

## REPORT ON MACHINERY.

No. 7999

Date of writing Report 8<sup>th</sup> Aug 1918 When handed in at Local Office 13 AUG. 1918 Port of Belfast  
 No. in Survey held at Belfast Date, First Survey March 1917 Last Survey 5<sup>th</sup> Aug 1918  
 Reg. Book. S.S. British Lantern (Number of Visits 106) Gross 6897 Tons Net 4067  
 Master Workman Clark & Co Built at Belfast By whom built Workman Clark & Co When built 1918  
 Engines made at Belfast By whom made - when made -  
 Boilers made at - By whom made - when made -  
 Registered Horse Power - Owners The Shipping Controller Port belonging to London  
 Nom. Horse Power as per Section 28 634 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Single Screw Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 27-45-75 Length of Stroke 54 Revs. per minute 70 Dia. of Screw shaft 16.25 Material of 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  
 Is 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 8'-5"  
 Dia. of Tunnel shaft 15.5 as per rule ✓ Dia. of Crank shaft journals 14.92 as per rule ✓ Dia. of Crank pin 15.5 Size of Crank webs 28" x 10" Dia. of thrust shaft under  
 collars 15.5 Dia. of screw 18'-9" Pitch of Screw 17'-6" No. of Blades 4 State whether moveable Yes Total surface 100 sq ft  
 No. of Feed pumps 2 Diameter of ditto 4.5 Stroke 27 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4.5 Stroke 27 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines See Notes Sizes of Sheet No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room 6-3.5 In Holds, &c. ✓

No. of Bilge Injections 1 sizes 10 Connected to condenser, or to circulating pump Pumps Is a separate Donkey Suction fitted in Engine room & size 1-3.5  
 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 Steam heating 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  
 Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record P) Manufacturers of Steel Steel Coy of Scotland

Total Heating Surface of Boilers 9666 sq ft Is forced Draft fitted Yes No. and Description of Boilers 3, Single End Cylind.  
 Working Pressure 190 lbs Tested by hydraulic pressure to 380 lbs Date of test 4-2-18 No. of Certificate 517  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 78.5 sq ft No. and Description of Safety Valves to  
 boiler 2 Direct Spring Area of each valve 12.56 sq in Pressure to which they are adjusted 195 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork About 30" Mean dia. of boilers 16'-6" Length 2'-0" Material of shell plates Steel  
 Thickness 1.5 Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seam Lap R & S  
 seams Butt Lap Diameter of rivet holes in long. seams 1.32 Pitch of rivets 9.5 Top of plates or width of butt straps 20.5  
 Percentages of strength of longitudinal joint 86.0 Working pressure of shell by rules 190 lbs Size of manhole in shell 16" x 12"  
 of compensating ring No. Neils No. and Description of Furnaces in each boiler 4-Doyleton Material Steel Outside diameter 45.5  
 Length of plain part 8'-0" Thickness of plates 3.75 Description of longitudinal joint Weld No. of strengthening rings ✓  
 Working pressure of furnace by the rules 201 lbs Combustion chamber plates: Material Steel Thickness: Sides 2.5 Back 2.5 Top 2.5 Bottom 1.5  
 No. of stays to ditto: Sides 8.5 Back 8.5 Top 8.5 Bottom 8.5 If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 196 lbs  
 Material of stays Steel Area at smallest part 76.5 supported by each stay Varies Working pressure by rules 198 lbs End plates in steam space:  
 Material Steel Thickness 1.5 Pitch of stays 20 x 15.5 How are stays secured Nuts & Washers Working pressure by rules 198 lbs Material of stays Steel  
 at smallest part 6.09 Area supported by each stay 322.8 Working pressure by rules 96 lbs Material of Front plates at bottom Steel  
 Thickness 1 Material of Lower back plate Steel Thickness 7.5 Greatest pitch of stays 13.5 x 8 Working pressure of plate by rules 213 lbs  
 Diameter of tubes 2.5 Pitch of tubes 8.5 x 3.5 Material of tube plate Steel Thickness: Front 6.5 Back 1.5 Mean pitch of stays 11.5 x 7.5  
 across wide water spaces 13.5 Working pressures by rules 190 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 9.5 (3.5 x 2) Length as per rule 33.5 Distance apart 8.5 Number and pitch of stays in each 3-7.5  
 Working pressure by rules 195 lbs Steam dome: description of joint to shell ✓ % of strength of joint -  
 Material - Thickness of shell plates - Material - Description of longitudinal joint - Diam. of rivet holes -  
 of rivets - Working pressure of shell by rules - Crown plates - Thickness - How stayed -

SUPERHEATER. Type - Date of Approval of Plan - Tested by Hydraulic Pressure to -  
 of Test - Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler -  
 of Safety Valve - Pressure to which each is adjusted - Is Easing Gear fitted -



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 WORKMAN, CLARK & CO., LIMITED.

