

REPORT ON MACHINERY.

Port of Glasgow
 No. in Survey held at Glasgow Date, first Survey 28th Dec^r 1896 Last Survey 5th October 1897
 Reg. Book. S. S. "Kassala" (Number of Visits 49) Gross 3825 Tons Net 2498
 Master B. V. Butler Built at Glasgow By whom built The London & Glasgow Co. Ltd. When built 1894
 Engines made at Glasgow By whom made " " " " when made 1894
 Boilers made at " By whom made " " " " when made 1894
 Registered Horse Power " Owners Steam Ship "Kassala" Co. Ltd. Port belonging to Glasgow
 Nom. Horse Power as per Section 28 346 MacLay & Co. Ltd. Inyre Managers Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple No. of Cylinders 3 No. of Cranks 3
 Diameter of Cylinders 23 $\frac{1}{2}$ " 39 $\frac{1}{2}$ " 64" Length of Stroke 48" Revolutions per minute 40 Diameter of Screw shaft 12 $\frac{1}{2}$ "
 Diameter of Tunnel shaft 12" Diameter of Crank shaft journals 12 $\frac{1}{2}$ " Diameter of Crank pin 12 $\frac{1}{2}$ " Size of Crank webs 28 $\frac{1}{2}$ " x 9"
 Diameter of screw 14 $\frac{1}{2}$ " Pitch of screw 16 $\frac{1}{2}$ " No. of blades 4 State whether moveable Yes Total surface 82 $\frac{1}{2}$ "
 No. of Feed pumps Two Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps Two Diameter of ditto 4 $\frac{1}{2}$ " Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 3 Sizes of Pumps 10" x 10" x 15" Ballast No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 4 - 3 $\frac{1}{2}$ " 8" x 6" x 8" Fuel 4" x 6" x 18" Feed Holds, &c. 2 in each 3 $\frac{1}{2}$ "
 No. of bilge injections 1 sizes 3 $\frac{1}{2}$ " Connected to main or to circulating pump — Is a separate donkey suction fitted in Engine room & size 3 $\frac{1}{2}$ "
 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 —
 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 near to
 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 Suction from stokehold How are they protected Wood casing
 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 On slip before launching Is the screw shaft tunnel watertight Apparently
 Is it fitted with a watertight door Yes worked from Upper deck 2339 $\frac{1}{2}$ " Total 4648 $\frac{1}{2}$ " Is forced draft fitted By hand

BOILERS, &c.— (Letter for record —) Total Heating Surface of Boilers 2339 $\frac{1}{2}$ " Is forced draft fitted By hand
 No. and Description of Boilers Two multitubular triple ended Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs
 Date of test 10/8/97 Can each boiler be worked separately Yes Area of fire grate in each boiler 52 $\frac{1}{2}$ " No. and Description of safety valves to
 each boiler Two Direct Spring Area of each valve 11" 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 18" Mean diameter of boilers 14 $\frac{1}{2}$ " 3"
 Length 11 $\frac{1}{2}$ " 3" Material of shell plates Steel Thickness 1 $\frac{1}{16}$ " Description of riveting: circum. seams Lap long. seams J. butt straps
 Diameter of rivet holes in long. seams 1 $\frac{1}{16}$ " Pitch of rivets 8 $\frac{1}{2}$ " Leads of plates width of butt straps 23" x 1 $\frac{1}{16}$ "
 Per centages of strength of longitudinal joint 86 $\frac{1}{2}$ % Working pressure of shell by rules 185 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring In heels No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 3 $\frac{1}{2}$ " 10"
 Length of plain part top bottom Thickness of plates top bottom 9 $\frac{1}{16}$ " Description of longitudinal joint Welded No. of strengthening rings —
 Working pressure of furnace by the rules 190 lbs Combustion chamber plates: Material Steel Thickness: Sides 9 $\frac{1}{16}$ " Back 1 $\frac{1}{32}$ " Top 1 $\frac{1}{32}$ " Bottom 1 $\frac{1}{16}$ "
 Pitch of stays to ditto: Sides 3 $\frac{3}{4}$ " Back 3 $\frac{3}{4}$ " x 1 $\frac{1}{8}$ " Top 8 $\frac{1}{16}$ " x 1 $\frac{1}{2}$ " stays are fitted with nuts or riveted heads Nuts Working pressure by rules 182 lbs
 Material of stays Steel Diameter at smallest part 1 $\frac{1}{2}$ " x 1 $\frac{3}{4}$ " Area supported by each stay 61 $\frac{1}{2}$ " Working pressure by rules 183 lbs End plates in steam space:
 Material Steel Thickness 1 $\frac{1}{16}$ " Pitch of stays 18" x 19" How are stays secured Nuts & washers Working pressure by rules 180 lbs Material of stays Steel
 Diameter at smallest part 3 $\frac{1}{4}$ " Area supported by each stay 342" Working pressure by rules 194 lbs Material of Front plates at bottom Steel
 Thickness 1 $\frac{1}{16}$ " Material of Lower back plate Steel Thickness 1 $\frac{1}{16}$ " Greatest pitch of stays 12" Working pressure of plate by rules 215 lbs
 Diameter of tubes 2 $\frac{1}{2}$ " Pitch of tubes 3 $\frac{3}{4}$ " Material of tube plates Steel Thickness: Front 2 $\frac{1}{32}$ " Back 2 $\frac{1}{32}$ " Mean pitch of stays 4 $\frac{1}{2}$ "
 Pitch across wide water spaces 13" Working pressures by rules 186 lbs Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 4 $\frac{3}{4}$ " x 13 $\frac{1}{4}$ " Length as per rule 2 $\frac{1}{2}$ " 4 $\frac{1}{2}$ " Distance apart 83 $\frac{1}{16}$ " Number and pitch of Stays in each 3 - 4 $\frac{1}{2}$ "
 Working pressure by rules 199 lbs 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 —

