

REPORT ON MACHINERY.

No. 27779
WED. 2 JUN 1909

Date of writing Report May 25th 1909 When handed in at Local Office 27th 1909 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 8th Jan 1909 Last Survey 18th May 1909
 Reg. Book. 5. 5. "Cardiff City" (Number of Visits 28)
 on the 5. 5. "Cardiff City"
 Master J. Hollywood Built at Paisley By whom built John Gullerton & Co. Tons { Gross 328.24
 Engines made at Glasgow By whom made Ross & Duncan 10/9/95. Net 118.40
 Boilers made at Glasgow By whom made Ross & Duncan 10/12/95. When built 1909
 Registered Horse Power 168 Owners The Despatch Steamship Co. Ltd when made 1909
 Nom. Horse Power as per Section 28 168 Port belonging to Cardiff
 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines

Compound No. of Cylinders 2 No. of Cranks 2
 Dia. of Cylinders 16" x 24" Length of Stroke 24" Revs. per minute 116 Dia. of Screw shaft 3 1/8" 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 Yes 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 Yes If two
 liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 2' 5 1/2"
 Dia. of Tunnel shaft 4 1/4" Dia. of Crank shaft journals 4 1/4" Dia. of Crank pin 4 1/4" Size of Crank webs 13 1/2" x 4 1/2" Dia. of thrust shaft under
 collars 4 1/4" Dia. of screw 8-6" Pitch of Screw 10-9" No. of Blades 4 State whether moveable No Total surface 29 sq
 No. of Feed pumps 9 Diameter of ditto 2 1/2" Stroke 12" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 2 1/4" Stroke 12" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines one Sizes of Pumps 7 1/2" x 8" duplex No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 1-2: 1-2 1/4" & 1-2" special In Holds, &c. 2-2"

No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size Yes
 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 Yes
 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 wooden rings
 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 15-4-09 of Stern Tube 15-4-09 Screw shaft and Propeller 15-4-09
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record)

Manufacturers of Steel W. Bechtel & Sons
 Total Heating Surface of Boilers 1321 Is Forced Draft fitted No No. and Description of Boilers One single ended
 Working Pressure 130 lbs Tested by hydraulic pressure to 260 lbs Date of test 1-4-09 No. of Certificate 9901
 Can each boiler be worked separately Yes Area of fire grate in each boiler 40 sq No. and Description of Safety Valves to
 each boiler pair spring loaded Area of each valve 6.49 sq Pressure to which they are adjusted 135 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 3'-0" Mean dia. of boilers 12'-0" Length 10'-0" Material of shell plates steel
 Thickness 5/16" Range of tensile strength 28,000 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams P.R.
 long. seams T.R.D.P.S. Diameter of rivet holes in long. seams 15/16" Pitch of rivets 5 1/4" Length of plates 15' width of butt straps 15'
 Per centages of strength of longitudinal joint 89.6 Working pressure of shell by rules 134 lbs Size of manhole in shell 18" x 16"
 Size of compensating ring 6 3/4" x 25/32" No. and Description of Furnaces in each boiler 2 plain Material steel Outside diameter 3'-9"
 Length of plain part 15' Thickness of plates 3/32" Description of longitudinal joint weld No. of strengthening rings one
 Working pressure of furnace by the rules 135 lbs Combustion chamber plates: Material steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 3/4"
 Pitch of stays to ditto: Sides 9 x 9" Back 8 1/4" x 8 1/4" Top 9 x 9" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 135 lbs
 Material of stays steel Diameter at smallest part 1 1/8" Area supported by each stay 81 sq Working pressure by rules 146 lbs End plates in steam space:
 Material steel Thickness 3/8" Pitch of stays 14" x 16" How are stays secured D.N. Wash Working pressure by rules 133 lbs Material of stays steel
 Diameter at smallest part 3.55" Area supported by each stay 242 sq Working pressure by rules 136 lbs Material of Front plates at bottom steel
 Thickness 3/32" Material of Lower back plate steel Thickness 3/32" Greatest pitch of stays 14" x 8 3/4" Working pressure of plate by rules 131 lbs
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/4" Material of tube plates steel Thickness: Front 3/32" Back 3 1/32" Mean pitch of stays 9 1/8"
 Pitch across wide water spaces 14" Working pressures by rules 158 lbs Girders to Chamber tops: Material Iron Depth and
 thickness of girder at centre 6 1/2" x 2" Length as per rule 28 15/32" Distance apart 9" Number and pitch of stays in each 2 @ 9"
 Working pressure by rules 152 lbs Superheater or Steam chest; how connected to boiler — Can the superheater be shut off and the boiler worked
 separately Yes 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 —

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:— 2 connecting rod top end bolts & nuts: 2 connecting rod bottom end bolts & nuts: 2 main bearing bolts: 1 set of coupling bolts: 1 set of feed and bilge pump valves: a quantity of assorted bolts & nuts: iron of various sizes etc.

The foregoing is a correct description,

Ross Duncan

Manufacturer.

Dates of Survey while building: During progress of work in shops— 1909 Jan 8. 11. 21. 27. 29. Feb 3. 4. 9. 12. 18. 24. Mar 2. 9. 16. 17. 19. 23. During erection on board vessel— April 1. 7. 8. 9. 19. 22. 30 May 5. 10. 12. 18. 19. 1: 5-1 Total No. of visits 28.

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders 18.2.09. Slides 2.3.09. Covers 2.3.09. Pistons 9.3.09. Rods 9.3.09. Connecting rods 9.3.09. Crank shaft 18.2.09. Thrust shaft 9.4.09. Tunnel shafts. ✓ Screw shaft 9.4.09. Propeller 1.4.09. Stern tube 1.4.09. Steam pipes tested 18.5.09. Engine and boiler seatings 15.4.09. Engines holding down bolts 10.5.09. Completion of pumping arrangements 10.5.09. Boilers fixed 5.5.09. Engines tried under steam 18.5.09. Main boiler safety valves adjusted 18.5.09. Thickness of adjusting washers 3 5/16" 9 x 5 1/16" bar. Material of Crank shaft Iron. Identification Mark on Do. 495. Material of Thrust shaft Iron. Identification Mark on Do. 495. Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts Iron. Identification Marks on Do. 495. Material of Steam Pipes Copper. Test pressure 260 lbs. ✓

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

The machinery has been built under special survey: the material and workmanship being good, and satisfactorily tried under steam. It is submitted that above vessel will be eligible for a record of + L. M. C. 5.09.

It is submitted that

THE RECORD.

+ LMC 5.09

WRSR 3/6/09
3.6.09

The amount of Entry Fee .. £ 1 : - :
Special .. £ 9 - 9 - 0 :
Donkey Boiler Fee .. £ : :
Travelling Expenses (if any) £ : :
Committee's Minute

When received, 31/6/09 4/6/09

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

Assigned + LMC 5.09

17-JUN. 1909

MACHINERY CERTIFICATE
WRITTEN.



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Foundation

Glasgow

Certificates (if required) to be sent to

(The Surveyor is requested not to write on or below the space for Committee's Minute.)