

REPORT ON MACHINERY.

No. 8747

1st AUG. 1922

Received at London Office

Date of writing Report 8th Aug. 1922 When handed in at Local Office

Port of Belfast

No. in Survey held at Belfast

Date, First Survey 18th March 1920 Last Survey 3rd August 1922

Reg. Book. on the Trin's "PORT AUCKLAND"

(Number of Visits 111)

Master Built at Belfast By whom built Hortman Black & Co. Ltd When built 1922

Engines made at Belfast By whom made Hortman Black & Co. Ltd when made 1922

Boilers made at Belfast By whom made Hortman Black & Co. Ltd when made 1922

Registered Horse Power Owners Commonwealth & Dominion Line Port belonging to London

Nom. Horse Power as per Section 28 859 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Trin Triple-expansion recip. No. of Cylinders 6 No. of Cranks 6

Dia. of Cylinders 22 1/2 - 38 - 63 1/2 Length of Stroke 48 Revs. per minute 120 Dia. of Screw shaft 13 3/8 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 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 5'-0"

Dia. of Tunnel shaft 12.37 Dia. of Crank shaft journals 12.09 Dia. of Crank pin 13 3/4 Size of Crank webs 9" x 26 Dia. of thrust shaft under collars 13 3/4 Dia. of screw 16-6 Pitch of Screw 17-6 No. of Blades 3 State whether moveable Yes Total surface 80 sq. feet

No. of Feed pumps 1 each engine Diameter of ditto 6 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 1 each engine Diameter of ditto 6 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 12-3 1/2 In Holds, &c. 11-3 1/2

Boilerdams - 4-3 1/2

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 1-3 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 Above

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 See hold suction How are they protected Iron tunnel

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 5) Manufacturers of Steel D. Colville & Co & Steel Co of Scotland

Total Heating Surface of Boilers 12900 Is Forced Draft fitted Yes No. and Description of Boilers 4-Single ended marine

Working Pressure 200 Tested by hydraulic pressure to 350 Date of test 3-5-21 No. of Certificate 789

Can each boiler be worked separately Yes Area of fire grate in each boiler 79 sq. feet No. and Description of Safety Valves to each boiler 2-Spring loaded Area of each valve 14.1 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 About 16" Mean dia. of boilers 16-9" Length 12-3" Material of shell plates Steel

Thickness 1 1/2" Range of tensile strength 29-33 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap DR.

long. seams Butt double Diameter of rivet holes in long. seams 1 1/32" 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 86.9 Working pressure of shell by rules 206 Size of hole in shell 16" x 12"

Size of compensating ring McNeil No. and Description of Furnaces in each boiler 4-Monison Material Steel Outside diameter 47 1/4"

Length of plain part top 8" Thickness of plates bottom 4 1/4" Description of longitudinal joint Weld No. of strengthening rings 4

Working pressure of furnace by the rules 211 Combustion chamber plates: Material Steel Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 3/32"

Pitch of stays to ditto: Sides 9 1/4" x 9 1/8" Back Tapered Top 9 1/4" x 8" If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 209

Material of stays Steel Area at smallest part 2.39-1.76 Area supported by each stay 740 Working pressure by rules 214 End plates in steam space: Material Steel Thickness 1 3/16" Pitch of stays 21" x 16 1/4" How are stays secured Nuts & washers Working pressure by rules 200 Material of stays Steel

Area at smallest part 3.55 x 6.66 Area supported by each stay 3370 Working pressure by rules 205 Material of Front plates at bottom Steel

Thickness 1" Material of Lower back plate Steel Thickness 3/32" Greatest pitch of stays 13 1/2" x 8 1/2" Working pressure of plate by rules 220

Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 3/8" Material of tube plates Steel Thickness: Front 7/8" Back 1/16" Mean pitch of stays 11 1/4" x 7 1/2"

Pitch across wide water spaces 13 1/2" Working pressures by rules 223 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 11" (3/4" x 2) Length as per rule 40 1/2" Distance apart 8" and 6 3/4" Number and pitch of stays in each 3-9 1/4"

Working pressure by rules 212 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

