

REPORT ON MACHINERY.

No. 7956

Received at London Office

THU. 16 MAY. 1918

Date of writing Report May 14th 1918 When handed in at Local Office May 14th 1918 Port of Belfast
 No. in Survey held at Belfast Date, First Survey 28 Jan 1916 Last Survey 1st May 1918
 Reg. Book. J.S.S. Port Demson (Number of Visits 91) Gross 40334
 on the J.S.S. Port Demson

Master Built at Belfast By whom built Warkman Clark & Co Tons }
 Engines made at Belfast By whom made when made 1918 Net }
 Boilers made at By whom made when made Gross }

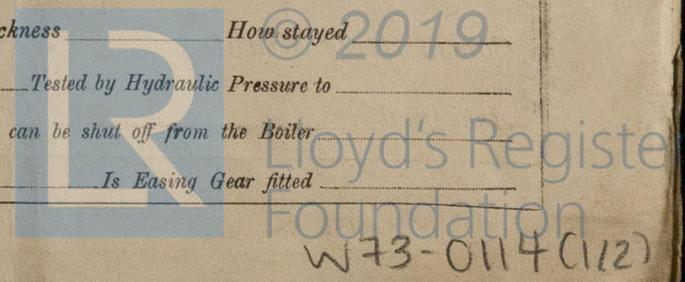
Registered Horse Power Owner Commonwealth Dominion Dock belonging to London
 Nom. Horse Power as per Section 28 209 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Two Screw Triple Expansion Cylinders 6 No. of Cranks 6
 Dia. of Cylinders 22 1/2 - 38 - 63 1/2 Length of Stroke 45 Revs. per minute 80 Dia. of Screw shaft 13.5 Material of 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 4-9 1/2
 Dia. of Tunnel shaft 12.07 Dia. of Crank shaft journals 12.67 Dia. of Crank pin 3 1/2 Size of Crank webs 9 1/2 x 9 Dia. of thrust shaft under
 collars 13 1/2 Dia. of screw 16-6 Pitch of Screw 17-9 No. of Blades 3 State whether moveable Yes Total surface 80 sq ft
 No. of Feed pumps 1 Diameter of ditto 5 1/2 Stroke 24 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 1 Diameter of ditto 5 1/2 Stroke 24 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines See separate sheet No. and size of Suctions connected to both Bilge and Donkey pumps
 in Engine Room 6 - 3 1/2 In Holds, &c. 12 - 3 1/2 + 1 - 2 1/2

No. of Bilge Injections 2 sizes 8 Connected to condenser, or to circulating pump Pump 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
 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 Casings
 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 Top platform & Room

MILERS, &c.—(Letter for record) Manufacturers of Steel Beardmore & Co
 Total Heating Surface of Boilers 11960 sq ft Forced Draft fitted Yes No. and Description of Boilers 4 Single End Cylind
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 16-11-17 No. of Certificate 5/3
 Can each boiler be worked separately Yes Area of fire grate in each boiler 73 3/8 sq ft No. and Description of Safety Valves to
 each boiler 2 - Direct Spring Area of each valve 11.04 sq ft Pressure to which they are adjusted 200 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 24 Mean dia. of boilers 15-10 1/2 Length 12-6 Material of shell plates Steel
 Thickness 1/2 Range of tensile strength 30-33 1/2 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Top & S
 Long. seams Butt Diameter of rivet holes in long. seams 1/16 Pitch of rivets 10 1/2 Top of plates or width of butt straps 22 1/2
 Percentages of strength of longitudinal joint rivets 90.6 Working pressure of shell by rules 231 lbs Size of manhole in shell 16 x 12
 Size of compensating ring M. Heils No. and Description of Furnaces in each boiler 4 - Mousons Material Steel Outside diameter 44 1/2
 Length of plain part top 3 bottom 8 Thickness of plates crown 3/8 bottom 3/8 Description of longitudinal joint Weld No. of strengthening rings
 Working pressure of furnace by the rules 227 lbs Combustion chamber plates: Material Steel Thickness: Sides 2 1/2 Back 4 1/2 x 4 1/2 Top 2 1/2 Bottom 13/16
 Pitch of stays to ditto: Side 6 1/2 x 8 x 8 1/2 Back Varies Top 9 x 8 If stays are fitted with nuts or riveted heads Nuts in shell Working pressure by rules 206 lbs
 Material of stays Steel Area at smallest part 76 x 2 3/8 supported by each stay 72 sq Working pressure by rules 221 lbs End plates in steam space:
 Material Steel Thickness 1 1/2 Pitch of stays 20 x 15 1/2 How are stays secured Nuts in shell Working pressure by rules 208 lbs Material of stays Steel
 Area at smallest part 6.09 x 7.2 supported by each stay 310 sq Working pressure by rules 241 lbs Material of Front plates at bottom Steel
 Thickness 1 Material of Lower back plate Steel Thickness 4/8 Greatest pitch of stays 13 3/4 x 8 1/2 Working pressure of plate by rules 231 lbs
 Diameter of tubes 2 1/2 Pitch of tubes 3 1/2 x 3 3/4 Material of tube plate Steel Thickness: Front 6/32 Back 13/16 Mean pitch of stays 7 1/2 x 7 1/2
 Pitch across wide water spaces 13 1/2 Working pressures by rules 203 lbs Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 10 1/2 x (1/2 x 2) Length as per rule 34 1/2 Distance apart 9 Number and pitch of stays in each 3-8
 Working pressure by rules 234 lbs Steam dome: description of joint to shell % of strength of joint
 Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes
 Pitch 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
 Date of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
 Number of Safety Valves 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 -- 1916, Jan 28, Feb 28, March 18, 1917 up till *Nov 1st 1918*
During erection on board vessel ---
Total No. of visits 91

