

REPORT ON MACHINERY.

No. 27358

TUE. APR. - 7. 1914

Date of writing Report 31st Mar 1914 When handed in at Local Office 6-4 10 14 Port of HullNo. in Survey held at Hull Date, First Survey Oct 7th Last Survey Mar 28th 1914
Reg. Book. 78 Sup. on the steel De K "MAROC."

Master Built at Selby. By whom built Cockrane & Sons Ltd. Tons Gross 6384 Net 368

Engines made at Hull. By whom made Amos & Smith Ltd Hull when made 1914.

Boilers made at Hull. By whom made Amos & Smith Ltd when made 1914.

Registered Horse Power Owners J. Hurst. Port belonging to Boulogne.

Nom. Horse Power as per Section 28 128. Is Refrigerating Machinery fitted for cargo purposes no. Is Electric Light fitted yes.

ENGINES, &c.—Description of Engines Triple-Expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 15" 25" 42" Length of Stroke 27" Revs. per minute 108. Dia. of Screw shaft as per rule 8 3/4" Material of screw shaft S
 Is 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
 in 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
 liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 3'-4"
 Dia. of Tunnel shaft as per rule 7.47" Dia. of Crank shaft journals as per rule 7.8" Dia. of Crank pin 8" Size of Crank webs 15 3/4" x 5 1/2" Dia. of thrust shaft under
 collars 8" Dia. of screw 10 1/2" Pitch of Screw 11 1/2" No. of Blades 4. State whether moveable no. Total surface 40 sq ft
 No. of Feed pumps 2 Diameter of ditto 2 1/2" Stroke 18" Can one be overhauled while the other is at work yes.
 No. of Bilge pumps 1 Diameter of ditto 2 1/2" Stroke 18" Can one be overhauled while the other is at work
 No. of Donkey Engines 2 Sizes of Pumps 6" x 4 1/4" x 6" 7 1/2" x 8" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2-2" One forward One aft. In Holds, &c. 2-2" Reserve bunker & flush well.
 2" ejector from all bilges. 1 1/2" ejector from fore peak.
 No. of Bilge Injections 1 sizes 4" dia. Connected to condenser, or to circulating pump pump. Is a separate Donkey Suction fitted in Engine room & size 2" ejector.
 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 none.
 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 Hold Suctions 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.
 Dates of examination of completion of fitting of Sea Connections 13.1.14. of Stern Tube 13.1.14. Screw shaft and Propeller 13.1.14.
 Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record S. Manufacturers of Steel Messrs Phoenix & Co. Ltd. Harbin of Harbin.

Total Heating Surface of Boilers 2371 Is Forced Draft fitted no. No. and Description of Boilers One Single-ended.

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 5.2.14. No. of Certificate 2056.

Can each boiler be worked separately Area of fire grate in each boiler 74 sq ft No. and Description of Safety Valves to

each boiler 2-Spring loaded. Area of each valve 5.94 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 7 1/2" Ext Mean dia. of boilers 15'-6" Length 11'-0" Material of shell plates S.

Thickness 1 3/16" Range of tensile strength 29-33. Are the shell plates welded or flanged Descrip. of riveting: cir. seams brd.

long. seams IRAB Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8.75" Lap of plates or width of butt straps 18 3/8"

Per centages of strength of longitudinal joint rivets 87.9 plate 85.7 Working pressure of shell by rules 180. Size of manhole in shell 16" x 12"

Size of compensating ring 30" x 40" x 1 1/16". No. and Description of Furnaces in each boiler 4 plain Material S. Outside diameter 38 3/8".

Length of plain part top 82" Thickness of plates crown 1 3/16" bottom 1 1/16" Description of longitudinal joint welded. No. of strengthening rings 13 1/16"

Working pressure of furnace by the rules 208. Combustion chamber plates: Material S. Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 1 1/16"

Pitch of stays to ditto: Sides 7 1/2" x 9 3/4" Back 9" x 10" Top 7 1/2" x 9 3/4" stays are fitted with nuts or riveted heads nuts Working pressure by rules 182.

Material of stays S. Diameter at smallest part 2.06. Area supported by each stay 90 Working pressure by rules 206 End plates in steam space:

Material S. Thickness 1 1/4" Pitch of stays 21" x 18 3/4" How are stays secured 15" x 15" Working pressure by rules 184. Material of stays S.

