

REPORT ON MACHINERY.

No. 4791

WED. 18 APR. 1917

Date of writing Report 12th April 1917 When made at Local Office

Port of Belfast

No. in Survey held at Belfast

Date, First Survey 8th Aug. 1912 Last Survey 7th April 1917

Reg. Book. on the S.S.S. Justicia

(Number of Vials 214)

Gross 32120

Master Hamilton Built at Belfast

By whom built Harland & Wolff Ltd

Tons Net 19738

When built 1917

Engines made at Belfast

By whom made

when made

Boilers made at

By whom made

when made

Registered Horse Power

Owners Oceanic Steam Navigation Co. Ltd. Port belonging to Liverpool

Nom. Horse Power as per Section 28 4012

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

ENGINES, &c. Description of Engine Triple Screw, 4 Cylinders, Triple Expansion and 12 ft. Stroke

Dia. of Cylinders 35 1/2 - 56 - 64 - 64 Length of Stroke 60 Revs. per minute 80 Dia. of Screw shaft as per rule 19 3/4 Material of 2 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 71 - 9

Dia. of Tunnel shaft as per rule 18 1/2 Dia. of Crank shaft journals as per rule 19 1/2 Dia. of Crank pin 20 1/2 Size of Crank web 37 1/2 x 4 1/2 of thrust shaft under

collars 19 3/4 Dia. of screw 20 - 0 Pitch of Screw 24 - 6 No. of Blades 3 State whether moveable Yes Total surface 1152 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 others of Belfast No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 8 - 3 1/2 7 - 2 1/2 4 - 3 (Emergency 6 - 8) In Holds, &c. 21 - 3 1/2 7 - 2 1/2 (Emergency 8 - 8)

No. of Bilge Injections 4 sizes 13 Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size 2 - 5

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 None How are they protected

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 22 - 5 - 14 of Stern Tube 7 - 5 - 14 Screw shaft and Propeller 28 - 2 - 17

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper deck

BOILERS, &c. (Letter for record S) Manufacturers of Steel A. Colville & Sons Ltd

Total Heating Surface of Boilers 62088 sq. ft. Forced Draft fitted Yes No. and Description of Boilers 12 - B. End Cylindrical

Working Pressure 215 lbs Tested by hydraulic pressure to 430 lbs Date of test 19 - 5 - 14 No. of Certificate 461

Can each boiler be worked separately Yes Area of fire grate in each boiler 118 sq. ft. No. and Description of Safety Valves to

each boiler 4 - Direct Spring Area of each valve 10.322 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 18 Mean dia. of boilers 15 1/4 Length 20 - 0 Material of shell plates Steel

Thickness 1 3/4 Range of tensile strength 31 - 36 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seam Lap Rivet

long. seams Auto Lubricator rivet holes in long. seams 1 1/2 Pitch of rivets 10 1/2 Lap of plates or width of butt straps 22 1/2

Per centages of strength of longitudinal joint rivets 91.8 plate 84.7 Working pressure of shell by rules 243 lbs Size of manhole in shell 16 - 12

Size of compensating ring No. 11 No. and Description of Furnaces in each boiler 6 - Morion Material Steel Outside diameter 49 1/2

Length of plain part top 2 - Thickness of plates crown 3 3/4 Description of longitudinal joint Weld No. of strengthening rings

Working pressure of furnace by the rules 242 lbs Combustion chamber plates: Material Steel Thickness: Sides 5 - Back 5 - Top 5 - Bottom 3 - 1/2

Pitch of stays to ditto: Sides 8 1/2 x 7 1/2 Back 8 1/2 x 7 1/2 Top 8 1/2 x 7 1/2 If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 218 lbs

Material of stays Steel Diameter at smallest part 1 1/2 - 1 5/8 Area supported by each stay 6 5/8 sq. ft. Working pressure by rules 228 lbs End plates in steam space

Material Steel Thickness 1 1/8 Pitch of stays 7 1/2 x 15 How are stays secured Secured with Working pressure by rules 221 lbs Material of stays Steel

Diameter at smallest part 2 1/4 Area supported by each stay 22 6/8 sq. ft. Working pressure by rules 252 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 2 1/4 Pitch of tubes 4 x 4 Material of tube plates Steel Thickness: Front 7/8 Back 1 1/8 Mean pitch of stays 8 x 8

Pitch across wide water spaces 14 Working pressures by rules 209 lbs with 4. Double Chamber tops: Material Iron Depth and

thickness of girder at centre 9 x (8 x 2) Length as per rule 52 3/4 Distance apart 8 1/2 x 8 1/2 Number and pitch of stays in each 6 - 7 1/2

Working pressure by rules 302 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,

for Sayland & Wolff Ltd.

W. C. Munn

Manufacturer.

Dates of Survey while building
During progress of work in shops - -
During erection on board vessel - - -
Total No. of visits

1912-1-18-21 Sep 24 up till 7th April 1917

2/4

Is the approved plan of main boiler forwarded herewith

yes ✓

Dates of Examination of principal parts - Cylinders

12-2-13

Covers

Do

Pistons

Rods

Connecting rods

18-8-14

Crank shaft

17-1-13

Thrust shaft

Do

Tunnel shafts

Do

Screw shaft

30-5-14

Propeller

3-4-14

Stern tube

3-4-14

Steam pipes tested

28-8-14

Engine and boiler seatings

12-9-14

Engines holding down bolts

5-10-14

Engines tried under steam

12-1-17

Completion of pumping arrangements

16-3-17

Boilers fixed

5-10-14

Engines tried under steam

12-1-17

Main boiler safety valves adjusted

12-1-17

Thickness of adjusting washers

7-17

52

Material of Crank shaft

Steel

Identification Mark on Do.

40125

Material of Thrust shaft

Do

Identification Mark on Do.

Do

Material of Tunnel shafts

Do

Identification Marks on Do.

Do

Material of Steam Pipes

Steel

Test pressure

645 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.

Yes ✓

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

Yes ✓

Is this machinery duplicate of a previous case

No ✓

If so, state name of vessel.

Yes ✓

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

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 throughout, and on trial in Belfast Lough the machinery worked satisfactorily. In my opinion it is eligible for record + L.M.C. 4-17, with notation "Forced draft" "Electric Light".

The sizes of the shafting for the Reciprocating and Turbine Engines are as per Secretary's Letter 10-7-12.

It is submitted that
this vessel is eligible for
THE RECORD. + L.M.C. 4-17. F.D.

T. 8 Cy. (2) 35", (2) 56" (4) 64" - 60".

1 L.P. Turbine

12 D.B. 72 Cf. 65 14/16 HS 6/344. 215 lb. (5)

The amount of Entry Fee

£ 3 : 0 :

When applied for.

Special

£ 132-13 :

11-4-1917

Donkey Boiler Fee

£ :

When received.

Travelling Expenses (if any) £ :

8/11/17

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

Committee's Minute

Assigned

*THE MAY 1917
+ L.M.C. 4-17 F.D.*

MACHINERY CERTIFICATE
WRITTEN



© 2020

Lloyd's Register
Foundation