Northern Star Marine Ltd

NARROWBOAT SURVEYS

& Boat Safety Scheme Certification

Report prepared by - Michael Clarke – *Dip.S.C.Sur. MIMarEST*

....Survey Report....

This is to certify

That I the undersigned carried out a pre-purchase condition survey on the vessel below at the request of

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for the purpose of reporting on the vessels condition subject to stated limitations and in accordance to our standard terms of survey. The 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 or any other third party. Such liability must be constructed, as a contract under British law and any dispute arising hereunder shall be submitted to the exclusive jurisdiction of the courts of England and Wales.

Name ……..

Date: ……...

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Survey Statement:

This report is a factual statement of the examination carried out within stated limitations below and in accordance with our standard terms of survey, with all opinions given in good faith as far as seen and accessible at the time of the survey. It carries with it no guarantee against faulty design or latent defects, or suitability of the vessel for any particular purpose, nor any guarantee of compliance with any particular national or international rule, requirement, regulation, law, standard or code unless specifically requested as a special instruction on the contract form and confirmed in the text of the report. It is further agreed that no liability will arise for any consequential or economic loss, loss of profits, business interruption or loss of use.

Definition of terms:

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.
2. The use of the word ***serviceable/adequate*** indicates that a 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 in a nearly new condition 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 to see if its condition deteriates.
5. The use of the word ***poor*** indicates that the component/system is unsuitable as it is and will need to be replaced or repaired for it to be considered functional.
6. ***Readily accessible*** means capable 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. ***BSS*** is an abbreviation of Boat Safety Scheme.
8. ***BMEA*** is an abbreviation of British Marine Electrical association.
9. ***RCD*** is an abbreviation of Residual Current Device.
10. ***CIN*** is an abbreviation of Craft Identification Number.
11. ***PRV*** is an abbreviation of Pressure Relief Valve.

Scope:

The purpose of the survey was to ascertain the general condition of the vessel for the prospective new owner. The structural condition of the craft was examined by hammer testing, visual inspection, and by taking ultrasonic meter readings. The rest of the vessel was examined by non-intrusive, listening, and visual inspection only. We have not inspected woodwork or other parts of the structure, which are covered, unexposed or inaccessible, and we are therefore, unable to report that any such part of the structure is free from defect.

Location/ Conditions:

The survey was carried out in the water and on hard standing at …….. Marina. A slip trolley supported the vessel, which restricted access to parts of the hulls bottom plates. The hull had a very thick coating of hull blacking, which made inspection of the steelwork difficult. This report should be read in conjunction with the limitations of survey in section 12.

The weather was: Overcast.

Vessel Particulars:

Name:	……..	**Type:**	Cruiser style Narrowboat
Hull Builder:	Springer	**Fit-out**:	…….
Approx. Year of build:	1970's	**Index:**	…….
CIN No:	Not applicable	**Approx. Length:**	36ft
Approx. Draught:	2ft 3in		

N.B ***The above particulars are "as offered" and are neither confirmed nor guaranteed.***

The Survey:

Recommendations are defined by:

Rec 1: Items that should be addressed which may affect the vessel's insurability or watertight integrity.

Rec 2: Items that should be addressed in order to pass the current BSS examination with no advisories.

Rec 3: Items that should be addressed which affect the safe or normal use of the vessel or a particular system.

Rec 4: Items that should be addressed as soon as is practically possible to prevent future problems arising.

Rec 5: General maintenance items.

Recommendations are all in bold italic type, and Rec 1 & 2 are in red for quick reference.

1. External Hull, Decks, and Superstructure

A Hull sides:

Originally fabricated from nominal 1/8" steel plate to an adequate standard.

Ultrasonic measurements were taken with a Tritex 5500 triple echo meter with a 13mm probe. The side plates had a covering of marine growth and were not pressure washed prior to inspection. Approximately thirty sample areas were selected at random and prepared for inspection. From the sample areas selected, ultrasonic measurements show the plate thickness to be between 2.5mm and 3.3mm, which are not within acceptable limits. Two small sections of the aft transom have been patch overplated to a poor standard.

