Survey Report

For

“……”

Northern Star Marine

NARROWBOAT SURVEYS

& BSS Certification

Michael Clarke **–** *Dip.S.C.Sur. AMIMarEST*

....Survey Report....

This is to certify

That I the undersigned carried out a full 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 / Index No: **.....**

For the purpose of: **Full Survey**

On: **.....**

At: **.....**

Mill Wharf, Gayton Road, Blisworth Northamptonshire NN7 3BN Tel: (01604) 858 868 Mob: 07944 856 351
www northernstarmarine.co.uk info@northernstarmarine.co.uk

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 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.

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.

Location/ Conditions:

The survey was carried out on hard standing at the ..... boat Co. Wooden sleepers supported the vessel which restricted access to the bottom of the hull. The vessels hull had a thick coating of bitumen based paint which made it difficult to inspect the steelwork.

The weather was: Overcast.

Vessel Particulars:

Name:	.....	**Type:**	Semi-trad style Narrowboat
Builder:	Teddlesley boats	**Fit-out**:	Teddlesley boats
Year of build:	2002	**Index:**	.....
Hin/Yard No:	Non sighted	**Length:**	64ft
Beam:	6ft 10in	**Draught:**	2ft 5In
Fuel:	Diesel	**Engine/Gearbox:**	Isuzu / Delta

Summery:

.....is a 64ft semi traditional style narrowboat built circa 2002 by Teddlesley boat Co.

No documentation was available to show original compliance with the Recreational Craft Directive which was a requirement for this vessel when it was manufactured.

The hull sides and bottom have minimal galvanic pitting corrosion.

The steel thickness where tested, is within acceptable limits.

One of the underwater counter plate joints has been welded from one side only.

The paintwork has been applied to a good standard and the interior of the vessel and the on board systems are in a good usable condition.

The engine and gearbox performed well when tested.

There are a number of faults noted, detailed in this report.

The Survey:

Recommendations are defined by:

Rec 1: Items that should be addressed before the vessel is considered to be in an insurable condition.

Rec 2: Items that should be addressed in order to pass the current BSS examination or to comply with recommendations set out in the BSS technical manual for good practice.

Rec 3: Items that should be addressed which affect the normal use of the vessel.

Rec 4: Items that should be addressed to prevent future problems.

Recommendations are all in bold italic type for quick reference.

1. External Hull, decks, and superstructure

A Sides:

Originally fabricated from nominal 6mm steel. One notable dent is present at the stern of the vessel.

Approximately twenty sample areas were selected at random and prepared for inspection

From the sample areas selected, ultrasonic measurements show the plate thickness to be between 6mm and 6.1mm which is within acceptable limits.

Minimal galvanic pitting was evident.

From the sample areas selected at random the pit depths were less than 0.5mm.

The hull has a thick coating of what appears to be bitumen based paint.

B Bottom:

Originally fabricated from nominal 10mm steel.

Approximately twenty sample areas were selected at random and prepared for inspection.

From the sample areas selected, ultrasonic measurements show the plate thickness to be between 9.9mm and 10.1mm, which is within acceptable limits.

Minimal galvanic pitting was evident.

From the sample areas selected at random the pit depths were less than 0.5mm deep.

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 5-10mm of wear edge remaining apart from the sections at the turn of the counter swim which is between 30-40mm.

Rec 3: ***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 sometimes 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 is coated to protect the steelwork.

C Counter/Uxter plate (Underside of engine bay):

Originally fabricated from nominal 10mm steel.

From the sample areas selected at random, ultrasonic measurements show the plate thickness to be between 9.9mm and 10mm which is within acceptable limits.

Light galvanic pitting was evident.

From the sample areas selected at random the pit depths were less than 0.5mm.

The aft counter plate joint has been single sided welded only, and full thickness penetration has not been achieved.

Rec 1: ***Continuously weld the aft counter plate joint externally.***

D Rubbing strakes (Weld on steel protection strips):

1 x 50mm strip along the length of the vessel above the waterline attached by welding. 3 x strips at the bow and 1 x strip at the stern.

In the sample areas examined, the rubbing strakes appear to be continuously welded at the top and intermittently welded at the bottom.

The strakes have a thick coating of bitumen blacking on which made them difficult to inspect.

