J F Pope BSc CEng MRINA & W McMurray MABSE
Marine Surveyors - Euro Marine Consultants Ltd

Survey Report Surv/02202

SURVEY REPORT

On the narrowboat

"Sparkbrook"

For

[redacted]

1 This is to certify that W McMurray, Marine Surveyor, acting for and on behalf of the undersigned Surveyor, acting on the instructions of our client, [redacted], carried out a pre-purchase condition survey on the narrowboat "Sparkbrook" at Harral Brokerage Services Limited, Northwich, Cheshire, on 19 July 2002.

2 This report is issued on the understanding that the undersigned Surveyor is legally bound to the above-named client and not to any subsequent holder of this report. Copyright and intellectual rights of this report remain the property of the undersigned Surveyor and Euro Marine Consultants Limited.

3 No opinion is given or implied on the condition of any part of the structure of the vessel or its equipment which was obscured, inaccessible, or otherwise unavailable to the undersigned Surveyor at the time of the survey.

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for and on behalf of
J F Pope BSc CEng MRINA MABSE & W McMurray MABSE
Marine Surveyors- Euro Marine Consultants Limited

19 July 2002

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1 Introduction

1.1 Narrowboat name
"Sparkbrook"

1.2 Narrowboat identity
The name "Sparkbrook" is sign written on the aft panels. The British Waterways index number 75994 is painted on the cabin sides. The narrowboat displays British Waterways pleasure craft licence (number 00005, expiring May 2002) which confirms the name and index number.

1.3 Type of survey
On the instructions of our clients, an out-of-water condition survey for purchase purposes.

1.4 Date and place of survey
The survey was undertaken on 19 July 2002 at Wincham Wharf, Northwich, Cheshire.

1.5 Instructing client
The survey was commissioned by [redacted] The instructing client was not in attendance for the survey.

1.6 Broker
The narrowboat is understood to be on brokerage with Harral Brokerage Services Limited of 220 Manchester Road, Northwich, Cheshire, CW9 7NT.

1.7 Financial Details
The narrowboat is understood to be on brokerage for the sum of £35,000.00 subject to survey.

2 General Description

2.1 "Sparkbrook" is a traditional style narrowboat which is understood to have been built by Olds of Northampton, and fitted out by Stephen Goldsborough in 1988 as a passenger boat. The British Waterways index number 75994 was issued in 1988, this supporting the claimed date of build.

Photograph 1

"Sparkbrook" – port forward.

Photograph 2

"Sparkbrook" – starboard forward.

2.2 The narrowboat has the following principle dimensions

Length overall	21,3 m (70 ft)
Beam	2,08 m (6 ft 10 ins) nominal
Draught forward	0, 432 m (17 ins)
Draught aft	0,510 m (24 ins)

The measurements have been verified as part of the survey. The draughts have been estimated from witness marking on the hull sides, but are considered to be reasonably accurate.

2.3 The narrowboat is of fully welded steel construction with a full length steel superstructure.

2.4 The narrowboat is of conventional layout, this comprising of a foredeck of length 0,9 m (35,5 ins), a self-draining well deck of length 1,8 m (71 ins), a full-length superstructure, and a traditional style, open aft deck of length 0,95 m (37,5 ins) with an elliptical transom.

2.5 The accommodation spaces are fully fitted for passenger carrying and are arranged as a trip boat to provide, from forwards, an open plan cabin, a toilet to midships, with a galley and bar area aft. The helm position is located aft with no direct access to the cabin.

2.6 The narrowboat is powered by a single Thornycroft four cylinder diesel engine, serial number 10847, and a Newage PRM gearbox, serial number 0504017 F00255. The engine and gearbox are located under the helm position.

2.7 The narrowboat is not subject to the requirements of the Boat Safety Scheme as a passenger carrying boat.

2.8 The narrowboat is not subject to the requirements of the Recreational Craft Directive.

3 Access and Limitations

3.1 The narrowboat was surveyed whilst in and out of the water in dry dock, supported on plates. Access to the bottom plating was generally restricted except locally to the hull sides. The bottom plates are typically unpainted and are now scaled and rust marked. The hull side, swim, transom, and counter plating has recently been treated with a bitumen-based paint system (commonly referred to as 'blacking'). A close inspection of the shell plating could only be undertaken in locations where the bitumen paint coating and surface debris was removed by means of a scraper. Any conclusions and recommendations given within this report regarding the condition of the plating relate only to areas subject to a close examination. The hull, steering gear, and stern gear have been examined. The engine and gearbox have been inspected and tested by means of limited trials only. The weed hatch has been inspected. Handling and manoeuvring trials have not been undertaken. The electrical installations have been examined, and where possible, tested by means of powering up only. The liquefied

petroleum gas installation has been examined and tested by functional trials only. The water installation has been examined and tested by means of functional trials only. The fire extinguishers and fire blanket have been examined.

3.2 The weather at the time of the survey was wet with an ambient temperature of 10 °C to 12 °C. The narrowboat was also surveyed under cover. The temperature in the dry dock was between 10 °C and 12 °C.

3.3 The narrowboat "Sparkbrook" was examined using visual and non-destructive techniques where appropriate. It is advised that fixed items, furniture, and panels were not removed to allow for examination of the structure behind; loose floors and coverings were removed where possible; accessible lockers and spaces were examined. Where structural items, fittings, and equipment are described as being in sound, serviceable, good, or fair condition it should be noted that allowances have been made for blemishes to be expected in a craft of this age and nature. Woodwork or other parts of the structure which were covered, unexposed, or inaccessible have not been inspected and therefore can not be reported as being free from defect.

4 Hull Survey

4.1 The general style of construction of the narrowboat is to a good standard with clean, unassuming lines and a reasonable hull form. A degree significant weld distortion is evident to the base, hull, and cabin sides. The weld seams are generally dressed but remain apparent.

4.2 The hull is of conventional welded flat plate steel construction, this comprising of flat bottom plates and slab sided hull plates with sight tumblehome above the upper full length rubbing strake leading to a square gunwale. The cabin sides have slight tumblehome and are inset from the hull sides to form full-length gunwales of nominal width 100 mm (4 ins). The cabin roof is slightly radiused and is fitted with integral box section handrails with drain cut-outs. The hull construction includes a foredeck, a peak space locker, a self-draining well deck, a full length steel cabin, and a traditional style, open aft deck with a rounded transom. The forward and aft swims are of adequate length. The narrowboat is fitted with an integral water tank located under the well deck, an integral fuel tank located across the transom, and an integral gas locker located to port aft superstructure. An independent waste holding tank is located under the toilet.

4.3 Details of the steel specification, hull framing, and cabin framing have not been stated; however, the general appearance of the narrowboat would suggest that these are consistent with craft of this age and type.

4.4 The bottom plates are typically unpainted and are now lightly fouled and lightly marked with corrosion by-products. The hull side, swim, transom, and counter plating has previously been blacked and is now lightly fouled with marine growth and similarly marked with corrosion by-products, this being more apparent along the waterline where the paintwork is damaged or deteriorated, leaving the steelwork exposed. The hull sides are lightly scuff-marked locally to the forward and aft swim entries.