The sides were smooth with minimal pitting corrosion.

The hull has a very thick coating of hull blacking, which has cracked and is coming detached in sections due to the thickness.

Rec 1: ***Overplate the sides with 4mm or 5mm steel plate up to the lower rubbing strakes. Replace the two small sections of patched overplating on the aft transom.***

Rec 4: ***Remove the existing coating then re-black the hull.***

B Hull bottom:

Flat keel with a V-section, originally fabricated from nominal 1/8" & 3/16" steel plate.

The bottom plates had a covering of marine growth and were not pressure washed prior to inspection. Approximately twenty sample areas were selected at random around the perimeter of the base plate and prepared for inspection.

From the sample areas selected, ultrasonic measurements show the plate thickness to be between 0mm and 5mm, which are not within acceptable limits. The bottom plate was holed below the engine.

The bottom was smooth with minimal pitting corrosion.

Rec 1: ***Overplate the bottom with 4mm or 5mm steel plate.***

C Counter / Uxter plate:

Originally fabricated from nominal 1/8" steel plate.

From the sample areas selected at random, ultrasonic measurements show the plate thickness to be between 2.7mm and 3.3mm, which are not within acceptable limits.

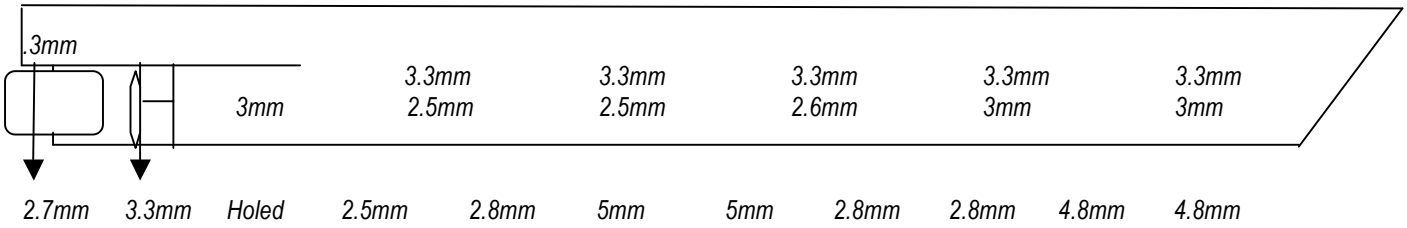
The counter plate was smooth with minimal pitting corrosion.

Rec 1: ***Overplate the counter with 4mm or 5mm steel plate.***

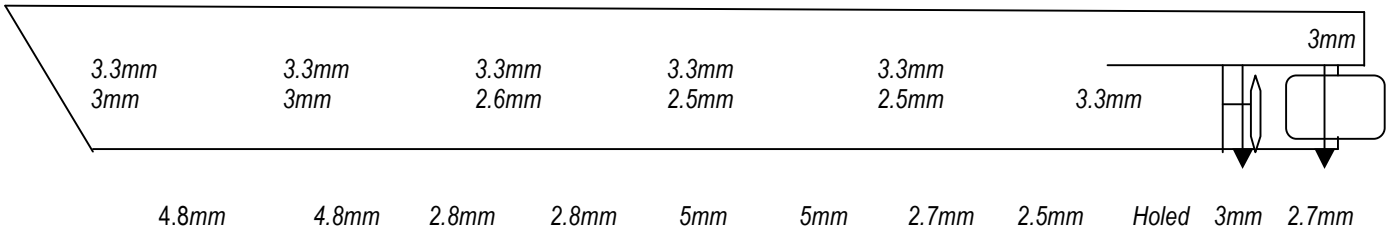
D Ultrasonic measurements

The diagrams below are an approximate guide to show the general position from where the ultrasonic measurements were taken from, and the reading obtained.

