

REPORT ON MACHINERY.

No. 42693

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

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

ENGINES, &c.—Description of Engines *Triple expansion* No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 17"-27½"-45" Length of Stroke 33" Revs. per minute Dia. of Screw shaft 9.84" as per rule 9.25" Material of screw shaft 8.
 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 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 *Yes* If two
 liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 40½"
 Dia. of Tunnel shaft 8.62" as per rule 8.34" Dia. of Crank shaft journals 9.05" as per rule 9.18" Dia. of Crank pin 9¼" Size of Crank webs 17½" x 6" Dia. of thrust shaft under
 collars 9½" 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 2¾" Stroke 16½" Can one be overhauled while the other is at work *Yes*
 No. of Bilge pumps 2 Diameter of ditto 3" Stroke 16½" Can one be overhauled while the other is at work *Yes*
 No. of Donkey Engines Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room In Holds, &c.

No. of Bilge Injections sizes Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine room & size
 Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible
 Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Discharge Pipes above or below the deep water line
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate
 What pipes are carried through the bunkers How are they protected
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges
 Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record 8.) 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 *four spring* Area of each valve 4.9 sq. in. Pressure to which they are adjusted Are they fitted with easing gear *Yes*
 Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers 12'-0" Length 10'-6" Material of shell plates 8.
 Thickness 1" Range of tensile strength 28-32 Are the shell plates welded or flanged *no* Descrip. of riveting: cir. seams 8.R.
 long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1½" Pitch of rivets 7" Lap of plates on width of butt straps 1-5¾"
 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 No. and Description of Furnaces in each boiler 2 *iron* Material 8 Outside diameter 3'-7½"
 Size of compensating ring 30½" x 26½" Length of plain part top *✓* Thickness of plates crown 9/16" Description of longitudinal joint *weld* No. of strengthening rings *✓*
 bottom *✓* Working pressure of furnace by the rules 204 Combustion chamber plates: Material 8. Thickness: Sides 1/16" Back 5/8" Top 1/16" Bottom 1/16"
 Pitch of stays to ditto: Sides 9½" x 9" Back 8½" x 8½" Top 9½" x 9" If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules 187.
 Material of stays 8. 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 8 Thickness 1½" Pitch of stays 17" x 16" How are stays secured *D. nuts* Working pressure by rules 185 Material of stays 8.
 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 8.
 Thickness 27/32" Material of Lower back plate 8. Thickness 27/32" Greatest pitch of stays 14" x 8½" Working pressure of plate by rules 183
 Diameter of tubes 3½" Pitch of tubes 4½" x 4½" Material of tube plates 8 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 8 Depth and
 thickness of girder at centre 7¾" x 1¾" Length as per rule 30 5/8" Distance apart 9" Number and pitch of stays in each 2-9½"
 Working pressure by rules 194 Steam dome: description of joint to shell *homer* % 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
 Diameter of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted

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 -- 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 5 14 19 Mar 1 2 5 7
During erection on board vessel -- 18 Apr 20 May 18 Oct 19 1922 Mar 8 20 24 29 Apr 4 13 24 May 1 Jun 20 Nov 21 Dec 1 7 26 28 1923 Jan 9 12 18 22 24 26 Feb 6 12 14 19 21 Mar 1 2 5 7
Total No. of visits 76

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders 6-2-23 Slides 6-2-23 Covers 6-2-23 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.C. 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 Middlebrook where they will be fitted on board.

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

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

Special 4/5 ... £ 31 : 4 : 0 1/5/23

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

Travelling Expenses (if any) £ : : 7.5.1923 per Don. Advice H.B.

Committee's Minute GLASGOW 1-MAY 1923

Assigned Deferred

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

FRI. 15. III. 1923



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Foundation