

## REPORT ON MACHINERY.

No. 69220

Received at London Office 1916

Date of writing Report 9th Sept 1916 When handed in at Local Office

Port of Newcastle-on-Tyne

No. in Survey held at Newcastle

Date, First Survey 19th May 1915 Last Survey 6th Sept 1916

Reg. Book. on the S.S. "British" &amp; "Imperial"

(Number of Vessels 65)

Master Built at Newcastle By whom built Sir W. G. Armstrong Whitworth &amp; Co. When built 1916

Engines made at Newcastle By whom made North Eastern Marine Eng. Co. When made 1916

Boilers made at Newcastle By whom made when made 1916

Registered Horse Power Owners British Tanker Co. Ltd. Port belonging to London

Nom. Horse Power as per Section 28 380 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 23"-38"-62" Length of Stroke 42" Revs. per minute 68 Dia. of Screw shaft as per rule 13.26" Material of screw shaft as fitted 13 3/4" 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 Length of stern bush 4'-9"  
 Dia. of Tunnel shaft as per rule 11.45" Dia. of Crank shaft journals as per rule 12.05" Dia. of Crank pin 12 3/4" Size of Crank webs 19 1/4" x 7 1/2" Dia. of thrust shaft under  
 collars 12 3/4" Dia. of screw 16'-9" Pitch of Screw 16'-0" No. of Blades 4 State whether moveable Yes Total surface 86 sq ft  
 No. of Feed pumps 2 Diameter of ditto 3 1/4" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 3 1/4" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 3 Sizes of Pumps 6 x 7 1/2 x 6 7 1/2 x 5 x 6 5 x 3 1/2 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Three 3 1/2" In Holds, &c. None

No. of Bilge Injections 1 sizes 8" Connected to condenser or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 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 3 1/2"  
 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 18.2.16 of Stern Tube 18.2.16 Screw shaft and Propeller 18.2.16  
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door Yes worked from Yes

**BOILERS, &c.**—(Letter for record R) Manufacturers of Steel & Spencer & Sons  
 Total Heating Surface of Boilers 5904 sq ft Is Forced Draft fitted Yes No. and Description of Boilers Three, single-ended  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 2.2.16 No. of Certificate 8838  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 44 sq ft No. and Description of Safety Valves to  
 each boiler Two, spring Area of each valve 7.06 sq in Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 13'-6 1/4" Length 11'-6" Material of shell plates Steel  
 Thickness 1 1/4" Range of tensile strength 29 3/4 - 33 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams 8 Lap.  
 long. seams 13 S. J. Riv. Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 17 3/4"  
 Per centages of strength of longitudinal joint rivets 88.6 plate 88.4 Working pressure of shell by rules 186 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring Flanged No. and Description of Furnaces in each boiler 3-8ightone Material Steel Outside diameter 40"  
 Length of plain part top Thickness of plates crown 1 1/2" bottom Description of longitudinal joint Welded No. of strengthening rings  
 Working pressure of furnace by the rules 188 lbs Combustion chamber plates: Material Steel Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 7/8"  
 Pitch of stays to ditto: Sides 10 3/4" x 9" Back 10 3/4" x 9" Top 10 3/4" x 9" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 182 lbs  
 Material of stays Iron Diameter at smallest part 2.37" Area supported by each stay 97.6 sq in Working pressure by rules 182 lbs End plates in steam space  
 Material Steel Thickness 1 3/8" Pitch of stays 25" x 19" How are stays secured 3 n. 11 Working pressure by rules 182 lbs Material of stays Steel  
 Diameter at smallest part 2.29" Area supported by each stay 47.5 sq in Working pressure by rules 181 lbs Material of Front plates at bottom Steel  
 Thickness 1" Material of Lower back plate Steel Thickness 1 5/16" Greatest pitch of stays 14 1/2" Working pressure of plate by rules 185 lbs  
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" Material of tube plates Steel Thickness: Front 1" Back 1 3/16" Mean pitch of stays 7 1/2"  
 Pitch across wide water spaces 14 1/2" Working pressures by rules 183 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 8 3/4" x 1 3/4" Length as per rule 35" Distance apart 9" Number and pitch of stays in each 2-10 3/4"  
 Working pressure by rules 187 lbs Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked  
 separately Yes 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 now forwarded? ✓