Starboard readings:



Port readings:



E Rubbing strakes (Mild steel protection strips):

In the sample areas examined, the rubbing strakes appear to be stitch welded at the top and bottom, with heavy crevice corrosion and holes evident behind and below. The strakes close to the aft transom are fabricated from wood and have heavy corrosion behind.

Rec 1: ***Continuously weld the lower strakes at the top and the bottom.***
Remove the wooden strakes close to the transom and replace them with steel.

Rec 4: ***Continuously weld the upper strakes at the top and the bottom.***

F Cathodic protection (Anodes):

6 x 2.5kg anodes are attached to the vessel by welding, which are exhausted.

Rec 4: ***Replace the anodes.***

G Rudder:

A Single vain flat blade rudder is fitted at the stern, which is welded to the rudderstock and is in a serviceable condition. The rudderstock is bolted to the vessel, which appears to be secure but the connection was not verified as being watertight.

The skeg (the section of steel which protrudes from the base plate which the rudder sits on) hammer tested satisfactorily.

Rec 1: ***Re-attach the lower rudderstock bracket by welding.***

H Stern gear:

A 14" Turbine type propeller is fitted on a stainless steel shaft with a nut and split pin. The propeller and shaft appear to be in a serviceable condition. In the areas visible for inspection the stern tube bearing appears to be in a serviceable condition with approx. 0.9mm of wear.

I Outlets / Freeboard:

2 x unused holes located below the gas locker drains, 2 x unused holes on the starboard side transom, and 2 x holes at the aft transom require capping-off. The outlet hoses for the galley sink, bathroom sink, water tank overflow, and bilge pump are pushed through the hull. 2 x unused outlets on the starboard side around the top rubbing strake require capping-off.

Rec 1: ***Overplate the 6x unused holes around the aft transom.***

Rec 4: ***Remake the outlets for the galley sink, bathroom sink, water tank overflow, and bilge pump with proprietary brass through hull fittings. Capp-off the unused outlets on the starboard side around the top rubbing strake.***

J Decks:

The aft deck drainage channels have moderate and heavy corrosion and are holed in places. The deck boards are in a serviceable condition.

Rec 4: ***Repair the holed sections of drainage channels.***
De-rust and apply a suitable coating to the areas where the paint system has failed.

K Cabin sides:

The cabin sides are fabricated from welded steel sections to an adequate standard. The paint finish has been applied to an adequate standard and is in a fair condition with some areas of light corrosion and flaking topcoat.

Rec 4: ***De-rust and apply a suitable coating to the areas where the paint system has failed.***

L Cabin Top:

The cabin top is fabricated from welded steel sections to an adequate standard. The paint finish has been applied to an adequate standard and is in a fair condition with some areas of light corrosion and flaking topcoat.

Rec 4: ***De-rust and apply a suitable coating to any areas where the paint system has failed.***

M Windows / doors / hatches:

The windows are aluminium top hoppers and openers, which appeared to be in a fair condition as some of the seals are damaged. The windows were not tested for water tightness.

The pigeon box and aft door do not appear to be fully watertight.

Rec 4: ***Replace the damaged window seals.***
Install a lip to the lower section of the aft door for better rainwater drainage, and adjust the door so that it seals better.

2. Hull internal

A. Engine compartment

The engine compartment has some moderate and heavy corrosion where the coating has failed. Water was evident below the engine at the start of the survey, which drained away through the holed section of the base plate.

Rec 4: ***De-rust, and repaint the engine compartment.***

B. Weed Box

The weed hatch and coaming were found to be sound with light corrosion, and the top of the weed box appears to be above the required height. The seal appears to be in a serviceable condition, but some of the securing bolts are missing.

Rec 4: ***De-rust, and apply a suitable coating to the areas where the paint system has failed. Replace the missing securing bolts.***

C. Internal Cabin

The internal cabin was mainly obscured by the fit-out. The only areas accessible for inspection were at the inspection hatch in the aft cabin and below the forward bed and the cabin bilge appeared to be dry with some light and moderate corrosion.

