

REPORT ON MACHINERY.

No. 18853

Port of Hull

THUR. 4 APL 1907

Received at London Office

19

No. in Survey held at Hull Date, first Survey Oct 2/06 Last Survey Mar 20th 1907
 Reg. Book. 35 on the Screw Steamer "Onward No" (Number of Visits 32)
 Master Built at Hull By whom built Charles C. Ld Tons { Gross 323
 Engines made at Hull By whom made Amos & Smith when made 1907
 Boilers made at do By whom made do when made 1907
 Registered Horse Power 95.6 Owners S. J. White & Co. Ld Port belonging to Hull
 Nom. Horse Power as per Section 28 95.6 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 14.23.38 Length of Stroke 27 Revs. per minute 112 Dia. of Screw shaft 8.1 Material of screw shaft Iron
 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 7.18 Dia. of Crank shaft journals 7.5 Dia. of Crank pin 7.3 Size of Crank webs 15.4x5 Dia. of thrust shaft under
 collars 7.3 Dia. of screw 10.0 Pitch of Screw 11.6 No. of Blades 4 State whether moveable No Total surface 30.6 sq. ft.
 No. of Feed pumps 2 Diameter of ditto 2.5 Stroke 18 Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 2.5 Stroke 18 Can one be overhauled while the other is at work yes
 No. of Donkey Engines One Sizes of Pumps 6x3x6 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Two 2" dia. In Holds, &c. Three 2" dia.
Ejector suction from engine room bilges & discharge on deck.
 No. of Bilge Injections 1 sizes 3.2 Connected to condenser, or to circulating pump ump Is a separate Donkey Suction fitted in Engine room & size 2.5 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 suction 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 15.2.07 of Stern Tube 15.2.07 Screw shaft and Propeller 15.2.07
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record (S) / Manufacturers of Steel Wm Beardmore & Co. Ld)
 Total Heating Surface of Boilers 1655 sq. ft. Forced Draft fitted No No. and Description of Boilers One 3.6 cyl. Multi
 Working Pressure 185 lbs Tested by hydraulic pressure to 370 lbs Date of test 10.1.07 No. of Certificate 1538
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 50 sq. ft. No. and Description of Safety Valves to
 each boiler Two spring Area of each valve 5.9 Pressure to which they are adjusted 190 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 5.2 Mean dia. of boilers 14.0 Length 10.6 Material of shell plates Steel
 Thickness 1.5 Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams bx. lap
 long. seams bx. 5 Rivet Diameter of rivet holes in long. seams 1.4 Pitch of rivets 8.64 Lap of plates or width of butt straps 18.3
 Per centages of strength of longitudinal joint rivets 91 plate 85.5 Working pressure of shell by rules 185 lbs Size of manhole in shell 16x12
 Size of compensating ring 40x30x1.5 No. and Description of Furnaces in each boiler Three plain Material Steel Outside diameter 41.32
 Length of plain part top 6.5 bottom 6.0 Thickness of plates crown 4.9 bottom 6.4 Description of longitudinal joint Welded No. of strengthening rings ✓
 Working pressure of furnace by the rules 183 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/16 Back 1/16 Top 1/16 Bottom 1/16
 Pitch of stays to ditto: Sides 8.3x7.2 Back 9.3x8 Top 9x7.8 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 215 lbs
 Material of stays Steel Diameter at smallest part 1.2 Area supported by each stay 65.6 Working pressure by rules 214 End plates in steam space:
 Material Steel Thickness 1.7 Pitch of stays 18x15.2 How are stays secured bx. & screwed into end plates Working pressure by rules 191 lbs Material of stays Steel
 Diameter at smallest part 6.1 Area supported by each stay 279 Working pressure by rules 218 Material of Front plates at bottom Steel
 Thickness 1.5 Material of Lower back plate Steel Thickness 1.5 Greatest pitch of stays 14.3x9.3 Working pressure of plate by rules 199 lbs
 Diameter of tubes 3.4 Pitch of tubes 4.3x4.2 Material of tube plates Steel Thickness: Front 15/16 Back 27/32 Mean pitch of stays 9.4
 Pitch across wide water spaces 14 Working pressures by rules 195 lbs Girders to Chamber tops: Material Iron Depth and
 thickness of girder at centre 9.2x2 Length as per rule 2-10 Distance apart 9 Number and pitch of stays in each 30 7.8
 Working pressure by rules 197 lbs 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 ✓

If not, state whether, and when, one will be sent?

Is a Report also sent on the Hull of the Ship?

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 rod bolts + nuts. Two main bearing bolts + nuts. One set of coupling bolts + nuts. One set of feed + bilge pump valves. Main donkey feed check valves. Assorted bolts + nuts &c.*

The foregoing is a correct description, **FOR AMOS & SMITH**

Manufacturer.

Dates of Survey while building: During progress of work in shops— 1906. Oct 2. 5. 16. 19. 26. Nov 8. 16. 21. 22. 26. MANAGING PARTNER. *See J.P. Dec 7. 13. 1907. Jan 12. 7. 9. 10.*

During erection on board vessel— Jan 18. 25. Feb 7. 8. 14. 15. 21. 23. 27. Mar 1. 5. 6. 12. 13. 20.

Total No. of visits 32

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

Dates of Examination of principal parts—Cylinders 7.12.06 Slides 9.1.07 Covers 7.2.07 Pistons 7.2.07 Rods 9.1.07

Connecting rods 9.1.07 Crank shaft 7.12.06 Thrust shaft 7.12.06 Tunnel shafts ✓ Screw shaft 7.12.06 Propeller 2.1.07

Stern tube 2.1.07 Steam pipes tested 1.3.07 Engine and boiler seatings 15.2.07 Engines holding down bolts 21.2.07

Completion of pumping arrangements 6.3.07 Boilers fixed 27.2.07 Engines tried under steam 6.3.07

Main boiler safety valves adjusted 6.3.07 Thickness of adjusting washers *F 3/16" A 5/16"*

Material of Crank shaft *Steel* Identification Mark on Do. *3/4 J.K.* Material of Thrust shaft *Steel* Identification Mark on Do. *3/4 J.K.*

Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts *Iron* Identification Marks on Do. *3/4 J.K.*

Material of Steam Pipes *Solid drawn copper* Test pressure *370 lbs.*

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

The Engines and Boiler of this vessel have been constructed under Special Survey, are of good material and workmanship, and have been fitted and secured on board in accordance with the Rules. They are now in good working condition and in my opinion eligible to have the notation of +LMC 3.07 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD +LMC 3.07

J.P.M.
4/4/07

The amount of Entry Fee. £ 1 : : : When applied for.

Special .. £ 14 : 8 : : 3/4/1907

Donkey Boiler Fee .. £ : : : When received.

Travelling Expenses (if any) £ : : : 30/4/07

Committee's Minute

FRI. 5 APR 1907

Assigned

+LMC 3.07

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



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MACHINERY CERTIFICATE WRITTEN.