

REPORT ON MACHINERY.

No. 2843
MON. AUG.

Date of writing Report 16th Aug 1917 When handed in at Local Office Belfast Port of Belfast
 No. in Survey held at Belfast Date, First Survey 18th Sep 1914 Last Survey 2nd July 1917
 Reg. Book. 210 on the S.S. Lancashire (Number of Visits 85) Tons { Gross 9445 Net 5886
 Master Belfast Built at Belfast By whom built Harland & Wolff L^r When built 1917
 Engines made at Belfast By whom made - when made -
 Boilers made at - By whom made - when made -
 Registered Horse Power 942 Owners Bobby S. S. Coy L^r Port belonging to Liverpool
 Nom. Horse Power as per Section 28 950 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c. — Description of Engine Turn Screw Quadruple Expansion Cylinders 8 No. of Cranks 8
 Dia. of Cylinders 22"-31 1/2"-46"-66" Length of Stroke 51" Revs. per minute 84 Dia. of Screw shaft 13.8" Material of screw shaft S. Steel
 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 4'-9"
 Dia. of Tunnel shaft 12.57" Dia. of Crank shaft journals 13.2" Dia. of Crank pin 14" Size of Crank webs 19x10 Dia. of thrust shaft under collars 14" Dia. of screw 16"-9" Pitch of Screw 18"-0" No. of Blades 3 State whether moveable Yes Total surface 80 sq ft.
 No. of Feed pumps } Diameter of ditto Stroke Can one be overhauled while the other is at work
 No. of Bilge pumps } Diameter of ditto Stroke Can one be overhauled while the other is at work
 No. of Donkey Engines See separate sheet No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 4-3 1/2" + 4-2 1/2" In Holds, &c. 10-3 1/2" + 7-2 1/2"

No. of Bilge Injections 2 sizes 9" Connected to condenser, or to circulating pump Pump a separate Donkey Suction fitted in Engine room & size 1-6 1/2"
 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 bunkers Fore hold suction How are they protected Wood casings
 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 16-11-16 of Stern Tube 3-11-16 Screw shaft and Propeller 21-11-16
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform to Room

BOILERS, &c. — (Letter for record S) Manufacturers of Steel R. D. Belleville & Sons L^r
 Total Heating Surface of Boilers 17,040 sq ft Total 2 DB + 2 SB
 Working Pressure 215 lbs Tested by hydraulic pressure to 430 lbs Date of test 3-4-17 No. of Certificate 500
 Can each boiler be worked separately Yes Area of fire grate in each boiler 140 sq ft. No. and Description of Safety Valves to each boiler 3 - Direct Spring of each valve 12.56 sq in 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 about 7" Mean dia. of boilers 16"-3" Length 20'-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 L, D, & S
 long. seams Butt Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10 1/2" Lap of plates or width of butt straps 24 1/2"
 Per centages of strength of longitudinal joint 97.5% Working pressure of shell by rules 252 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring McNeill's No. and Description of Furnaces in each boiler 8 - Mansion Material Steel Outside diameter 46 1/8"
 Length of plain part 5" Thickness of plates 3 1/4" Description of longitudinal joint Weld No. of strengthening rings ✓
 Working pressure of furnace by the rules 243 lbs Combustion chamber plates: Material Steel Thickness: Sides 5" Back 5" Top 5" Bottom 1"
 Pitch of stays to ditto: Side 8" x 7 1/2" Back 7 1/2" x 7 1/2" Top 7 1/2" x 7 1/2" stays are fitted with nuts or riveted heads Nuts Working pressure by rules 217 lbs

Material of stay Steel Diameter at smallest part 1/2" x 5/8" Area supported by each stay 62 sq in Working pressure by rules 254 lbs plates in steam space
 Material Steel Thickness 1 1/8" Pitch of stays 16" x 15 1/2" How are stays secured pressed into plate Working pressure by rules 216 lbs Material of stays Steel
 Diameter at smallest part 2 1/4" Area supported by each stay 248 sq in Working pressure by rules 241 lbs Material of Front plates at bottom Steel
 Thickness 5/8" Material of Lower back plate ✓ Thickness ✓ Greatest pitch of stays ✓ Working pressure of plate by rules ✓
 Diameter of tubes 2 1/4" Pitch of tubes 4" x 4" Material of tube plate Steel Thickness: Front 5/8" Back 1 1/8" Mean pitch of stays 8" x 8"
 Pitch across wide water spaces 13 1/2" Working pressures by rule 285 lbs with Double to Chamber tops: Material Iron Depth and thickness of girder at centre 9" x (7 x 2) length as per rule 54 1/8" Distance apart 7 1/2" Number and pitch of stays in each 6-7 1/2"
 Working pressure by rules 337 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 ✓

IS A DONKEY BOILER FITTED? *No*

If so, is a report note forwarded?

SPARE GEAR. State the articles supplied :-

See Separate Sheet.

The foregoing is a correct description,

J. Bairland & Wolff Ltd Glasgow Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1914 - Sep^r 18, 22 Oct^r 5, 9, 16, 22, 27 up till 2^d July 1917
During erection on board vessel - - - 9 Aug 1917
Total No. of visits 85

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

Dates of Examination of principal parts - Cylinders 27 Slides 10 - Covers 4 Pistons 5 Rods
Connecting rods 2-3-17 Crank shaft 29 Thrust shaft 15 Tunnel shafts 5 Screw shaft 23-11-7 Propeller 15-8-17
Stern tube 15-8-16 Steam pipes tested 6-6-17 Engine and boiler seatings 17-4-17 Engines holding down bolts 17-4-17
Completion of pumping arrangements 2-8-17 Boilers fixed 4-5-17 Engines tried under steam 9-8-17

Main boiler safety valves adjusted 2-8-17 Thickness of adjusting washers 2-11-17

Material of Crank shaft *Steel* Identification Mark on Do. *LLOYDS 7-7-16* Material of Thrust shaft *Do* Identification Mark on Do. *Do*

Material of Tunnel shafts *Do* Identification Marks on Do. *Do* Material of Screw shafts *Do* Identification Marks on Do. *LLOYDS 23-11-17*

Material of Steam Pipes *Steel* Test pressure 650 lbs sq. in.

Is an installation fitted for burning oil fuel *No* Is the flash point of the oil to be used over 150°F.

Have the requirements of Section 49 of the Rules been complied with

Is this machinery duplicate of a previous case If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery of this vessel has been constructed under Special Survey, and in accordance with the Rules. The materials and the workmanship are of good description throughout, and on trial in Belfast Lough, the machinery worked satisfactorily. In my opinion, it is eligible for record + L.M.C. 8-17, with notations "Electric Light".

It is submitted that this vessel is eligible for THE RECORD. + LMC 8.17.

J.M. J.W.D.
28/8/17

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

The amount of Entry Fee ... £ 3 : - :
Special ... £ 67 : 10 :
Donkey Boiler Fee ... £ : : :
Travelling Expenses (if any) £ : : :
When applied for, 15-8-17
When received, 20/8/17

Committee's Minute TUE SEP - 11 1917
Assigned + L.M.C. 8.17.