Photograph 3

Bottom plates showing build-up of corrosion by-products.

Photograph 4

Hull sides showing scuff marking.

4.5 The hull, from a general visual examination is, generally free from indications of damage, deterioration, and repair. The hull is locally indented; however, the indentations are cosmetic in nature, and should give no cause for concern.

4.6 The bottom and counter plates protrude past the line of the hull side, swim, and transom plates to form sacrificial chines or wear edges, commonly referred to as footings. The footings are in sound condition and are free from significant wear and feathering. Hammer testing of the footings does not reveal the presence of any significant defects.

4.7 The narrowboat is fitted with a full-length square edge half round steel rubbing strake, this being continuous around the transom. Additional quarter length rubbing strakes are fitted, three forward and one aft. The rubbing strakes are in sound condition. The rubbing strakes appear to remain adequate at this time. Hammer testing of the rubbing strakes does not reveal the presence of any significant defects.

4.8 As noted above, the bottom plates are typically unpainted. The hull side, swim, transom, and counter plating have previously been blacked. The blacking is in fair condition, with scrapes and scuff marks apparent. The hull should be cleaned back and reblacked at this time. Consideration should be given to painting the bottom plating. Consideration should be given to either painting the hull with a compatible metal primer in addition to the blacking, or preferably to the use of either a two-pack epoxy paint system or a proprietary paint system such as Leigh's Paints 'Resistex'.

***Recommendation** – the narrowboat requires descaling and repainting at this time (P).*

***Recommendation** – consideration should be given to painting the bottom plates (A).*

Recommendation *– consideration should be given to protecting the hull plating by means of a compatible metal primer, or preferably to the use of either a two-pack epoxy paint system or a proprietary paint system such as Leigh's Paints 'Resistex' (M).*

Photograph 5

Hull sides showing scuff marking.

Photograph 6

Hull sides showing scuff marking.

Photograph 7

Hull sides showing scuff marking.

4.9 Plate thickness measurements have been obtained using a Portagauge ultrasonic thickness meter (calibrated to an accuracy of ±0,1 mm). The measurements have been taken on a random basis on accessible sections of the hull, base plates, swim plates, counter plates, and the superstructure, together with indicative readings which include the paint thickness on the cabin sides, cabin roof, and bulkheads. The range of thickness readings are given in table 1.

Table 1 – Ultrasonic Thickness Measurements

Location	Thickness measurements
Bottom plate	9,7 mm to 9,8 mm
Side plate	6,0 mm
Counter	5,9 mm to 6,0 mm
Swim plate	5,7 mm to 5,9 mm
Cabin sides	2,7 mm*
Cabin roof	2,4 mm*
Bulkheads	2,4 mm*

* – measurements include paint thickness

The general pattern of the ultrasonic thickness measurements indicates an original steel specification of 10,0 mm bottom plates, 6,0 mm hull side, and swim plates, and a 3,0 mm superstructure.

4.10 Where accessible, the bottom, hull side, swim, transom, and counter plating is generally in sound condition, free from significant pitting and wastage; however, a degree of light pitting is apparent in the hull plating. Although of no concern at this time, reference should be made to comments above regarding painting of the hull plates.

4.11 Hammer testing of the accessible areas of the bottom, hull side, swim, transom, and counter plating does not reveal the presence of any significant defects.

4.12 The skeg comprises of a channel section which is welded to the underside of the bottom plates. The skeg is in reasonable condition.

4.13 The shell and framing within the engine space are in reasonable condition with slight flaking of paintwork apparent. The engine bearers are in sound condition and appear to be adequately tied in to the hull structure.

4.14 The cabin linings could not been removed at the time of the survey to allow for an inspection of the hull and cabin structure. The cabin sole could not be lifted to allow for an inspection of the bottom framing and ballasting arrangements. This lack of access is typical for most narrowboats.

5 Hull Penetrations

5.1 The narrowboat is fitted with a number of openings and hull penetrations for drainage and discharge purposes. Where examined, the openings and hull penetrations are in sound condition and are set at an adequate height in relation to the normal waterline.

5.2 The narrowboat is not fitted with hull penetrations below the waterline.

6 Sacrificial Protection

6.1 The narrowboat is fitted with a total of four sacrificial anodes, these located two forward and two aft. The overall condition of the sacrificial anodes is such that they should remain adequate until the next docking within a two-year period.

***Recommendation** – the condition of the sacrificial anodes should be assessed at each docking and replacement sacrificial anodes fitted as found necessary (M).*

Photograph 8

Sacrificial anode.

6.2 It is recommended, for a narrowboat of this size and for a two year protection system, that a minimum of four 2,0 kg anodes are fitted (for inland waterways use these should be magnesium). For additional protection, two 0,3 kg disc anodes should be fitted to the rudder for protection of the stern gear (this is not, however, common practice for inland waterways craft). It is not possible to fit anodes midships on this particular narrowboat.

7 Steering Gear

7.1 The steering gear is a conventional arrangement comprising of a balanced flat plate rudder which is connected to a rudder stock and operated by a swan-necked tiller arm from the aft deck.

7.2 The rudder is of flat plate construction of nominal thickness 10,0 mm. The rudder plate appears to be of adequate shape, size, and balance. The rudder plate is in poor condition with the connection to the rudder stock damaged.

***Recommendation** – the rudder plate fixing arrangements should be examined and repaired as found necessary (P).*

Photograph 9

Rudder plate.

7.3 The rudder stock is of round bar construction and appears to be of adequate diameter. The rudder stock is housed within a tubular rudder trunk between the counter and the aft deck. The rudder trunk is inaccessible for inspection. The rudder stock is, where accessible, in poor condition, having been damaged in a manner which has bent the rudder stock at the counter.

Recommendation – the rudder stock to be examined and either straightened or replaced as found necessary (P)

7.4 The swan-necked tiller arm is bolted to a boss which is welded to the rudder stock. The tiller arm is in sound condition.

7.5 The rudder upper bearing comprises of a proprietary bearing which is bolted to the aft deck. The rudder upper bearing is in reasonable condition with no play evident. The lower bearing comprises of a steel bush which is welded to the skeg to form a housing for a pintle extension of the rudder stock. The lower bearing arrangements are in sound condition.

Recommendation – the rudder upper bearing should be examined and greased as found necessary (P).

Recommendation – the condition of the rudder lower bearing arrangements should be checked when the rudder stock is repaired (P)

Photograph 10

Rudder lower bearing arrangement.

7.6 Full helm operation of the steering gear could not be verified due to the damage to the rudder stock.

***Recommendation** – extended handling and manoeuvring trials should be undertaken in order to determine the overall effectiveness of the steering arrangements (P).*

8 Weed Hatch

8.1 A weed hatch is fitted in the counter plates directly over the propeller. The weed hatch comprises of a raised trunk and an upper perimeter flange which is closed by means of a flat plate cover and secured by means of a quick-release mechanism. Access to the weed hatch is good.

Photograph 11

Weed hatch.

8.2 The weed hatch cover plate is secured by means of a quick-release mechanism which comprises of a cross bar with a central tee stud. The cross bar and the tee stud are sound condition.

8.3 The cover plate is in sound condition

Photograph 12

Weed hatch with cover removed.

