

REPORT ON MACHINERY.

No. 25987

Received at London Office TUES. 19 NOV 1907

Date of writing Report 19 When handed in at Local Office 18 NOV 1907 10 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 17th Sept 06 Last Survey 6th Nov 1907
 Reg. Book. 419 on the Triple Screw Turbine Steamer "Heliopolis" (Number of Visits 62)
 Master Built at Glasgow By whom built Fairfield & B. & C. Ltd Tons { Gross 10896.68
 Engines made at Glasgow By whom made Fairfield & B. & C. Ltd when made 1907
 Boilers made at do By whom made do when made 1907
 Registered Horse Power Owners Egyptian Mail S. C. Ltd Port belonging to London
 Nom. Horse Power as per Section 28 2930 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Turbine No. of Cylinders 3 No. of Cranks 1
 Dia. of Cylinders 5.4 7.7 7.7 Length of Stroke 10.5 Revs. per minute 340 Dia. of Screw shaft 11.5
 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 5.6
 Dia. of Tunnel shaft as per rule 10.5 Dia. of Crank shaft journals as per rule 15 Dia. of Crank pin Size of Crank webs Dia. of thrust shaft under
 collars Dia. of screw 8.1 1/2 Pitch of Screw 8.1 1/2 No. of Blades 3 State whether moveable no Total surface 29 # each
 No. of Feed pumps 2 pairs Diameter of ditto 15.5 11.5 Stroke 26 Can one be overhauled while the other is at work Yes - Wicks
 No. of Bilge pumps 2 Diameter of ditto 7.7 Stroke 7 Can one be overhauled while the other is at work Yes - Canuthen's
 No. of Donkey Engines 7 Sizes of Pumps 7.5 x 12, 7.5 x 7, 3, 10 x 24 x 12 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2 - 4" B.R. 4 - 4" 1/2 In Holds, &c. 3 - 3", 2 - 3 1/2, aft 2 - 3 1/2, 1 - 3

No. of Bilge Injections 2 sizes 12" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size 2 at 5"
 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
 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 stakehold 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 None How are they protected
 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 9 of Stern Tube 9 Screw shaft and Propeller 2.1 - 12.6 / 5/07
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top grating

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel David White & Son.
 Total Heating Surface of Boilers 39540 Is Forced Draft fitted Yes No. and Description of Boilers H. S. 8 & 4 D. 8.
 Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 9 No. of Certificate In Back
 Can each boiler be worked separately Yes Area of fire grate in each boiler D. 8. 164.2, S. 8. 82.4 No. and Description of Safety Valves to
 each boiler D. E. 3, S. E. 2. Spring Area of each valve D. E. 14.6 S. E. 11 Pressure to which they are adjusted 485 lb Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork abt 12" Mean dia. of boilers 16.9 Length 20.0 Material of shell plates steel
 Thickness 1 3/16" Range of tensile strength 29/32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams Double & Treble
 long. seams D. B. S. Diameter of rivet holes in long. seams 1 7/32 Pitch of rivets 10" Lap of plates or width of butt straps 21 x 1 3/16
 Per centages of strength of longitudinal joint rivets 92.2 Working pressure of shell by rules 206 lb Size of manhole in shell 16 x 12
 plate 84.7 No. and Description of Furnaces in each boiler S. E. 4 Material steel Outside diameter 46"
 Size of compensating ring One hole Length of plain part top 1 Thickness of plates crown 9/16 Description of longitudinal joint weld No. of strengthening rings
 bottom 1 Working pressure of furnace by the rules 191 Combustion chamber plates: Material steel Thickness: Sides 19/32 Back 19/32 Top 19/32 Bottom 7/8
 Pitch of stays to ditto: Sides 7 7/8 x 8 Back 7 7/8 x 8 Top 7 3/4 x 8 If stays are fitted with nuts or riveted heads rules Working pressure by rules 196 lb
 Material of stays steel Diameter at smallest part 1.48 Area supported by each stay 7 3/4 x 8 Working pressure by rules 191 End plates in steam space:
 Material steel Thickness 1 3/32 Pitch of stays 16 x 16 1/4 How are stays secured Double rules Working pressure by rules 180 Material of stays steel
 Diameter at smallest part 5.27 Area supported by each stay 16 x 16 1/4 Working pressure by rules 202 Material of Front plates at bottom steel
 Thickness 13/16 Material of Lower back plate steel Thickness 2 1/32 Greatest pitch of stays 12" Working pressure of plate by rules 180
 Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 Material of tube plates steel Thickness: Front 11/16 Back DE 7/8 Mean pitch of stays 9 3/8
 Pitch across wide water spaces 13 1/2 Working pressures by rules 230 lb Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 12 3/4 x 2 3/4 Length as per rule 29 1/2 Distance apart 7 3/4 Number and pitch of stays in each 3 - 8"
 Working pressure by rules 180 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