SPARE GEAR. State the articles supplied:— Two top-end, two bottom-end & 4 main-beat bolts & nuts, one set of coupling bolts, one set of feed & bilge pump valves, one set of rings & springs for each piston, a quantity of assorted bolts, nuts & iron, 2 propeller blades, a screw shaft, 1 pair crank pin bearings, 1 eccentric sheave & strap, 1 slide valve spindle, 1 air pump rod, 2 condenser tubes

The foregoing is a correct description,

FOR THE NORTH EASTERN MARINE ENGINEERING CO. LD.

Edgarson Manufacturer.

1915  
Dates of Survey while building { During progress of work in shops -- 24. 25. 26. 29. Dec. 1. 3. 13. 15. 17. 20. 22. 23. 1916 Jan. 5. 6. 10. 24. Feb. 2. 24. 25. Mar. 13. 20. 28. 30. Apr. 6. 11. 14. 15. 17. 19. 22. 23. Feb. 5. 6.  
During erection on board vessel --  
Total No. of visits 65

Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders 1-10-15 Slides 17-11-15 Covers 24-2-16 Pistons 24-1-16 Rods 15-10-15  
Connecting rods 4-10-15 Crank shaft 20-3-16 Thrust shaft 29-11-15 Tunnel shafts none Screw shaft 19-5-16 Propeller 16-11-1  
Stern tube 23-11-15 Steam pipes tested 23-8-16 Engine and boiler seatings 11-8-16 Engines holding down bolts 11-8-16  
Completion of pumping arrangements 5-9-16 Boilers fixed 11-8-16 Engines tried under steam 5-9-16  
Main boiler safety valves adjusted 5-9-16 Thickness of adjusting washers PB.  $F\frac{7}{16}$  A  $\frac{3}{4}$  SB.  $F\frac{7}{16}$  A  $\frac{7}{16}$  FB.  $F\frac{7}{16}$  A  $\frac{7}{16}$   
Material of Crank shaft Steel Identification Mark on Do. C.C. 3-16 Material of Thrust shaft Steel Identification Mark on Do. C.C. 11-16  
Material of Tunnel shafts none Identification Marks on Do. ✓ Material of Screw shafts none Identification Marks on Do. C.C. 5-16  
Material of Steam Pipes none Test pressure 540 lbs

Is an installation fitted for burning oil fuel yes

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

General Remarks (State quality of workmanship, opinions as to class, &c.) The engines & boilers of this vessel have been constructed under special survey & the materials & workmanship are found to be good. The engines have been tried under steam & the safety valves adjusted at the working pressure. The machinery is now in good & safe working condition & eligible in our opinion to have the notations of + L.M.C. 9-16.

Fitted for oil fuel 9-16. F.P. above 150°F.  
A report on the electric installation will be forwarded when received from the Electricians.

It is submitted that this vessel is eligible for THE BROOD + L.M.C. 9.16. F.D.  
Fitted for oil fuel 9.16. F.P. above 150°F.

The amount of Entry Fee ... £ 3 : 0 : 0  
Special ... £ 39 : 0 : 0  
Donkey Boiler Fee ... £ 1 : 0 : 0  
Travelling Expenses (if any) £ ... : 0 : 0  
When applied for, 3 - OCT 1916  
When received, 7 - 10 - 1916 9/10/16

Committee's Minute FRI. 6 - OCT 1916

Assigned + L.M.C. 9.16

MACHINERY CERTIFICATE  
WRITTEN.

F.D. Fitted for oil fuel 9.16  
F.P. above 150°F.



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Foundation