

REPORT ON MACHINERY.

No. 9859
THU. SEP 27 1917

Date of writing Report 15th Sep 1917
No. in Survey held at Belfast
Reg. Book. P.S. Millais
Port of Belfast
Date, First Survey 30th Sep 1914
Last Survey 15th Sep 1917
(Number of Visits 80) Gross 7300
Net 4457
When built 1917

Master Built at Glasgow By whom built Harland & Wolff Ltd
Engines made at Belfast By whom made - when made -
Boilers made at - By whom made - when made -

Registered Horse Power 808
Owners Lampart & Holt L^{td} Port belonging to Liverpool
Nom. Horse Power as per Section 28 808
Is Refrigerating Machinery fitted for cargo purposes Yes
Is Electric Light fitted Yes

ENGINES, &c. — Description of Engines Single Screw Quadruple Expansion

Dia. of Cylinders 27" - 38 1/2" - 54 1/2" - 78 1/2" Length of Stroke 54" Revs. per minute 75
Dia. of Screw shaft as per rule 15.8" Material of screw shaft Steel
as fitted 17.0" 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 Yes
If two liners are fitted, is the shaft lapped or protected between the liners Yes

Dia. of Tunnel shaft as per rule 14.57" Dia. of Crank shaft journals as per rule 15.29" Dia. of Crank pin 16 1/2" Size of Crank web 22 1/2" x 11 1/2"
as fitted 15.37" as fitted 16.25" Dia. of thrust shaft under collars 16 1/4" Dia. of screw 18" - 9" Pitch of Screw 18" - 6" No. of Blades 4 State whether moveable Yes Total surface 115 sq ft.

No. of Feed pumps 2 Diameter of ditto 5 1/2" Stroke 30" Can one be overhauled while the other is at work Yes
No. of Bilge pumps 2 Diameter of ditto 5 1/2" Stroke 30" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room 9 - 3 1/2" + 2 - 2 1/2" In Holds, &c. 9 - 3 1/2" + 1 - 2 1/2"

No. of Bilge Injections / sizes 11" Connected to condenser, or to circulating pump Pumps a separate Donkey Suction fitted in Engine room & size 1 - 3 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 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 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 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 Connection See Glasgow Report 1236 & 279
Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper deck

BOILERS, &c. — (Letter for record 3) Manufacturers of Steel D. Colville Sons Ltd

Total Heating Surface of Boilers 4028 sq ft
Working Pressure 215 lbs Tested by hydraulic pressure to 430 lbs Date of test 20-6-17 No. of Certificate 501

Can each boiler be worked separately Yes Area of fire grate in each boiler 122 1/2 sq ft No. and Description of Safety Valves to each boiler 3 Direct 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 18" Mean dia. of boilers 15' - 6" Length 19' - 0" Material of shell plates Steel
Thickness 3/32" Range of tensile strength 29-33 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap Rivet
long. seams Double diameter of rivet holes in long. seams 1 1/32" Pitch of rivets 10 1/4" Top of plates or width of butt straps 23 1/2"

Per centages of strength of longitudinal joint rivets 90.6 Working pressure of shell by rules 257 lbs Size of manhole in shell 16" x 12"
plate 83.8

Size of compensating ring No. and Description of Furnaces in each boiler 6 - Morrison Material Steel outside diameter 49 3/4"
Length of plain part top 2" Thickness of plates crown 3 23/32" Description of longitudinal joint Weld No. of strengthening rings
bottom 8" bottom 3 32"

Working pressure of furnace by the rules 242 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/8" Back 1/8" Top 1/8" Bottom 15/16"
Pitch of stays to ditto: Sides 8 7/8" x 8 7/8" Back 8 7/8" x 8 7/8" Top 8 7/8" x 8 7/8" If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 226 lbs

Material of stay Steel Diameter at smallest part 1 1/8" Area supported by each stay 72 1/2 sq Working pressure by rules 267 lbs
Material Steel Thickness 1/8" Pitch of stays 7 1/8" / 15 1/4" How are stays secured Screwed into plates + S. nuts Working pressure by rules 215 lbs Material of stays Steel
Diameter at smallest part 7.06" Area supported by each stay 274 1/2 sq Working pressure by rules 267 lbs Material of Front plates at bottom Steel

Thickness 7/8" Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules
Diameter of tubes 3 1/2" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel thickness: Front 1/8" Back 1/8" Mean pitch of stays 9" x 9"

Pitch across wide water spaces 14 1/2" Working pressures by rules 298 lbs with 1 1/2" double Working pressure by rules 226 lbs
thickness of girder at centre (8 x 7/8) x 2 Length as per rule 46 3/8" Distance apart 8 1/2" Number and pitch of stays in each 4 - 8 1/2"

Working pressure by rules 384 lbs Superheater or Steam chest; how connected to boiler Pipes Can the superheater be shut off and the boiler worked
separately Yes Diameter Schmidt's Patent Length Thickness of shell plates See Manchester Report No. F 507
holes enclosed 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 3 1/4 sq Are they fitted with easing gear Yes

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.*
George Murray Manufacturer.

90.
 Dates of Survey while building: During progress of work in shops - - *1914. March 30 April 17. 22. 27 up till 15-9-17*
 During erection on board vessel - - - *80*
 Total No. of visits *80*
 Is the approved plan of main boiler forwarded herewith *Yes*
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 Dates of Examination of principal parts - Cylinders *12-8-17* Slides *Concess* Pistons *8* Rods
 Connecting rods *26-6-17* Crank shaft *11* Thrust shaft *Tunnel shafts* Screw shaft *8-5-17* Propeller *27-9-16*
 Stern tube *27-9-16* Steam pipes tested *30-8-17* Engine and boiler seatings *22-8-17* Engines holding down bolts *22-8-17*
 Completion of pumping arrangements *11-9-17* Boilers fixed *21-8-17* Engines tried under steam *15-9-17*
 Main boiler safety valves adjusted *11-9-17* Thickness of adjusting washers *6-13*
 Material of Crank shaft *Steel* Identification Mark on Do. *LLOYDS F.J.B. 8-5-17* 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. *Do*
 Material of Steam Pipes *Shell drawn 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. The workmanship and the materials are of good description and on trial in Belfast Lough, the machinery worked satisfactorily. In our opinion, it is eligible for record + L.M.C. 9-17, with notation Electric Light + Refrigerating Machinery.

It is submitted that this vessel is eligible for THE RECORD. + LMC 9. 17.

J.W.D. 11/10/17
John Pollock

R. L. O'Brien
 Engineer Surveyor to Lloyd's Register of British Foreign Shipping.

The amount of Entry Fee ... £ *3* - : When applied for, *25-9-17*
 Special ... £ *60* 8 : When required, *22/10/17*
 Donkey Boiler Fee ... £ : *23/10/17*
 Travelling Expenses (if any) £ : *23/10/17*

Committee's Minute
 Assigned *+ L.M.C. 9. 17*
 MACHINERY CERTIFICATE WRITTEN

TUE. 30 OCT. 1917



This office Certificate (if required) to be sent to The Surveyors are requested not to write on or below the space for Committee's Minute.