

REPORT ON MACHINERY.

Port of LIVERPOOL

SAT. 7 JAN 1899

Received at London Office

No. in Survey held at Liverpool Date, first Survey Feb 10th 97 Last Survey Dec 31st 1898
 Reg. Book. 194 on the Steel Twin Screw Ste. "Manhattan" (Number of Visits 135) Tons } Gross 7950
 Master Built at Belfast By whom built Harland & Wolff When built 1898
 Engines made at Liverpool By whom made Fawcett Preston & Co. (Linn) when made 1898
 Boilers made at do By whom made do when made 1898
 Registered Horse Power Owners Atlantic & Transport Co. Ltd Port belonging to Belfast
 Nom. Horse Power as per Section 28 478 Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Inverted Triple Expansion No. of Cylinders 3 to each No. of Cranks 3 to each
 Diameter of Cylinders (2 set) 19" 31" 52" Length of Stroke 48" Revolutions per minute 75 Diameter of Screw shaft as per rule 11" 24"
 Diameter of Tunnel shaft as per rule 10" 2" Diameter of Crank shaft journals 12" Diameter of Crank pin 12" Size of Crank webs 15 1/2" x 8 1/2"
 Diameter of screw 14" 9" Pitch of screw 18" 3" No. of blades 3 State whether moveable Yes Total surface 53.5 sq ft.
 No. of Feed pumps 2 Diameter of ditto 4 1/4" Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines (5) Sizes of Pumps 1 ballast donkey 12" x 10" x 12" No. and size of Suctions connected to both Bilge and Donkey pumps
1 Feed 10" x 8" x 26" 3 Carriers No. 1 Feed 9" x 6" x 8" 1 Feed 5 1/4" x 4" x 5" 1 Cable Donkey 4" x 3" x 5"
In Engine Room (4) 3 of 3 1/2" dia. 1 of 2 1/2" dia In Holds, &c. (11) of 3 1/2" dia. Several wells (2) of 2 1/2" dia
The main bridge and donkey pumps draw from sea water through bridges of Engine Room & holds. Hotwell & Condenser
 No. of bilge injections 1 sizes 6" Connected to condenser, or to circulating pump Yes 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 below
 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 Yes
 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 before launching Is the screw shaft tunnel watertight Yes
 Is it fitted with a watertight door Yes worked from Main Platform

BOILERS, &c.— (Letter for record (5)) Total Heating Surface of Boilers 8359 sq ft. Is forced draft fitted No
 No. and Description of Boilers (3) Cylindrical & Multitubular Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs
 Date of test Can each boiler be worked separately Yes Area of fire grate in each boiler 231 sq. ft. No. and Description of safety valves to X
 each boiler (2) direct spring Area of each valve Pressure to which they are adjusted 180 lbs Are they fitted X
 with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean diameter of boilers 15'-0"
 Length 10" 3" Material of shell plates Steel Thickness 1 3/8" Description of riveting: circum. seams lap 8" x 1 1/2" in long. seams Triple riv. Bull straps
 Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9 5/8" x 4 1/8" Lap of plates or width of butt straps 1" 9 1/2"
 Per centages of strength of longitudinal joint ricets 84.34 Working pressure of shell by rules 184 lbs Size of manhole in shell 16" 12"
plate 85.29 12" dia. man.
 Size of compensating ring 31" x 27" x 1 1/2" No. and Description of Furnaces in each boiler Marine Material Steel Outside diameter 3' 7 1/2" X
 Length of plain part top 6" Thickness of plates crown 19" Description of longitudinal joint Welded No. of strengthening rings 1
bottom 6" bottom 32"
 Working pressure of furnace by the rules 214 lbs Combustion chamber plates: Material Steel Thickness: Sides 19" Back 19" Top 20" Bottom 3"
 Pitch of stays to ditto: Sides 8 1/4" x 8" Back 8 1/4" x 8" Top 8 1/4" x 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 180 lbs
 Material of stays Steel Diameter at smallest part 1 3/8" Area supported by each stay 66 sq in Working pressure by rules 180 lbs End plates in steam space:
 Material Steel Thickness 1" Pitch of stays 18" x 16 3/8" How are stays secured Double nuts Working pressure by rules 180 lbs Material of stays Steel
 Diameter at smallest part 2 1/2" Area supported by each stay 294 sq in Working pressure by rules 180 lbs Material of Front plates at bottom Steel
 Thickness 15" Material of Lower back plate Steel Thickness 1 1/2" Greatest pitch of stays 14" Working pressure of plate by rules 180 lbs
 Diameter of tubes 3" Pitch of tubes 4 1/4" x 4 1/4" Material of tube plates Steel Thickness: Front 3/8" Back 3/4" Mean pitch of stays 8 1/2"
 Pitch across wide water spaces 14 1/4" Working pressures by rules 180 lbs Girders to Chamber tops: Material Iron Depth and
 thickness of girder at centre 7 1/2" x 1" Length as per rule 2' 6" Distance apart 8 1/2" Number and pitch of Stays in each (3) single ended (4) double
 Working pressure by rules Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked
 separately Yes 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 How stayed
 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— Description *None*

