

# REPORT ON MACHINERY.

8194

No. 8194

Port of Glasgow.

RECEIVED 3 NOV 1887

No. in Survey held at Glasgow.

Date, first Survey 5<sup>th</sup> March

Last Survey 29<sup>th</sup> Oct 1887

Reg. Book.

(Number of Visits 61) 2819

on the S. S. Mogul.

Tons 1824

Master J. M. Hudson Built at Glasgow. By whom built Aitken & Mansel When built 1887.

Engines made at Glasgow By whom made John & James Thomson when made 1887.

Boilers made at Glasgow By whom made John & James Thomson when made 1887.

Registered Horse Power 400. Owners Mogul S. S. Co. (Lim) Port belonging to Rochester

## ENGINES, &c.—

Description of Engines Triple Expansion.

Diameter of Cylinders 27" 43" 70" Length of Stroke 54" No. of Rev. per minute 75 Point of Cut off, High Pressure 1/2 Low Pressure 2/3

Diameter of Screw shaft 14 1/2" Diam. of Tunnel shaft 14" Diam. of Crank shaft journals 14 1/2" Diam. of Crank pin 14 1/2" size of Crank webs 10 1/2" x 19"

Diameter of screw 18'-6" Pitch of screw 21'-0" No. of blades 4 state whether moveable Yes total surface 90 sq ft

No. of Feed pumps 2. diameter of ditto 4" Stroke 27" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2. diameter of ditto 5" Stroke 27" Can one be overhauled while the other is at work Yes

Where do they pump from All Compartments.

No. of Donkey Engines two Size of Pumps 9" x 12" x 7 Where do they pump from Hotwell, Sea, bilge tanks. Also 7 1/2" x 6" Weir's Donkeys 18" Stroke

Are all the bilge suction pipes fitted with roses Yes Are the roses always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes

No. of bilge injections One and sizes 4" Are they connected to condensers or to circulating pump Suction.

How are the pumps worked by levers off Mid. engine.

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 bilge tank suction How are they protected wood casing

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times Yes

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges Yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock on Stocks before launching

Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from upper platform

## BOILERS, &c.—

Number of Boilers Two Description Round Multitubular Whether Steel or Iron Steel

Working Pressure 150 lbs. Tested by hydraulic pressure to 300 lbs. Date of test 1<sup>st</sup> September 1887.

Description of superheating apparatus or steam chest None

Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately

No. of square feet of fire grate surface in each boiler 106. Description of safety valves d. Spring No. to each boiler two

Area of each valve 12.5 Are they fitted with easing gear Yes No. of safety valves to superheater area of each valve

Are they fitted with easing gear Smallest distance between boilers and bunkers or woodwork 9" Diameter of boilers 13'-6"

Length of boilers 16'-6" description of riveting of shell long. seams tub. riv. d. butt. seams tub riv. lap Thickness of shell plates 1 1/32

Diameter of rivet holes 1 3/16 whether punched or drilled drilled pitch of rivets 7 3/4" x 3 7/8" Lap of plating 18" butt str.

Percentage of strength of longitudinal joint 84.6% working pressure of shell by rules 150 lbs. size of manholes in shell 12 x 16"

Size of compensating rings wrought iron ring doub. riv. to shell No. of Furnaces in each boiler Six

Outside diameter 39 1/2" length, top 6'-7 1/2" bottom Through thickness of plates 1/2 description of joint Fox's Corrugated are fitted

Greatest length between rings working pressure of furnace by the rules 158 lbs combustion chamber plating, thickness, sides 1/2" back top 9/16

Pitch of stays to ditto, sides 7 x 7 1/4" back top 7 x 7 1/4" If stays are fitted with nuts or riveted heads Nuts inside working pressure of plating by rules 150 lbs

Diameter of stays at smallest part 1 1/4" working pressure of ditto by rules 150 lbs end plates in steam space, thickness 14/16

Pitch of stays to ditto 16" x 16" how stays are secured d. nuts working pressure by rules 150 lbs. diameter of stays at smallest part 2 7/8" rods working pressure by rules 150 lbs

Greatest pitch of stays working pressure by rules Diameter of tubes 3 1/4" pitch of tubes 4 3/4" thickness of tube plates, front 14/16 back 14/16 how stayed d. tubes pitch of stays 9 1/2" width of water spaces 6"

Diameter of Superheater or Steam chest length thickness of plates description of longitudinal joint diam. of rivet holes

Pitch of rivets working pressure of shell by rules diameter of flue thickness of plates If stiffened with rings

Distance between rings working pressure by rules end plates of superheater, or steam chest; thickness how stayed

Superheater or steam chest; how connected to boiler

GLS154-0281



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DONKEY BOILER— Description Round Multitubular. Steel.  
Made at Glasgow by whom made John & James Thomson when made 1887 where fixed on deck  
Working pressure 80 lbs. tested by hydraulic pressure to 160 lbs. No. of Certificate 1887. fire grate area 23.75 description of safety  
valves direct spring No. of safety valves 2 area of each 4. if fitted with easing gear yes if steam from main boilers can  
enter the donkey boiler no diameter of donkey boiler 8'-0" length 8'-0" description of riveting tri. riv. lap  
Thickness of shell plates 7/8" diameter of rivet holes 1/8" whether punched or drilled drilled pitch of rivets 3 1/4" lap of plating 5 3/4"  
per centage of strength of joint 43% thickness of ~~cross~~ plates 1 1/16 stayed by 1 3/4" rods & rivet stays.  
Diameter of furnace, ~~top~~ 30 1/8" bottom — length of furnace 5'-9" thickness of plates 1/16 description of joint butt.  
Thickness of ~~furnace~~ cross plates 1/16" stayed by Scru Stays 8" x 8". working pressure of shell by rules 80 lbs.  
Working pressure of furnace by rules 80 lbs. diameter of ~~uptake~~ tube 4 1/2 thickness of plates — thickness of ~~water~~ tube plate 9/16

SPARE GEAR. State the articles supplied:— One length crank shaft. One propeller-  
shaft and two blades. Top and bottom end brasses.  
Coupling and main bearing bolts. A. & L.P. Valve spindles  
Air circulating pump rods. Feed & bilge pump valves & seats.  
The foregoing is a correct description,  
John & James Thomson Manufacturers

General Remarks (State quality of workmanship, opinions as to class, &c. The above mentioned)  
Engines and Boilers are now completed onboard in  
a satisfactory manner of good workmanship and  
material and the Machinery is now in my  
opinion in a good and efficient working order  
and eligible to be noted in the Society's  
Register Book: T.L.M.C. 10. 87.

It is submitted that this vessel  
is eligible to have the notification  
+ since 10.87 recorded

The amount of Entry Fee . . . £ 3 : - : - received by me,  
Special . . . £ 40 : - : -  
Donkey Boiler Fee . . . £ - : - : -  
Certificate (if required) . . . £ - : - : - 5/11/1887  
To be sent as per margin.  
(Travelling Expenses, if any, £ - 4/6.)

Committee's Minute

FRIDAY 4 NOV 1887

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

Glasgow.  
Lloyd's Register  
Foundation