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

Dates of Examination of principal parts: Cylinders 29, Slides 11, Covers 1, Pistons 1, Rods 1
Connecting rods 20-4-17, Crank shaft 2, Thrust shaft 17, Tunnel shafts 5, Screw shaft 29-6-17, Propeller 21-8-17
Stern tube 21-8-17, Steam pipes tested 8-2-18, Engines and boiler seatings 16-1-18, Engines holding down bolts 5-2-18
Completion of pumping arrangements 30-4-18, Boilers fixed 6-2-18, Engines tried under steam 30-4-18
Completion of fitting sea connections 6-8-17, Stern tube 12-6-17, Screw shaft and propeller 12-9-17
Main boiler safety valves adjusted 30-4-18, Thickness of adjusting washers 7-12-18
Material of Crank shaft *Steel*, Identification Mark on Do. *LLOYD'S*, 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. *LLOYD'S*
Material of Steam Pipes *W. Iron*, Test pressure 600 lbs sq. in. *29-8-17*

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? *Yes* If so, state name of vessel: *"Port Darwin"*

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 materials and the workmanship are of good description, and on trials under steam at Belfast Lough the machinery worked satisfactorily.

In my opinion, it is eligible for record + L.M.C. 5-18, with notes "Forced Draft Electric Light + Refrigerating Machinery"

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 5. 18 F.D.

R. F. Bevan
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... 3 : - :
Special ... £ 60 : 9 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 14-5-1918
When received, June 29, 1918

Committee's Minute
Assigned + R. M. C. 5. 18 J. D.

MACHINERY CERTIFICATE
WRITTEN

Rpt. 9a.

Port of *Belfast* Continuation of Report No. 7956 dated *11th May 1918* on the

- J. N. Port Darwin*
- 1 Propeller Shaft
 - 2 - blades
 - 10 Condenser tubes
 - 2 main crank pin bushes
 - 2 - cross head
 - 1 air pump head valve
 - 2 - rods + valves etc
 - 4 Slide valve spindles
 - 2 Eccentric straps
 - 2 sets H. P. piston rings
 - 2 - - - - - valves rings
 - 2 cylr escape valves
 - 3 - - - - - springs
 - 2 safety valve springs
 - 30 Boiler tubes
 - 1 Centrifugal pump impeller + spindle
 - 4 Boiler check valves
 - auxiliary pump spare gear etc, and all gear to Lloyd's Rules extra.

Donkey Pumps

- 2 Main Centrifugal Circulating 13" pipe ✓
- 1 Ballast 8" x 10" x 18" ✓
- 2 Main Feed 13 1/2" x 10" x 21" ✓
- 1 General Service 9" x 6" x 10" ✓
- 1 Sanitary 6" x 7" x 8" ✓
- 1 Fresh Water 5" x 5" x 8" ✓
- 1 Aux. Air 8" x 12" x 12" ✓

R. F. Bevan