

## REPORT ON MACHINERY.

No. 43907

Received at London Office  
Date of writing Report 19 When handed in at Local Office 25/8/14 Port of Glasgow  
No. in Survey held at Clydebank Date, First Survey 13/6/23 Last Survey 19 August 1924  
Reg. Book. s/s "GEM" (Number of Visits 28)  
Master Built at Bowling By whom built Scott & Sons (295) Tons Gross 640  
Engines made at Clydebank By whom made Nicholson Blair & Co. (145) when made 1924  
Boilers made at Govan By whom made Smith & Co. (Lindsay Burnett & Co.) when made 1924  
Registered Horse Power Owners Mr. Robertson Port belonging to Glasgow.  
Nom. Horse Power as per Section 28 101 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Single Screw Steam, triple exp. No. of Cylinders 3 No. of Cranks 3  
Dia. of Cylinders 14", 23", 38" Length of Stroke 27" Revs. per minute 96 Dia. of Screw shaft 8.07" as per rule 7.6" as fitted 8.76" 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 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 2' 10 5/8" No Oil gland  
Dia. of Tunnel shaft 7.1" as per rule 7.1" as fitted 7.1" Dia. of Crank shaft journals 7.47" as per rule 7.47" as fitted 7.47" Dia. of Crank pin 7 1/2" Size of Crank webs 14" x 5" Dia. of thrust shaft under  
collars 7 1/2" Dia. of screw 10' 0" Pitch of Screw 10' 6" No. of Blades 4 State whether moveable No Total surface 34.6 sq ft  
No. of Feed pumps 2 Diameter of ditto 2 1/4" Stroke 14" Can one be overhauled while the other is at work Yes  
No. of Bilge pumps 2 Diameter of ditto 2 1/4" Stroke 14" Can one be overhauled while the other is at work Yes  
No. of Donkey Engines 2 Sizes of Pumps 7" x 7" x 8" and 6" x 4" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room 3 of 2 1/2" In Holds, &c. 2 of 2 3/4"

No. of Bilge Injections 1 sizes 3 3/4" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes 2 3/4"  
Are all the bilge suction pipes fitted with roses 2 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  
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 Suctions to 700' hold bilge How are they protected Wood casing  
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 Yes worked from Yes

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

Total Heating Surface of Boilers 1830 sq ft Is Forced Draft fitted No No. and Description of Boilers One single ended, marine  
Working Pressure 180 lbs Tested by hydraulic pressure to Date of test No. of Certificate  
Can each boiler be worked separately Yes Area of fire grate in each boiler 57.75 sq ft No. and Description of Safety Valves to  
each boiler 2 Spring loaded Area of each valve 5.94 sq in Pressure to which they are adjusted 180 lbs Are they fitted with easing gear Yes  
Smallest distance between boilers or uptakes and bunkers or woodwork Well clear 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 rivets 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 top Thickness of plates crown Description of longitudinal joint No. of strengthening rings  
bottom Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom  
Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules  
Material of stays Area at smallest part Area 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 spaces 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 None % 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

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

002592-002601-0091



IS A DONKEY BOILER FITTED? no.

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 2 Connecting rod bottom end bolts & nuts.

2 " " top " "

2 main bearing bolts & nuts.

12 coupling bolts & nuts.

1 Propeller.

1 set of feed & bilge pump valve.

And various other

Assorted bolts & nuts. Assorted iron & brass.

Small spares.

The foregoing is a correct description,

FOR AND ON BEHALF OF

**AITCHISON, BLAIR, LIMITED.**

Arch<sup>d</sup> Blair

Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1923 June 13. Aug 7. Sept 7. 13. Oct 10. 15. 29. Nov 8. 13. 27. Dec 5. 21. 28.  
During erection on board vessel -- 1924 Jan 8. Feb 6. 29. Mar 10. 28. Apr 9. 28. May 16. 29. June 6. July 28. 31. Aug 5. 19.  
Total No. of visits 28.

Is the approved plan of main boiler forwarded herewith ☒

" " " donkey " " " ☒

Dates of Examination of principal parts—Cylinders 8/11/23 Slides 8/11/23 Covers 13/11/23 Pistons 5/12/23 Rods 5/12/23

Connecting rods 28/12/23 Crank shaft 29/1/24 Thrust shaft 29/5/24 Tunnel shafts ☒ Screw shaft 29/5/24 Propeller 29/5/24

Stern tube 29/5/24 Steam pipes tested 6/6/24 Engine and boiler seatings 6/6/24 Engines holding down bolts 8/7/24

Completion of pumping arrangements 31/7/24 Boilers fixed 8/7/24 Engines tried under steam 19/8/24

Completion of fitting sea connections 6/6/24 Stern tube 26/5/24 Screw shaft and propeller 6/6/24

Main boiler safety valves adjusted 19/8/24 Thickness of adjusting washers PORT  $\frac{3}{8}$ " STAD  $\frac{7}{16}$ "

Material of Crank shaft S.M. Steel Identification Mark on Do. 29/1/24 AC Material of Thrust shaft S.M. Steel Identification Mark on Do. LLOYDS No 29

Material of Tunnel shafts ☒ Identification Marks on Do. ☒ Material of Screw shafts S.M. Steel Identification Marks on Do. LLOYDS No 671

Material of Steam Pipes Copper Test pressure 360 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 no If so, state name of vessel ☒

General Remarks (State quality of workmanship, opinions as to class, &c. \_\_\_\_\_)

The machinery of this vessel has been built under survey and the materials tested in accordance with the rules of this Society. The materials and workmanship, as far as can be seen, are sound and good and the engine and boiler have been properly fitted on board and tried under steam.

The machinery of this vessel is eligible in my opinion to be classed with the notation in the Register Book of L.M.C. 8.24

See Glasgow Report 2.43522 on the boiler

It is submitted that  
this vessel is eligible for  
THE RECORD. + LMC 8.24. CL.

CERTIFICATE WRITTEN  
1.9.24

The amount of Entry Fee ... £ 3 : 0 :  
Special  $\frac{3}{5}$  of total ... £ 15 : 3 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
When applied for, 26/8/24  
When received, 28/8/24

Committee's Minute

Assigned + LMC 8.24



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