

# REPORT ON MACHINERY.

SAT. 19 JUN 1923

No. 42693

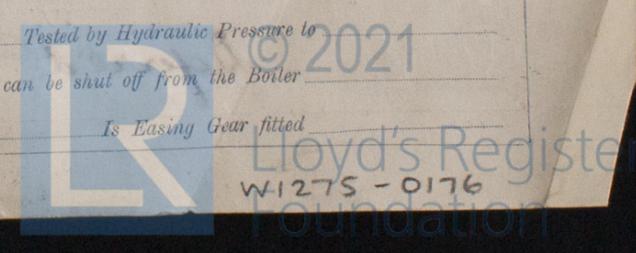
Date of writing Report **26-4-1923** When handed in at Local Office **30-4-1923** Port of **Glasgow**  
 Date, First Survey **23<sup>rd</sup> Feb 1920** Last Survey **25<sup>th</sup> April 1923**  
 (Number of Visits. **76**)

Master **Hamilton Hill** By whom built **Furness S. B. Co.** Tons **Gross**  
**Glasgow** By whom made **Ross & Duncan N:1091** when made **1923** Tons **Net**  
 Boilers made at **do** By whom made **do** N:1645-6 when made **1923** When built  
 Registered Horse Power **156** Owners **do** Port belonging to **do**  
 Nom. Horse Power as per Section 28 **156** Is Refrigerating Machinery fitted for cargo purposes **do** Is Electric Light fitted **do**

**ENGINES, &c.**—Description of Engines **Triple expansion** No. of Cylinders **3** No. of Cranks **3**  
 Dia. of Cylinders **17"-27 1/2"-45"** Length of Stroke **33"** Revs. per minute **9.84** Dia. of Screw shaft **9.25"** Material of screw shaft **S.**  
 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 **40 1/2"**  
 Dia. of Tunnel shaft **8.62"** Dia. of Crank shaft journals **9.05"** Dia. of Crank pin **9 1/4"** Size of Crank webs **17 1/2" x 6"** Dia. of thrust shaft under collars **9 1/8"** Dia. of screw **12.3"** Pitch of Screw **12.6"** No. of Blades **4** State whether moveable **No** Total surface **50 sq. ft.**  
 No. of Feed pumps **2** Diameter of ditto **2 3/4"** Stroke **16 1/2"** Can one be overhauled while the other is at work **Yes**  
 No. of Bilge pumps **2** Diameter of ditto **3"** Stroke **16 1/2"** Can one be overhauled while the other is at work **Yes**  
 No. of Donkey Engines **do** Sizes of Pumps **do** No. and size of Suctions connected to both Bilge and Donkey pumps **do**  
 In Engine Room **do** In Holds, &c. **do**  
 No. of Bilge Injections **do** sizes **do** Connected to condenser, or to circulating pump **do** Is a separate Donkey Suction fitted in Engine room & size **do**  
 Are all the bilge suction pipes fitted with roses **do** Are the roses in Engine room always accessible **do** Are the sluices on Engine room bulkheads always accessible **do**  
 Are all connections with the sea direct on the skin of the ship **do** Are they Valves or Cocks **do**  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates **do** Are the Discharge Pipes above or below the deep water line **do**  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel **do** Are the Blow Off Cocks fitted with a spigot and brass covering plate **do**  
 What pipes are carried through the bunkers **do** How are they protected **do**  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times **do**  
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges **do**  
 Is the Screw Shaft Tunnel watertight **do** Is it fitted with a watertight door **do** worked from **do**

