

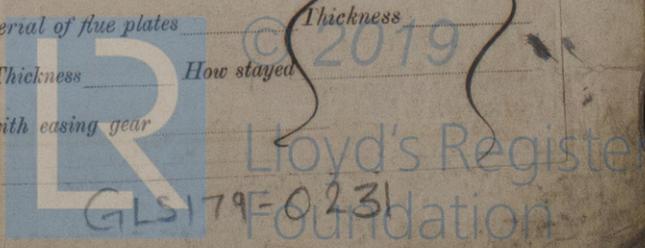
# REPORT ON MACHINERY.

Port of Glasgow  
 Received at London Office SAT 9 OCT 1897  
 No. in Survey held at Glasgow Date, first Survey 28<sup>th</sup> Dec<sup>r</sup> 1896 Last Survey 5<sup>th</sup> October 1897  
 Reg. Book. S.S. "Kassala" (Number of Visits 49) Gross 3825 Tons  
 on the S.S. "Kassala" Net 2498  
 Master B. W. Butler Built at Glasgow By whom built The London & Glasgow Coy. Ltd. When built 1894  
 Engines made at Glasgow By whom made " " " " when made 1894  
 Boilers made at " " " " " " when made 1894  
 Registered Horse Power " " Owners Steam Ship "Kassala" Co. Ltd. Port belonging to Glasgow  
 Nom. Horse Power as per Section 28 340 Maclay & Co. Inkyre Managers Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple No. of Cylinders 3 No. of Cranks 3  
 Diameter of Cylinders 23<sup>1</sup>/<sub>2</sub> 39<sup>1</sup>/<sub>2</sub> 64 Length of Stroke 48" Revolutions per minute 40 Diameter of Screw shaft as per rule 12.1  
 Diameter of Tunnel shaft as fitted 12" Diameter of Crank shaft journals 12<sup>1</sup>/<sub>2</sub>" Diameter of Crank pin 12<sup>1</sup>/<sub>2</sub>" Size of Crank webs 28<sup>1</sup>/<sub>2</sub>" x 9"  
 Diameter of screw 14<sup>1</sup>/<sub>2</sub>" Pitch of screw 16.6" No. of blades 4 State whether moveable Yes Total surface 82<sup>1</sup>/<sub>2</sub>"  
 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<sup>1</sup>/<sub>2</sub>" 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<sup>1</sup>/<sub>2</sub>" 8" x 6" x 8" duplex 7" x 6" x 18" Teed Holds, &c. 2 in each 3<sup>1</sup>/<sub>2</sub>"  
 No. of bilge injections 1 sizes 5<sup>1</sup>/<sub>2</sub>" Connected to condenser to circulating pump Yes Is a separate donkey suction fitted in Engine room & size 3<sup>1</sup>/<sub>2</sub>"  
 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 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<sup>1</sup>/<sub>2</sub>" Is forced draft fitted Howden

BOILERS, &c.— (Letter for record None) Total Heating Surface of Boilers 2339<sup>1</sup>/<sub>2</sub>" Is forced draft fitted Howden  
 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<sup>1</sup>/<sub>2</sub>" 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' x 3"  
 Length 11' x 3" Material of shell plates Steel Thickness 1<sup>9</sup>/<sub>16</sub>" Description of riveting: circum. seams Lap long. seams J. butt straps  
 Diameter of rivet holes in long. seams 1<sup>1</sup>/<sub>16</sub>" Pitch of rivets 8<sup>1</sup>/<sub>2</sub>" Iron of plate width of butt straps 23" x 1<sup>1</sup>/<sub>2</sub>"  
 Per centages of strength of longitudinal joint rivets 86.8% Working pressure of shell by rules 185 lbs Size of manhole in shell 16" x 12"  
 plate 83% Size of compensating ring Inchails No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 3' x 10"  
 Length of plain part top Thickness of plates bottom 9<sup>1</sup>/<sub>16</sub>" Description of longitudinal joint welded No. of strengthening rings None  
 Working pressure of furnace by the rules 190 lbs Combustion chamber plates: Material Steel Thickness: Sides 9<sup>1</sup>/<sub>16</sub>" Back 1<sup>9</sup>/<sub>32</sub>" Top 1<sup>9</sup>/<sub>32</sub>" Bottom 1<sup>9</sup>/<sub>16</sub>"  
 Pitch of stays to ditto: Sides 4<sup>3</sup>/<sub>4</sub>" Back 4<sup>3</sup>/<sub>4</sub>" x 4<sup>3</sup>/<sub>4</sub>" Top 8<sup>3</sup>/<sub>16</sub>" x 7<sup>1</sup>/<sub>2</sub>" stays are fitted with nuts or riveted heads Nuts Working pressure by rules 182 lbs  
 Material of stays Steel Diameter at smallest part 1<sup>1</sup>/<sub>2</sub>" x 1<sup>3</sup>/<sub>4</sub>" Area supported by each stay 61<sup>1</sup>/<sub>2</sub>" Working pressure by rules 83 lbs End plates in steam space:  
 Material Steel Thickness 1<sup>9</sup>/<sub>16</sub>" 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<sup>1</sup>/<sub>4</sub>" Area supported by each stay 342" Working pressure by rules 199 lbs Material of Front plates at bottom Steel  
 Thickness 1<sup>1</sup>/<sub>2</sub>" Material of Lower back plate Steel Thickness 1<sup>1</sup>/<sub>2</sub>" Greatest pitch of stays 12" Working pressure of plate by rules 215 lbs  
 Diameter of tubes 2<sup>5</sup>/<sub>2</sub>" Pitch of tubes 3<sup>3</sup>/<sub>4</sub>" Material of tube plates Steel Thickness: Front 2<sup>9</sup>/<sub>32</sub>" Back 2<sup>5</sup>/<sub>32</sub>" Mean pitch of stays 4<sup>1</sup>/<sub>2</sub>"  
 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<sup>3</sup>/<sub>4</sub>" x 13<sup>1</sup>/<sub>4</sub>" Length as per rule 2' x 4<sup>1</sup>/<sub>2</sub>" Distance apart 8<sup>3</sup>/<sub>16</sub>" Number and pitch of Stays in each 3 - 4<sup>1</sup>/<sub>2</sub>"  
 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 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  
 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

Report also sent on the Itall of the Ship?



15534 gls.

**DONKEY BOILER**— Description *Smith tubular*  
 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 ft* Description of safety valves *Direct Spring*  
 No. of safety valves *2* Area of each *4 sq ft* 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 *16"*  
 Description of riveting long. seams *Lap treble* Diameter of rivet holes *1 1/2"* Whether punched or drilled *Drilled* Pitch of rivets *1 1/2"*  
 Lap of plating *1/8"* Per centage of strength of joint *44.2%* Rivets *44.2%* Thickness of *end* plates *16"* Radius of *aperture* No. 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 1/2"* Description of joint *Double butt Strap* Thickness of *end* plates *16"* Stayed by *Screw stays 1 3/8 x 9/8 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 tops & 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,  
*Nick Hughes* Manufacturer.

**DATES**  
 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, 28*  
 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 and 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) £ " : " : "

TUES. 12 OCT 1897

*James Morrison*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping  
 Clyde District



Certificate (if required) to be sent to the Surveyors and to be kept in the space for Committee's Minutes.

Committee's Minute

Assigned

*L.M.C. 10.97 F.D.*