

REPORT ON MACHINERY.

Port of Sunderland

Received at London Office

19

No. in Survey held at Sunderland Date, first Survey 23rd Feby 1901 Last Survey 27th Feby 1902
 Reg. Book. on the Steel Screw Steamer "Kelvinside" (Number of Visits 58) Tons { Gross 3531
 Net 2203
 Master E. H. O'Neal Built at Sunderland By whom built Short Bros When built 1902
 Engines made at Sunderland By whom made N. E. M. & Co. Ltd. when made 1902
 Boilers made at " " " " " " when made 1902
 Registered Horse Power Owners Glasgow S.S. Coy Port belonging to Glasgow
 Nom. Horse Power as per Section 28 333 Is Refrigerating Machinery fitted No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 25"-41"-68" Length of Stroke 48" Revs. per minute 70 Dia. of Screw shaft 14 1/8" as per rule 14 1/8" as fitted 14 3/8" Lgth. of stern bush 4'-7"
 Dia. of Tunnel shaft 12 3/4" as per rule 12 3/4" as fitted 12 3/4" Dia. of Crank shaft journals 13 3/8" as per rule 13 3/8" as fitted 13 3/8" Dia. of Crank pin 13 3/8" Size of Crank webs 20 1/4" x 8 1/4" Dia. of thrust shaft under collars 1/4" Dia. of screw 17'-6" Pitch of screw 17'-6" No. of blades 4 State whether moveable No Total surface 90 sq ft
 No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 3 Sizes of Pumps 10 1/2" x 11" x 10 1/2" & 6" x 4" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 4 of 3 1/2" dia. In Holds, &c. 2 of 3 1/2" in each hold & tunnel well

No. of bilge injections 1 sizes 5" Connected to condenser, or to circulating pump C.P. Is a separate donkey suction fitted in Engine room & size Yes 3 1/2"
 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 New vessel Is the screw shaft tunnel watertight Yes
 Is it fitted with a watertight door Yes worked from Deck

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 4925 sq ft Is forced draft fitted Yes
 No. and Description of Boilers Two ordinary Marine Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs
 Date of test 21/10/01 Can each boiler be worked separately Yes Area of fire grate in each boiler 59.5 sq ft No. and Description of safety valves to each boiler 2 Spring Area of each valve 8.29 sq in Pressure to which they are adjusted 180 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 14'-7 1/2" Length 11'-7 1/4" Material of shell plates S
 Thickness 1 5/32" Range of tensile strength 29-32 T. Are they welded or flanged No Descrip. of riveting: cir. seams D.R.L. long. seams T.R.D.B.
 Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8 5/16" Lap of plates or width of butt straps 17 3/4"
 Per centages of strength of longitudinal joint rivets 85.7 plate 85.7 Working pressure of shell by rules 182.5 lbs Size of manhole in shell end 6" x 12"
 Size of compensating ring Flanged No. and Description of Furnaces in each boiler 3 Morrison's Material S Outside diameter 3'-11 1/2"
 Length of plain part top ✓ bottom ✓ Thickness of plates crown 3 9/16" Description of longitudinal joint Welded No. of strengthening rings ✓
 Working pressure of furnace by the rules 185 lbs Combustion chamber plates: Material S Thickness: Sides 2 3/32" Back 1 1/16" Top 3 3/32" Bottom 3 1/4"
 Pitch of stays to ditto: Sides 9 3/4" x 10" Buck 9 3/8" x 9" Top 9 3/4" x 10" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 183 lbs
 Material of stays S Diameter at smallest part 2 1/4" Area supported by each stay 104 sq in Working pressure by rules 181 lbs End plates in steam space:
 Material S Thickness 1 1/4" Pitch of stays 21" x 19" How are stays secured N.Y.W. Working pressure by rules 184 5/8 lbs Material of stays S
 Diameter at smallest part 7.24" Area supported by each stay 399 sq in Working pressure by rules 191 lbs Material of Front plates at bottom S
 Thickness 1 3/16" Material of Lower back plate S Thickness 2 1/32" Greatest pitch of stays 13 1/4" x 9 3/8" Working pressure of plate by rules 186 lbs
 Diameter of tubes 3 1/2" Pitch of tubes 3 3/4" x 3 3/4" Material of tube plates S Thickness: Front 1 1/8" Back 1 3/16" Mean pitch of stays 7 1/2" x 7 1/2"
 Pitch across wide water spaces 1'-1 1/4" Working pressures by rules 186 lbs Girders to Chamber tops: Material S Depth and thickness of girder at centre 7 1/2" Length as per rule 29 1/2" Distance apart 9 3/4" Number and pitch of Stays in each 2 of 10"
 Working pressure by rules 199 lbs 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

Is a Report also sent on the Hull of the Ship

[2001-1/12/99-Copyable Ink.]



