

REPORT ON MACHINERY.

THUR. 2 APL 1903

Port of Newcastle-on-Tyne

Received at London Office

Date, first Survey Feb 19 '02 Last Survey March 26 1903

No. in Survey held at Newcastle

Reg. Book. on the 3/3 "Silverlip"

(Number of Visits 43)

Master H. Carter Built at Newcastle By whom built Armstrong Whitworth & Co When built 1903

Engines made at Newcastle By whom made Wallsend Shipway & Eng. Co when made 1903

Boilers made at Newcastle By whom made Wallsend Shipway & Eng. Co when made 1903

Registered Horse Power 579 Owners M. Samuel & Co Port belonging to London

Nom. Horse Power as per Section 28 579 Is Refrigerating Machinery fitted No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triph No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 29 1/2, 48, 78 Length of Stroke 54 Revs. per minute 60 Dia. of Screw shaft 16.12 as per rule 16.12 as fitted 16.24 Lgth. of stern bush 6.0

Dia. of Tunnel shaft 15 3/4 as per rule 14.66 as fitted 15 3/4 Dia. of Crank shaft journals 18.39 as per rule 18.39 as fitted 18 3/4 Dia. of Crank pin 15 1/2 Size of Crank webs 25x10 1/2 Dia. of thrust shaft under collars 15 3/4 Dia. of screw 19-3 Pitch of screw 19-3 No. of blades 4 State whether moveable No Total surface 120 9

No. of Feed pumps 2 Diameter of ditto 4 3/4 Stroke 26 Can one be overhauled while the other is at work No

No. of Bilge pumps 2 Diameter of ditto 5 Stroke 26 Can one be overhauled while the other is at work No

No. of Donkey Engines 1 Pair Wain Sizes of Pumps 9x5 1/2 x 10, 7 1/2 x 5 1/2 x 10, 9 1/2 x 7 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps 2 1/2 inch

In Engine Room Two 3" steam suction in each hold, 3" in each hold, 3" in each pump room, 2" in each hold, 2" in each pump room.

No. of bilge injections 1 sizes 8 1/2 Connected to condenser or to circulating pump No Is a separate donkey suction fitted in Engine room & size 1 1/2 x 3

Are all the bilge suction pipes fitted with roses No Are the roses in Engine room always accessible No Are the stoves on Engine room bulkheads always accessible None

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 Above

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 None

Is it fitted with a watertight door — worked from —

OILERS, &c.— (Letter for record 5) Total Heating Surface of Boilers 10225 1/2 Is forced draft fitted No

No. and Description of Boilers Six single Ended Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs

Date of test 29/8/02 Can each boiler be worked separately No Area of fire grate in each boiler 56 1/2 No. and Description of safety valves to each boiler Two spring valves Area of each valve 7.07 Pressure to which they are adjusted 185 lbs Are they fitted with easing gear No

Smallest distance between boilers or uptakes and bunkers or woodwork 13-4 1/2 Mean dia. of boilers 13-4 1/2 Length 11-9 Material of shell plates S

Thickness 1/16 Range of tensile strength 29-32 Are they welded or flanged No Descrip. of riveting: cir. seams Lap dth long. seams d. 1/2 to 2 in.

Diameter of rivet holes in long. seams 1 1/8 Pitch of rivets 8 Lap of plates or width of butt straps 17 1/8

Per centages of strength of longitudinal joint rivets 87 Working pressure of shell by rules 181 Size of manhole in shell 12x16

Size of compensating ring 6 1/2 x 1 3/16 No. and Description of Furnaces in each boiler 3 Brownscomb Material S Outside diameter 41 3/4

Length of plain part — Thickness of plates — Description of longitudinal joint weld No. of strengthening rings —

Working pressure of furnace by the rules 182 Combustion chamber plates: Material S Thickness: Sides 3/32 Back 1/16 Top 3/32 Bottom 3/32

Pitch of stays to ditto: Sides 8 1/2 x 9 1/2 Back 9 1/2 x 9 1/2 Top 9 1/2 x 8 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 182

Material of stays S Diameter at smallest part 1 1/8 Area supported by each stay 90.25 Working pressure by rules 202 End plates in steam space: Material S Thickness 1 3/32 Pitch of stays 19 1/2 x 18 3/4 How are stays secured dn. r. w. Working pressure by rules 193 Material of stays S

Diameter at smallest part 3 1/4 Area supported by each stay 365 Working pressure by rules 198 Material of Front plates at bottom S

