

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 an in-water pre-purchase 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: .....



### 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 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. **Inaccessible for inspection** 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.

### Scope:

The purpose of the survey was to ascertain the general condition of the internal/external cabin, engine, and on-board systems for the prospective new owner. The hull and the watertight integrity of the vessel were not inspected. 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 at ..... Marina. This report should be read in conjunction with the limitations of survey in section 11.

The weather was:           Overcast.

## Vessel Particulars:

Name:	.....	Type:	Traditional style narrowboat
Hull Builder:	.....	Fit-out:	Owner
Approx. Year of completion:	1981	Index:	.....

*N.B The above details 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. Decks and Superstructure

### A Decks:

In the areas visible for inspection the front and rear decks appear to be sound with light and moderate corrosion.

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

### B Cabin sides:

The cabin sides are fabricated from welded steel sections to a reasonably good standard. The paint has been applied to an adequate standard with abrasions to the steelwork evident below. The coating is in a serviceable condition with a small amount of corrosion and some cracking of the filler at one of the butt joints.

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

### C Cabin Top:

The cabin top is fabricated from welded steel sections to a reasonably good standard. The paint has been applied to an amateur standard with abrasions to the steelwork, and the old coating evident below. The coating is in a serviceable condition with a small amount of corrosion.

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

### D Windows / doors / hatches:

The windows are aluminium top hoppers and brass portholes, which appeared to be in a serviceable condition, but were not tested for water tightness.

The doors and hatches are in a serviceable condition. The top of the front doors is not protected from rainwater.

**Rec 4:** *Install a rainwater diverter to the top of the front doors.*

## 2. Hull internal

### A. Engine compartment

The engine compartment has moderate corrosion where the coating has failed. The bilges have water in them and the area below the engine is fouled with oil.

**Rec 4:** *De-rust, and repaint the engine compartment.  
Remove the water from the bilges, and the oil from below the engine.*

### B. Internal Cabin

The internal cabin was mainly obscured by the fit-out, and the only area accessible for inspection was around the shower pump and the cabin bilge was dry.

**Rec 4:** *Install an inspection hatch close to the aft steps for periodical inspection of the cabin bilge.*

### 3. Propulsion

#### A. Engine / Gearbox

Ford XLD418 1.8 (approx. 49hp) 4 cylinder diesel inboard / PRM 160: Recorded engine hours = 5457

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. *Black smoke was evident under heavy load.*
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 light brown and the level was correct at the start of the survey.*
6. *The propeller shaft and associated joints appeared to be in a serviceable condition.*
7. *The exhaust system was not gas tight.*
8. *The engine was secure but some movement was evident throughout the RPM range.*
9. *Both forward and reverse gears engaged but the coupling came partly detached from the gearbox when reverse was selected.*
10. *The air filter was fouled.*
11. *The engine is not protected by antifreeze.*
12. *An oil leak was noted from the oil extraction pump, and the engine was fouled with used oil, which made inspection for leaks difficult.*
13. *The engine compartment does not have adequate ventilation.*

**Rec 2:** *Repair or replace the exhaust system.*

**Rec 3:** *Repair the gearbox (the coupling comes partly detached in reverse)*

**Rec 4:** *Carry out a full service to the engine including the fuel system, coolant system, and air filter. In the absence of any service records I recommend that the cambelt be replaced. Secure the oil-extraction pump and rectify the oil leak from the base. Clean the engine. Install 2 x 6in x 6in louvered vents to the aft doors for better engine compartment ventilation.*

#### B. Fuel system

The engine fuel tank is integral to the hull and appears to be in a serviceable condition but was not fully accessible for inspection. The filler and vent are compliant with the current Boat Safety scheme requirements.

#### C. Controls / instruments

The engine is controlled by a remote cable operated lever, which functioned adequately. All the engine instruments appeared to function adequately.

#### 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.

## 4. Batteries / charging

### A. Batteries

3 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 apart from the connecting leads were undersized.

**Rec 2:** *Replace the undersized domestic battery cables.*

### B Engine driven charging system

1 x 12v alternator is fitted to the engine, and the charging output was tested to be approx. 14v. The output is split via a relay. The drive belt appeared to be a serviceable condition.

## 5. Electrical System

### A. Battery isolators

2 x manual battery isolators are fitted to the vessel. The starter isolator appears to be compliant with the current Boat Safety Scheme requirements, and the area behind the domestic isolator was inaccessible for inspection so could not be verified.

### B. 12V System

The majority of the 12v circuits are fed from the switch panel located in the aft cabin, which is 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 lights functioned apart from 1 x engine room light. The headlamp functioned adequately. The 12v fridge appeared to function but was not fully tested. The radio was not secured.

**Rec 4:** *Secure the 12v radio.*

### C. 230V System

A 230v circuit is installed incorporating 13A sockets, which are fed from the inverter, generator, or the shoreline connection.

