

# REPORT ON MACHINERY.

Port of Newcastle-on-Tyne

MUN. 27 OCT 1902

No. in Survey held at Newcastle Date, first Survey Apr. 23 Last Survey Nov. 11 1902  
 Reg. Book. on the "S/S Morpeth" (Number of Visits 29)  
 Master W. Bowie Built at Newcastle By whom built R. Stephenson & Co Tons { Gross 2508 Net 1585  
 Engines made at Newcastle By whom made North Eastern Mar. Eng. Co when made 1902  
 Boilers made at Newcastle By whom made North Eastern Mar. Eng. Co when made 1902  
 Registered Horse Power \_\_\_\_\_ Owners J. B. Adams Port belonging to Newcastle  
 Nom. Horse Power as per Section 28 233 Is Refrigerating Machinery fitted No Is Electric Light fitted No

**ENGINES, &c.**—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 22.36.58 Length of Stroke 39 Revs. per minute 75 Dia. of Screw shaft 12.49 as per rule 12.49 as fitted 12.49 Lgth. of stern bush 4.6  
 Dia. of Tunnel shaft 10.8 as per rule 10.8 as fitted 10.8 Dia. of Crank shaft journals 11.4 as per rule 11.4 as fitted 11.4 Dia. of Crank pin 11.4 Size of Crank webs 2 1/2 x 7 Dia. of thrust shaft under collars 11.4 Dia. of screw 15.3 Pitch of screw 15.3 No. of blades 4 State whether moveable No Total surface 70 sq  
 No. of Feed pumps 2 Diameter of ditto 3 1/4 Stroke 18 Can one be overhauled while the other is at work No  
 No. of Bilge pumps 2 Diameter of ditto 3 1/4 Stroke 18 Can one be overhauled while the other is at work No  
 No. of Donkey Engines 2 Sizes of Pumps 8x9x10, 6x4x6 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Two 3" Two 3 1/2" In Holds, &c. Two in each hold 3" one in after well 2 1/4"  
 No. of bilge injections 1 sizes 4" Connected to condenser, or to circulating pump No Is a separate donkey suction fitted in Engine room & size No 3 1/2"  
 Are all the bilge suction pipes fitted with roses No Are the roses in Engine room always accessible No Are the sluices on Engine room bulkheads always accessible No  
 Are all connections with the sea direct on the skin of the ship No Are they Valves or Cocks Both  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates No Are the discharge pipes above or below the deep water line No  
 Are they each fitted with a discharge valve always accessible on the plating of the vessel No Are the blow off cocks fitted with a spigot and brass covering plate No  
 What pipes are carried through the bunkers None How are they protected \_\_\_\_\_  
 Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times No  
 Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges No  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock Nov Is the screw shaft tunnel watertight No  
 Is it fitted with a watertight door No worked from Upper Platform

**BOILERS, &c.**— (Letter for record S) Total Heating Surface of Boilers 3840 sq Is forced draft fitted No  
 No. and Description of Boilers Two Single Ended Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs  
 Date of test 13/8/02 Can each boiler be worked separately No Area of fire grate in each boiler 63.7 sq No. and Description of safety valves to each boiler Two spring valves Area of each valve 7.07 sq Pressure to which they are adjusted 165 lbs Are they fitted with easing gear No  
 Smallest distance between boilers or uptakes and bunkers or woodwork 6" + 1/2" + 1/2" Mean dia. of boilers 14-0 7/8" Length 10-6" Material of shell plates S  
 Thickness 1 1/8" Range of tensile strength 29-32 Are they welded or flanged No Descrip. of riveting: cir. seams Lap double long. seams d. b. to riv.  
 Diameter of rivet holes in long. seams 1 7/8" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 15 3/8"  
 Per centages of strength of longitudinal joint rivets 80 Working pressure of shell by rules 160 Size of manhole in shell 16x12  
 Size of compensating ring Handled in No. and Description of Furnaces in each boiler 3 Plain Material S Outside diameter 40 1/2"  
 Length of plain part top 6-3 bottom 6-8 Thickness of plates crown 23 bottom 32 Description of longitudinal joint d. b. single No. of strengthening rings ✓  
 Working pressure of furnace by the rules 166 Combustion chamber plates: Material S Thickness: Sides 1/8" Back 1/8" Top 1/8" Bottom 7/8"  
 Pitch of stays to ditto: Sides 9 3/4 x 10 1/4 Back 10 1/2 x 9 1/2 Top 10 1/4 x 9 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 162  
 Material of stays S Diameter at smallest part 1 1/2" Area supported by each stay 100 sq Working pressure by rules 161 End plates in steam space: Material S Thickness 1 1/4" Pitch of stays 21x21 How are stays secured A n. w. Working pressure by rules 167 Material of stays S  
 Diameter at smallest part 7.24 sq Area supported by each stay 441 sq Working pressure by rules 164 Material of Front plates at bottom S  
 Thickness 7/8" Material of Lower back plate S Thickness 3/4" Greatest pitch of stays 14 1/2" Working pressure of plate by rules 165  
 Diameter of tubes 3 1/2" Pitch of tubes 14 1/2" Material of tube plates S Thickness: Front 3/4" Back 3/4" Mean pitch of stays 9"  
 Pitch across wide water spaces 14 1/2" Working pressures by rules 248 Girders to Chamber tops: Material S Depth and thickness of girder at centre 8 1/2" + 1 1/2" Length as per rule 34" Distance apart 9 1/2" Number and pitch of Stays in each 2, 10 1/2"  
 Working pressure by rules 172 Superheater or Steam chest; how connected to boiler ✓ Can the superheater be shut off and the boiler worked separately ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet holes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓  
 If stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ✓ How stayed ✓  
 Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the ship?

