

## REPORT ON MACHINERY.

No. 8765

FRI. 7 JUL. 1922

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Received at London Office

Date of writing Report 29<sup>th</sup> June 1922 When handed in at Local Office 19 Port of Belfast  
No. in Survey held at Belfast Date, First Survey 18<sup>th</sup> March 1920 East Survey 27<sup>th</sup> June 1922  
Reg. Book. T.S.S. Port Campbell (Number of Visits 102)  
Master Belfast Built at Belfast By whom built Warkman Clark & Co. Ltd. Tons } Gross  
Engines made at Belfast By whom made Warkman Clark & Co. Ltd. when made 1922 Net  
Boilers made at Belfast By whom made Warkman Clark & Co. Ltd. when made 1922  
Registered Horse Power 259 Owner Commonwealth Dominion Line Ltd. belonging to London  
Nom. Horse Power as per Section 28 259 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Screw Triple Expansion No. of Cylinders 6 No. of Cranks 6  
Dia. of Cylinders 22½"-38"-63½" Length of Stroke 48" Revs. per minute 137½ Dia. of Screw shaft 14½" Material of screw shaft 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 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 60"  
Dia. of Tunnel shaft 12.37" Dia. of Crank shaft journals 12.99" Dia. of Crank pin 13½" Size of Crank webs 26" x 9" Dia. of thrust shaft under collars 13½" Dia. of screw 16" Pitch of Screw 17"-6" No. of Blades 3 State whether moveable Yes Total surface 802 sq. ft.  
No. of Feed pumps 1 Diameter of ditto 6" Stroke 24" Can one be overhauled while the other is at work Yes  
No. of Bilge pumps 1 Diameter of ditto 6" Stroke 24" 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 12-3½" In Holds, &c. 11-3½" Offenders 4-3½"

No. of Bilge Injections 2 sizes 9" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size 1-3½"  
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 Hold suction How are they protected Iron 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  
Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper deck level

BOILERS, &c.—(Letter for record 3) Manufacturers of Steel W. R. Beal & Co. Ltd. & Babcock & Wilcox  
Total Heating Surface of Boilers 12900 sq. ft. Forced Draft fitted Yes No. and Description of Boilers 4-Single End by kind  
Working Pressure 200 lbs Tested by hydraulic pressure to 350 lbs Date of test 20-9-21 No. of Certificate 799  
Can each boiler be worked separately Yes Area of fire grate in each boiler 79 sq. ft. No. and Description of Safety Valves to each boiler 2-Direct Spring Area of each valve 14.19 sq. in. Pressure to which they are adjusted 205 lbs Are they fitted with easing gear Yes  
Smallest distance between boilers or uptakes and bunkers or woodwork 20" Mean dia. of boilers 16"-9" Length 2'-3" Material of shell plates Steel  
Thickness 1½" Range of tensile strength 29-33 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap White  
long. seams Butt Lubber Diameter of rivet holes in long. seams 1½" Pitch of rivets 10½" Lap of plates or width of butt straps 22½"  
Per centages of strength of longitudinal joint rivets 86.9 Working pressure of shell by rules 200 lbs Size of manhole in shell 34½" x 31" x 18"  
Size of compensating ring 34½" x 31" x 18" No. and Description of Furnaces in each boiler 4-Morrisons Material Steel Outside diameter 47½"  
Length of plain part 8" Thickness of plates 3/4" Description of longitudinal joint Weld No. of strengthening rings 1  
Working pressure of furnace by the rules 211 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/8" Back 1/8" Top 1/8" Bottom 3/16"  
Pitch of stays to ditto: Side 8½" x 9½" Back 8½" x 9½" Top 8½" x 9½" Bottom 8½" x 9½" If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 209 lbs  
Material of stay Steel Area at smallest part 2.89 sq. in. supported by each stay 74 sq. in. Working pressure by rules 214 lbs and plates in steam space:  
Material Steel Thickness 1/8" Pitch of stays 20½" x 16½" How are stays secured Nuts & washers Working pressure by rules 200 lbs Material of stays Steel  
Area at smallest part 5.53 sq. in. supported by each stay 387 sq. in. Working pressure by rules 205 lbs Material of Front plates at bottom Steel  
Thickness 1" Material of Lower back plate Steel Thickness 3/8" Greatest pitch of stays 13½" Working pressure of plate by rules 220 lbs  
Diameter of tubes 2½" Pitch of tubes 3½" x 8" Material of tube plate Steel Thickness: Front 5/8" Back 1/8" Mean pitch of stays 11½" x 7½"  
Pitch across wide water spaces 13½" Working pressures by rules 228 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 11" x (4" x 2") Length as per rule 40½" Distance apart 8" x 6½" Number and pitch of stays in each 3-9½"  
Working pressure by rules 212 lbs Steam dome: description of joint to shell Yes % of strength of joint 100  
Diameter 1" Thickness of shell plates 1/8" Material Steel Description of longitudinal joint Weld Diam. of rivet holes 1/8"  
Pitch of rivets 1" Working pressure of shell by rules 200 lbs Crown plates Yes Thickness 1/8" How stayed Yes

SUPERHEATER. Type Horizontal Date of Approval of Plan 1922 Tested by Hydraulic Pressure to 220 lbs  
Date of Test 1922 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes  
Diameter of Safety Valve 1" Pressure to which each is adjusted 220 lbs Is Easing Gear fitted Yes



IS A DONKEY BOILER FITTED? - *None*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied: - *See other sheet*

The foregoing is a correct description,  
FOR WORKMAN, CLARK & CO., LIMITED,

*F. Cunningham*

Manufacturer.

