

# REPORT ON MACHINERY.

No. 18253

Received at London Office

WED. JUL 9 1924

Writing Report 2.6.1924 When handed in at Local Office 27.6.1924 Port of Greenock

Survey held at Greenock Date, First Survey 6th May, 1920 Last Survey 1-7-1924  
Book. on the S/S "Mariston" (Number of Visits 79)

Built at Glasgow By whom built Lithgow & Co. 744 When built 1924

Machinery made at Greenock By whom made Rankie Blackmore & Co (HOB) when made 1924

Repairs made at ditto By whom made ditto (HOB when made 1924)

Registered Horse Power Owners W.S. Miller & Co Port belonging to Glasgow

Horse Power as per Section 28 404 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
of Cylinders 26-42.40 Length of Stroke 48 Revs. per minute 65 Dia. of Screw shaft 14.6 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 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 Yes  
between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If two Yes  
shafts are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 60"

Dia. of Tunnel shaft 13.62 as per rule 13.62 Dia. of Crank shaft journals 13.5/8 as fitted 13.5/8 Dia. of Crank pin 13.5/8 Size of Crank webs 25.7/8 x 8.3/4 Dia. of thrust shaft under 13.5/8 as fitted 13.5/8

Dia. of screw 18.0 Pitch of Screw 18.6 No. of Blades 4 State whether moveable No Total surface 100 sq ft

No. of Feed pumps 2 Diameter of ditto 33/4 Stroke 24 Can one be overhauled while the other is at work Yes  
No. of Bilge pumps 2 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3 Sizes of Pumps Ball 4 1/2, 5 1/2, 3 1/2 x 1 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps 2, 3" + 6, 3 1/4"  
Engine Room 3 at 2 1/2 Tunnel 1.2 1/4 In Holds, &c. 2, 3" + 6, 3 1/4"

No. of Bilge Injections 1 sizes 6" Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room of size Yes 4 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 Yes

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 Bilge Suctions 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 Yes Is it fitted with a watertight door Yes worked from Upper Platform

MATERIALS, &c.—(Letter for record S) Manufacturers of Steel Lanarkshire, Steel Co., James Dudgeon

Total Heating Surface of Boilers 6713 sq ft Is Forced Draft fitted No No. and Description of Boilers 3 Single Ended 358  
Working Pressure 180 Tested by hydraulic pressure to 320 Date of test 1-5-24 No. of Certificate 1651

Can each boiler be worked separately Yes Area of fire grate in each boiler 613/4 sq ft No. and Description of Safety Valves to 1  
on each boiler Double Spring Area of each valve 706 sq in Pressure to which they are adjusted 185 Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 5.0 Mean dia. of boilers 15.0 Length 11.0 Material of shell plates S  
Thickness 17/32 Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DR

Long. seams TRIDBS Diameter of rivet holes in long. seams 1 1/4 Pitch of rivets 8 15/16 Lap of plates or width of butt straps 18 5/8  
Percentage of strength of longitudinal joint 86.74 Working pressure of shell by rules 181 Size of manhole in ends 16 x 12"

Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 corrugated Material S Outside diameter 48 1/2"  
Length of plain part top 9 1/6" Thickness of plates bottom 9 1/6" Description of longitudinal joint weld No. of strengthening rings 1

Working pressure of furnace by the rules 181 Combustion chamber plates: Material S Thickness: Sides 43/64 Back 2 1/2" Top 43/64 Bottom 3/4"  
Pitch of stays to ditto: Sides 9 3/4 x 8 5/8 Back 9 1/4 x 8 5/8 Top 9 3/4 x 8 5/8 If stays are fitted with nuts or riveted heads Yes Working pressure by rules 184

Material of stays S Area at smallest part 177.239 sq in Area supported by each stay 84 sq in Working pressure by rules 186 End plates in steam space: S  
Material S Thickness 1 5/16 Pitch of stays 22 1/4 + 20 How are stays secured DN Working pressure by rules 180 Material of stays S

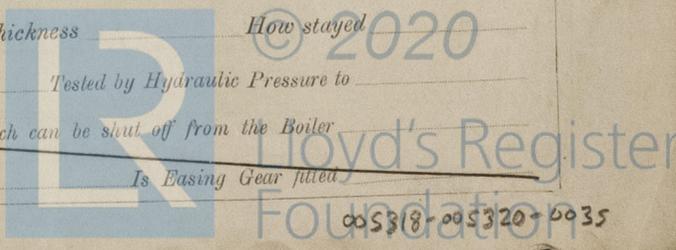
Area at smallest part 7.24 sq in Area supported by each stay 405 sq in Working pressure by rules 181 Material of Front plates at bottom S  
Thickness 2 1/2 Material of Lower back plate S Thickness 13/16 Greatest pitch of stays 13 1/4 x 8 15/16 Working pressure of plate by rules 183