Rec 4: ***De-rust and repaint the internal cabin steelwork where accessible.***

3. Propulsion

A. Engine / Gearbox

Yanmar 2GM 13hp (approx.) 2 cylinder inboard / Yanmar: Recorded engine hours = Unknown
The engine was run whilst the vessel was in the water for approx. 50 minutes and findings are:

1. *The engine started easily and ran satisfactorily throughout the test period.*
2. *A large amount of smoke was noted on start-up that cleared.*
3. *The engine did not appear to overheat within the test period.*
4. *The engine oil was dark brown, and the level was correct.*
5. *The gearbox oil was emulsified and above the maximum level.*
6. *The propeller shaft and associated joints appeared to be in a serviceable condition.*
7. *The raw water intake hoses were perished but appeared to be watertight at the moment. The intake hose connection was also poorly made and is not watertight. The inlet is not fitted with a proprietary strainer.*
8. *The engine was secure on its mounts but a small amount of movement was evident.*
9. *Both forward and reverse gears ran satisfactorily.*
10. *The water pump belt was not correctly tensioned.*

Rec 1: ***Replace the perished raw water system hoses, and remake the current external inlet connection with a proprietary underwater water scoop with a seacock and strainer. Replace the metallic exhaust silencer with proprietary rubber exhaust hose as per the manufacturers installation instructions.***
Rec 3: ***Change the gearbox oil.***
Rec 4: ***Tighten the water pump drive belt.***
Service the engine.

B. Fuel system

The fuel tank is located in the engine compartment and appears to be in a serviceable condition with some light corrosion. The filler and vent are compliant with the current Boat Safety scheme requirements. The fuel feed pipe is not fully secure.

Rec 2: ***Secure the fuel feed pipe.***
Rec 4: ***De-rust, and apply a suitable coating to the areas where the paint system has failed.***

C. Controls / instruments

The engine is controlled by a remote cable operated lever, which functioned adequately. All the engine instruments appeared to function adequately apart from the stop cable, which could not be operated.

Rec 3: ***Free off the engine stop cable.***

D. Stern gland / seal

A Traditional type stern gland is fitted which appeared to be in a serviceable condition.

E. Bilge pump

A 12v bilge pump is fitted with a manual switch, which functioned adequately on the manual setting.

4. Batteries / charging

A. Batteries

2 x 12v lead acid domestic and 1 x 12v lead acid engine starter batteries are fitted. The batteries were connected to a Sealey BT02 battery analyser and the findings were:

1. *Domestic batteries – Serviceable condition.*
2. *Engine battery – Serviceable condition.*

The battery installation is compliant with the current BSS requirements.

B Engine driven charging system

1 x 12v alternator is fitted to the engine, and the charging output was tested to be approx. 13.6v. The drive belt is in a serviceable condition.

5. Electrical System

A. Battery isolators

2 x manual battery isolators are fitted to the vessel, which are compliant with the current Boat Safety Scheme requirements apart from the cable to the domestic isolator is undersized.

Rec 2: ***Replace the undersized cable to the domestic isolator with a 25mm2 cable.***
Rec 3: ***Ensure that the cable from the isolator to the fuse boxes is appropriable rated for the circuits.***

B. 12V System

The majority of the 12v circuits appear to be fed from the fuse boxes located in the forward cabin and at the helm, which appear to be in a serviceable condition. I was unable to ascertain if all the cables were of the correct current carrying capacity or if the fuses were appropriately rated. The fuses were not labelled.

The forward cabin lights did not function. The headlamp functioned adequately but uses the hull as a negative.

Rec 2: ***Rewire the headlamp so that it uses the cable provided as a negative conductor and not the hull (advisory not a requirement to pass)***

Rec 3: ***Check the fuse for the forward cabin lights and retest.***

6. Fresh Water System

A Water Tank / Pump

The fresh water tank is located in the engine compartment and appears to be fabricated from a plastic container. The tank appears to be in a serviceable condition but was not sealed. The foot operated water pump functioned adequately. The vessel has no means of generating hot water.

