

REPORT ON MACHINERY.

No. 6894

Port of Belfast Received at London Office 18 JAN 1911
 No. in Survey held at Belfast Date, first Survey 23rd Dec 1909 Last Survey 14th Jan 1911
 Reg. Book. S.S. Thermistocles (Number of Visits 89)
 on the S.S. Thermistocles Tons { Gross 11231 Net 7046
 Master J. S. Douglas Built at Belfast By whom built Harland & Wolff Ltd When built 1911
 Engines made at Belfast By whom made Harland & Wolff Ltd when made -
 Boilers made at Belfast By whom made Harland & Wolff Ltd when made -
 Registered Horse Power ✓ Owners W. J. Thompson & Co Ltd Port belonging to Mersey
 Nom. Horse Power as per Section 28 1045 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Two S. S. Quadruple Expansion of Cylinders 8 No. of Cranks 8
 Dia. of Cylinders 23-34-48-69 Length of Stroke 51 Revs. per minute 78 Dia. of Screw shaft 14.1 as per rule 14.1 Material of S. Steel
 as fitted 14.1 screw shaft
 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 ✓ If two
 liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 60 1/2
 Dia. of Tunnel shaft 13.9 as per rule 13.9 Dia. of Crank shaft journals 14.5 as per rule 14.5 Dia. of Crank pin 14 1/2 Size of Crank webs 26 1/2 x 10 1/2 Dia. of thrust shaft under
 collars 14 1/2 Dia. of screw 16-6 Pitch of Screw 19-0 No. of Blades 3 State whether moveable Yes Total surface 72 sq ft.
 No. of Feed pumps 1 Diameter of ditto 5 1/2 Stroke 28 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 1 Diameter of ditto 5 Stroke 28 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines See S. S. Sheet No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 4-3 1/2 x 4-3 1/2 In Holds, &c. 16-3 1/2 x 9-2 1/2

No. of Bilge Injections 2 sizes 8" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 2-4
 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 stokehold plates Yes Are the Discharge Pipes above or below the deep water line Both
 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 bunker None How are they protected Steel w. 7 tunnel
 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 15-9-10 of Stern Tube 9-9-10 Screw shaft and Propeller 19-9-10
 Is the Screw Shaft Tunnel watertight Stated to be Is it fitted with a watertight door Yes worked from Engine Room top platform

BOILERS, &c.—(Letter for record ✓) Manufacturers of Steel A. Caldwell & Sons Ltd
 Total Heating Surface of Boilers 14400 Is Forced Draft fitted No No. and Description of Boilers 3 Double End Cylindrical
 Working Pressure 215 lbs Tested by hydraulic pressure to 430 lbs Date of test 1-4-10 No. of Certificate 435
 Can each boiler be worked separately Yes Area of fire grate in each boiler 124 sq ft. No. and Description of Safety Valves to
 each boiler 9-1/2 inch Spring Area of each valve 7.62 sq Pressure to which they are adjusted 215 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 18 Mean dia. of boilers 15.6 Length 19.0 Material of shell plates Steel
 Thickness 1 1/2 Range of tensile strength 29-33 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seam Top & Bottom
 long. seam Butt Diameter of rivet holes in long. seams 1 1/2 Pitch of rivets 10 Top of plates or width of butt straps 23 1/2
 Per centages of strength of longitudinal joint 90.6 Working pressure of shell by rules 250 lbs Size of manhole in shell 16 x 12
 Size of compensating ring 12 No. and Description of Furnaces in each boiler 6-Monitors Material Steel Outside diameter 49 1/2
 Length of plain part 6 Thickness of plates 3 1/2 Description of longitudinal joint Mild No. of strengthening rings 47 on
 Working pressure of furnace by the rules 240 lbs Combustion chamber plates: Material Steel Thickness: Sides 5 Back 5 Top 5 Bottom 5 1/2
 Pitch of stays to ditto: Sides 7 1/2 x 7 1/2 Back ✓ Top 7 1/2 x 8 1/2 If stays are fitted with nuts or riveted heads None inside Working pressure by rules 214 lbs
 Material of stays Steel Diameter at smallest part 1 1/2 x 1 1/2 Area supported by each stay 50 sq in Working pressure by rules 224 lbs End plates in steam space:
 Material Steel Thickness 1 1/2 Pitch of stays 8 x 5 1/2 How are stays secured None Working pressure by rules 215 lbs Material of stays Steel
 Diameter at smallest part 3 1/2 x 2 1/2 Area supported by each stay 279 sq in Working pressure by rules 263 lbs Material of Front plates at bottom Steel
 Thickness 1 1/2 Material of Lower back plate ✓ Thickness ✓ Greatest pitch of stays ✓ Working pressure of plate by rules ✓
 Diameter of tubes 3 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plate Steel Thickness: Front 1 1/2 Back 1 1/2 Mean pitch of stay 8 1/2 x 8 1/2
 Pitch across wide water spaces 14 1/2 Working pressures by rules 226 lbs Borders to Chamber tops: Material W. Iron Depth and
 thickness of girder at centre 9 1/2 x (3 x 2) Length as per rule 49 1/2 Distance apart 8 1/2 Number and pitch of stays in each 6-7 1/2
 Working pressure by rules 200 lbs 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 ✓