1500-4-02-Copyable Ink.



**DONKEY BOILER**— No. *44* Description *Vertical, Blake's patent*  
 Made at *Middlesbrough* By whom made *Richardson & Welfarth* When made *17/7/02* Where fixed *St. Michael*  
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *2792* Fire grate area *20 sq* Description of safety valves *spring*  
 No. of safety valves *2* Area of each *4.91* Pressure to which they are adjusted *80 lbs* If fitted with casing gear *no* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *7'-0"* Length *15'-0"* Material of shell plates *6* Thickness *15/32* Range of tensile strength *27,32* Descrip. of riveting long. seams *lap double* Dia. of rivet holes *15/16* Whether punched or drilled *drilled* Pitch of rivets *3"*  
 Lap of plating *4 5/8"* Per centage of strength of joint Rivets *83.5* Thickness of shell crown plates *15/32* Radius of do. *4 1/2* No. of Stays to do. *—*  
 Dia. of stays *✓* Diameter of furnace Top *3'-3"* Bottom *5'-6 3/4"* Length of furnace *4'-7"* Thickness of furnace plates *19/32* Description of joint *lap simple* Thickness of furnace crown plates *3 7/8"* Stayed by *Cylindrical dished 3'-9"* Working pressure of shell by rules *87*  
 Working pressure of furnace by rules *93* Diameter of *water* tubes *2 1/2"* Thickness of *water* tubes *7/8"* Thickness of water tubes *✓*

**SPARE GEAR.** State the articles supplied:— *Two top end, + two bottom end connecting rod bolts + nuts, two main bearing bolts, one set coupling bolts, one set fuel + high pump valves assorted bolts + nuts, iron of various sizes.*

The foregoing is a correct description,

**THE NORTH EASTERN MARINE ENGINEERING CO. LTD.** Manufacturer.

*J. Harrison*  
 Dates of Survey while building: During progress of work in shops *Apr 23, 24, 25, 26, 27, 28, 29, 30, May 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, June 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, July 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Aug 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Sep 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, Oct.*  
 During erection on board vessel *1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30*  
 Total No. of visits *29* Is the approved plan of main boiler forwarded herewith *no*  
 " " " donkey " " " " *no*

**General Remarks** (State quality of workmanship, opinions as to class, &c.)

Material of screw shaft *Iron* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *no*  
 Is the after end of the liner made water tight in the propeller boss *no* If the liner is in more than one length are the joints burned *✓*  
 If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *✓* If two liners are fitted, is the shaft lapped or protected between the liners *no*

*The Machinery of this vessel has been constructed under special survey. The materials and workmanship are sound and good and under the vessel eligible in my opinion to have record of T.L.M.C. 10.02*

*It is submitted that this vessel is eligible for THE RECORD. + T.L.M.C. 10.02 Elec. light.*  
*C.M.*  
*28.10.02*  
*28.10.02*

The amount of Entry Fee. £ *2* : : : When applied for, *20 OCT 1902*  
 Special . . . . . £ *31 13* : : : : :  
 Donkey Boiler Fee . . . . . £ : : : : :  
 Travelling Expenses (if any) £ : : : : :  
 When received, *12/11/02*

*J. Harrison*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **TUES. 28 OCT 1902**  
 Assigned *+ T.L.M.C. 10.02*

Certificate (if required) to be sent to Newcastle-on-Tyne

The Surveyors are requested not to write on or below the space for Committee's Minute.

MACHINERY CERTIFICATE WRITTEN.



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