Rec 4: ***I recommend replacing the current unsealed container for a proprietary sealed water tank, and fitting a 12v automatic water pump.***

B. Shower / Bath - Not applicable

C. Calorifier – Not applicable

D Toilet

A Thetford cassette toilet is fitted, which and appeared to be in a serviceable condition. The flush did not function but may not be connected to the 12v system.

Rec 3: ***Check that the toilet flush has a 12v supply then retest.***

E Sinks

The sinks were in a serviceable condition.

7. LPG System

A Locker

2 x 13kg butane cylinders are installed in the aft locker with a cylinder-mounted regulator. The installation is compliant with current BSS requirements. The base of the locker has light corrosion but appeared to be sound.

Rec 4: ***De-rust and repaint the base of the gas locker.***

B Appliances / system

Vanette GG2200 oven and grill - The appliance was flame tested and functioned adequately.

Dometic hob - The appliance was flame tested and functioned adequately.

The appliances and system are installed inline with current BSS requirements.

8. Cabin Internal

A Diesel / LPG Heating - Not applicable

B. Solid fuel stove

A solid fuel stove is installed in the saloon with a tiled hearth, which appears to be in a serviceable condition apart from the door glass was cracked. The door catch has been replaced by a bolt and does not seal completely. The ashtray has been replaced by a foil tray. I could not verify that the hearth was installed in accordance with the manufacturers recommendations.

Rec 2: ***Replace the stove door glass.***
Rec 3: ***Adjust the door bolt so that the door seals better, or fit a rope seal around the edge.***

C Lining

The cabin appears to be lined with painted plywood sheets and pine cladding, which is fitted to an adequate standard and is in a serviceable condition. Some of the cladding is not fully secured.

Rec 5: ***Secure the loose sections of cladding.***

D Cabin sole (floor)

The cabin sole appears to be sound, but some of the sections are not fully secured.

Rec 5: ***Secure the loose sections of floorboards.***

E Woodwork / Joinery

The cabin is fitted out to a basic amateur standard. The majority of the cabinets are built from veneered chipboard and pinewood and are in a usable condition.

F Insulation

The cabin is insulated with what appears to be polystyrene sheets and Rockwool. This may cause unwanted condensation to run behind the back of the lining panels if the sheets are not fully bonded to the cabin sides. Any electrical cables that come into contact with the polystyrene sheets may suffer from a chemical reaction, which can cause the cable insulation to break down and short circuit. I could not verify that all the cables are adequately protected.

9. Safety

A Fire Fighting

2 x 8A 55B dry powder extinguishers + 1 x fire blanket.

The units appear to be compliant with current BSS requirements.

B. Ventilation

Low -level none sighted.

High-level 3 x Mushroom vents.

The ventilation is below the required amount.

Rec 2: Install 2 x 6" x 6" louvered vents to the aft door.

10. Conclusion

The vessel requires overplating, and remedial attention to the through hull outlets and engine raw water intake system before being deemed in a sound insurable condition. Assuming all the recommendations are carried out the vessel should comply with the current BSS requirements and maintain to be in a serviceable condition.

11. Valuation

The fair market value given herein is defined as the highest price that could be obtained by a willing seller from a willing buyer, with neither being compelled to sell or buy, and subject to the vessel having been on the open market for a reasonable time. Estimates are based on current listed asking prices along with current market conditions and based on the condition of the vessel.

Estimated current value:

12. Limitations of survey

1. The purpose of survey was to carry out a structural and mechanical evaluation of the vessel for pre-purchase, finance and/or insurance purposes

2. The vessel was ashore (unless stated otherwise) supported on chocks / slings, allowing access to the hull bottom, apart from the chocking / sling positions

3. Machinery installations, auxiliary and ancillary equipment, gas and other services, electronic, pumping and plumbing, navigational aids, safety equipment, fuel systems, electrical systems, steering systems, hydraulic systems and other sundry items were visually inspected only. None of these items were dismantled nor were specific tests carried out.