**BOILERS, &c.**—(Letter for record **S.**) Manufacturers of Steel **Colvill** **2SB.**  
 Total Heating Surface of Boilers **2806 sq. ft.** Is Forced Draft fitted **No** No. and Description of Boilers **two multitubular**  
 Working Pressure **180 lbs** Tested by hydraulic pressure to **320 lbs** Date of test **23-4-23** No. of Certificate **16237-9**  
 Can each boiler be worked separately **Yes** Area of fire grate in each boiler **59.5 sq. ft.** No. and Description of Safety Valves to each boiler **pair spring** Are they fitted with casing gear **Yes**  
 Area of each valve **4.9 sq. ft.** Pressure to which they are adjusted **do** Are they fitted with casing gear **Yes**  
 Smallest distance between boilers or uptakes and bunkers or woodwork **do** Mean dia. of boilers **12'-0"** Length **10'-6"** Material of shell plates **S.**  
 Thickness **1"** Range of tensile strength **28-32** Are the shell plates welded or flanged **No** Descrip. of riveting: cir. seams **D.R.**  
 long. seams **T.R.D.B.S.** Diameter of rivet holes in long. seams **1 1/8"** Pitch of rivets **7"** Lap of plates or width of butt straps **1-5 3/4"**  
 Per centages of strength of longitudinal joint rivets **84.5** Working pressure of shell by rules **180** Size of manhole in shell **16" x 12"**  
 plate **83.9** Size of compensating ring **30 1/2" x 26 1/2"** No. and Description of Furnaces in each boiler **2 iron** Material **S** Outside diameter **3'-7 3/8"**  
 Length of plain part **do** Thickness of plates **9/16"** Description of longitudinal joint **weld** No. of strengthening rings **do**  
 Working pressure of furnace by the rules **204** Combustion chamber plates: Material **S** Thickness: Sides **1/16"** Back **5/8"** Top **1/16"** Bottom **1/16"**  
 Pitch of stays to ditto: Sides **9 1/2" x 9"** Back **8 1/2" x 8 1/2"** Top **9 1/2" x 9"** If stays are fitted with nuts or riveted heads **nuts** Working pressure by rules **187**  
 Material of stays **S** Area at smallest part **2.07 sq. ft.** Area supported by each stay **85.5 sq. ft.** Working pressure by rules **195** End plates in steam space: Material **S** Thickness **1 1/2"** Pitch of stays **17" x 16"** How are stays secured **D. nuts** Working pressure by rules **185** Material of stays **S**  
 Area at smallest part **5.18 sq. ft.** Area supported by each stay **272 sq. ft.** Working pressure by rules **198** Material of Front plates at bottom **S**  
 Thickness **27/32"** Material of Lower back plate **S** Thickness **27/32"** Greatest pitch of stays **14" x 8 1/2"** Working pressure of plate by rules **183**  
 Diameter of tubes **3 1/4"** Pitch of tubes **4 1/2" x 4 1/4"** Material of tube plates **S** Thickness: Front **27/32"** Back **3/4"** Mean pitch of stays **10"**  
 Pitch across wide water spaces **14"** Working pressures by rules **342** Girders to Chamber tops: Material **S** Depth and thickness of girder at centre **7 3/4" x 1 3/4"** Length as per rule **30 5/8"** Distance apart **9"** Number and pitch of stays in each **2-9 1/2"**  
 Working pressure by rules **194** Steam dome: description of joint to shell **homer** % of strength of joint **do**  
 Diameter **do** Thickness of shell plates **do** Material **do** Description of longitudinal joint **do** Diam. of rivet holes **do**  
 Pitch of rivets **do** Working pressure of shell by rules **do** Crown plates **do** Thickness **do** How stayed **do**

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



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

Ross & Duncan

Manufacturer.

Dates of Survey while building

|  |   |  |                    |
|--|---|--|--------------------|
| During progress of work in shops --<br>During erection on board vessel --<br>Total No. of visits | 1920 Feb 23 Mar 2 12 Apr 14 20 30 May 3 19 Jun 4 9 14 Jul 7 6 17 21 29 Oct 11 19 29 Nov 8 15 25 30 Dec 13 27 1921 Jan 13 21 26 Feb 2 8 14 19 Mar 1 8 15 22 28 30 Apr 5 7 12 16 25 | Is the approved plan of main boiler forwarded herewith <input checked="" type="checkbox"/> |                    |
|  |   |  | 76                 |
|  |   |  | " " " donkey " " " |

Dates of Examination of principal parts—Cylinders 6-2-23 Slides 22-3-23 Covers 23-3-23 Pistons 8-11-20 Rods 6-2-23

Connecting rods 25-11-20 Crank shaft 21-1-21 Thrust shaft 12-4-23 Tunnel shafts 12-4-23 Screw shaft 25-4-23 Propeller 25-4-23

Stern tube 25-4-23. Steam pipes tested Engine and boiler seatings Engines holding down bolts

Completion of pumping arrangements Boilers fixed Engines tried under steam

Completion of fitting sea connections Stern tube Screw shaft and propeller

Main boiler safety valves adjusted Thickness of adjusting washers

Material of Crank shaft S Identification Mark on Do. 1096 J.S.S. Material of Thrust shaft S Identification Mark on Do. 1096 J.S.C

Material of Tunnel shafts S Identification Marks on Do. 1096 J.S.C Material of Screw shafts S Identification Marks on Do. 1096 J.S.C

Material of Steam Pipes Test pressure

Is an installation fitted for burning oil fuel 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. These engines and boilers have been built under special survey in accordance with the Rules, and approved plans, the material and workmanship are good.

The Engines and boilers are being shipped to middlebro where they will be fitted on board.

The machinery will be eligible in my opinion to be classed L.M.C. (with date) when satisfactorily fitted on board and tried under steam.

Glasgow

The amount of Entry Fee ... £ 3 : 0 : 0 When applied for.

Special  $\frac{4}{5}$  ... £ 31 : 4 : 0 1/5/23

Donkey Boiler Fee ... £ : : : When received.

Travelling Expenses (if any) £ : : : 7.5.23 per Don. Advice H.B.

Jas Cairns  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 1-MAY 1923

Assigned Defered.

FRI. 15. III. 1923



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HC 30-4-23

Certificate (if required) to be sent to. The Surveyors are requested not to write on or below the space for Committee's Minute.