Rec 4: ***Continuously weld the strakes at the bottom to prevent crevice corrosion. If it is not possible to do this due to financial or time constraints clean off all corrosion and seal with an underwater sealant then paint over with bitumen based paint.***

E Cathodic protection (Anodes):

None

Rec 4: ***Attach 4 x 2.5kg anodes by welding. 2 x at the stern and 2 x at the bow.***

D Rudder:

Light surface pitting and corrosion is present

The rudder and stock were not attached to the vessel at the time of survey. The rudder nib was bent and the stock was also bent. The rudder stock tube is inaccessible for inspection as it passes through the fuel tank.

The skeg hammer tested satisfactorily.

The top and bottom bushes appear to be in a serviceable condition but were not tested with the rudder stock in place so I was unable to assess the free play movement.

I was informed by the prospective new owner that the rudder stock rattled and vibrated when in use.

Rec 4: ***Straighten rudder and stock.***

Rec 4: ***Replace top rudder bearing if excessive free play movement is evident.***

I Stern gear:

An 18" Turbine type propeller is fitted on a stainless steel shaft with a nut and a split pin. The shaft is in a serviceable condition. The propeller has a number of abrasions which may cause vibration.

The stern tube appears to be in a serviceable condition.

Rec 4: ***Repair/replace propeller if excessive vibration is evident.***

J Outlets / Freeboard:

It is a requirement of the Boat Safety Scheme for hire boats and unregulated passenger boats for all outlets to terminate to at least 10 inches above the normal laden waterline.

It is also a requirement by most insurance companies but does not normally become apparent until a vessel is approx. 15-20 years old when a hull survey is required to gain a certificate of insurance.

All the outlets appeared to terminate to at least 10Inches above the waterline.

K Decks:

In the areas visible for inspection the front deck appeared to be sound.

In the areas visible for inspection the rear deck appeared to be sound.

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

L Cabin sides / Gunwales:

The cabin sides are fabricated from welded steel sections to a reasonable standard. The joining welds are ground flat and are hidden.

The paint finish appears to be standard marine enamel, which has been applied to a good standard.

The gunwales have been finished with a smooth finish.

Rec 4*:** ***De-rust, and apply suitable marine enamel to any areas where the paint system has failed and apply a non-slip finish to the gunwales.

M Cabin Top:

The cabin top is fabricated from welded steel sections to a reasonable standard with light bowing. The joining welds have been ground flat and are hidden.

The paint finish appears to be standard marine enamel, which has been applied to a good standard.

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

N Windows:

The windows are anodised aluminium top hoppers. The windows are in a serviceable condition.

The windows were not tested for water tightness.

O Security:

The front doors are fabricated from plywood. The doors can be locked from the inside only and are in a good condition.

The rear door is fabricated from plywood. The door can be locked from the inside and out and is in a good condition.

The rear hatch is fabricated from mild steel. The hatch can be locked from the inside and out and is in a serviceable condition.

P Cratch

NA

2. Hull internal

A. Engine room

Surface corrosion is present in the areas visible where the paint system has failed.

Rec 4: ***Clean, degrease, de-rust, and apply suitable marine enamel in the areas where the paint system has failed.***

B. Weed Box

The weed hatch and coaming were hammer tested and found to be sound with some areas of corrosion.

The top of the weed box is more than 6" above the waterline which is a requirement of most insurance companies.

The seal is in a fair condition.

Rec 4: ***Clean, degrease, de-rust, and apply suitable marine enamel in the areas where the paint system has failed, and replace the seal annually.***

C. Internal Cabin (inspection hatch)

The internal cabin was obscured by the fit-out.

The only area visible was the inspection hatch for the water pump. The cabin bilge was dry.

3. Propulsion

A. Engine /Gearbox

Isuzu 38hp 4 cylinder diesel inboard / Delta hydraulic Engine hours: unknown

The engine was tested whilst the vessel was in the water for approx. 20 Mins the findings are:

1. The engine started easily after a short period of pre-heat.
2. A small amount of smoke was noted that quickly cleared.
3. The engine did not appear to overheat within the test period.
4. The engine oil was brown, and the level was correct.
5. The gearbox oil was clear and the level correct.
6. The coolant system was at the correct level and the anti-freeze at 25%.