Photograph 13

Weed hatch cover plate and integral splash plate upended.

8.4 The weed hatch trunk is in reasonable condition, showing signs of light pitting and surface corrosion but appearing to remain adequate at this time.

***Recommendation** – the weed hatch trunk should be descaled, closely inspected, and repainted at this time (P).*

Photograph 14

Weed hatch trunk – note the surface corrosion and light pitting.

8.5 A neoprene rubber strip gasket is bonded to the underside of the cover plate. The gasket is in poor condition and will not be effective in providing a seal between the cover plate and the upper perimeter flange.

***Recommendation** – a new weed hatch gasket should be fitted at this time (P).*

Photograph 15

Weed hatch gasket – note the poor condition of the gasket.

8.6 An integral splash plate is welded to the underside of the cover plate. The splash plate is in reasonable condition, requiring descaling and repainting.

***Recommendation** – the weed hatch splash plate should be descaled and repainted at this time (M).*

8.7 The weed hatch trunk extends approximately 270 mm above the counter plate, giving an effective freeboard of 300 mm relative to the normal waterline. These dimensions are adequate; however, care should be taken not to leave the weed hatch cover plate loose when cruising.

9 Mooring & Fender Arrangements

9.1 Mooring arrangements comprise of a single tee stud forward and two bollards aft. The tee stud and bollards are in sound condition and appear to be adequately connected to the hull structure. Tee stud are also fitted to port and starboard midships – these are in sound condition.

9.2 Mooring warps are fitted forward, one forward and one aft. The warps are in reasonable condition.

9.3 An anchor and chain are not carried.

9.4 The narrowboat is fitted with a rope button bow fender. The bow fender is in fair condition. A rope button stern fender is fitted. The stern fender is in reasonable condition; however, the bow fender is not secured in a manner which will allow movement up and over the bow.

***Recommendation** – the bow fender should be secured in a manner which will allow movement up and over the bow in the event of catching on obstructions such as lock gates, etc. (U).*

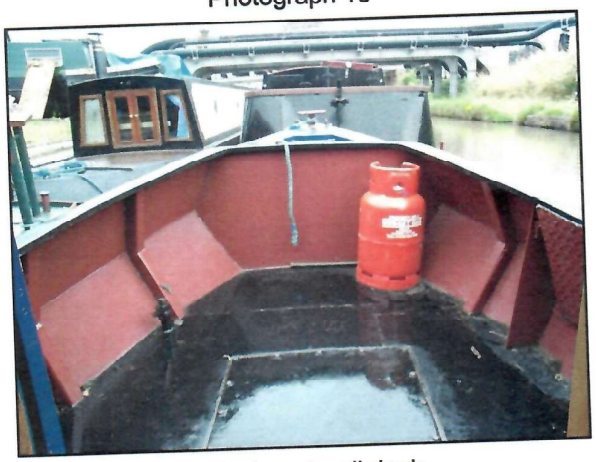
10 Decks and Lockers

10.1 The narrowboat has a foredeck which incorporates a peak space locker. The foredeck and peak space locker are in fair condition, requiring descaling and repainting.

***Recommendation** – the foredeck and peak space locker require descaling and repainting (P).*

10.2 A self-draining well deck is situated immediately forward of the cabin bulkhead. The well deck is in sound condition. Drain apertures are fitted to port and to starboard in the hull sides adjacent to the cabin bulkhead; the apertures are adequate sized to shed water from the deck.

Photograph 16



Foredeck and well deck.

10.3 The narrowboat has a traditional style aft deck. The aft deck is in sound condition.

10.4 Covers are not apparent for the forward and aft decks.

11 Superstructure

11.1 The superstructure of the narrowboat comprises of a single full-length steel cabin with steel forward and aft bulkheads. The superstructure is in sound condition with no indications of

damage, deterioration, or repair apparent; however, reference should be made to comments below regarding the poor condition of the paintwork.

11.2 The sliding hatch of size 865 mm by 3 m is fitted in the cabin roof. The hatch appears to be in sound condition but is difficult to operate and is not provided with a means of securing.

Photograph 17

Coach roof sliding hatch.

***Recommendation** – the operation of sliding roof hatch should be improved (P).*

***Recommendation** – the sliding roof hatch should be fitted with a means of securing when closed (P).*

11.3 The forward bulkhead is fitted with double hardwood doors and side windows. The side window panes are not marked to indicate the grade of glass in use – the Boat Safety Scheme requires glazing materials to conform to BS 952: Part 1, or to be of suitable acrylic or polycarbonate material. The doors are in sound condition; however, the starboard door is not protected by paint along the hinged edge. The doors appear to be secure when closed with a dead lock and bolt providing security.

***Recommendation** – the grade of the glass in the cabin forward doors should be verified, or the glass replaced either with glass conforming to BS 952 Part 1, acrylic sheet, or with polycarbonate sheet (A).*

***Recommendation** – the hinged edge of the starboard forward door should be painted (A).*

Photograph 18

Cabin forward doors.

11.4 Doors and hatches are fitted in the cabin sides to port and starboard. The doors are of steel construction with wooden linings internally. The doors are in sound condition. The doors appear to be secured when closed and locked.

11.5 Doors and a hatch are fitted in the cabin aft bulkhead. The doors are of steel construction and are in sound condition. The doors appear to be secured when closed

11.6 Aluminium -framed hopper style sliding windows are fitted to the cabin sides in the main cabin, with top-opening windows fitted in the galley. The windows are in poor condition with catches and seals missing. The windows appeared to be leak-free at the time of the survey; however, the existing seals are showing signs of deterioration. The window panes are not marked as being of an appropriate grade of toughened glass.

***Recommendation** – the missing window catches and seals should be replaced (P).*

***Recommendation** – the grade of glass in the windows should be verified, or the panes replaced with toughened or safety glass (P).*

***Recommendation** – the windows require re-sealing (P).*

Photograph 19

Cabin window – note the missing catch.

11.7 The cabin roof is fitted with integral handrails which are continuous to port and to starboard, except at the drain cut-outs. The handrails are in sound condition.

11.8 The narrowboat is not fitted with tunnel bars.

12 Paintwork

12.1 The narrowboat is painted with a bitumen-type paint to the hull sides up to the upper full length rubbing strake, and maroon gloss to the upper hull sides, gunwales, cabin side, bulkheads, and decks. The cabin roof is painted grey. The cabin sides are decorated with blue panels and cream borders. Refer to comments above regarding the deteriorated condition of the hull blacking. The gloss paintwork is in poor condition and requires repainting at this time.

***Recommendation** – the narrowboat requires repainting (P).*

Photograph 20

Cabin roof showing deteriorated paintwork.

12.2 A slip-resistant treatment has been applied to the gunwales. The slip-resistant treatment is in reasonable condition.