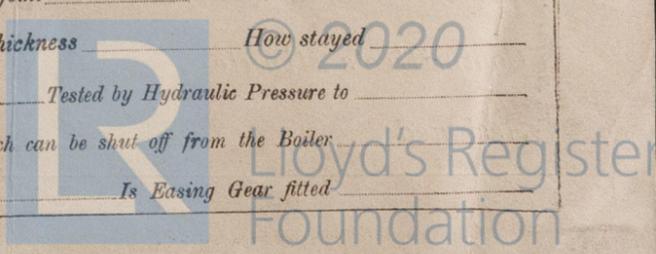
SUPERHEATER. Type Date of Approval of Plan 3-5-21 Tested by Hydraulic Pressure to 350

Date of Test 3-5-21 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Pressure of Safety Valves 212 Pressure to which each is adjusted 212 Is Easing Gear fitted

W210-0156 1/2

If not, state whether, and when, one will be sent



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.

J. Cunningham

Manufacturer.

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

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

Dates of Examination of principal parts—Cylinders *25/5/20* Slides Covers Pistons Rods

Connecting rods *11/5/22* Crank shaft *16/2/22* Thrust shaft *4/4/22* Tunnel shafts *14/2/22* Screw shafts *4/2/22* Propeller *4/4/22*

Stern tube *4/4/22* Steam pipes tested *9/6/22* Engine and boiler seatings *5/6/22* Engines holding down bolts *7/6/22*

Completion of pumping arrangements *1/8/22* Boilers fixed *5/6/22* Engines tried under steam *25/7/22*

Completion of fitting sea connections *5/5/22* Stern tube *5/5/22* Screw shaft and propeller *5/5/22*

Main boiler safety valves adjusted *25/7/22* Thickness of adjusting washers *10-13/32*

Material of Crank shaft *Steel* Identification Mark on Do. *16-2-22* Material of Thrust shaft *Steel* Identification Mark on Do. *4-4-22*

Material of Tunnel shafts " Identification Marks on Do. *20/5/21* Material of Screw shafts *Steel* Identification Marks on Do. *4/4/22*

Material of Steam Pipes *Lap welded Steel* Test pressure *600 lbs*

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 Campbell"*

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, & on trial in Belfast Lough, the machinery worked satisfactorily. on my opinion it is eligible for record + L.M.C. 8, 22 with notations "Forced draft," "Electric Light" and "Refrigerating Machinery"

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

+ L.M.C. 8.22 F.D. C.L.

A.A.D. 14/5/22

A.P. Southwell
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ *6 0 0* When applied for.
Special ... £ *117 19 0* 4/8/1922
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :

Committee's Minute

TUE 15 AUG 1922

MACHINERY CERTIFICATE

Assigned

+ L.M.C. 8.22

F.D. C.L.

Rpt. 9a.

Port of

Belfast

Continuation of Report No. 8777 dated 8th August, 1922 on the

Trim 1/8" PORT AUCKLAND

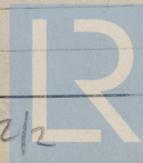
List of Pumps.

- 2 Meis Feed pumps. — 15 1/2" x 10" x 26"
- 2 Main Circulating Pumps — 45" Impeller x 14" Pump.
- 1 Aux. " " 27" " x 8" "
- General Service Pump. 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 Circulating 8 1/2" x 10" x 10"

Principal items of Spare Gear.

- 1 Propeller shaft complete.
- 2 C.P. propeller blades.
- 30 Condenser tubes.
- 100 Ferrules.
- 2 pairs of crank pin bushes.
- 2 " Crosshead "
- 2 A.P. Valve spindles & bushes.
- 2 M.P. " "
- 2 L.P. " "
- 2 Sets rings & springs for A.P. piston valves.
- 4 " " " " A.P. & M.P. pistons
- 2 " " " " L.P. pistons.
- 2 Air pump rods with nuts; 2 guards with studs.
- 1 Piston rod gland in halves.
- 30 Boiler tubes.
- 1- Forced draft fan shaft.
- 1- Main Circulating Pump impeller.
- 2- " " " spindles.
- 1- Thomson breakdown shaft coupling.
- Large supply of spare gear for pumps and auxiliaries, as well as all gear required by Rules.

A.P. Southwell



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