

REPORT ON MACHINERY.

No. 19463

Port of Hull

Received at London Office SAT. 5 OCT 1907

o. in Survey held at HullDate, first Survey May 24thLast Survey Sep 20th

1907

Book.

App on the Steamer "Indian Empire"(Number of Visits 22)Tons { Gross 289Net 113When built 1907when made 1907-9when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.when made 5.

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Built at Selly.By whom built Bochum & Sonsines made at HullBy whom made Amos & Smithlers made at 5.By whom made 5.

istered Horse Power

Owners Cairns & SonPort belonging to Hulla. Horse Power as per Section 28 87.84Is Refrigerating Machinery fitted for cargo purposes NoIs Electric Light fitted NoGINES, &c.—Description of Engines Triple ExpansionNo. of Cylinders 3No. of Cranks 3a. of Cylinders 13 1/2 x 22 1/2 x 37Length of Stroke 24Revs. per minute 112Dia. of Screw shaft 7 1/2as per rule 7 1/2Material of Ironthe screw shaft fitted with a continuous liner the whole length of the stern tube YesIs the after end of the liner made water tight Yesthe propeller boss Yes If the liner is in more than one length are the joints burned YesIf the liner does not fit tightly at the part Yesween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive YesIf two Yesers are fitted, is the shaft lapped or protected between the liners YesLength of stern bush 2' 8 1/2"ia. of Tunnel shaft 7 1/2as per rule 7 1/2Dia. of Crank shaft journals 7 1/2as per rule 7 1/2Dia. of Crank pin 7 1/2Size of Crank webs 14 1/2 x 4 1/2Dia. of thrust shaft under 7 1/2llars 7 1/2Dia. of screw 9' 3"Pitch of Screw 11' 3"No. of Blades 4State whether moveable NoTotal surface 29 sq. ft.o. of Feed pumps 2Diameter of ditto 27"Stroke 12"Can one be overhauled while the other is at work Yeso. of Bilge pumps 2Diameter of ditto 27"Stroke 12"Can one be overhauled while the other is at work Yeso. of Donkey Engines 2Sizes of Pumps 5' x 5' x 5' & 5' x 5' x 5'No. and size of Suctions connected to both Bilge and Donkey pumps 4' x 2"n Engine Room 2' x 2' & 1' x 3' (For Air & Water)In Holds, &c. 4' x 2" (Main hold, Fore hold, Fore & Aft hold)No. of Bilge Injections 1sizes 3"Connected to condenser, or to circulating pump YesIs a separate Donkey Suction fitted in Engine room & size 1' x 3" LucasAre all the bilge suction pipes fitted with roses YesAre the roses in Engine room always accessible YesAre the sluices on Engine room bulkheads always accessible YesAre all connections with the sea direct on the skin of the ship YesAre they Valves or Cocks BothAre they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates YesAre the Discharge Pipes above or below the deep water line AboveAre they each fitted with a Discharge Valve always accessible on the plating of the vessel YesAre the Blow Off Cocks fitted with a spigot and brass covering plate YesWhat pipes are carried through the bunkers Hot air suctionHow are they protected Lead casingAre all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges YesDates of examination of completion of fitting of Sea Connections 24/6/07of Stern Tube 24/6/07Screw shaft and Propeller 24/6/07Is the Screw Shaft Tunnel watertight YesIs it fitted with a watertight door Yesworked from YesBOILERS, &c.—(Letter for record Steel & of Portland. Ltd.)Manufacturers of Steel Steel & of Portland. Ltd.Total Heating Surface of Boilers 14000 sq. ft.Is Forced Draft fitted NoNo. and Description of Boilers 1 S.E. MachineryWorking Pressure 200 lbs.Tested by hydraulic pressure to 400 lbs.Date of test 23/8/07No. of Certificate 1587Can each boiler be worked separately YesArea of fire grate in each boiler 39.37 sq. ft.No. and Description of Safety Valves to 2each boiler 2 Spring loadedArea of each valve 3.98 sq. in.Pressure to which they are adjusted 205 lbs.Are they fitted with easing gear YesSmallest 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 SteelThickness 1 3/16"Range of tensile strength 28-32Are the shell plates welded or flanged NoDescrip. of riveting: cir. seams S.H. Lap.long. seams S.B. 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 89rivets 89Working pressure of shell by rules 200 lbs.Size of manhole in shell 16' x 12'Size of compensating ring 40 x 30 x 1 3/16"No. and Description of Furnaces in each boiler 2 - BelgiumMaterial SteelOutside diameter 4' 1 1/4"Length of plain part topThickness of plates bottomDescription of longitudinal joint weldedNo. of strengthening rings 1Working pressure of furnace by the rules 230Combustion chamber plates: Material SteelThickness: 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 YesWorking pressure by rules 224Material of stays SteelDiameter at smallest part 1 1/2"Area supported by each stay 60 sq. in.Working pressure by rules 235End plates in steam space: YesMaterial SteelThickness 1/16"Pitch of stays 17 1/2' x 15'How are stays secured by nutsWorking pressure by rules 202Material of stays SteelDiameter at smallest part 6' 1"Area supported by each stay 262.5 sq. in.Working pressure by rules 232Material of Front plates at bottom SteelThickness 1/32"Material of Lower back plate SteelThickness 3/32"Greatest pitch of stays 15 1/2"Working pressure of plate by rules 200Diameter of tubes 3 1/4"Pitch of tubes 4 1/2' x 4 1/2'Material of tube plates SteelThickness: Front 1 1/2"Back 7/8"Mean pitch of stays 9 1/2"Pitch across wide water spaces 15"Working pressures by rules 206Girders to Chamber tops: Material IronDepth and Yesthickness 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 222Superheater or Steam chest; how connected to boiler NoneCan the superheater be shut off and the boiler worked Yesseparately YesDiameter YesLength YesThickness of shell plates YesMaterial YesDescription of longitudinal joint YesDiam. of rivet Yesholes YesPitch of rivets YesWorking pressure of shell by rules YesDiameter of flue YesMaterial of flue plates YesThickness YesIf stiffened with rings YesDistance between rings YesWorking pressure by rules YesEnd plates: Thickness YesHow stayed YesWorking pressure of end plates YesArea of safety valves to superheater YesAre they fitted with easing gear YesWorking pressure of end plates YesArea of safety valves to superheater YesAre they fitted with easing gear YesWorking pressure of end plates YesArea of safety valves to superheater YesAre they fitted with easing gear YesWorking pressure of end plates YesArea of safety valves to superheater YesAre they fitted with easing gear YesWorking pressure of end plates YesArea of safety valves to superheater YesAre they fitted with easing gear YesWorking pressure of end plates YesArea of safety valves to superheater YesAre they fitted with easing gear Yes

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 _____
 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 feed & 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 5/8 S 3/8*
 Material of Crank shaft *Steel* Identification Mark on Do. 366. 27.8.07 Material of Thrust shaft *Steel* Identification Mark on Do. 366. 14.9.07
 Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts *Iron* Identification Marks on Do. 366. 27.8.07
 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, are 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

ARRR

5-10-07

5.10.07

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

When applied for.

4/10/07

When received.

31.10.1907

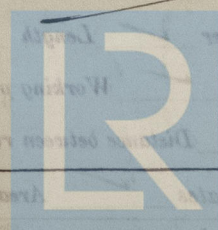
John L. Gwynne
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

+ L.M.C. 9.07

MACHINERY CERTIFICATE
 WRITTEN.



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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.)