***Recommendation** – the slip-resistant finish will require re-application when the narrowboat is repainted (P).*

13 Accommodation

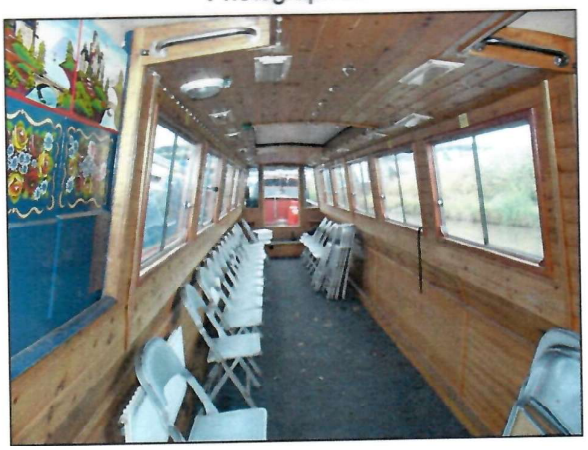
13.1 The accommodation spaces are fully fitted and are arranged as a passenger boat to provide, from forward, an open plan cabin, a toilet, a bar, and an aft galley.

The cabin is open plan. Folding chairs are provided for passenger seating purposes.

Photograph 21

Cabin viewed from forward.

Photograph 22



Cabin viewed from aft.

The bathroom is fitted with a corner hand basin and a pump out toilet.

Photograph 23

Bathroom showing the pump out toilet.

Photograph 24

Bathroom showing the corner hand basin.

The bar area is fitted with a worktop with cupboards under.

Photograph 25

Bar area – viewed from forward.

The galley is arranged in a basic 'L' manner, with a full length worktop along the port cabin side, and is fitted with a double base unit, an inset stainless steel sink, 12-volt refrigerator with drawer over, and a free-standing cooker adjacent to the bulkhead.

Photograph 26

Bar area – viewed from aft.

The galley is arranged in a basic 'L' manner with a full length worktop across the aft bulkhead, a double burner hob, and a stainless steel sink with cupboards under.

Photograph 27

Galley – viewed from forward.

13.2 The cabin is lined with a combination of pine tongue and groove cladding and plywood panels. The linings are in reasonable condition, having been fitted out specifically for passenger trip purposes.

***Recommendation** – the cabin is fitted out and equipped for passenger trip purposes and will require significant modification and expenditure to provide recreational cruising facilities (P).*

13.3 The cabin sole linings could not be lifted to allow for an examination of the cabin sole boards.

***Recommendation** – the cabin sole linings should be exposed to allow for an examination of the cabin sole (A).*

14 Engine Installation

14.1 The engine and gearbox are located in an aft engine compartment. The narrowboat is powered by a single Thornycroft four-cylinder diesel engine, serial number 10847, and a Newage PRM gearbox, serial number 0504017F00255. The engine and gearbox combination should prove adequate for general canal cruising purposes.

Photograph 28

Engine installation.

14.2 The engine and gearbox have not been opened up for examination. The engine oil level is satisfactory. The cooling water level is low; the antifreeze concentration has not been checked. The gearbox oil level is low.

***Recommendation** – the engine cooling water antifreeze concentration should be checked and adjusted as found necessary – this should ideally be between 35% and 40% (P).*

14.3 A limited engine trial has been carried out. The engine appears to function in a satisfactory manner with prompt starting demonstrated from cold and hot. The engine does not have any extraneous noise or vibration, and the exhaust is free from discolouration.

***Recommendation** – extended handling and engine trials should be carried out to verify the condition of the engine and gearbox (P).*

14.4 The engine and gearbox have been visually examined and found, are far as could be seen without any dismantling or opening-up, and except as noted, to be externally In sound condition. This, together with the limited trials, does not, however, constitute a warranty or guarantee as to the condition of the engine, gearbox, and ancillaries. No documentation relating to engine servicing and maintenance was apparent; the dirty condition of the oil filter suggests that a service would be of benefit.

***Recommendation** – the engine and gearbox should be serviced (to include replacement of engine and gearbox oils, replacement engine filters, and replacement fuel filter) by a competent marine mechanic (M).*

14.5 The engine enclosure is not directly vented overboard, leaving an inadequate supply of fresh air for engine combustion, space cooling, and battery ventilation purposes.

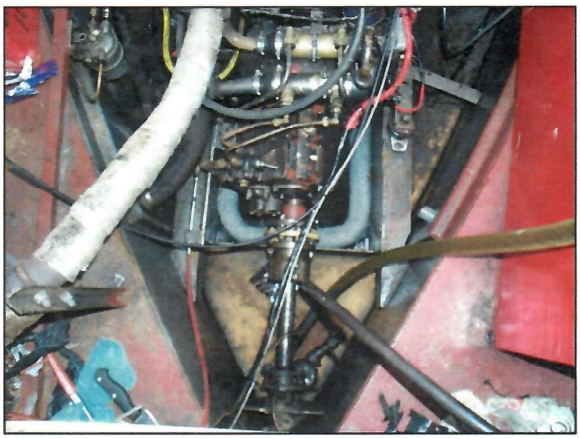
***Recommendation** – the engine enclosure should be vented directly overboard in a manner which provides an adequate supply of air for engine combustion, space cooling, and battery ventilation purposes (P).*

14.6 The engine is directly water-cooled using a port side swim cooling tank. The cooling system, including the tank, pipes, flexible hoses, and hose clamps, is in poor condition. The flexible hoses are showing signs of deterioration. A calorifier has been linked to the engine cooling system for the provision of hot waster when the engine is running; the operation of the calorifier has not been tested. The cooling system appears to function in a satisfactory manner.

***Recommendation** – the engine cooling system flexible hoses should be closely inspected and replaced as found necessary (P).*

14.7 The engine is fitted with a water jacket manifold exhaust system which comprises of a solid section connected to a silencer box which discharges through a port side hull outlet. The exhaust system is fully lagged. The exhaust system appears to be in sound condition (the lagging has not been removed to allow for close inspection of the system) and to be leak-free.

Photograph 29



Engine exhaust system.

14.8 The engine and gearbox are flexibly mounted onto the engine bearers. The flexible mounts are, where accessible, in sound condition. The engine and gearbox brackets are in sound condition.

14.9 An integral oil-tight containment area is formed by the engine bearers and an aft end plate. The oil containment area extends beneath the engine and the gearbox. A bilge pump is correctly not fitted into the oil containment area.

14.10 The engine and gearbox are controlled by an M & M Marine single lever control which is located on a pedestal to port. The control system, including the rods, linkages, and supports, are in poor condition, with the lock nuts loose.

***Recommendation** – the control system should be checked and the loose lock nuts tightened (P).*

Photograph 30

M & M Marine single lever control and instrument panel.

14.11 A basic Thorneycroft instrument panel is located on the pedestal on the port side. The panel is fitted with a start switch, warning lights, temperature gauge, oil pressure gauge, voltmeter, and amps gauge. Switches for the tunnel light, bilge pump, and horn are located on a secondary panel positioned adjacent to the engine panel. The instrument panel and the secondary panel are in sound condition and appear to function in a satisfactory manner.

14.12 The engine is fitted with a pull cable stop arrangement which is operated from the engine instrument panel. The stop arrangement has been tested and is in sound condition.

15 Fuel Tanks and Pipes

15.1 The narrowboat is fitted with a diesel fuel system. An integral mild steel fuel tank is located across the transom. The capacity of the fuel tank is understood to be 170 litres (45 gallons). The tank is fully accessible for inspection. The fuel tank is not suitably marked or stamped to indicate a satisfactory pressure test at the time of manufacture – this is acceptable for existing craft for the purposes of the Boat Safety Scheme. The fuel tank is in sound condition with no leaks apparent.