7. The engine did not appear to have any fuel, lubricant or coolant leaks although the engine had a light layer of oil and grime on making it difficult to locate any leaks.
8. The air filter was dirty.
9. The exhaust system was correctly lagged.
10. The engine mounts are slightly worn but secure
11. The engine hour meter did not function.

Rec 4: ***Degrease engine, clean air filter, and repair hour meter***

B. Fuel system

The fuel tank is integral to the hull, and appears to be in a good condition.

The filler and vent are in accordance with the current Boat Safety scheme requirements.

The shut off valve is located under the rear deck and is labelled correctly.

C. Controls / instruments

The engine control lever is in a serviceable condition and functioned well.

All the gauges appeared to function correctly.

D. Stern gland

(Stuffing box with gland packing) The stern gland appears to be in a serviceable condition which appeared to have been letting in a small amount of water which is normal for this setup.

Note: The vessel was not seen in the water.

E. Bilge pump

An electric bilge pump is fitted with a manual switch.

The pump switch tested satisfactorily.

The pump uses the hull as a negative conductor.

The wires to the pump need securing.

Rec 2: ***Secure pump wires.***

Note: ***It is recommended for best practice in the BSS technical manual, and is a requirement set out in the BMEA code of practice which should be applied to new built vessels that the hull is not used as a conductor.***

4. Batteries/Charging

A. Batteries

4 x 225Ah 6V Deep cycle domestic batteries linked together as 2 x 12V cells + 1 x 95Ah starter battery.

The electrolyte levels are correct.

The voltage was tested to be approx. 12.6v for both battery banks.

The batteries were connected to a Sealey BT02 battery analyser and found to be in a serviceable condition.

The installation is in accordance with the current Boat Safety Scheme requirements apart from the batteries move more than 10mm in either direction.

Rec 2: ***Secure batteries.***

B Charging System

1 x 12v alternator is fitted. The output passes through a relay which separates the battery banks.

The charging output for the alternator was tested to be approx. 13.9v at 1500rpm.

The belt is slightly worn and correctly tensioned.

5. Electrical System

A. Battery isolators

1 x single manual battery isolator is fitted in the engine compartment which switches the negative conductor.

The isolator is installed in accordance with the current Boat Safety Scheme requirements.

Note: ***It is recommended for best practice in the BSS technical manual, and is a requirement set out in the BMEA code of practice which should be applied to new built vessels that the battery isolators switch the positive circuit.***

B. Cables

The main battery cables are the correct type.

The cables which pass through the metal conduit from the engine compartment to the batteries are in contact with the steelwork.

Rec 2: ***Protect wires with rubber pipe or conduit.***

C. Lights

Filament type lights.

All of the lights functioned when tested.

D. Inverter / charger

A Mastervolt 2000 inverter is fitted in the aft cabin beneath the seating.

The installation is in accordance with current BSS requirements.

The unit appeared to function correctly but was not tested under full load.

E. Generator

Not applicable.

F. 12V System

The 12v circuits are fed from the main panel located in the aft cabin cupboard which is in a good condition. I was unable to ascertain if all the cables were of the correct current carrying capacity or if the circuit breakers were appropriately rated. The circuit breakers are labelled with their rating only.

The connections for the headlamp and horn are exposed.

Rec 2: ***Insulate connections.***

Rec 4: ***Label circuit breakers with their use.***

G. 240V System

A 240v ring main is installed incorporating 13A sockets which are fed from the inverter.

Protection is provided by a 30Ma RCD unit and 1 x 10A & 1 x 6A circuit breakers. The breakers were not labelled with their use.

The system appeared to function correctly but was not tested under load.

The system earth wire does not appear to be attached to the hull.

Rec 4: ***Attach system earth wire to hull. Label circuit breakers.***

Note: ***The BMEA code of practice states that newly built vessels require an earth protection wire to be attached to the hull but is not a requirement for the BSS examination.***

H. Bowthruster

Not applicable

6. <u>Fresh Water System</u>

A Water Tank

The fresh water tank is located under the front deck and appears to be fabricated from stainless steel.

The tank filler and breather are located in the locker on the forward deck.

The tank appeared to be water tight, but was not pressure tested.