DONKEY BOILER— No. 1 Description *Ordinary Marine, Two plain furnaces*
 Made at *Strickton* By whom made *Riley Boss* When made *24/10/01* Where fixed *Stockhold*
 Working pressure *100 lbs* tested by hydraulic pressure to *200 lbs* No. of Certificate *2612* Fire grate area *24 sq ft* Description of safety valves *Spring*
 No. of safety valves *2* Area of each *7.06 sq ft* Pressure to which they are adjusted *100 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *10'-0"* Length *10'-0"* Material of shell plates *S* Thickness *2 1/32"* Range of tensile strength *27 1/32 T* Descrip. of riveting long. seams *D.B.S.* Dia. of rivet holes *15/16"* Whether punched or drilled *D.* Pitch of rivets *4" 2R*
 Lap of plating *9/2 BS* Per centage of strength of joint Rivets *78* Thickness of shell plates *27/32"* Radius of do. *1 1/2"* Pitch of Stays to do. *18"*
 Dia. of stays *2 1/4"* Diameter of furnace Top *36"* Bottom *L* Length of furnace *6'-7"* Thickness of furnace plates *17/32"* Description of joint *Weld* Thickness of furnace crown plates *1/2" to 9/16"* Stayed by *1 1/8" off ss. 7 1/2" to 8 1/4" R. nuts* Working pressure of shell by rules *113 lbs*
 Working pressure of furnace by rules *106 lbs* Diameter of uptake *3 1/2"* Thickness of uptake plates *F 2 1/32 B 2 1/2"* Thickness of water tubes *5 1/16"*

SPARE GEAR. State the articles supplied:— *Set of main bearings, top & bottom end & coupling bolts & nuts, air, fire, feed & bilge pump valves propeller shaft, tubes for boilers & condenser, assorted bolts, nuts, & iron.*

The foregoing is a correct description,
 NORTH EASTERN MARINE ENGINEERING CO. LTD. Manufacturer.
Walter Northrup

Dates of Survey while building
 During progress of work in shops: 1901. - July 23, 27, March 5, 14, 19, 26, April 1, 16, 18, 24, 30, May 9, 15, 20, 23, June 3, 16, July 2, 8, 11, 13, 19, 24, 29, 31, Aug 14, 20, 22.
 During erection on board vessel: 30, Sep 4, 10, 17, 20, Oct 9, 11, 21, 24, Nov 1, 6, 11, Dec 4, 12, 1902. - Jan 3, 13, 16, 21, 23, 27, Feb 6, 11, 13, 19, 21, 24, 25, 26, 27.
 Total No. of visits *58* Is the approved plan of main boiler forwarded herewith *Yes*
 " " " donkey " " " *Yes*

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

Material of screw shaft *W.I.* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *Yes*
 Is the after end of the liner made water tight in the propeller boss *Yes* 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

The machinery herein described has been built under Special Survey, the workmanship & material are good & efficient. Boilers & main steam pipes tested by water to double the working pressure, afterward examined under steam & found satisfactory. In my opinion it is worthy of the notation in the Register Book of + LMC 2/02

It is submitted that this vessel is eligible for THE REGD. LMC 2.02 F.D. Elec. light.

C.A.
 11. 3. 02

The Surveyor appears to have overlooked forced draught being fitted when working out the NHP & charging fee. NHP should be 374

H.S.
 11. 3. 02

The amount of Entry Fee. £ 3 : : When applied for, 7. 3. 1902
 Special £ 36 : 13 : : When received, 27. 3. 02
 Donkey Boiler Fee £ 2 : :
 Travelling Expenses (if any) £ : :
29. 3. 02

W. Fillmore
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
 Assigned
 TUES. MAR 11 1902
 + LMC 2.02 FD

Certificate (if required) to be sent to Sunderland.

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