15.2 The fuel tank is filled by means of a stub pipe with a screwed cap which is located on the port side of the aft deck. The fuel tank filling connection is of adequate diameter. The connection is identified by means of a suitable label. The filling connection is recessed into the aft deck in a manner which prevents spilt fuel from running across the aft deck.

Photograph 31

Fuel tank filling & venting arrangements.

15.3 The fuel tank is vented by means of a stub pipe which terminates on the aft deck immediately forward of the tiller. The vent pipe is connected directly to the fuel tank. The stub pipe is fitted with a gauze flame arrester. The flame arrester fitting is in fair condition cosmetically but remains adequate at this time.

15.4 A dipstick or similar device is not provided for gauging the fuel tank contents.

***Recommendation** – a dipstick or similar device should be provided for gauging the fuel tank contents (A).*

15.5 The fuel tank is fitted with a drain connection. The drain, which is correctly capped, is in sound condition.

15.6 The fuel feed is connected directly to the forward face of the fuel tank. The fuel return is connected to the fuel filter. The tank connections are in reasonable condition with no leaks evident.

15.7 A fuel shut-off cock is fitted in the fuel feed pipe at the connection to the fuel tank. The fuel shut-off cock is in sound condition and appears to function correctly. The location of the fuel shut-off cock is identified by means of a label fitted above the aft deck.

15.8 The fuel pipework is of cold drawn copper tubing with compression fittings used at each joint. The pipework is routed and secured in a competent manner. The pipework and joints are in sound condition. Flexible fuel hoses are used to connect the fixed fuel pipework to the engine. The hoses are of adequate grade and construction but are chaffing where routed adjacent to the engine.

***Recommendation** – the flexible fuel hoses should be replaced (P).*

15.9 A fuel filter is fitted above the port swim cooling tank. The fuel filter is of metallic construction. The fuel filter is in reasonable condition. A water separator is not fitted; however, the fuel filter drain plug can be used for this purpose.

15.10 The fuel installation, including the engine-mounted components, is in reasonable condition, requiring minor attention as noted above. The fuel installation appears to perform in a satisfactory manner with no leaks apparent.

16 Stern Gear

16.1 The stern gear comprises of a single propeller shaft driving a three-bladed cast propeller through a conventional welded stern gland and bearing assembly.

16.2 The propeller shaft is of stainless steel and has a diameter of 38,1 mm (1,5 ins). The propeller shaft is in reasonable condition with no play evident in the stern bearing.

16.3 The propeller shaft is connected directly to the gearbox.

16.4 The narrowboat is fitted with a cast, three-bladed propeller. The propeller markings are not evident; however, the diameter has been measured as 18 ins. The propeller size appears to be adequate for the size of the narrowboat and the engine & gearbox combination (this should be verified as part of the engine trial). The propeller is in fair condition.

16.5 The propeller is a taper fit onto the shaft and is assumed to be keyed (the taper and the key are not accessible for inspection). The propeller is secured by a means of a brass nut and a brass pin. The nut and the pin are in sound condition – the propeller appears to be adequately secured on the shaft.

16.6 The narrowboat is fitted with a conventional stern gland stuffing box and a remote greaser. The stuffing box appears to be leak-free. The remote greaser is in sound condition.

17 Direct Current Installation

17.1 The narrowboat is fitted with a comprehensive extra-low voltage direct current installation which is rated at 12 volts.

17.2 The 12-volt electrical installation is a basic two wire insulated system based on one bank of 12-volt batteries which are charged by an engine-mounted alternator. The 12-volt installation includes an engine starter motor, tunnel light, horn, and domestic services including lighting and pumps.

17.3 The narrowboat is fitted with a single battery bank. Details of the batteries are given in table 2.

Table 2 – Batteries

Bank	Manufacturer/Type	Rating	Condition
Engine/Domestic	Type 644	12 volt 96 amphour	8,27 volt
			8,27 volt
			8,27 volt
			8,27 volt

The batteries are generally accessible for inspection and testing. The batteries, from testing with a multimeter only, appear to be in poor condition.

***Recommendation** – the 12-volt batteries should be examined by a competent marine electrician and new batteries fitted as found necessary (P).*

17.4 Access to the batteries is adequate. The batteries are located within a wooden box. The batteries are adequately secured. The battery box is fitted with a wooden cover which is secured by lips. The cover is in sound condition.

Photograph 32

Battery bank with cover removed, and battery isolation switch.

17.5 The batteries vent directly into the engine space – this arrangement is not satisfactory in that the engine space is not adequately ventilated – refer to comments above in this respect.

17.6 The battery bank is isolated on the positive circuits by means of a key-operated battery isolation switch. The battery isolation switch is located above the batteries. The location of the battery master switch is identified by means of a label located above the aft deck. The isolation switch is in sound condition and appears to be capable of isolating all the 12-volt circuits.

17.7 The battery cables are secured by means of crimped cable connectors which are attached to stud type battery terminal blocks. The battery terminal connections are in reasonable condition with traces of light corrosion apparent to several of the terminal blocks. The

terminals should be cleaned with a wire brush and protected by a light film of petroleum jelly to reduce the possibility of corrosion.

***Recommendation** – the battery terminal connections should be cleaned with a wire brush and protected by a light film of petroleum jelly (M).*

17.8 An equipotential bonding conductor is not fitted between the battery negative terminals and the craft's ground (refer to comments below regarding the protective earth conductor on the alternating current installation) as required by ISO 10133 : 1994 and the BMEA Code of Practice.

***Recommendation** – an equipotential bonding conductor should be fitted between the battery negative terminals and the craft's ground (A).*

17.9 The 12-volt installation is fitted with a fuse panel which is located at the helm cabin forward panel. The fuse panel is in sound condition. The function of each fuse is not identified. The fuse ratings are adequate for the cables and connected equipment and fittings used within the installation.

***Recommendation** – the function of each 12-volt fuse should be identified (A).*

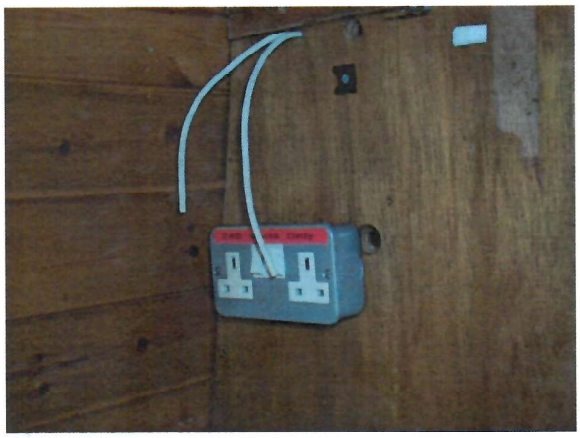
17.10 The 12-volt cables are accessible for inspection within the engine compartment but are generally inaccessible for inspection within the accommodation space except by removal of the cabin linings. The cables, where examined by removal of selected electrical fittings, are of adequate size, grade, and construction. The securing arrangements are not adequate (this is a Boat Safety Scheme fault item). The 12-volt cables are generally installed in a competent manner but are not protected from chaff damage at the penetrations in the cabin forward bulkhead (this is a Boat Safety Scheme fault item). There are a number of exposed and unconnected cables apparent in the installation.