Diameter at smallest part 7.24 Area supported by each stay 393 Working pressure by rules 185. Material of Front plates at bottom S.

Thickness 3 1/2" Material of Lower back plate S. Thickness 29 3/32 Greatest pitch of stays 13 1/2" Working pressure of plate by rules 205.

Diameter of tubes 3 1/4" Pitch of tubes 4 3/4" Material of tube plates S. Thickness: Front 3 1/32 Back 27 3/32 Mean pitch of stays 9 1/4"

Pitch across wide water spaces 13 1/2" Working pressures by rules 198. Girders to Chamber tops: Material S. Depth and

thickness of girder at centre 9 1/4" x 7 1/8" Length as per rule 34" Distance apart 9 3/4" Number and pitch of stays in each 30 x 9 3/4" + 10

Working pressure by rules 182. 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

004378-004386-0106

IS A DONKEY BOILER FITTED? *no.*

If so, is a report now forwarded? *✓*

SPARE GEAR. State the articles supplied:— *Two each top and bottom connecting rods bolts and nuts, two main bearing bolts and nuts, one set of coupling bolts and nuts, one set each feed and bilge pump valves, iron of various sizes, a quantity of assorted bolts, nuts etc., Propeller, Tail shaft, Piston rod nut, Valve spindle, nut washers, Bilge pump plunger, eccentric pulley & strap, Main & bottom end connecting rod brasses, Piston rings and springs for each cylinder. 4 White metal liners for thrust shoes. 2 plain & 6 stay tubes. Bucket & piston rings for donkey 16 condenser tubes.*

The foregoing is a correct description,

FOR AMOS & SMITH LTD.

J. Prachebury

Manufacturer.

Dates of Survey while building { During progress of work in shops - - - 1913. - Oct 7, 17, 28. Nov 11, 18, 26. Dec 2, 9, 17, 23 1914. - Jan 2, 9, 13, 15, 19, 21, 27, 30. Feb 4, 5.
During erection on board vessel - - - Feb 9, 11, 13, 14, 20. Mar 4, 5, 11, 13, 20, 21, 23, 25, 26, 28.
Total No. of visits 35

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

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 27.1.14. Slides 27.1.14. Covers 27.1.14. Pistons 20.2.14. Rods 11.2.13.

Connecting rods 11.2.13. Crank shaft 21.1.14. Thrust shaft 9.1.14. Tunnel shafts *✓* Screw shaft 9.1.14. Propeller 9.1.14.

Stern tube 9.1.14. Steam pipes tested 13.3.14. Engine and boiler seatings 13.1.14. Engines holding down bolts 11.3.14.

Completion of pumping arrangements 23.3.14. Boilers fixed 11.3.14. Engines tried under steam 21.3.14.

Main boiler safety valves adjusted 21.3.14. Thickness of adjusting washers F.V. $\frac{3}{4}$ full A.V. $\frac{13}{16}$ "

Material of Crank shaft S. Identification Mark on Do. 1200. Material of Thrust shaft S. Identification Mark on Do. 1200.

Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts S. Identification Marks on Do. 1200.

Material of Steam Pipes *Copper solid drawn.* Test pressure 300 lbs. hyd. press. *✓*

Is an installation fitted for burning oil fuel *no.* Is the flash point of the oil to be used over 150°F. *✓*

Have the requirements of Section 49 of the Rules been complied with *✓*

Is this machinery duplicate of a previous case *no.* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c. *The engines & boiler of this vessel have been constructed under special survey in accordance with the Rules. The materials and workmanship are sound and good. The boiler tested by hydraulic pressure and with the engines secured on board and tested under steam. They are now in good order & safe working condition and respectfully submitted as being eligible in my opinion to be classed with the notation of + LMC 3.14. in the Register book.*

It is submitted that
this vessel is eligible for
THE RECORD. + LMC 3.14.

JWD.
8/4/14
JPR

The amount of Entry Fee ... £ 2 : : When applied for,
Special ... £ 19 : 4 : 6/4/1914
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : 8 : 2 30/4/1914

Committee's Minute THU. APR. 9-1914

Assigned

+ LMC 3.14

J. S. MacKillop.
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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Foundation