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VERTICAL DONKEY BOILER--

Manufacturers of Steel

None

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:— Propeller shaft, 2 propellers 1st hand & 1st hand, 2 turbine main bearing bushes, set steam gland rings for HP & for one & P turbine, 12 coupling bolts & nuts, etc.

The foregoing is a correct description,

THE FAIRFIELD SHIPBUILDING
AND ENGINEERING CO., LIMITED.

Manufacturer.

Ally Cleghorn MANAGER

Dates of Survey while building

During progress of work in shops: 1906: Sep 17 26 Oct 3 9 Nov 12 23 Dec 17 24 27 1907: Jan 5 10 18 25 30 Feb 1 8 15 19 Mar 12 20 Apr 9 16 26 29

During erection on board vessel: May 3 9 14 21 28 June 4 10 14 20 26 27 July 2 8 9 25 Aug 6 13 22 27 29 Sept 6 10 15 20 24 25 26 Oct 2 10 17 22 Nov 1 4 6

Total No. of visits 62

Is the approved plan of main boiler forwarded herewith Yes - *two*

Dates of Examination of principal parts: Turbines, Cylinders 30/3/07, Slides, Covers, Pistons, Rods

Connecting rods: Spindles, Crank shaft 8/2/07, Thrust shaft, Tunnel shafts, Screw shaft 30/3/07, Propeller 30/3/07 etc.

Stern tube 30/3/07 etc. Steam pipes tested 29/4/07 etc. Engine and boiler seatings 2/7/07 Engines holding down bolts 17/10/07

Completion of pumping arrangements 17/10/07 Boilers fixed 24/9/07 Engines tried under steam 8/11/07

Main boiler safety valves adjusted 22/10/07 Thickness of adjusting washers See below

Material of Crank shaft *steel* Identification Mark on Do. *HQS* Material of Thrust shaft Identification Mark on Do. *HQS*

Material of Tunnel shafts *steel* Identification Marks on Do. Material of Screw shafts *steel* Identification Marks on Do.

Material of Steam Pipes *Iron* Test pressure 540 lbs

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

The turbines & boilers of this vessel have been constructed under Special Survey & are of good materials & workmanship. They have been securely fitted on board & satisfactorily tried under steam.

This vessel is in my opinion eligible to have notation *L M C 11.07* in the Register Book.

Boilers. Dates of Test. 17/12/06, 24/12/06, 25/1/07, 27/12/07, 10/1/07, 16/1/07, 30/1/07, 4/2/07. Certificate Nos. 8681, 8684, 8716, 8431, 8686, 8713, 8717, 8752.

Safety Valve Washers: P.F.D.E. 23/16, 23/16, 23/16; S.F.D.E. 23/16, 23/16, 23/16; P.F.S.E. 19/16, 19/16, 19/16; S.F.S.E. 19/16, 19/16, 19/16; P.A.S.E. 17/16, 17/16, 17/16; S.A.S.E. 17/16, 17/16, 17/16; P.A.D.E. 13/16, 13/16, 13/16; S.A.D.E. 13/16, 13/16, 13/16.

It is submitted that

this vessel is eligible for

THE RECORD. *L M C 11.07* F.D. Elec. Light

H.R.R. 20.11.07

The amount of Entry Fee.

Special

£166-10

Donkey Boiler Fee

Travelling Expenses (if any) £

Committee's Minute

Assigned

- *L M C 11.07*

When applied for.

14 NOV 1907

When received.

22-11-07

Glasgow 18 NOV 1907

H Gardner-Smith.

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



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