

# REPORT ON MACHINERY.

No. 19463

Port of Hull

Received at London Office SAT. 5 OCT 1907

Survey held at Hull Date, first Survey May 24<sup>th</sup> Last Survey Sep 20<sup>th</sup> 1907  
 Book. "Steamer Indian Empire" (Number of Visits 22)  
 App on the Steamer "Indian Empire" Tons { Gross 289 Net 113  
 ter Built at Selby By whom built Bochum & Sons When built 1907  
 ines made at Hull By whom made Amos & Smith when made 1907-9  
 lers made at S By whom made S when made S  
 istered Horse Power Owners Cairnie Steam Towing & Co. Port belonging to Hull  
 a. Horse Power as per Section 28 87.84 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

**GINES, &c.—Description of Engines** Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 a. of Cylinders 13 1/2 x 22 1/2 x 37 Length of Stroke 24 Revs. per minute 112 Dia. of Screw shaft as per rule 7 1/2 Material of screw shaft Iron  
 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  
 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  
 ers are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 2' 8 1/2"  
 ia. of Tunnel shaft as per rule 7 1/2 Dia. of Crank shaft journals as per rule 7 1/2 Dia. of Crank pin 7 1/2 Size of Crank webs 14 1/2 x 4 1/2 Dia. of thrust shaft under  
 llars 7 1/2 Dia. of screw 9' 3" Pitch of Screw 11' 3" No. of Blades 4 State whether moveable No Total surface 29 sq. ft.  
 o. of Feed pumps 2 Diameter of ditto 27 Stroke 12 Can one be overhauled while the other is at work Yes  
 o. of Bilge pumps 2 Diameter of ditto 27 Stroke 12 Can one be overhauled while the other is at work Yes  
 o. of Donkey Engines 2 Sizes of Pumps 5' x 3 1/2' x 5' & 5' x 5' x 5' No. and size of Suctions connected to both Bilge and Donkey pumps  
 n Engine Room 2-2' & 1-3' (For Air Exhaust) In Holds, &c. 4-2' (Main hold, Fore hold, For Air Exhaust)  
Hull hold) 1-2' Exch suction from air pipes & discharge & deck,  
 No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump Condenser Is a separate Donkey Suction fitted in Engine room & size 1-3" suction  
 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 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 Hot air suction How are they protected Lead 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  
 Dates of examination of completion of fitting of Sea Connections 24/6/07 of Stern Tube 24/6/07 Screw shaft and Propeller 24/6/07  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Yes

**BOILERS, &c.—(Letter for record)** Manufacturers of Steel Steel & of Portland, Ltd  
 Total Heating Surface of Boilers 1400 sq. ft. Is Forced Draft fitted No No. and Description of Boilers 1 S.E. Machinery  
 Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 23/8/07 No. of Certificate 1587  
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 39.37 sq. ft. No. and Description of Safety Valves to  
 each boiler 2 Spring loaded Area of each valve 3.98 sq. in. Pressure to which they are adjusted 205 lbs. Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 4 1/2" Mean dia. of boilers 13' 3" Length 10' 3" Material of shell plates Steel  
 Thickness 1 3/16" Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams S.H. Lap.  
 long. seams S.B.L. Lap. Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 7.77 Lap of plates or width of butt straps 17 1/4"  
 Per centages of strength of longitudinal joint rivets 89 Working pressure of shell by rules 200 lbs. Size of manhole in shell 16' x 12'  
 plate 84.7  
 Size of compensating ring 40 x 30 x 1 3/16" No. and Description of Furnaces in each boiler 2 Brighton Material Steel Outside diameter 4' 1 1/2"  
 Length of plain part top ✓ Thickness of plates crown 1 1/16" Description of longitudinal joint welded No. of strengthening rings ✓  
 bottom ✓  
 Working pressure of furnace by the rules 230 Combustion chamber plates: Material Steel Thickness: Sides 3/4" Back 23/32" Top 7/8" Bottom 7/8"  
 Pitch of stays to ditto: Sides 9 1/2' x 8' Back 9 1/2' x 8' Top 8' x 7 1/2' If stays are fitted with nuts or riveted heads None Working pressure by rules 224  
 Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 60 sq. in. Working pressure by rules 235 End plates in steam space:  
 Material Steel Thickness 1 1/16" Pitch of stays 17 1/2' x 15' How are stays secured Discharge Working pressure by rules 202 Material of stays Steel  
 Diameter at smallest part 6' 1" Area supported by each stay 262.5 sq. in. Working pressure by rules 232 Material of Front plates at bottom Steel  
 Thickness 1 1/2" Material of Lower back plate Steel Thickness 3/32" Greatest pitch of stays 15 1/2" Working pressure of plate by rules 200  
 Diameter of tubes 3 1/2" Pitch of tubes 4 1/2' x 4 1/2' Material of tube plates Steel Thickness: Front 1 1/2" Back 7/8" Mean pitch of stays 9 1/2'  
 Pitch across wide water spaces 15" Working pressures by rules 206 Girders to Chamber tops: Material Iron Depth and  
 thickness of girder at centre 9 1/2' x 2' Length as per rule 2' 10" Distance apart 8' Number and pitch of stays in each 30 7 1/2"  
 Working pressure by rules 222 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 ✓