***Recommendation** – the 12-volt cables should be secured (BSS).*

***Recommendation** – the 12 volt cables should be checked by a qualified marine electrician and replaced as found necessary (P).*

***Recommendation** – the exposed cables and unconnected cables should be examined and removed where found necessary (P)*

Photograph 33



Unidentified and unconnected cables.

17.11 The cabin is, where accessible, thermally insulated with rockwool-type material. Polystyrene thermal insulation does not appear to have been used – it is known that routing PVC insulated cables in close contact with polystyrene can result in complete breakdown of the electrical insulation. The use of rockwool and similar thermal insulation materials does not have an adverse effect on the performance of the PVC insulated cables other than considerations for de-rating due to thermal limitations of the cable insulation.

17.12 The batteries are charged by means of a single engine-driven alternator. The charging system has been tested with unsatisfactory results noted – the alternator shows a low output and requires further investigation.

***Recommendation** – the electrical system should be examined and tested by a marine electrician and repaired as found necessary (P).*

***Recommendation** – consideration should be given to fitting a battery management system (A).*

17.13 The 12-volt installation could not be tested due to the poor condition of the batteries.

***Recommendation** – the operation of the 12-volt installation, equipment, and fittings should be verified (P).*

18 Alternating Current Installation

18.1 The narrowboat is fitted with a comprehensive alternating current installation which is rated at 230-volts. The on-board alternating current circuits are supplied by means of a shore line connection.

18.2 The shore supply connection socket, which conforms to IEC 309-2 (BS 4343), is fitted on the port side of the aft deck coaming. The shore connector is in reasonable condition with the cover damaged.

***Recommendation** – the shore supply connection socket should be replaced (P).*

18.3 A 230-volt distribution panel is located on the forward bulkhead. The distribution panel is fitted with a 100-amp main fuse and a residual current device which is rated for 16 amps with a 30-milliamp trip. The operation of the distribution panel has not been verified.

***Recommendation** – the operation of the 230-volt distribution panel should be verified (P).*

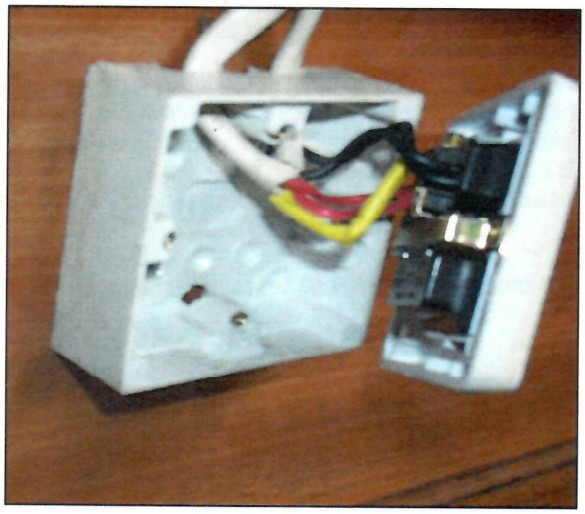
18.4 The 230-volt cables are generally not accessible for inspection except by removal of the cabin linings and the electrical fittings. Where checked at selected electrical fittings, the cables are of adequate size; however, domestic grade solid core cables have been used in the installation – this type of cable is not suitable for use in a marine environment due to vibration considerations which can result in work hardening and fracturing of the conductors.

***Recommendation** – the 230-volt installation should be re-wired using multi stranded conductors (P).*

18.5 The operation of the 230-volt installation has not been verified.

***Recommendation** – the operation of the 230-volt installation should be verified (P).*

Photograph 34



Socket removed to show the use of domestic grade cables.

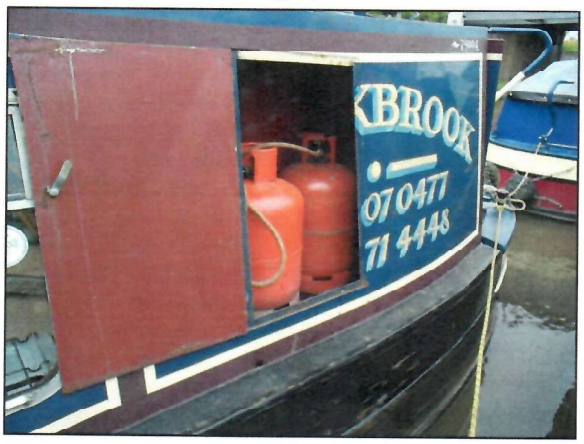
19 Liquefied Petroleum Gas (LPG) Installation

19.1 The narrowboat is fitted with a liquefied petroleum gas (LPG) installation based on bottled propane gas. The installation is of a vapour withdrawal type.

19.2 An integral gas cylinder storage locker is located to port aft, recessed into the superstructure. The locker should prove capable of housing two 13,0 kg propane gas cylinders; however, only one cylinder is currently installed. The gas locker is of fully welded steel construction and is fitted with a hinged steel door. The gas locker is in poor condition with the lower locker sides and base heavily corroded and scaled (this is a Boat Safety Scheme fault item). The gas locker is of adequate depth to correctly accommodate the gas cylinders currently installed.

***Recommendation** – the gas locker should be descaled, closely examined, and repaired/repainted as found necessary (BSS).*

Photograph 35



Gas locker.

19.3 The gas locker is vented at low level by means of a slot cut into the locker side immediately above the locker base. The gas locker is adequately vented at high level by virtue of the latent gaps which exist around the locker cover.

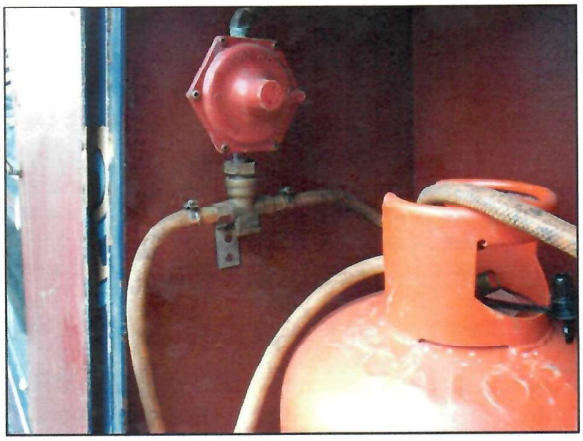
19.4 No means are apparent for securing the gas cylinders (this is a Boat Safety Scheme fault item).

***Recommendation** – a means should be provided for securing the gas cylinders such that lateral movement is limited to a maximum of 50 mm whilst avoiding damage to the pressure regulator, associated pipework, and fittings (BSS).*

19.5 A Calor Type 766 gas pressure regulator is located on the gas locker forward bulkhead. The pressure regulator is connected to the gas cylinders by a flexible gas hoses conforming to BS 3212 type 2. The pressure regulator is in sound condition. The flexible hoses are in poor condition with the outer fabric of the hose damaged (this is a Boat Safety Scheme fault item). The hoses are operating at cylinder pressure and are incorrectly secured by means of worm drive hose clamps (this is a Boat Safety Scheme fault item)

***Recommendation** – the existing gas locker flexible hoses should be replaced with new hoses with integral swaged end fittings (BSS).*

Photograph 36



Calor 766 gas pressure regulator – note the use of worm drive hose clamps on the high pressure hoses.