Diameter of tubes 3 1/4 Pitch of tubes 43/8 x 43/8 Material of tube plates S Thickness: Front 27/32 DP Back 3/4 Mean pitch of stays 8 3/4 x 12 1/8  
Pitch across wide water spaces 13 3/4 Working pressures by rules 184 Girders to Chamber tops: Material S Depth and S  
thickness of girder at centre 9 x 3 1/4 (2) Length as per rule 22.19/32 Distance apart 9 3/4 Number and pitch of stays in each 3 at 8 5/8

Working pressure by rules 188 Steam dome: description of joint to shell DN % of strength of joint 100  
Diameter 18 Thickness of shell plates 13/16 Material S Description of longitudinal joint DN Diam. of rivet holes 1 1/4

Pitch of rivets 8 15/16 Working pressure of shell by rules 188 Crown plates DN Thickness 13/16 How stayed DN  
SUPERHEATER. Type DN Date of Approval of Plan 1-5-24 Tested by Hydraulic Pressure to 320

Date of Test 1-5-24 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the boiler Yes  
Diameter of Safety Valve 1 1/2 Pressure to which each is adjusted 180 Is Easing Gear fitted Yes



IS A DONKEY BOILER FITTED? **910**

If so, is a report now forwarded? **-**

SPARE GEAR. State the articles supplied:— **2 Connecting Rod w/ End. bolts nuts, dills for bottom end, 2 Fore and Aft bearing bolts, 1 set of Coupling bolts, 1 set of Feed Pulley Pump washers, a quantity of assorted bolts & nuts, 1 set of various covers**

The foregoing is a correct description,  
RANKIN & BLACKMORE, LTD.,

*Director* Director.

Manufacturer.

Dates { During progress of work in shops - - } 1920. May 6-10-15-18-21-26-27-31. June 4-9. July 26. Aug 7-13. Oct 20. Nov 10-15. 1923. Jan 29. Feb 12-19-28. Mar 2-9-12-20-26-29. Apr 3-6-12-17-25.  
{ During erection on board vessel - - - } 27. May 2-11-22-25-29. June 6-7-12-15-19. July 13-24. Aug 8-16-28. Sept 5. Oct 2. Nov 8-29. Dec 10-18. 1924. Jan 17-24. Feb 5. Apr 23. May 1-2-7-9-14-16-19-23.  
Total No. of visits **26-27-28** June 3-5-6-16-19-21-23-24-25-27. July 1. **49** Is the approved plan of main boiler forwarded herewith **Yes**  
" " " donkey " " " **-**

Dates of Examination of principal parts—Cylinders **7. 6. 23** Slides **25. 5. 23** Covers **7. 6. 23** Pistons **25. 5. 23** Rods **24. 7. 23**  
Connecting rods **16. 5. 23** Crank shaft **14. 5. 24** Thrust shaft **14. 5. 24** Tunnel shafts **14. 5. 24** Screw shaft **7. 5. 24** Propeller **7. 5. 24**  
Stern tube **7. 5. 24** Steam pipes tested **23. 6. 24** Engine and boiler seatings **23. 4. 24** Engines holding down bolts **24. 6. 24**  
Completion of pumping arrangements **24. 6. 24** Boilers fixed **19. 6. 24** Engines tried under steam **24. 6. 24**  
Completion of fitting sea connections **19. 5. 24** Stern tube **19. 5. 24** Screw shaft and propeller **3. 6. 24**  
Main boiler safety valves adjusted **25. 6. 24** Thickness of adjusting washers **P 15/32 S 1/2 P 15/32 S 7/16 P 13/32 S 7/16**  
Material of Crank shaft **S** Identification Mark on Do. **Lloyds WGM 403** Material of Thrust shaft **S** Identification Mark on Do. **Lloyds WGM 403**  
Material of Tunnel shafts **S** Identification Marks on Do. **403** Material of Screw shafts **S** Identification Marks on Do. **447524**  
Material of Steam Pipes **S** Test pressure **540 lb**

Is an installation fitted for burning oil fuel **910** 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 **910** If so, state name of vessel **-**

General Remarks (State quality of workmanship, opinions as to class, &c. **These Engines & Boilers have been built under Special Survey in accordance with the approved plans & the workmanship & material are of good quality, they have now been securely fitted on board, tried under steam & found satisfactory. The machinery is eligible in my opinion for the record of LMC 7-24.**

It is submitted that this vessel is eligible for THE RECORD. + LMC 7. 24. CL.

*W. Gordon-Muscliss* 10/7/24

**W. Gordon-Muscliss**  
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ **5** : - / When applied for.  
Special ... £ **85** : 12 : / 27-6-1924  
Donkey Boiler Fee ... £ : : / When received.  
Travelling Expenses (if any) £ : : / 30-6-1924

Committee's Minute **GLASGOW -8 JUL 1924**

Assigned + LMC 7,24

14724  
CERTIFICATE WRITTEN  
dated 9/7/24



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