15534 gls.

DONKEY BOILER—

Description

multitubular

Made at *Glasgow* By whom made *The London Glasgow S. & C. Coy. Ltd* When made *1894* Where fixed *On upper deck or*

Working pressure *90 lbs* Tested by hydraulic pressure to *180 lbs* No. of Certificate *4398* Fire grate area *31 sq* Description of safety valves *Direct Spring*

No. of safety valves *2* Area of each *4 sq* Pressure to which they are adjusted *90 lbs* If fitted with easing gear *Yes* If steam from main boilers can

enter the donkey boiler *No* Diameter of donkey boiler *10' 5 1/2"* Length *10' 6"* Material of shell plates *Steel* Thickness *1 1/2"*

Description of riveting long. seams *Lap treble* Diameter of rivet holes *1 1/2"* Whether punched or drilled *Drilled* Pitch of rivets *4"*

Lap of plating *1/8"* Per centage of strength of joint *44.2%* Rivets *44.2%* Thickness of *End* plates *1 1/2"* Radius of *aperture* of Stays to do *16 1/8 x 1 1/4"*

Dia. of stays *2 1/2"* Diameter of furnace *3' 3"* Bottom *Length of furnace 6' 6"* Thickness of furnace plates *3/4"* Description of

joint *Double butt* Thickness of *End* plates *1 1/2"* Stayed by *Screw stays 1 3/8 x 9 x 8 1/4"* Working pressure of shell by rules *98 lbs*

Working pressure of furnace by rules *100 lbs* Diameter of uptake *4"* Thickness of uptake plates *1"* Thickness of water tubes *1"*

SPARE GEAR. State the articles supplied:— *Propeller Shaft, 2 Propeller blades, 2 top & two bottom end connecting rod bolts, 2 holding down bolts, set coupling bolts, Air pump rod, set of valves for pumps, Crank pin bolts, assortment of bolts, nuts, Springs & other gear.*

The foregoing is a correct description,

Manufacturer.

Nick Hughes

Dates of Survey while building
During progress of work in shops— *1894 Dec. 28, 31, 1894 Jan. 14, 18, 28, Feb. 8, 10, 12, 14, 22, March 1, 3, 9, 11, 18, 22, 24, 29, 31, April 8, 15, 21, 26,*
During erection on board vessel — *May 10, 11, 12, 19, 25, June 1, 3, 8, 15, 14, 29, July 5, 29, 30, Aug 5, 10, 16, 25, 30, Sept 9, 22, 23, Oct 1, 4, 5,*
Total No. of visits *40*

General Remarks (State quality of workmanship, opinions as to class, &c. *These Engines & Boilers have been made under survey. The workmanship & materials are of good description and the machinery & Boilers tried under full power and are now in good order & safe working condition and eligible in my opinion to be noted in the Register Book. L.M.C. 10/94*

It is submitted that
this vessel is eligible for
THE RECORD. + L.M.C. 10.97 F.D.

H.S.

11.10.97

The amount of Entry Fee.. £ *3* : " : "
Special £ *34* : *6* : "
Donkey Boiler Fee £ " : " : "
Travelling Expenses (if any) £ " : " : "

When applied for,

15/10/94

When received,

16/10/94

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

Clyde District

Committee's Minute

TUES. 12 OCT 1897

Assigned

+ L.M.C. 10.97 F.D.



Lloyd's Register
Foundation