

REPORT ON MACHINERY

Received at London Office

Date of writing Report 10. 4. 1924 When handed in at Local Office 26. 5. 1924. Port of Greenock.

No. in Survey held at Greenock Date, First Survey 4th December 1922. Last Survey 22. 5. 1924
Reg. Book. S/S "ZAPALA" (Number of Visits 73.)

Master Built at Pt Glasgow By whom built Glasgow C^o L^{td} (454) Tons { Gross
Engines made at Greenock By whom made Rankin Blackmore C^o L^{td} (399) when made 1924 } Net
Boilers made at ditto By whom made ditto (399) when made 1924
Registered Horse Power Owners Buenos Ayres & Southern Railway C^o Port belonging to London
Nom. Horse Power as per Section 28 440 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
Dia. of Cylinders 24-44-43 Length of Stroke 48 Revs. per minute 65 Dia. of Screw shaft as per rule 14 7/16 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 No 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 No If two
liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 60"
Dia. of Tunnel shaft as per rule 13.33 Dia. of Crank shaft journals as per rule 14 Dia. of Crank pin 14 Size of Crank webs 25 3/4 x 9 Dia. of thrust shaft under
collars 14 Dia. of screw 14.9 Pitch of Screw 18-0 No. of Blades 4 State whether moveable Yes Total surface 102 #
No. of Feed pumps 2 Diameter of ditto 4 Stroke 26 Can one be overhauled while the other is at work Yes
No. of Bilge pumps 2 Diameter of ditto 4 Stroke 26 Can one be overhauled while the other is at work Yes
No. of Donkey Engines 3 Sizes of Pumps 12 x 12 4 x 18 6 x 8 No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room 3 at 2 3/4 1 at 4 1/2 Tunnel Well 1 2 1/4 In Holds, &c. 6 at 3 1/2 2 at 3 1/2

No. of Bilge Injections 00 sizes 4 1/2 Connected to condenser to circulating pump pumps Is a separate Donkey Suction fitted in Engine room of size 1-4 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 No
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 Below
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 UER Platform

OILERS, &c.—(Letter for record S) Manufacturers of Steel Doulton Lanarkshire Steel C^o of Scotland
Total Heating Surface of Boilers 5862 # Is Forced Draft fitted Yes No. and Description of Boilers 2 Single Ended
Working Pressure 180 Tested by hydraulic pressure to 320 Date of test 10.8.23 No. of Certificate 1634

Can each boiler be worked separately Yes Area of fire grate in each boiler 6 3/4 # No. and Description of Safety Valves to
each boiler Double Spring Area of each valve 11.25 # Pressure to which they are adjusted 185 Are they fitted with easing gear Yes
Smallest distance between boilers or uptakes and bunkers or woodwork 24" Mean dia. of boilers 16-6" Length 11-6" Material of shell plates S
Thickness 1 1/32 Range of tensile strength 28/32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DR L
long. seams TR + DBS Diameter of rivet holes in long. seams 13/8" Pitch of rivets 9 1/16" Lap of plates or width of butt straps 20 3/8"
Per centages of strength of longitudinal joint rivets 84.8 % plate 85.8 % Working pressure of shell by rules 182 Size of manhole in shell 16 x 12

Size of compensating ring 31 x 24 + 1 1/32 No. and Description of Furnaces in each boiler 3 corrugated Material S Outside diameter 48 1/4"
Length of plain part top 7 1/2 bottom 7 1/2 Thickness of plates crown 7 9/16 bottom 7 9/16 Description of longitudinal joint welded No. of strengthening rings 1
Working pressure of furnace by the rules 181 Combustion chamber plates: Material S Thickness: Sides 11/16 Back 43/64 Top 11/16 Bottom 3/4
Pitch of stays to ditto: Sides 10 1/4 x 8 3/4 Back 10 1/4 x 8 1/2 Top 10 1/4 x 8 3/4 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 182

