

REPORT ON MACHINERY.

Received at London Office

of writing Report 28-6-17 When handed in at Local Office Belfast 19 Port of Belfast
 in Survey held at Belfast Date, First Survey 15th Dec 1913 Last Survey 21st June 1917
 on the S.S. Belgic (ex Belgeland) (Number of Vents 144) Gross 2454.7
 Master R.O. Jones Built at Belfast By whom built Harland & Wolff L^{td} When built 1917
 Lines made at Belfast By whom made Harland & Wolff L^{td} when made 1917
 made at Belfast By whom made Harland & Wolff L^{td} when made 1917

Indicated Horse Power 3198 Owners International Navigⁿ Co^y L^{td} Port belonging to Liverpool
 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

GINES, &c.—Description of Engines Wain Screw 4 cyl. Simple Expansⁿ and one L.P. Turbine
 No. of Cylinders 8 No. of Cranks 8

Length of Stroke 60 Revs. per minute 77 Dia. of Screw shaft 19.37 Material of S. Steel
 as per rule 19.37 as fitted 20.12 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 Yes
 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
 are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 8'-3"

Dia. of Tunnel shaft 18.71 as per rule 18.73 Dia. of Crank shaft journals 19.0 as per rule 19.75 Dia. of Crank pin 20.5 Size of Crank web 26.5 x 14.5 of thrust shaft under
 bars 19.5 Dia. of screw 19'-6" Pitch of Screw 26'-6" No. of Blades 3 State whether moveable Yes Total surface 100 sq ft.

of Feed pumps Diameter of ditto None on Main Engines Stroke None Can one be overhauled while the other is at work Yes
 of Bilge pumps Diameter of ditto None Stroke None Can one be overhauled while the other is at work Yes

of Donkey Engines See sizes on other sheet No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room 10-3.5 x 14-3 In Holds, &c. 6-2.5 8-3 17-8.5
Emergency 17-6

of Bilge Injections 4 sizes 12" Connected to condenser, or to circulating pump Pumps Is a separate Donkey Suction fitted in Engine room & size 4'-6"
 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 stowhold plates Yes Are the Discharge Pipes above or below the deep water line Below
 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 None How are they protected Yes
 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 29-10-14 of Stern Tube 15-12-14 Screw shaft and Propeller 5-4-17
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper decks

MILERS, &c.—(Letter for record S) Manufacturers of Steel D. Colville & Sons L^{td}

Total Heating Surface of Boilers 55100 sq ft Draft fitted No No. and Description of Boilers 10-Double End Cylind^r
 Working Pressure 215-lbs Tested by hydraulic pressure to 430 lbs Date of test 29-10-14 No. of Certificates 2768
469

Can each boiler be worked separately Yes Area of fire grate in each boiler 129 sq ft. No. and Description of Safety Valves to
 each boiler 4-Boiled Spring Area of each valve 9.62 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 About 21 Mean dia. of boilers 15'-9" Length 20'-0" Material of shell plates Steel

Thickness 1/4 3/4 Range of tensile strength 29-33 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap Rivet
 Long. seams C. Butt Diameter of rivet holes in long. seams 1/4 3/4 Pitch of rivets 10 1/2 Lap of plates or width of butt straps 2 3/4

Percentage of strength of longitudinal joint 93.2 Working pressure of shell by rules 234 lbs Size of manhole in shell 16" x 12"
 Diameter of compensating ring McNeill No. and Description of Furnaces in each boiler 6-Morrison Material Steel Outside diameter 49 1/4
6.5" bottom

Length of plain part top 23 1/2 Thickness of plates bottom 3 1/2 Description of longitudinal joint Weld No. of strengthening rings 8
 Working pressure of furnace by the rules 239 lbs Combustion chamber plates: Material Steel Thickness: Sides 3/2 Back 3/2 Top 3/2 Bottom 3/4 + 1/2

Pitch of stays to ditto: Sides 8 1/2 x 7 1/2 Back 7 1/2 x 9 1/2 Top 7 1/2 x 8 1/2 Are stays fitted with nuts or riveted heads Nuts Working pressure by rules 228 lbs

Material of stays Steel Diameter at smallest part 1 1/2 x 1 1/2 Area supported by each stay 77 3/4 sq Working pressure by rules as applicable in steam space
 Material Steel Thickness 1 1/2 Pitch of stays 8 1/2 x 15 1/2 How are stays secured Stays screw into plates and single nuts Material of stays Steel

Diameter at smallest part 3 x 3 Area supported by each stay 29 1/2 Working pressure by rules 243 lbs Material of Front plates at bottom Steel
 Thickness 7/8 Material of Lower back plate Yes Thickness Yes Greatest pitch of stays Yes Working pressure of plate by rules Yes