4. The LPG gas system(s), appliances, piping, tanks and components are not tested for leaks or tightness unless a BSS examination was carried out.

5. The fuel system(s), engine(s), piping, tanks and components are not tested for leaks or tightness

6. As surveyors (not technical engineers) we visually inspect engines, gearboxes and generator installations during our inspections, and where possible the engine is run up to access its general running characteristics, vibration levels, etc. No dismantling of the engine or associated equipment is carried out within the scope of a condition survey so no detailed comment upon the internal parts is possible.

7. Water tanks and plumbing (where accessible) are externally inspected (only) where visible, and are not pressure tested. No liability is accepted for any subsequent leaks not apparent at time of inspection.

8. Windows, hatches, port lights, external and watertight doors are not tested for water tightness

9. Skin fittings and associated seacocks / valves are not tested or dismantled

10. If this report does not discuss a specific item, equipment or machinery, it is not covered by this report.

11. We have not inspected woodwork or other parts of the structure which are covered, unexposed or inaccessible and we are, therefore, unable to report that any such part of the structure is free from defect

12. 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 inspection.

13. The report is not undertaken with any intention to ascertain that the vessel would comply with any authority under whose jurisdiction the vessel may operate

14. The maximum allowable thinning, wear, or wastage corrosion for a steel plate is approximately 40%. If the steel plates tested are within acceptable limits but are below 4mm in thickness, this may not still be acceptable by some insurance companies.

15. If the owner or purchaser is present during the survey inspection this may cause the surveyor to miss important items if distracted so cannot be held responsible for mistakes or omissions in these circumstances.

16. Ultrasonic measurements were taken from the sample areas selected at random only. The size of the ultrasonic probe is approx. 13mm in diameter so we can only verify that the steel thickness was acceptable at the point where the measurement was taken. If a low reading is taken at any one point further readings are taken at closer intervals to give a better idea of the plate thickness.

17. Information is included within this report that is gathered from various sources, such as Brokers / Owner's Details of Sale, Ship's Papers, Engine manuals, Manufacturers Manuals, Boat Safety Scheme documentation, and other third parties, and such information is neither confirmed nor guaranteed.

18. The gas cylinders were not removed before or during the survey, which made parts of the locker inaccessible for inspection, so cannot be guaranteed free from defect in these areas.

19. Every effort is made to inspect the external and internal steelwork of the lockers, decks, and drains, but due to time restrictions placed upon the surveyor, and difficult access some parts cannot be inspected so cannot be guaranteed free from defect.

20. 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 conditioned and circumstances as they existed at the time of the survey.

21. The external sections of the hull were covered with corrosion, paint, bitumen and marine growth, so examination of the steel was not possible except where removed for inspection purposes. It should be noted that complete removal of all the corrosion, paint, bitumen, and marine growth is necessary to facilitate inspection of the entire external structure.

22. Lockers, compartment and areas of the vessel containing, or obscured by: galley equipment, victuals, stores, clothing, personal effects, paint containers, tools, and any other loose or miscellaneous items of equipment were not inspected. It is recommended that any such items are removed and those areas be inspected prior to purchase.

23. If applicable, the measurements for the length and draught of the vessel are both approx., as accurate measurements cannot be taken due to restrictions placed on the surveyor in the dock, slipway, or due to adverse weather conditions. If a measurement cannot be taken we reserve the right to obtain the data from the Manufacturers Manual, Boat Safety Scheme Documentation, or other third parties, which cannot be confirmed or guaranteed as correct. The beam of the vessel was not measured.

24. Recreational Craft Directive compliance was not checked as this is beyond the scope of a normal pre-purchase survey.

Signed…… **Date**……

Michael Clarke

Marine surveyor - Northern Star Marine Ltd