Made at _____ By whom made _____ When made _____ Where made _____
Working pressure tested by hydraulic pressure to _____ No. of Certificate _____ Fire grate area _____ Description of safety valves _____
No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____
Diameter of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____
Description of riveting long. seams _____ Diameter of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____
Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Thickness of shell crown plates _____ Radius of do. _____ No. of Stays to do. _____
Dia. of stays. _____ Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____ Thickness of furnace crown plates _____ Stayed by _____ Working pressure of shell by rules _____
Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied:— *1 crank shaft, 1 Propeller shaft, 1 Air pump bracket and rod, 2 Main bearing bolts, 4 connecting rod bolts, 1 set coupling bolts, 3 Slide Valve spindles, 1 set feed + bridge pump valves, 1 set boiler feed check valves, 2 Propeller blades, and a quantity of bolts & nuts assorted for various parts of engine.*
The foregoing is a correct description,
For **FAWCOETT, PRESTON & Co., LIME** Manufacturer.
Thos Roberts

Dates During progress of work in shops— *1897* Secretary *Feb 10, 17, Mar 16, 26, Apr 1, 5, 12, 22, 27, 28, May 7, 8, 11, 12, 14, 21, 24, 26, June 3, 9, 12, 19, July 1, 6, 10, 12, 15, 30, Aug 5, 6, 11, 24, 25, Sep 7, 8, 13, Oct 7, 9, 18, 25, 26, 27, 28, Nov 3, 4, 6, 9, 10, 11, 12, 19, Dec 2, 7, 1898*
During erection on board vessel — *Jan 6, 7, Feb 2, 3, 7, 9, 11, 12, 19, 28, Mar 7, Apr 28, May 3, 4, 5, 11, 12, 18, 20, 23, 25, 27, June 1, 2, 6, 8, 9, 13, 17, 20, 23, July 5, 8, 19, 26, 27, 29, Aug 5, 8, 10, 16, 23, 24, 25, 26, 31, Sep 8, 14, 21, 23, 26, 27, Oct 3, 6, 7, 13, 19, 20, 26, Nov 1, 3, 4, 7, 8, 11, 14, 17, 21, 22, 23, 25, 28, 30, Dec 5, 6, 10, 16, 17, 19, 23, 28.*
Total No. of visits *135*
General Remarks (State quality of workmanship, opinions as to class, &c.)

The Machinery & Boilers of this Vessel have been surveyed during construction and while fitting on board. The material and workmanship are of good description constructed in conformity with the rules and were found efficient when tested under steam, and eligible in my opinion to be recorded in the Society's Register Book + L.M.C. 12-98 and Elec. Light.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 12-98 Elec. Light

J.S.
7.1.99.

The amount of Entry Fee. . . £ *3* : 0 0 When applied for, *5 JAN 99*
Special £ *43* : 18 : 0
Donkey Boiler Fee £ : : :
Travelling Expenses (if any) £ : : :
When received, *6/11/99*

J.M. Grogan
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute LIVERPOOL - 6 JAN 99
Assigned *L.M.C. 12-98.*



Certificate (if required) to be sent to