

# REPORT ON MACHINERY.

Port of Newcastle

Received at London Office WED. 14 FEB 1894

No. in Survey held at Newcastle Date, first Survey 5<sup>th</sup> Oct. 93 Last Survey Jan 30 1894  
 Reg. Book. Supplement (Number of Visits 25)  
 14 on the Steel Screw Steamer "Newark"  
 Master J. Mear Built at Newcastle By whom built Messrs Palmers Coy Tons { Gross 1028  
 Net 649.8  
 When built 1894  
 Engines made at Newcastle By whom made Messrs Palmers Coy when made 1894  
 Boilers made at Do By whom made Do when made 1894  
 Registered Horse Power 120 Owners Newcastle S. S. Coy (Lim) Port belonging to Newcastle  
 Nom. Horse Power as per Section 28 150 J. J. & C. M. Forster - Managers

ENGINES, &c.— Description of Engines Triple Expansion No. of Cylinders 3  
 Diameter of Cylinders 19-3 1/2 - 5 1/2 Length of Stroke 33 Revolutions per minute 70 Diameter of Screw shaft as per rule 9 1/2  
 Diameter of Tunnel shaft as per rule 8 3/4 Diameter of Crank shaft journals 9 1/4 Diameter of Crank pin 9 1/4 Size of Crank webs 6 1/2 X 12 1/2  
 Diameter of screw 13 0 Pitch of screw 14 6 No. of blades 4 State whether moveable No Total surface 46 sq  
 No. of Feed pumps 2 Diameter of ditto 3 Stroke 16 1/2 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 3 Stroke 16 1/2 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines Two Sizes of Pumps 11 X 11 X 12 5 1/2 X 3 1/2 X 5 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Four 2 1/2 Tunnel well one 2 1/2 Holds, &c. Main hold two 2 1/2 - After main hold three 2 1/2  
 No. of bilge injections Three sizes 3 3/4 Connected to condenser, or to circulating pump As pumps a separate donkey suction fitted in Engine room & size 2 1/2 3  
 Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes  
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks both  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the discharge pipes above or below the deep water line above  
 Are they each fitted with a discharge valve always accessible on the plating of the vessel Yes Are the blow off cocks fitted with a spigot and brass covering plate Yes  
 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 Yes  
 Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges Yes  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock ✓ Is the screw shaft tunnel watertight Yes  
 Is it fitted with a watertight door Yes worked from top platform

BOILERS, &c.— (Letter for record S.) Total Heating Surface of Boilers 2220 sq  
 No. and Description of Boilers One Multitubular Single ended Working Pressure 160 lb Tested by hydraulic pressure to 320 lb  
 Date of test 22/12/93 Can each boiler be worked separately ✓ Area of fire grate in each boiler 50.5 sq No. and Description of safety valves to each boiler 2 Spring  
 Area of each valve 7.07 Pressure to which they are adjusted 165 lb Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 18 Mean diameter of boiler 15.6  
 Length 10 0 Material of shell plates Steel Thickness 1 1/2 Description of riveting: circum. seams Lap double long. seams D. B. Triple  
 Diameter of rivet holes in long. seams 1 1/2 Pitch of rivets 8 1/4 Lap of plates or width of butt straps 17 3/4  
 Per centages of strength of longitudinal joint rivets 86.3 Working pressure of shell by rules 160 lb Size of manhole in shell 16 X 12  
 plate 85.3  
 Size of compensating ring Flanged No. and Description of Furnaces in each boiler 4 plain Material Steel Outside diameter 39 1/2  
 Length of plain part top 5.9 bottom 5.7 Thickness of plates top 1/2 bottom 1/2 + 1/2 Description of longitudinal joint D. B. Single No. of strengthening rings 2 ring  
 Working pressure of furnace by the rules 161 lb Combustion chamber plates: Material Steel Thickness: Sides 9/16 Back 9/16 Top 9/16 Bottom 1/2 + 1/2  
 Pitch of stays to ditto: Sides 8 X 8 Back 8 X 8 Top 8 X 8 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 161 lb  
 Material of stays Steel Diameter at smallest part 1 1/2 Area supported by each stay 79 Working pressure by rules 179 lb End plates in steam space:  
 Material Steel Thickness 1 1/2 Pitch of stays 16 X 17 1/2 How are stays secured Don't Working pressure by rules 165 lb Material of stays Steel  
 Diameter at smallest part 2 1/2 Area supported by each stay 280 Working pressure by rules 169 lb Material of Front plates at bottom Steel  
 Thickness 1/2 Material of Lower back plate Steel Thickness 1/2 Greatest pitch of stays 15 1/2 Working pressure of plate by rules 160 lb  
 Diameter of tubes 3 1/2 Pitch of tubes 4 1/2 Material of tube plates Steel Thickness: Front 3/4 Back 3/4 Mean pitch of stays 11 1/2  
 Pitch across wide water spaces 14 1/2 Working pressures by rules 200 lb Girders to Chamber tops: Material Iron Depth and thickness of girder at centre ✓ Length as per rule ✓ Distance apart ✓ Number and pitch of Stays in each ✓  
 Working pressure by rules ✓ Superheater or Steam chest; how connected to boiler None 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 ✓