Protection is provided by a 25A/30Ma RCD, which switch tested adequately but appears to be over rated for the circuit. The earth to hull connection was loose. The double socket close to the calorifier has been disconnected. A cable and plug are fitted below the calorifier, and I was unable to verify what this was used for. The 230v system was tested by using the inverter and generator and appeared to function adequately.

**Rec 3:** *Replace the 25A RCD for a 16A unit.  
Secure the earth to hull connection at the front of the engine.*

## **D. Inverter/charger**

A Sterling 2500w inverter is fitted in the aft cabin, which tested adequately. I could not verify that a fuse was fitted, and the cables did not pass through the isolator.

**Rec 2:** *Fit an inline fuse for the inverter if one is not found, and modify the positive cable to pass through the battery isolator.*

## **E. Generator**

A Sterling 3.5kva 230v engine driven generator is fitted, which switch tested adequately but was not tested under full load. The cables connections to the control box are exposed.

**Rec 3:** *Fit an enclosed housing around the generator control box connections.*

## **6. Fresh Water System**

### **A Water Tank / Pump**

The fresh water tank is located under the forward well deck and appears to be fabricated from galvanised steel. The tank appears to be in a serviceable condition but was not fully accessible for inspection. The water pump tested adequately but was also inaccessible for inspection.

### **B. Shower / Bath**

A wall-mounted shower is fitted, which functioned adequately. The wastewater pump also functioned adequately but was not secured.

**Rec 4:** *Secure the shower wastewater pump.*

### **C. Calorifier**

A twin coil copper calorifier is fitted in the cabin, which appears to be in a serviceable condition. The connection from the stove was leaking, and the immersion heater was not connected.

Hot water is achieved from the calorifier by circulating water from the engine and solid fuel stove. Hot water can also be achieved from the gas water heater when the stop tap is closed at the top of the calorifier. The unit was tested by running the engine for approx. 50 minutes and produced warm water.

**Rec 4:** *Test the calorifier on an extended run of the engine.  
Rectify the leaking stove connection.*

### **D Toilet**

A Porta Potti toilet is provided, which was not tested.

### **E Sinks**

The sinks were in a serviceable condition. The waste outlet for the galley sink is poorly made.

**Rec 4:** *Fit a proprietary connection for the galley sink waste outlet.*

## 7. LPG System

### A Locker

2 x 13kg propane cylinders are installed in the forward locker with a bulkhead-mounted. The installation is compliant with current BSS requirements. The base of the locker has light and moderate corrosion but appeared to be sound.

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

### B Appliances / system

**Vanette 500 DIT full cooker** - The appliance was flame tested and functioned adequately.

**Morco D-61B water heater** - The appliance was flame tested and functioned adequately.

The appliances and system appeared to be installed inline with the current BSS requirements but I could not verify that the 15mm pipe was proprietary gas pipe, and I could not access to connection at the back of the cooker.

## 8. Cabin Internal

### A Cabin Heating

A Morso Squirrel solid fuel stove is fitted in the saloon with an integral back boiler, which feeds the cabin radiators via gravity. The stove appears to be in a serviceable condition but the flue connection was in a poor condition. The stove and system was not tested. I could not verify that the hearth was installed inline with the manufacturers recommendations. The system is not protected by antifreeze.

**Rec 2:** *Remake the lower flue connection.*

**Rec 4:** *Ensure that the antifreeze density is correct, and test the stove and the system for effective operation.*

### C Lining

The majority of the cabin appears to be lined with veneered plywood, and painted pinewood cladding, which is fitted to an adequate amateur standard and is in a serviceable condition. Some light water staining was noted around the windows, which appears to be due to condensation.

**Rec 4:** *Refinish the woodwork around the windows.*

### D Cabin sole (floor)

The cabin sole appears to be sound throughout and the floor covering is in a serviceable condition.

### E Woodwork / Joinery

The cabin is fitted out to a basic amateur standard using mainly plywood and veneered chipboard and is poorly finished in places. The cabinets are in a serviceable condition.



## **F Insulation**

The cabin is insulated with what appears to be polystyrene sheets. 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 13A 70B & 2 x 8A 34B compliant dry powder extinguishers + 1 x fire blanket.

### **B. Ventilation**

Low -level                    1 x 12" x 3" louvered vents forward and aft.

High-level                    4 x open mushroom vents, and 1 x closable mushroom vent.

The ventilation is compliant with the current BSS requirements.

## **10. Conclusion**

The vessel requires some remedial and maintenance work in order to bring it up to a usable standard. 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. 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 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. 10mm in diameter so we can only verify that the steel thickness was acceptable at the point, which 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 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.

Signed..... Date.....

*Michael Clarke*

Marine surveyor - Northern Star Marine Ltd