

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 hull condition survey on the vessel below at the request of

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:



Institute of  
Marine Engineering,  
Science & Technology

IMarEST



## 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 deteriorates.
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 current 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 on hard standing at ..... Marina. A slip trolley supported the vessel, which restricted access to parts of the hulls bottom plates. This report should be read in conjunction with the limitations of survey in section 4.

The weather was:           Overcast.

## Vessel Particulars:

Name:	.....	Type:	Traditional style narrowboat
Hull Builder:	.....	Approx. Year of build:	1998
Index:	.....	Approx. Length:	58ft
Approx. Draught:	2ft		

*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

### A Hull sides:

Originally fabricated from nominal 6mm steel plate.

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 5.8mm and 6mm, which are within acceptable limits.

Widespread pitting corrosion is present which is minimised around the anodes. The maximum pit depth measured was approx. 2mm, and the average pit depth was approx. 1.7mm with approx. 75% coverage, which is only just within acceptable limits. The areas around the forward and aft anodes are pitted to a lesser degree and the average pit depth measured at these points was approx. 1mm. The vessel will require remedial attention in the future if the pitting develops any further.

The hull requires blacking.

**Rec 4:** *I recommend shot-blasting the hull and applying a 2-pack epoxy coating, then fitting 2 x additional anodes on both the port and starboard sides, to help minimise any further pitting corrosion. It would also be prudent to install a galvanic isolator (I recommend that the above be carried out straight away)*

### B Hull bottom:

Shallow V-bottom with an overlap to protect the chine weld, originally fabricated from nominal 10mm 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 9.5mm and 10mm, which are within acceptable limits.

Widespread pitting corrosion is present. The maximum pit depth measured was approx. 2mm, and the average pit depth was approx. 1.8mm with approx. 75% coverage.

The bottom appears to have no visible coating, which is normal industry practice.

Weld protection is provided by a sacrificial overlap of the base plate which has approximately between 20-25mm of wear edge remaining.

**Rec 5:** *It is generally believed that the base plate of the hull does not require blacking as the coating would quickly be worn off under normal use, and is normally not possible due to restrictions placed in the dry dock. This however does not always appear to be true and the coating can last just as long as the paint system on the rest of the hull. I recommend that wherever possible the base plate be coated at the same time as the rest of the vessel to protect the steelwork.*

### C Counter / Uxter plate:

Originally fabricated from nominal 10mm steel with a slipper stern.

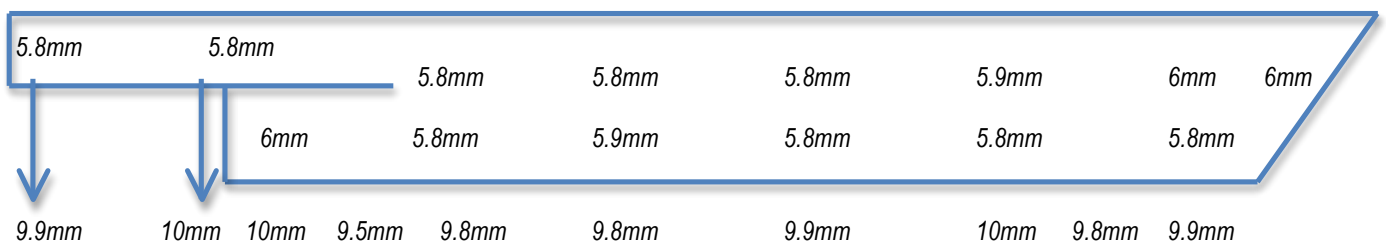
From the sample areas selected at random, ultrasonic measurements show the plate thickness to be between 9.8mm and 10mm, which are within acceptable limits.

The counter plate was smooth with minimal pitting corrosion.

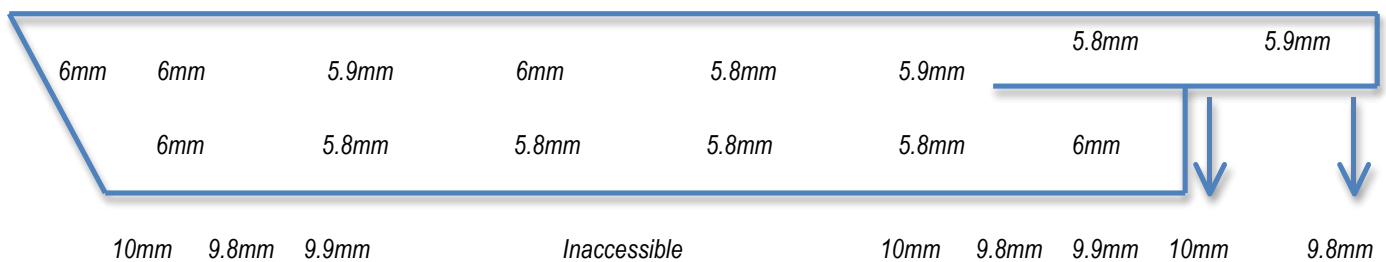
### D Ultrasonic measurements

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 side readings:



#### Portside reading:



### E Rubbing strakes (Mild steel protection strips):

In the sample areas examined, the rubbing strakes appear to be continuously welded at the top and stitch welded at the bottom, with light crevice corrosion evident below.

**Rec 4:** *De-rust and apply extra blacking to the bottom of the strakes each time the vessel is re-blacked. A better solution would be to continuously weld the strakes at the bottom.*

### F Cathodic protection (Anodes):

4 x 2.5kg anodes are attached to the vessel by welding, which are approx. 85% worn.

**Rec 4:** *Replace the anodes at the next docking.*

## **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 tube was inaccessible for inspection as it passes through the fuel tank.

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

The rudder bearings are in a serviceable condition.

## **H Stern gear:**

A 17" Turbine type propeller is fitted on a stainless steel shaft with a nut but the split pin is missing. The propeller and shaft appear to be in a serviceable condition.

In the areas visible for inspection the stern tube bearing has approx. 1.5mm of wear and requires refurbishing.

**Rec 4:**            *Refurbish the stern tube bearing at the next docking.  
Replace the propeller-nut split pin.*

## **I Outlets / Freeboard:**

All the outlets appeared to terminate to the required height, but full access to the interior connections was not available so could not be fully verified.

### **2. Hull internal**

#### **A. Engine compartment**

The engine compartment is in a reasonably well-kept condition with a small amount of light corrosion.

**Rec 5:**            *De-rust, and apply a suitable coating to the areas where the paint system has failed.*

#### **B. Weed Box**

The weed hatch and coaming were found to be sound, and the top of the weed box appears to be above the required height. The seal appears to be in a serviceable condition.

#### **C. Internal Cabin**

The internal cabin was mainly obscured by the fit-out. No provision was sighted for inspection of the cabin bilge.

**Rec 5:**            *Install an inspection hatch close to the aft steps for periodical inspection of the cabin bilge.*

#### **D. Stern gland / seal**

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

### **3. Conclusion**

The vessel is in a sound condition, which requires some preventative action in order to help minimise any further deterioration of the hull, and the possibility of future remedial work.

## 4. 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