Thickness 1 Material of Lower back plate S Thickness 3/32 Greatest pitch of stays 13 1/4 Working pressure of plate by rules 214

Diameter of tubes 3 Pitch of tubes 4 3/8 x 4 3/4 Material of tube plates S Thickness: Front 1 Back 3/4 Mean pitch of stays 8 5/8

Pitch across wide water spaces 14 Working pressures by rules 183 Girders to Chamber tops: Material S Depth and thickness of girder at centre 11 7/8 x 1 1/2 Length as per rule 39 Distance apart 9 1/4 Number and pitch of Stays in each 3, 8 1/8

Working pressure by rules 198 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 —



DONKEY BOILER— No. *One* Description *Single Ended Multitubular*
 Made at *Newarth* By whom made *Robt. Easton Mar. Eng. Co.* When made *16/10/02* Where fixed *upper deck*
 Working pressure *100 lbs* tested by hydraulic pressure to *200 lbs* No. of Certificate *6420* Fire grate area *42.3* Description of safety valves *Spring*
 No. of safety valves *2* Area of each *7.07* Pressure to which they are adjusted *100 lbs* If fitted with casing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *12-6"* Length *11-3"* Material of shell plates *S* Thickness *3/8"* Range of tensile strength *29-32* Descrip. of riveting long seams *d.b. d.b. riv.* Dia. of rivet holes *7/8"* Whether punched or drilled *drilled* Pitch of rivets *4 1/2"*
 Lap of plating *9/4"* Percentage of strength of joint *80* Rivets *80* Thickness of shell *end* plates *3/8"* Radius of do. *plates* of Stays to do. *9 1/2"*
 Dia. of stays *2 3/4"* Diameter of furnaces *top 4 1/2"* Bottom *-* Length of furnaces *7-0* Thickness of furnace plates *5/8"* Description of joint *d.b. single riv.* Thickness of furnace *end* plates *3/8"* Stayed by *1 1/8" stays 10 1/2" x 9/4"* Working pressure of shell by rules *101*
 Working pressure of furnace by rules *107* Diameter of *tubes* plates *3 1/4"* Thickness of *tubes* plates *3 1/2" x 3 1/2"* Thickness of *stay* tubes *1/4"*

SPARE GEAR. State the articles supplied:— *One Propeller shaft, Two top end, two bottom end, cm. rod bolts & nuts, Two main bearing bolts, one set coupling bolts, one set fuel & bilge pump valves, assorted bolts & nuts, Loose of various sizes.*

The foregoing is a correct description,
 FOR THE WALLSEND SLIPWAY & ENGINEERING CO. LIMITED Manufacturer.

Dates of Survey while building
 During progress of work in shops— *1902 Feb. 19, March 20, April 10, 17, 23, May 15, 15, 22, June 10, July 1, 10, 13, 22, 29, Aug. 18, 20, 29, Sep. 29, 17, 20, 25, 29*
 During erection on board vessel— *Oct. 2, 7, 14, 15, 16, 21, 22, 23, 27, Nov. 7, 14, 21, 28, Dec. 3, 5, 8, 1903, Feb. 6, 13, March 6*
 Total No. of visits *43* 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 *Steel* 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

This vessel is built to carry oil in bulk. The main and donkey boilers are fitted to burn liquid fuel on the tubes and Rankine system. Two 15 ton evaporators are fitted to make up loss of water due to spraying the oil. The oil fuel is carried in cross bunkers between engine room and stowhold and in double bottom under engines and after part of stowhold. Two suction pumps are fitted in stowhold to pump oil fuel from bunkers to the settling tanks in 'fiddley' and for pumping out oil wells. The oil used for fuel is intended to be kerosene oil and is stated to have a flash point not less than 190 F.

The Machinery of this vessel has been built under special survey, the materials and workmanship are sound and good, and under the vessel class in my opinion to have record of + L.M.C. 3.03. The engines are fitted aft.

It is submitted that this vessel is eligible for THE RECORD, + L.M.C. 3.03, ELEC. LIGHT, FITTED FOR LIQUID FUEL

The amount of Entry Fee... £ 3
 Special... £ 48 19
 Donkey Boiler Fee... £
 Travelling Expenses (if any) £

Balg
 2.4.03
 G.A. Staker
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
 Assigned
 FRI. 3 APL 1903

MINISTRY CERTIFICATE WRITTEN
 fitted for liquid fuel



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Certificate (if required) to be sent to the Surveyor and to arrive on or before the date for Committee's Minute.