

## REPORT ON MACHINERY.

No. 41464

Received at London Office

WED. 26 OCT. 1921

Date of writing Report 24. 10. 1921 When handed in at Local Office 24. 10. 1921 Port of Glasgow.  
 No. in Survey held at Coatbridge. Date, First Survey 22. 9. 1920 Last Survey 19. 10. 1921.  
 Reg. Book. on the Machinery for S.S. "Broughty" (Number of Visits 30)  
 Master Lane Built at Lane By whom built Lane Shipbuilding Co. Tons } Gross  
 Engines made at Coatbridge. By whom made Wm. Beardmore & Co. No 566. when made 1921. } Net  
 Boilers made at Glasgow. By whom made A. W. Dalglisk (1904/68) when made 1921.  
 Registered Horse Power 84 Owners Lane Port belonging to Lane  
 Nom. Horse Power as per Section 28 84 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

## ENGINES, &amp;c.—Description of Engines

Triple Expansion

No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 13" 21" 135" Length of Stroke 24" Revs. per minute 95 Dia. of Screw shaft 7.32" Material of screw shaft M.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 ✓ 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 32"  
 Dia. of Tunnel shaft as per rule 6.49 Dia. of Crank shaft journals as per rule 6.804" Dia. of Crank pin 7. Size of Crank webs 13 1/2" x 4 1/2" Dia. of thrust shaft under collars 4" Dia. of screw 9.0" Pitch of Screw 11.6" No. of Blades 4 State whether moveable No Total surface 34 sq. ft.  
 No. of Feed pumps 2 Diameter of ditto 2 1/2" Stroke 12" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 2 1/2" Stroke 12" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 2 Sizes of Pumps 6" x 4" x 6" + 7" x 7" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3 @ 2" In Holds, &c. 2 @ 2" Bilge.

No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump ✓ 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 None  
 Are all connections with the sea direct on the skin of the ship Yes. Are they Valves or Cocks Both cock & valves.  
 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 None How are they protected ✓  
 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 None Is it fitted with a watertight door ✓ worked from —

BOILERS, &c.—(Letter for record S) Manufacturers of Steel

Total Heating Surface of Boilers 1566 sq. ft. Is Forced Draft fitted No No. and Description of Boilers one single ended  
 Working Pressure 180 Tested by hydraulic pressure to 320 Date of test 23/8/21 No. of Certificate 15888  
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 51 sq. ft. No. and Description of Safety Valves to each boiler 1. 2 1/2" Double. Area of each valve 5.939 sq. in. Pressure to which they are adjusted 180 Are they fitted with easing gear Yes.  
 Smallest distance between boilers or uptakes and bunkers or woodwork 24" Mean dia. of boilers — Length — Material of shell plates —  
 Thickness — Range of tensile strength — Are the shell plates welded or flanged — Descrip. of riveting: cir. seams —  
 long. seams — Diameter of rivet holes in long. seams — Pitch of rivets — Lap of plates or width of butt straps —  
 Per centages of strength of longitudinal joint — Working pressure of shell by rules — Size of manhole in shell —  
 Size of compensating ring — No. and Description of Furnaces in each boiler — Material — Outside diameter —  
 Length of plain part — Thickness of plates — Description of longitudinal joint — No. of strengthening rings —  
 Working pressure of furnace by the rules — Combustion chamber plates: Material — Thickness: Sides — Back — Top — Bottom —  
 Pitch of stays to ditto: Sides — Back — Top — Bottom — Are stays fitted with nuts or riveted heads — Working pressure by rules —  
 Material of stays — Area at smallest part — Are stays supported by each stay — Working pressure by rules — End plates in steam space: —  
 Material — Thickness — Pitch of stays — How are stays secured — Working pressure by rules — Material of stays —  
 Area at smallest part — Area supported by each stay — Working pressure by rules — Material of Front plates at bottom —  
 Thickness — Material of Lower back plate — Thickness — Greatest pitch of stays — Working pressure of plate by rules —  
 Diameter of tubes — Pitch of tubes — Material of tube plates — Thickness: Front — Back — Mean pitch of stays —  
 Pitch across wide water space — Working pressures by rules — Girders to Chamber tops: Material — Depth and thickness of girder at centre — Length as per rule — Distance apart — Number and pitch of stays in each —  
 Working pressure by rules — 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 None 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?

NO

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

2 Connecting Rod bolts for top end also nuts, bolts for bottom end. 2 Main Bearing bolts 1 set of coupling bolts. 1 set of Fuel Bridge Pump Bolts a quantity of assorted bolts nuts & washers of various sizes.

The foregoing is a correct description,

For WILLIAM BEARDMORE & CO., LIMITED

Manufacturer

R. Sneddon

Dates of Survey while building { During progress of work in shops - - 1920 Sep 22-29 Oct 6-13 18-28 Nov 3-15 16-22 30 Dec 3-7 14 1921 Jan 11 Feb 1-17 Mar 10 Jun 10 July 8  
During erection on board vessel - - - Aug 9-17 19 Sept 21-23 30 Oct 13 19  
Total No. of visits 30

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 30.11.20 Slides 7.12.20 Covers 30.11.20 Pistons 30.11.20 Rods 30.11.20

Connecting rods 3.12.20 Crank shaft 28.10.20 Thrust shaft 12.7.21 Tunnel shafts none. Screw shaft 9.8.21 Propeller 9.8.21

Stern tube 9.8.21 Steam pipes tested 23.9.21 Engine and boiler seatings 19.8.21 Engines holding down bolts 30.9.21

Completion of pumping arrangements 19.10.21 Boilers fixed 13.9.21 Engines tried under steam 19.10.21

Completion of fitting sea connections 19.8.21 Stern tube 19.8.21 Screw shaft and propeller 19.8.21

Main boiler safety valves adjusted 20.9.21 Thickness of adjusting washers P 3/8 S 3/8

Material of Crank shaft M.S. Identification Mark on Do. 5684 20.10.20 Material of Thrust shaft M.S. Identification Mark on Do. 5686 20.10.20

Material of Tunnel shafts none Identification Marks on Do. Material of Screw shafts M.S. Identification Marks on Do.

Material of Steam Pipes Copper Test pressure 360

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 has been built

under Special Survey in accordance with the Rules of the Society. The materials & workmanship are good. The engine has been dispatched to Glasgow to be fitted on board the vessel.

The engine & boiler have now been securely fitted on board & satisfactorily tried under steam.

The machinery is eligible in our opinion to be classed with record of L.M.C. 10.21.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. - 10.21. C.L.

MACHINERY CERT  
WRITTEN 10.12.21

31/10/21

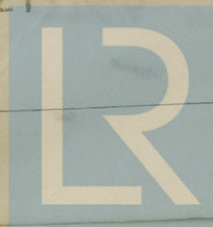
The amount of Entry Fee ... £ 2 : 0 :  
Special ... £ 12 : 12 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) ... £ : :  
When applied for, 25/10/21  
When received, 9.12.21

Committee's Minute GLASGOW 25 OCT 1921

Assigned + L.M.C. 10.21

John Barr, Wm. Gordon, Minch  
Engineer Surveyor to Lloyd's Register of Shipping.

FRI. 2 DEC. 1921



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