

REPORT ON MACHINERY.

No. 18936

Port of Hull

Received at London Office

JUN. 7 MAY 1907

No. in Survey held at Selby & Hull Date, first Survey Dec. 7th '06 Last Survey Apr 15th 1907
 Reg. Book. 332 on the Screw Steamer "Orlando" (Number of Visits 24)
 Master Built at Selby By whom built Cochrane & Sons Tons { Gross 276
 Engines made at Hull By whom made Amos & Smith Net 124
 Boilers made at do By whom made do When built 1907
 Registered Horse Power Owners Dolphin Steam Fishing Co Ltd Port belonging to Grimsey
 Nom. Horse Power as per Section 28 69.8 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 12 $\frac{1}{4}$ " 21" 34" Length of Stroke 24" Revs. per minute 114 Dia. of Screw shaft as per rule 7" Material of 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 2'-11"
 Dia. of Tunnel shaft as per rule 6.3" Dia. of Crank shaft journals as per rule 6.6" Dia. of Crank pin 6 $\frac{3}{8}$ " Size of Crank webs 10 $\frac{1}{2}$ " x 4 $\frac{3}{8}$ " Dia. of thrust shaft under
 collars 6 $\frac{3}{8}$ " Dia. of screw 8'-7" Pitch of Screw 10'-2" No. of Blades 4 State whether moveable No Total surface 27 sq. ft.
 No. of Feed pumps 1 Diameter of ditto 2 $\frac{5}{8}$ " Stroke 13" Can one be overhauled while the other is at work ✓
 No. of Bilge pumps 1 Diameter of ditto 3" Stroke 13" Can one be overhauled while the other is at work ✓
 No. of Donkey Engines One Sizes of Pumps 6" x 3" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room One 2" dia. In Holds, &c. Three 2" dia.
Ejector suction from engine room bilge & discharge on deck.
 No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size 2 $\frac{1}{2}$ " 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 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 1.2.07 of Stern Tube 1.2.07 Screw shaft and Propeller 1.2.07
 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 The Steel Coy of Scotland &c.
 Total Heating Surface of Boilers 11924 sq. ft. Forced Draft fitted No No. and Description of Boilers One S.E. Cyl. Multi
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 15.3.07 No. of Certificate 1551
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 35 sq. ft. No. and Description of Safety Valves to
 each boiler Two spring Area of each valve 3.9" Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 5 $\frac{1}{2}$ " Mean dia. of boilers 12'-6" Length 10'-13 $\frac{1}{2}$ " Material of shell plates Steel
 Thickness 1 $\frac{1}{2}$ " Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DR Lap
 long. seams DR Lap Diameter of rivet holes in long. seams 1 $\frac{1}{8}$ " Pitch of rivets 7.63" Lap of plates or width of butt straps 16 $\frac{1}{4}$ "
 Per centages of strength of longitudinal joint 85.2 Working pressure of shell by rules 181 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring 40" x 30" x 1 $\frac{1}{2}$ " No. and Description of Furnaces in each boiler Two plain Material Steel Outside diameter 43.53"
 Length of plain part 6'-4" Thickness of plates 1 $\frac{1}{2}$ " Description of longitudinal joint Welded No. of strengthening rings ✓
 Working pressure of furnace by the rules 180 lbs Combustion chamber plates: Material Steel Thickness: Sides 2 $\frac{3}{32}$ " Back 1 $\frac{1}{16}$ " Top 5 $\frac{1}{8}$ " Bottom 2 $\frac{3}{32}$ "
 Pitch of stays to ditto: Sides 9 $\frac{1}{4}$ " x 7" Back 9" x 8 $\frac{3}{4}$ " Top 8 $\frac{1}{2}$ " x 7" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 208 lbs
 Material of stays Steel Diameter at smallest part 1 $\frac{1}{2}$ " Area supported by each stay 64.75" Working pressure by rules 218 End plates in steam space:
 Material Steel Thickness 1 $\frac{1}{2}$ " Pitch of stays 16 $\frac{1}{4}$ " x 15" How are stays secured screwed into end plates Working pressure by rules 196 lbs Material of stays Steel
 Diameter at smallest part 5.05" Area supported by each stay 244" Working pressure by rules 207 Material of Front plates at bottom Steel
 Thickness 2 $\frac{9}{32}$ " Material of Lower back plate Steel Thickness 1 $\frac{1}{16}$ " Greatest pitch of stays 14" x 8 $\frac{3}{4}$ " Working pressure of plate by rules 222 lbs
 Diameter of tubes 3 $\frac{1}{2}$ " Pitch of tubes 4 $\frac{15}{16}$ " x 4 $\frac{3}{4}$ " Material of tube plates Steel Thickness: Front 2 $\frac{9}{32}$ " Back 2 $\frac{7}{32}$ " Mean pitch of stays 9 $\frac{7}{8}$ " x 9 $\frac{1}{2}$ "
 Pitch across wide water spaces 14" Working pressures by rules 183 lbs Girders to Chamber tops: Material Iron Depth and
 thickness of girder at centre 8 $\frac{3}{4}$ " x 2" Length as per rule 2'-9" Distance apart 8 $\frac{1}{2}$ " Number and pitch of stays in each 3 @ 7"
 Working pressure by rules 188 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 ✓

W1547-0042

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 - Dec 7	1907 - Jan 12	7.9.10.16.18.25.	Feb 7.8.18.	Mar 5.13.15.	22. Apr 4. 5.8.11.12.
	During erection on board vessel -	Apr 13. 15.					
Total No. of visits		24.					

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

Dates of Examination of principal parts—	Cylinders	2.1.07	Slides	22.3.07	Covers	22.3.07	Pistons	22.3.07	Rods	13.3.07	
Connecting rods	7.2.07	Crank shaft	5.3.07	Thrust shaft	5.3.07	Tunnel shafts	✓	Screw shaft	25.1.07	Propeller	25.1.07
Stern tube	25.1.07	Steam pipes tested	12.4.07	Engine and boiler seatings	1.2.07	Engines holding down bolts	4.4.07				
Completion of pumping arrangements	13.4.07	Boilers fixed	5.4.07	Engines tried under steam	13.4.07						
Main boiler safety valves adjusted	13.4.07	Thickness of adjusting washers	$P \frac{5}{16}$ S $\frac{3}{8}$								
Material of Crank shaft	Steel	Identification Mark on Do.	326 J.K. 5.3.07	Material of Thrust shaft	Steel	Identification Mark on Do.	5.3.07				
Material of Tunnel shafts	✓	Identification Marks on Do.	✓	Material of Screw shafts	Iron	Identification Marks on Do.	25.1.07				
Material of Steam Pipes	Solid drawn copper	Test pressure	360 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 4.07. in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. *+ L.M.C. 4.07.*

J.P. 7/5/07

R.S. 7.5.07

The amount of Entry Fee.	£ 1 : .	When applied for.	6/57
Special	£ 10 : 10	When received.	1/6/07
Donkey Boiler Fee	£ . : .		
Travelling Expenses (if any)	£ . : 8		

Committee's Minute

FRI. 10 MAY 1907

Assigned

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



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MACHINERY CERTIFICATE
GIVEN