Diameter of tubes 2 5/8 Pitch of tubes 3 5/8 x 3 5/8 Material of tube plate Steel Thickness: Front 7/8 Back 1 1/2 Mean pitch of stays 7 1/2 x 7 1/2
 Pitch across wide water spaces 13 3/4 Working pressures by rules 286 lbs with 10 Double Chamber tops: Material Iron Depth and
 thickness of girder at centre 9 x (6 x 2) Length as per rule 52 3/8 Distance apart 9 1/2 x 8 5/8 Number and pitch of stays in each 6 x 7 1/2

Working pressure by rules 281 lbs Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked
 separately Yes Diameter Yes Length Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet
1916
27.30
1. July 1916
 Visits 13

Pitch of rivets Yes Working pressure of shell by rules Yes Diameter of flue Yes Material of flue plates Yes Thickness Yes
 stiffened with rings Yes Distance between rings Yes Working pressure by rules Yes End plates: Thickness Yes How stayed Yes
 Working pressure of end plates Yes Area of safety valves to superheater Yes Are they fitted with easing gear Yes

Material of Front plates at bottom Steel
 Thickness 7/8 Material of Lower back plate Yes Thickness Yes Greatest pitch of stays Yes Working pressure of plate by rules Yes

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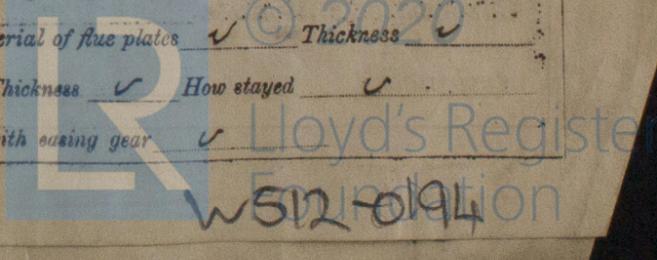
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IS A DONKEY BOILER FITTED? *No* If so, is a report now forwarded?
 SPARE GEAR. State the articles supplied: - *See separate sheet*

The foregoing is a correct description,
for Harland & Wolff, Ltd.
J. G. G. Manufacturer.

Dates of Survey while building: During progress of work in shops - - *1913: - Dec 15, 1914: - Jan 24-30, Feb 5, 16, 20, 24 and 25*
 During erection on board vessel - - - *till 21st June 1917*
 Total No. of visits *144* Is the approved plan of main boiler forwarded herewith? *Yes*

Dates of Examination of principal parts - Cylinders *1-5-17* Sides *do* Covers *do* Pistons *do* Rods *do*
 Connecting rods *30-6-17* Crank shaft *20-7-17* Thrust shaft *do* Tunnel shafts *do* Screw shaft *6-10-17* Propeller *9-3-17*
 Stern tube *24-11-17* Steam pipes tested *27-2-17* Engine and boiler seatings *19-2-17* Engines holding down bolts *19-2-17*
 Completion of pumping arrangements *14-6-17* Boilers fired *1-1-17* Engines tried under steam *31-5-17*
 Main boiler safety valves adjusted *31-5-17* Thickness of adjusting washers *9-15-17*

Material of Crank shaft *do* Identification Mark on Do. Material of Thrust shaft Identification Mark on Do.
 Material of Tunnel shafts *do* Identification Marks on Do. Material of Screw shafts Identification Marks on Do.
 Material of Steam Pipes *Lap welded steel* Test pressure *650 lbs*
 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? *No* 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, and in terms of Secretary's letter 1-1-14.
It has been securely fitted on board, and on trial under steam, in Belfast Lough, it worked satisfactorily in every way. In my opinion, it is eligible for record + L.M.C. 5-17, with notation, Electric Light and Repipe Machinery.

It is submitted that
 this vessel is eligible for
 THE RECORD. + L.M.C. 17.

J.W.D.
4/7/17.
A.R.B.

The amount of Entry Fee ... £ *3 : 0 : 0* When applied for, *27-6-17*
 Special ... £ *122 : 9 : 0*
 Donkey Boiler Fee ... £ : : : When received, *28/7/17*
 Travelling Expenses (if any) £ : : :

R. F. O'Brien
 Engineer/Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute *FRI.-6 JUL 1917*

Assigned *+ L.M.C. 617*

MACHINERY CERTIFICATE
 WRITTEN



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 Foundation

This office

Certificate (if registered) to be sent to

This form is to be filled in by the surveyor and is not to be used for Committee's Minutes.