Material of stays S Area at smallest part 177 # Area supported by each stay 833 # Working pressure by rules 183 End plates in steam space:
Material S Thickness 13/16 Pitch of stays 21 x 16 3/4 How are stays secured DN Working pressure by rules 182 Material of stays S
Area at smallest part 6.3 # Area supported by each stay 351.7 # Working pressure by rules 192 Material of Front plates at bottom S
Thickness 1" Material of Lower back plate S Thickness 13/16 Greatest pitch of stays 13 1/4 x 10 1/2 Working pressure of plate by rules 192
Diameter of tubes 23/4 Pitch of tubes 4 x 3 15/16 Material of tube plates S Thickness: Front 7/8 Back 3/4 Mean pitch of stays 11 1/16 x 8"
Pitch across wide water spaces 13 1/2 x 9 1/16 DP Working pressures by rules 192 Girders to Chamber tops: Material S Depth and
thickness of girder at centre 10 1/8 x 1 1/2 Length as per rule 35 3/4 Distance apart 10 1/4 Number and pitch of stays in each 3 at 8 3/4

Working pressure by rules 186 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
PERHEATER. 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?

Yes

If so, is a report now forwarded?

Yes

SPARE GEAR. State the articles supplied:— 2 Connecting Rod bolts, nuts for top end ditto for bottom end, 2 main bearing bolts, 1 set of coupling bolts, 1 set of Feed & Bilge Pump valves, 1 set of Piston Rings a quantity of assorted bolts, nuts, Iron of various sizes

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

Director.

Manufacturer.

Dates of Survey while building: During progress of work in shops -- 1222 Dec: 4-13-27-1923 Jan: 8-10-18-24-29 Feb: 1-7-8-12-19-23 Mar: 2-8-12-13-20-25-29 Apr: 3-4-11-12-17-25-27 May: 2-15-16-22-26-29 June: 6-8-12 July: 13-26-27 Aug: 1-8-11-28 Sept: 5 Oct: 2-17 Nov: 1-8-29 Dec: 16 (1924) Jan: 3-17-24 Feb: 5-11-19-22-25 Mar: 4-7-10-12-25 Apr: 21-28 May: 5-13-16-19-22 Total No. of visits 73

Is the approved plan of main boiler forwarded herewith Yes

Is the approved plan of donkey boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 2. 5. 23 Slides 12. 2. 23 Covers 24. 1- 23 Pistons 28. 2. 23 Rods 2. 5. 23 Connecting rods 25. 5. 23 Crank shaft 25. 3. 24 Thrust shaft 5. 2. 24 Tunnel shafts 10. 3. 24 Screw shaft 25. 2. 24 Propeller 25. 2. 24 Stern tube 25. 2. 24 Steam pipes tested 13. 5. 24 Engine and boiler seatings 7. 3. 24 Engines holding down bolts 16. 5. 24 Completion of pumping arrangements 16. 5. 24 Boilers fixed 5. 5. 24 Engines tried under steam 22. 5. 24 Completion of fitting sea connections 22. 2. 24 Stern tube 7. 3. 24 Screw shaft and propeller 25. 3. 24 Main boiler safety valves adjusted 16. 5. 24 Thickness of adjusting washers P 3/8 S 7/16 P 3/8 S 3/8 A 7/16 B F 7/16 Material of Crank shaft S Identification Mark on Do. LLOYDS Material of Thrust shaft S Identification Mark on Do. 6712 WGM Material of Tunnel shafts S Identification Marks on Do. 399 WGM Material of Screw shafts S Identification Marks on Do. 399 WGM Material of Steam Pipes Iron Test pressure 540 lb/sq in Is an installation fitted for burning oil fuel Yes Is the flash point of the oil to be used over 150°F. Yes Have the requirements of Section 49 of the Rules been complied with Yes 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 Enguin Boiler of this vessel.

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 5-24 Fitted for oil fuel 5-24 F.P. above 150°F

It is submitted that this vessel is eligible for THE RECORD.

CERTIFICATE WRITTEN 6.6.24

+ LMC 5-24 F.P. C.L. Fitted for oil fuel 5-24 F.P. above 150°F. 29th May 1924

The amount of Entry Fee ... £ 5 : - : When applied for, Special ... £ 91 : - : 26th May 1924 Donkey Boiler Fee ... £ : : When received, Travelling Expenses (if any) £ : : 29th May 1924

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

Committee's Minute 31 ASGOW 3 JUN 1924

Assigned + LMC 524 FD

Fitted for oil fuel 5,24 F.P. above 150°F.



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Greenock

Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.