19.6 A separate main gas valve is not fitted as required for a multi cylinder installation (this is a Boat Safety Scheme fault item). A label is provided for valve identification purposes.

***Recommendation** – a separate main gas valve should be fitted as required for a multi cylinder installation (BSS).*

19.7 The gas installation pipework is of cold drawn copper tubing. The gas pipework generally accessible for inspection except where routed through the bathroom – this arrangement is acceptable for the purposes of the Boat Safety Scheme provided no joints exist in the inaccessible pipework. The gas pipe sizes, where accessible, are in accordance with BS 5482 : Part 3 : 1999 with $^{3}/_{8}$ ins pipe used for the full length of the installation. Visually testing the flame behaviour at the cooker burners, using the checking criteria defined within the Boat Safety Scheme Technical Manual, confirms that the cooker has an adequate gas supply – this behaviour is not expected to change significantly with the Alde gas-fired boiler in operation. The gas pipe is protected from damage and is routed and secured in a satisfactory manner. Where secured by means of pipe clips; the clips are of adequate size of pipe in use.

19.8 Joints in the gas pipework are achieved using compression fittings. The number of joints appears to be to a minimum (note – not all the joints may be accessible for inspection). The joints are adequately secured on each branch.

19.9 The gas-burning appliances are connected to the gas feed pipe by means of in-line gas isolating valves and fixed copper pipework. The appliance connection is in sound condition.

Photograph 37

Cooker gas connection.

19.10 A separate gas test point is fitted in the gas pipework at the cooker. A gas soundness check has not been carried out; however, testing of the gas installation with a Trac-a-leak electronic gas detector indicates that the gas installation is sound and leak free.

19.11 The gas installation system is, except as noted above, in sound condition.

***Recommendation** – the gas installation and appliances should be examined and tested on a regular basis by a suitably qualified CORGI installer (A).*

20 Appliances

20.1 Details of the appliances installed in the narrowboat are given in table 3.

Table 3 – Appliances

Appliance	Heat Input	Location
Flavel Vanessa 2 burner and grill	7,9 kW	Galley
Alde 2921 Boiler	6,1 kW	Galley

* estimated heat input – actual heat input should be verified

20.2 The Vanette Vanessa cooker is installed in the galley. The cooker is adequately secured to prevent tipping. The adjacent cabin linings are protected from heat damage. The cooker is in sound condition and appears to function in a satisfactory manner.

Photograph 38

Vanessa cooker.

20.3 Alde 2921 boiler is installed in a locker within the galley area. The boiler is secure as appears as could be inspected in sound condition. The adjacent cabin linings appear free from heat damage; however, the stove has not been tested.

***Recommendation** – the Alde boiler should be examined and repaired were necessary by a CORGI gas engineer (P).*

21 Ventilation

21.1 The ventilation requirements, based on BS 5482 : Part 3, are summarised in table 4.

Table 4 – Ventilation Requirements

Description	Heat Input	Requirements
Flavel Vanessa Hotplate	7,928 kW	17441 mm²
Alde 2921 boiler balanced flue	N/A	N/A
Crew	(4)	2600 mm²
	Total	20041 mm²

* Assumed heat inputs – the actual heat inputs should be verified.

The accommodation space requires approximately 10020 mm² (15,5 in²) of high-level ventilation and 10020 mm² (15,5 in²) of low-level ventilation.

21.2 The existing high-level ventilation is provided by means of two ECS roof vent fittings which give approximately 4195 mm² of fixed, permanent ventilation, leaving a shortfall of 5825 mm². The current provisions for fixed, permanent ventilation at high level are inadequate (this is a Boat Safety Scheme fault item).

***Recommendation** – a minimum of 10020 mm² (14.6 in²) of fixed permanent ventilation should be provided at high level – the two ECS roof vents provide only 5825 mm² (BSS – advisory item).*

21.3 There is no existing low-level ventilation, leaving a shortfall of 10020 mm² (this is a Boat Safety Scheme fault item). The current provisions for fixed, permanent ventilation at low level are inadequate (this is a Boat Safety Scheme fault item).

***Recommendation** – a minimum of 10020 mm² of fixed permanent ventilation should be provided at low level (BSS – advisory item).*

22 Domestic Water, Waste & Toilets

22.1 The narrowboat is fitted with an integral water tank which is located under the well deck. The capacity of the water tank is understood to be 567 ltr (150 gall). The water tank is filled by means of a stub pipe and a screwed cap which is located on the well deck. A vent fitting is fitted to the filling cap. The filling connection is identified as a water filling point. The tank is fitted with an inspection hatch which is set flush into the well deck. The hatch has not been opened to allow for an inspection of the water tank.

***Recommendation** – the water tank access hatch should be removed to allow for inspection of the water tank (P).*

Photograph 39

Water tank filling and venting arrangements.

22.2 The water system is pressurised by a means of a Shurflo 12-volt pump. . The operation of the pump has not been verified.

***Recommendation** – the operation of the water pump should be verified (P).*

Photograph 40

Shurflo water pump.

22.3 Hot water is provided by a calorifier which is located under the fixed double berth. The calorifier is linked to the engine cooling water circuit and to the Alde water heater. The calorifier appears to be in sound condition but has not been tested.

***Recommendation** – the operation of the calorifier and the hot water installation should be verified when the water system is recommissioned (P).*

22.4 The cold and hot water systems appear to be installed in a competent manner and with the pipework routed in a satisfactory manner.

22.5 Waste water from the galley sink and the hand basin are discharged directly overboard

22.6 The narrowboat is equipped with a flushing toilet which is directly coupled to a holding tank. The holding tank capacity has not been stated. The toilet is in sound condition. The toilet is not capable of discharging polluting material overboard.

22.8 The pump out and rinse connections for the holding tank are not identified.

***Recommendation** – the holding tank pump out and rinse connections should be identified by means of labels (BSS).*

23 Life-saving Equipment

23.1 Life-saving equipment is not provided.

***Recommendation** – life-saving equipment and lifejackets should be provided commensurate with the intended role of the narrowboat (A).*

24 Equipment & Fittings

24.1 A 12-volt horn is fitted on the cabin forward bulkhead. The operation of the horn has not been verified.

***Recommendation** – the operation of the horn should be verified (P).*

24.2 A 12-volt tunnel light is fitted on the cabin forward bulkhead. The operation of the tunnel light has not been verified.

***Recommendation** – the operation of the tunnel light should be verified (P).*

24.3 The narrowboat is not fitted with navigation lights. Navigation lights are not required unless cruising on commercial rivers and waterways or cruising during conditions of restricted visibility.

24.4 An Attwood V450 12-volt bilge pump is fitted in the engine space. The operation of the bilge pump has not been verified.