Dates of Survey while building  
During progress of work in shops - *18<sup>th</sup> March 1922 to 27<sup>th</sup> June 1922*  
During erection on board vessel -  
Total No. of visits *102*

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

Dates of Examination of principal parts - Cylinders *25<sup>th</sup> March* Slides *25<sup>th</sup> March* Covers *25<sup>th</sup> March* Pistons *25<sup>th</sup> March* Rods *25<sup>th</sup> March*  
Connecting rods *25<sup>th</sup> March* Crank shaft *25<sup>th</sup> March* Thrust shaft *25<sup>th</sup> March* Tunnel shafts *25<sup>th</sup> March* Screw shaft *25<sup>th</sup> March* Propeller *25<sup>th</sup> March*  
Stern tube *25<sup>th</sup> March* Steam pipes tested *25<sup>th</sup> March* Engine and boiler seatings *25<sup>th</sup> March* Engines holding down bolts *25<sup>th</sup> March*  
Completion of pumping arrangements *25<sup>th</sup> March* Boilers fixed *25<sup>th</sup> March* Engines tried under steam *25<sup>th</sup> March*  
Completion of fitting sea connections *25<sup>th</sup> March* Stern tube *25<sup>th</sup> March* Screw shaft and propeller *25<sup>th</sup> March*  
Main boiler safety valves adjusted *25<sup>th</sup> March* Thickness of adjusting washers *25<sup>th</sup> March*  
Material of Crank shaft *Steel* Identification Mark on Do. *LLYDAS 25-3-22* Material of Thrust shaft *do* Identification Mark on Do. *LLYDAS 25-3-22*  
Material of Tunnel shafts *do* Identification Marks on Do. *LLYDAS 25-3-22* Material of Screw shafts *do* Identification Marks on Do. *LLYDAS 25-3-22*  
Material of Steam Pipes *Top Welded Steel* Test pressure *600 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. *✓*  
Have the requirements of Section 49 of the Rules been complied with *✓*  
Is this machinery duplicate of a previous case *✓* 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 my opinion, it is eligible for record + L.M.C. 6-22, with notation "Forced Draft" "Electric Light" and "Refrigerating Machinery".

It is submitted that  
this vessel is eligible for  
THE RECORD.

*F.L.M.C. - 6.22. F.D. C.L.*

*25/10/22*

*ARR*

The amount of Entry Fee ... £ *6 : 0 :* When applied for, *22-6-22*  
Special ... £ *117 : 19 :*  
Donkey Boiler Fee ... £ : : When received, *4-7-22*  
Travelling Expenses (if any) £ : : *4-7-22*

Committee's Minute *TUE. 11 JUL. 1922*

Assigned

*+ L.M.C. 6.22. F.D. C.L.*

MACHINERY CERT  
WRITTEN

*R.F. Beveridge*

Engineer Surveyor to Lloyd's Register of Shipping.

Rpt. 9a.

Port of *Belfast*

Continuation of Report No. 8765 dated 29<sup>th</sup> June 1922 on the

*T.S.S. Port Campbell*

List of Pumps

2 Main Feed Pumps *13 1/2" x 10" x 26"*  
General Service *9" x 6" x 10"*  
Ballast *8" x 10" x 10"*  
Sanitary *6" x 7" x 8"*  
Fresh Water *5" x 5" x 8"*  
Refrigerating *8 1/2" x 10" x 10"*  
2 Main Circulating *14" pump 45" impeller*  
Fun *8" 21"*

Principal items Spare Gear.

1 Propeller shaft complete  
2 C.S. propeller blades  
30 Condenser tubes, 100 fowls.  
2 Davis crank pin bushes  
2 - Crossheads  
2 H.P. valve spindles +  
2 M.P. -  
2 L.P. -  
2 sets rings + springs H.P. piston valves  
4 - H.P. + M.P. pistons  
2 - L.P. pistons  
2 Air pump with nuts; 2 glands + studs  
1 Piston rod gland in valves  
30 Barker tubes  
Forced draft fan shaft  
Main circulating pump impeller  
2 - Spindles  
1 Thomson breakdown shaft coupling  
Large supply spare gear for pumps, etc.  
and all gear to aux Rules extra.

*R.F. Beveridge*



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