6.2.1 The remote, domestic water tank is located under the front deck. The water tank filler is located in the middle of the front deck. No vent termination was sighted. The tank is hidden behind fixed linings.

6.2.2 The take off for the tank, stop cock, water pump with in-line filter and accumulator is located at the bottom of the forward, port corner cupboard.
~ The pump sits on an up turned tin lid which contains a small quantity of water. Lower sections of the cupboard as they meet the sole have water ingress deterioration.

6.2.3 ***Recommendation:***

- *Ensure no water leakage problems from domestic water pipework, fittings and equipment in the lower section of the forward, port corner cupboard.*

6.2.4 Hot water is provided by vertical Calorifier located on the starboard uxter plate. Pipework indicates heating is undertaken by the engine (confirmed) and Alde gas boiler.
~ A 230 volt immersion heater is also provided. Dry at time of survey but some signs of water staining around the immersion heater fitting are present.

6.2.5 A supply of hot & cold water is confirmed to the galley sink, wash basin and shower. A cold water supply is also confirmed to the toilet flush and filtered water tap to the galley sink.
~ Wash basin taps are loose.

6.2.6 The inline Gulper pump for shower waste water is located under the rear dinette seating. The pump was confirmed as expelling waste shower water.

6.2.7 Sighted supply and waste water pipework and fittings, were found leak free.

6.2.8 Macerator toilet equipment is hidden behind panelling to the rear of the toilet. The plastic toilet holding tank is located under forward dinette seat. The pump out and vent pipework is hidden behind linings and not seen. From that sighted no signs of leakage or ingress are present. No odour is detected.

6.3 **Cabin heating**

6.3.1 Cabin heating is provided by free standing solid fuel Morso squirrel stove and Alde gas boiler supplying radiators spread throughout the vessel.

6.3.2 The solid fuel stove is fitted in a traditional manner.

~ The glass panel to the main door is broken (cracked).

~ The blanking plate to the rear of the stove has become dislodged.

~ The top of the front facier is cracked.

~ Fire cement around the collar indicates problems.

6.3.3 ***Boat Safety Scheme:***

- *Repair the cracked glass to the solid fuel stove.*
- *Repair the blanking plate to the rear of the solid fuel stove.*

6.3.4 Tiled hearth with some cracked tiles.

~ Tiled surround around the main stove. The back right hand corner of the stove is inset into the tiles. The backing material behind tiles is not confirmed; comment cannot be made on any heat damage which may be taking place behind tiles.

6.3.5 It is recommended to re-site the solid fuel stove and provide / ensure a suitable backing material behind tiles. Reference to the code of practice for the installation of solid fuel stoves in vessels should be made.

6.3.6 ***Recommendation:***

- *Re-site the solid fuel stove and provide / ensure a suitable backing material behind tiles.*

6.3.7 With the Alde gas boiler not operated, heat to the radiator system was not confirmed.

6.3.8 On visual inspection some water damage is present to the Alde gas boiler. No water damage is sighted to radiators and pipework.

6.3.9 The central heating system should be periodically flushed and provided with new coolant.

6.3.10 ***Recommendation:***

- *Ensure the central heating radiator system is correctly being provided with heat from the Alde gas boiler.*
- *Investigate water damage to the Alde water jacket.*

6.4 **Windows, side doors and hatchways**

Gold anodised rectangular and circular framed windows with hopper openings. Externally, the rear circular framed window, to port, has silicone around its fitting with the cabin side, indicating a water ingress problem.

6.4.1 Internally, all linings around window apertures have condensation / water ingress staining / deterioration. Window frames should be monitored for water ingress in times of rain.

6.4.2 Some securing bolts to hopper windows are stiff to operate, seized or missing.

6.4.3 ***Recommendation:***

- *Remove all window frames and after good preparation re-seal back in place.*

6.4.4 Steel side doors to starboard with wood lined pads found to correctly operate.

6.4.5 Water ingress through the side doors is taking place which has caused deterioration to lining material below. The framework to the side doors as constructed will be prone to allowing water ingress. Sealing with silicone may help prevent water ingress but is unlikely to be fully eradicated without a change in design.

6.4.6 ***Recommendation:***

- *Take action to prevent water ingress into the cabin space through the side door aperture.*

6.5 **Cabin ventilation**

6.5.1 Overall, cabin ventilation is found compliant with the requirements of the Boat Safety Scheme.

6.5.2 Lower front cabin doors grills and three mushroom vents to the cabin top are found blocked.

6.5.3 Given the considered condensation that has been present causing damage to wood lining and trim as evidenced, a good level of ventilation should be provided at all times.

6.5.4 ***Boat Safety Scheme:***

- *Clear all blockages found behind ventilation grills and cabin top mushroom vents.*

6.6 **Safety equipment**

6.6.1 Three fire extinguishers, compliant with Boat Safety Scheme requirements were sighted.

~ With no service history consideration to replace all fire extinguishers should be made.

6.6.2 The compliant fire blanket requires its pull tabs exposing.

6.6.3 ***Boat Safety Scheme:***

- *Expose the pull tabs on the fire blanket.*

6.6.4 Any smoke and CO detectors currently on the vessel have not been tested. If history is unknown any provided should be replaced. Smoke detectors marked as 'Toast Proof' work best on boats.

~ A good source of guidance on fire and CO prevention can be found on Boat Safety Scheme issued leaflets and from the home page of the Boat Safety Scheme, www.boatsafetyscheme.org

6.6.5 Always follow manufacturer installation instructions.

7 Findings of Survey

Highlighted points are the express opinion of the undersigned surveyor against facts gathered during the survey. As with any vessel a regular & robust maintenance programme is required.

Hull Integrity Requirement:

None

Hull Integrity Recommendation:

1 After good preparation correctly apply a good quality protective paint system to the vessel's hull. A two pack epoxy system is preferred.
2 Access the bow thruster tube; after assuring good condition apply the protective paint system.

Hull Integrity Advisory:

1 Access the weedhatch; ensure good condition, and provide an effective seal.
2 Provide access to the base plate in the rear cabin area to allow assessment and the removal of collected water.

Recommendation:

1 Undertake a full engine service and assessment. Replace the suspected worn drive plate.
2 Verify the correct operation of the bow thruster.
3 Ensure no water leakage problems from domestic water pipework, fittings and equipment in the lower section of the forward, port corner cupboard.
4 Re-site the solid fuel stove and provide / ensure a suitable backing material behind tiles.
5 Ensure the central heating radiator system is correctly being provided with heat from the Alde gas boiler.
6 Investigate water damage to the Alde water jacket.
7 Remove all window frames and after good preparation re-seal back in place.
8 Take action to prevent water ingress into the cabin space through the side door aperture.

Boat Safety Scheme (BSS):

1 Fit a diesel isolation label in clear, open view.
2 Provide the starter, domestic and bow thruster battery with terminal protection.
3 Provide restraint to the bow thruster battery.
4 Confirm cabling bypassing battery isolator is allowed to do so. If allowed, provide in-line fuses close to the battery.

5 Sleeve electric cables passing through the steel deck above the bow thruster.
6 Appropriately seal holes found in the gas locker bulkhead next to the gas pipe bulkhead fitting.
7 Provide and use gas bottle restraint.
8 Provide a leak free gas system.
9 Ensure a blue stable flame pattern with all burners operating.
10 Repair the cracked glass to the solid fuel stove.
11 Repair the blanking plate to the rear of the solid fuel stove.
12 Clear all blockages found behind ventilation grills and cabin top mushroom vents.
13 Expose the pull tabs on the fire blanket.