242835-0010

**DONKEY BOILER**— Description *Vertical with 3 cross water tubes*  
 Made at *Stockton* By whom made *J. Johnson 76.57 Lin* When made *29/1/93* Where fixed *Stockton*  
 Working pressure *80 lb* tested by hydraulic pressure to *160 lb* No. of Certificate *750* Fire grate area *23 sq ft* Description of safety valves *Spring*  
 No. of safety valves *One* Area of each *11.04* Pressure to which they are adjusted *80 lb* If fitted with casing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *6'9"* Length *12'9"* Material of shell-plates *Steel* Thickness *7/8"*  
 Description of riveting long seams *Lap Double* Diameter of rivet holes *13/16"* Whether punched or drilled *punched* Pitch of rivets *2 3/4"*  
 Lap of plating *4 1/2"* Per centage of strength of joint Rivets *73.4* Plates *70.4* Thickness of shell crown plates *1/2"* Radius of do. *5'9"* No. of Stays to do. *7*  
 Dia. of stays. *1 3/4"* Diameter of furnace Top *5'4"* Bottom *6'1"* Length of furnace *5'9"* Thickness of furnace plates *5/8"* Description of joint *Lap single* Thickness of furnace crown plates *9/16"* Stayed by *7 stays & dished to 5'9"* Working pressure of shell by rules *80.4 lb*  
 Working pressure of furnace by rules *80 lb* Diameter of uptake *15"* Thickness of uptake plates *7/8"* Thickness of water tubes *3/8"*

**SPARE GEAR.** State the articles supplied *2 Top end bolts & nuts, 2 bottom end bolts & nuts, 2 main bearing bolts, one set of coupling bolts & nuts, 1 set of feed & bilge pump valves & seats, one feed check valve & seat - 1 spare propeller, one set H.P. piston springs - Bolts & nuts assorted.*

The foregoing is a correct description,  
*J. Johnson* Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been constructed under special survey the materials and workmanship are sound & good & eligible in my opinion to be classed + L.M.C. 1.94. in the Register Book of the Society*

*It is submitted that this vessel is eligible for THE RECORD + L.M.C. 1.94*  
*R. L.*  
*14/2/94.*

*[Large blue ink signature]*  
 Surveyor's Office.

Certificate (if required) to be sent to  
 The amount of Entry Fee.. £ 2 : : : : When applied for.  
 Special .. .. £ 22 : 0 : : : : 13.7.18.94.  
 Donkey Boiler Fee .. .. £ . : : : :  
 Travelling Expenses (if any) £ . : : : : 3/5/94

*R. F. Morton*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
 Assigned  
 + L.M.C. 1.94

FRI 16 FEB 1894

FRI 8 JUN 1894



(The Stencils are requested and to write in or below the space for Committee's Minute.)