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. \_\_\_\_\_ Description \_\_\_\_\_

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Safety Valves \_\_\_\_\_

No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_

If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_ Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_

Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Descrip. of riveting long. seams \_\_\_\_\_

Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ Plates \_\_\_\_\_

Working pressure of shell by rules \_\_\_\_\_ 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 \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:— *Two top & two bottom end connecting rods, bolts & nuts, two main bearing bolts, one set of coupling bolts & nuts, one set of sea & one set of high pump valves, assorted bolts & nuts etc.*

FOR AMOS & SMITH

The foregoing is a correct description,

Manufacturer.

*W.S. Wade*

MANAGING PARTNER.

Dates of Survey while building { During progress of work in shops - - 1907: - May 24, 31. Jun 14, 18, 24, 27. Jul 1, 10, 20. During erection on board vessel - - Jul 26, 30, Aug 17, 23, 27, 28, 31 Sep 3, 7, 11, 13, 14, 20. Total No. of visits 22

Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts—Cylinders 23.8.07 Slides 12.8.07 Covers 12.8.07 Pistons 30.7.07 Rods 26.7.07 Connecting rods 26.7.07 Crank shaft 26.7.07 Thrust shaft 14.9.07 Tunnel shafts ✓ Screw shaft 18.6.07 Propeller 18.6.07 Stern tube 18.6.07 Steam pipes tested 11.9.07 Engine and boiler seatings 24.6.07 Engines holding down bolts 3.9.07 Completion of pumping arrangements 14.9.07 Boilers fixed 31.8.07. Engines tried under steam 14.9.07 Main boiler safety valves adjusted 14.9.07 Thickness of adjusting washers *P 5/16 S 3/8*

Material of Crank shaft *Steel* Identification Mark on Do. *366* Material of Thrust shaft *Steel* Identification Mark on Do. *366*

Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts *Iron* Identification Marks on Do. *366*

Material of Steam Pipes *Solid drawn Copper* Test pressure *4 to 4 1/2*

General Remarks (State quality of workmanship, opinions as to class, &c.)

*The machinery and boiler of this vessel have been constructed under Special Survey, all of good material & workmanship, and have been fitted & secured on board in accordance with the Rules. They are now in good working condition, & eligible in my opinion to have the Notation L.M.C. 9.07 in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 9.07

*JRR*

*5-10-07*

*Yes*  
*5.10.07*

The amount of Entry Fee... £ 1 : 0 : 0  
Special ... £ 12 : 6 : 0  
Donkey Boiler Fee ... £ : : 0  
Travelling Expenses (if any) £ - : 4 : 2

When applied for.

When received.

*John L. Gwynne*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

TUES. 8 OCT 1907

*+ L.M.C. 9.07*

MACHINERY CERTIFICATE WRITTEN.



© 2021

Lloyd's Register Foundation

Certificate (if required) to be sent to Hull

The Surveyors are requested not to write on or below the space for Committee's Minute.