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:— Propeller & shaft, pinion & gear, screw & trap, feed pump plunger, ball pump plunger, air pump bucket & rod, foot valve, H. P. valve & spindle, L. P. valve & spindle, & spindle, propeller for circulating pump, air pump bucket & rod, etc. connecting rods, & propeller blades, etc. and all to Harland & Wolff, Belfast. Large Rules extra.

The foregoing is a correct description, 1909, Dec 23. 1910, Jan 13, 19, 24. Feb 11, 16, 22. March 3, 8, 15, 21 and up to 14 Jan 1911. Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders	24—	Shells	10	Covers	10	Pistons		Rods	
Connecting rod	20—9—10	Crank shaft	22	Thrust shaft	10	Tunnel shafts		Screw shaft	6—9—10
Propeller	31—8—10	Stern tube	31—8—10	Steam pipes tested	8—6—10	Engine and boiler seatings	26—10—10	Engines holding down bolts	19—10—10
Completion of pumping arrangements	6—12—10	Boilers fixed	1—11—10	Engines tried under steam	6—12—10	Main boiler safety valves adjusted	6—12—10	Thickness of adjusting washers	9—13—32
Material of Crank shaft	Ident. Mark on Do.	Material of Thrust shaft	Ident. Mark on Do.	Material of Tunnel shafts	Ident. Marks on Do.	Material of Screw shafts	Ident. Marks on Do.	Material of Steam Pipes	Ident. Mark on Do.
Test pressure	645 lbs								

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery of this vessel has been examined under Special Survey, and in accordance with the Rules. The workmanship and the materials are of good description and an trial under steam in Belfast Lough, the machinery worked satisfactorily. In my opinion, it is eligible for record + L.M.C. 1-11 with notation Electric Light & Refrigerating Machinery.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 1-11.

Ref. Machy.

JWD 19/1/11

ASR

The amount of Entry Fee..	£ 3 : -	When applied for.	11-1-11
Special ..	£ 41-14-6	When received,	18/1/11
Donkey Boiler Fee ..	£ :		
Travelling Expenses (if any) £	:		

Committee's Minute

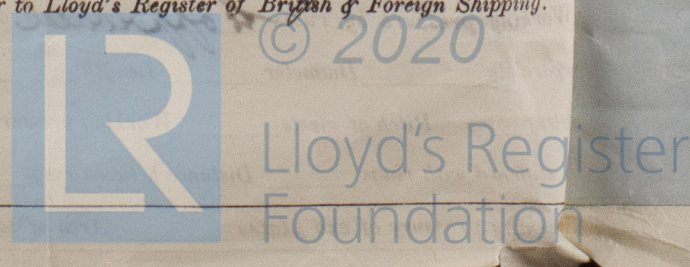
FRI. 20 JAN 1911

Assigned

+ Lmb. 1 11

Ref. Machy

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



Certificate (if required) to be sent to the office

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