*M. H. Bell*

Manufacturer.

Dates of Survey while building  
During progress of work in shops -- 1917, March 8, 26 up to 5th Aug 1918  
During erection on board vessel --  
Total No. of visits 106

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

Dates of Examination of principal parts—Cylinders 31—Slides 17 Covers Pistons 8 Rods  
Connecting rods 24—5—18 Crank shaft 17 Thrust shaft 17 Tunnel shafts 5 Screw shaft 20—5—18 Propeller 20—5—18  
Stern tube 20—5—18 Steam pipes tested 29—5—18 Engine and boiler seatings 21—6—18 Engines holding down bolts 21—6—18  
Completion of pumping arrangements 5—8—18 Boilers fixed 24—6—18 Engines tried under steam 31—7—18  
Completion of fitting sea connections 20—5—18 Stern tube 29—5—18 Screw shaft and propeller 29—5—18  
Main boiler safety valves adjusted 31—7—18 Thickness of adjusting washers 7—9—18  
Material of Crank shaft *Steel* Identification Mark on Do. *7.3.18* Material of Thrust shaft *Do* Identification Mark on Do. *7.4.18*  
Material of Tunnel shafts *✓* Identification Marks on Do. *✓* Material of Screw shafts *Steel* Identification Marks on Do. *7.3.18*  
Material of Steam Pipes *Iron & Steel* Test pressure 600 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 machinery of this vessel has been constructed under Special Survey, and in accordance with the Rules, and the instructions from the Admiralty and Controller of Auxiliary Shipbuilding, as forwarded in the Secretary's Letters and Specifications. The workmanship and the materials are of good description, and on trial in Belfast Lough, the machinery worked satisfactorily. In my opinion, it is eligible for records + L.M.C. 8-18, with notation "Forced Draft" & "Electric Light" Machinery "ft"

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 8, 18 F.D. FITTED FOR OIL FUEL 8, 18 F.P. ABOVE 150°F

The amount of Entry Fee ... Special Fee as per Circular Letter 2487 1918 When applied for, from London Office  
Special ...  
Donkey Boiler Fee ... £164 : 2 : 0 When received, 25/10/18  
Travelling Expenses (if any) £ : :  
Committee's Minute TUE. 20 AUG. 1918  
Assigned + L.M.C. 8. 18  
F.D. Fitted for oil fuel 8. 18.

FRI. 21 FEB. 1919

Rpt. 9a.

Port of *Belfast*

Continuation of Report No. 7999 dated 8th Aug 1918 on the

*BB. British Lantern*

1 Ballast Pump 6" x 8" x 8"  
1 Feed 8" x 5 1/2" x 8"  
2 Mewis Feed 12" x 9" x 21"  
1 Cent. Circulating 16" pipe  
1 General 8" x 5 1/2" x 8"

*Spare Gear - Principal Items*

1 Propeller shaft  
1 Pawl Crank pin bushes  
1 Eccentric Sheave & strap.  
1 Slide valve spindle  
1 Set of rings & springs for each piston + H.P. piston valve  
1 Air pump rod + set valves  
12 Main Condenser tubes + 100 ferrules  
1 Set Copeland's packing for each size rod fitted  
1 - packing rings for Mewis Pump buckets  
20 Exhaust tubes + 1 stay tube for boiler  
2 Cast Steel Propeller blades  
2 Top end x 2 bottom end bolts + nuts  
2 Main bearing bolts + nuts  
1 Set coupling  
1 Set Feed + Bilge pump valves  
1 Impeller for Circulating Pump  
1 - shaft  
2 Safety valve springs  
2 Waste  
12 Aux. Condenser tubes + 50 ferrules.  
1 Set Main Feed Check valves  
1 - Aux.  
Fan Engine + Circulating Pumps gear  
Refrigerating Engine gear  
Liquid Fuel burning spare gear  
Bolts, nuts, plates etc. all to Lloyd's Rules

*R. J. Beveridge*

Certificate (if required) to be sent to the Office of the Registrar of Shipping, Belfast.