B Stop cock

The stop cock is located in the forward cupboard on the port side

C. Water Pump

2 x diaphragm water pumps and an accumulator tank are installed behind the aft steps.

The pumps were tested and appeared to function adequately.

D. Sinks

The bathroom and galley sinks appeared to function correctly with no leaks.

E. Shower/Bath

The shower appeared to functioned correctly.

A waste water pump is fitted in the bathroom but was not accessible for inspection. The pump appeared to function correctly.

F. Calorifier

A twin coil copper calorifier is fitted beneath the double bed with a 3 bar pressure relief valve. The outlet from the valve expels onto the cabin floor.

Hot water is achieved by circulating water for the engine and from the Alde boiler.

The unit was not tested.

Rec 3: Install a waste outlet for the calorifier to expel overboard or into the engine bilge.

G Toilet

2 x Sealand traveller toilets are installed in the bathrooms on top of the waste tanks which appear to be in a serviceable condition.

The toilets functioned correctly when tested.

The waste tank or connections were not accessible for inspection.

8. Gas System

A Locker

4 x 13Kg Propane bottles are installed in the LPG locker with a bulkhead mounted regulator.

The installation is in accordance with the current Boat Safety Scheme requirements apart from:

1. The regulator needs protecting.

The steelwork in the locker is corroded at the bottom.

Rec 2: Protect regulator.

Rec 4: Clean, degrease, de-rust, and apply suitable marine enamel in the areas where the paint system has failed.

B LPG System

The LPG system in the areas visible for inspection is installed in accordance with the current Boat Safety Scheme requirements.

C Appliances

1. Alde comfort water heater.
2. Stoves new home cooker.

1. A flame test was carried out on the appliance and the unit appeared to function correctly.

2. A flame test was carried out on the appliance and the unit appeared to function correctly.

The units are installed in line with current BSS requirements apart from:

1. The isolation tap for the Alde boiler was not labelled.

Rec 2: Label isolation tap.

9. Cabin Internal

A Diesel / LPG Heating

An Alde comfort LPG central heating system is installed incorporating radiators.

The unit was tested and appeared to function correctly with heat from the radiators produced.

The system appeared to be installed correctly.

B Solid fuel stove

Not applicable.

C Lining

The cabin is lined with faced plywood with a hardwood trim.

All the lining appears to be in a serviceable condition.

D Flooring

The flooring is a mixture of vinyl and carpet laid on plywood.

The floor appears to be in a serviceable condition.

E Joinery

The cabin joinery is fabricated from plywood and laminated chipboard to a good standard. The cabinets are in a serviceable 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 steelwork.

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.

In the areas visible for inspection the cables are contained within a spiral wrap conduit. I could not verify that all the cables are adequately protected.

10. Safety

A Fire Fighting

3 x 8A 55B Thomas Glover dry powder extinguishers.

1 x fire blanket

The units appear to be in a serviceable condition and are in compliance with current BSS requirements.

Rec 4: Service extinguishers annually.

B Fire Detection / CO2 detection

Non sighted.

Rec 4: Install smoke and CO2 detectors.

C. Lifebuoys / life jackets

1 x life ring.

Rec 4: Always carry sufficient life jackets for the passengers and crew.

D. Ventilation

Low level 1 x 6" x 12" grill on the front doors. 1 x 6" x 12" grill on the rear door.

High level 4 x mushroom vents with grills.

The ventilation is compliant with the current BSS requirements.

11. RCD compliance documentation

No documentation was available to show original compliance with the Recreational Craft Directive which was a requirement for this vessel when it was manufactured.

As the vessel is being sold by the original manufacturer it may still be possible to CE mark the boat and provide the documentation required before the purchase goes ahead.

12. Conclusion

The vessel requires remedial attention to the counter plate joint before it can be considered to be in an insurable condition suitable for inland waterways use.

Assuming all the recommendations are carried out the vessel should comply with the current Boat Safety Scheme regulations, be safe to use, and give many years of service.

12. 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 assuming all the recommendations are carried out.

Estimated market value: £54,000 (Fifty four thousand pounds)

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

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 sea cocks / 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. 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.

15. 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.

Signed……. **Date**…….

MICHAEL CLARKE
MARINE SURVEYOR & BSS EXAMINER - NORTHERN STAR MARINE