***Recommendation** – the operation of the bilge pump should be verified (P).*

24.5 Mooring pins and a hammer are provided.

24.6 A boat pole and a boarding plank are provided. A boat hook is not evident.

24.7 An anchor and chain are not provided.

25 Fire Prevention and Extinguishing Equipment

25.1 Details of the fire extinguishers are given in table 5.

Table 5 – Fire Extinguishers

Type	Weight	Rating	Approval Marking	Location
Dry powder	4,5 kg	114B	BSI kite mark	Galley
Foam	5,5 ltr	13A 113B	BSI kite mark	Galley
Foam	5,5 ltr	13A 113B	BSI kite mark	Galley
Foam	5,5 ltr	13A 113B	BSI kite mark	Galley
Foam	5.5l	13A 113B	BSI kite mark	Engine room

25.2 The fire extinguishers are in sound condition. The fire extinguishers satisfy the requirements of the Boat Safety Scheme.

25.3 A fire blanket is fitted in the galley. The fire blanket conforms to BS 6575 as required by the Boat Safety Scheme. The fire blanket is in sound condition.

26 Pollution

26.1 The narrowboat is fitted with a close coupled toilet discharging into a holding tank which is not capable of discharging polluting material overboard.

26.2 An oil containment area is provided beneath the engine and gearbox. A bilge pump should not be used to discharge this containment area overboard.

27 Boat Safety Scheme

27.1 As a Class V Passenger Boat, the narrowboat has been exempt from the requirements of the Boat Safety Scheme. This exemption will no longer apply if the narrowboat is converted for recreational cruising purposes.

27.2 A number of Boat Safety Scheme fault items have been identified during the course of the survey – these faults should be addressed as part of the conditions of purchase. It should be noted that the fault items relating to the provision of fixed, permanent ventilation are advisory requirements only; nevertheless, it is strongly recommended that this requirement is fully addressed.

***Recommendation** – the Boat Safety Scheme fault items require attention (P).*

28 Recreational Craft Directive

28.1 The narrowboat is not subject to the requirements of the Recreational Craft Directive.

29 Licence

29.1 The narrowboat displays a British Waterways craft licence, number 075994, which expired in May 2002.

***Recommendation** – the narrowboat requires re-licensing with British Waterways or other relevant navigation authorities (P).*

[redacted]

30 Summary

30.1 The narrowboat "Sparkbrook" was surveyed on 7 May 2002 whilst out of the water at Wincham Wharf, Northwich, Cheshire.

30.2 The general style of construction of the narrowboat is to a good standard with clean, unassuming lines and a fair hull form. The accommodation spaces, from a general examination are, where accessible, in sound condition. The standard of workmanship within the accommodation spaces is to a competent standard. The arrangement of the accommodation spaces gives an efficient and practical layout which is suitable for recreational use for up to two plus two persons.

30.3 The hull is in generally in sound condition. New sacrificial anodes should be fitted at this time. The hull requires reblacking or better at his time. The gloss paintwork is in a poor and deteriorated condition.

30.4 The weed hatch requires descaling and repainting. A new weed hatch gasket should be fitted.

30.5 The steering gear requires repair.

30.6 The stern gear is in sound condition.

30.7 The engine and gearbox were subject to a general visual examination and limited running trials only. The engine and gearbox are, within the limitations of the survey, generally in sound condition.

30.8 The electrical systems are in reasonable condition. The 12-volt installation has suspect batteries and requires upgrading to current Boat Safety Scheme requirements. The 230-volt installation requires rewiring using multi stranded conductors.

30.9 The liquefied petroleum gas installation is in reasonable condition, requiring minor modifications to satisfy the requirements of the Boat Safety Scheme.

30.10 The cooker and the gas-fired water heater are in sound condition; however, the operation of the latter requires verification.

30.11 A number of Boat Safety Scheme fault items have been identified during the course of this survey – these should be addressed as part of the negotiations to purchase the craft.

30.12 The narrowboat is not subject to the requirements of the Recreational Craft Directive.

30.13 The narrowboat requires licensing. FROM May 2002

30.14 Recommendations and actions are given within the report.

30.15 A glossary of terms and definitions is given in annex A.

30.16 A valuation for this narrowboat is given in a separate letter.

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for and on behalf of
J F Pope BSc CEng MRINA MABSE & W McMurray MABSE
Naval Architect & Marine Surveyor – Euro Marine Consultants Ltd

Annex A
Survey report Surv/02202
"Sparkbrook"

Glossary - Report

Accessible	Capable of being reached for inspection without removal of permanent craft structure.
Readily accessible	Capable of being reached for inspection without removal of craft structure or use of any tools or removal of any portable equipment.
Where accessible	The component, fitting, or system was not fully accessible for inspection. The comments refer only to that part of the component, fitting, or system which was accessible.
Appeared	The component, fitting, or system could not be fully assessed or inspected due to constraints imposed during the survey (such as a lack of power, inability to remove panels, or requirements not to conduct destructive tests).
Fit for intended use	Use which is intended by the prospective purchaser as advised when the survey was commissioned.
Serviceable	The component, fitting, or system is sufficient for a specific requirement.
Powered up	Power was applied only. The component, fitting, or system was not operated or tested unless specifically indicated.
Excellent condition	A component, fitting, or system which is new or as-new
Good condition	A component, fitting, or system which is nearly new, with only minor cosmetic or structural discrepancies noted.
Sound condition	A component, fitting, or system which is not new, with only minor cosmetic or structural discrepancies noted commensurate with the estimated age of the component, fitting, or system.
Reasonable condition	A component, fitting, or system which is has minor cosmetic or structural discrepancies noted. The component, fitting, or system does not require repair at this time.
Fair condition	A component, fitting, or system which is functional as-is with minor repairs. The component, fitting, or system should be monitored as and when practicable.
Poor condition	A component, fitting, or system which is unusable, defective, or damaged. The component, fitting, or system requires repair or replacement in order to be considered functional.

Glossary - Defect Lists

Dangerous	**(D)**	The defective component, fitting, or system represents a serious hazard to the craft and to the safety of the crew. The craft should not be used. The defect should be rectified as a matter of urgency.
Urgent	**(U)**	The defective component, fitting, or system may become dangerous unless rectified at the earliest opportunity.
Priority	**(P)**	The defective component, fitting, or system, although not as serious as a (D) or (U) defect, should be rectified at the next maintenance opportunity. Also used to identify shortcomings which need to be addressed as considerations for purchase purposes.
Caution	**(C)**	A defect or shortcoming which is not an immediate hazard or in need of priority attention but should be taken into consideration at the next refit or end of season lay-up period.
Advice	**(A)**	A shortcoming which should be considered in terms of an improvement to a component, fitting, or system.
Maintenance	**(M)**	A shortcoming which should be addressed as part of an on-going maintenance schedule.
BSS	**(BSS)**	A Boat Safety Scheme fault item as defined by the checking procedure given in the British Waterways/Environment Agency Boat Safety Scheme Technical Manual.
RCD	**(RCD)**	A shortcoming in relation to the Recreational Craft Directive which should be brought to the attention of the Builder or the Builder's authorised representative. These shortcomings are enforceable by the relevant Trading Standards office.