

Rpt. 4.

REPORT ON MACHINERY

No. 43741

REC'D JUN. 18 1924

Date of writing Report 12 June 24 When handed in at Local Office 12-6 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 11th Jan'y 1924 Last Survey 10th June 1924
 Reg. Book. on the S.S. "Bulan" (Number of Visits 26)
 Master Built at Glasgow By whom built A. Stephen & Sons Tons Gross 1048 Net 442
 Engines made at Glasgow By whom made A. Stephen & Sons N° 503 when made 1924 When built 1924-6
 Boilers made at do By whom made do N° 503 when made 1924
 Registered Horse Power Owners F. & O. S. & L. E. Port belonging to Glasgow
 Nom. Horse Power as per Section 28 165 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 17½" 29" 47" Length of Stroke 30" Revs. per minute 111 Dia. of Screw shaft as per rule 9.1" 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 ✓ 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 light fit If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 42" no O.S.
 Dia. of Tunnel shaft as per rule 8.4" Dia. of Crank shaft journals as per rule 8.81" Dia. of Crank pin 9½" Size of Crank webs 17" 6¼" Dia. of thrust shaft under collars 9½" Dia. of screw 10" 6" Pitch of Screw 12" 0" No. of Blades 4 State whether moveable yes Total surface 28.04 sq.
 No. of Feed pumps 2 Diameter of ditto 3½" Stroke 15" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 3½" Stroke 15" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 1-Rallast Sizes of Pumps 8" x 7" x 18" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2-2½" In Holds, &c. N° 1. 2. 3. Holds 2-2½"
 No. of Bilge Injections 1 sizes 5½" Connected to main to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 3"
 Are all the bilge suction pipes fitted with yes Are the yes 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 None How are they protected None

*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 E.R. top platform

OILERS, &c.—(Letter for record S.) Manufacturers of Steel Steel Co. of Scotland 2SB.
 Total Heating Surface of Boilers 3083 sq. ft. Forced Draft fitted no No. and Description of Boilers 2-Multitubular
 Working Pressure 170 Tested by hydraulic pressure to 305 Date of test 31.3.24 No. of Certificate 16471
 Can each boiler be worked separately yes Area of fire grate in each boiler 44.5 sq. ft. No. and Description of Safety Valves to each boiler 2-Spring loaded Area of each valve 7.068" Pressure to which they are adjusted 175 Are they fitted with easing gear yes
 Smallest distance between boiler uptakes and bunkers or woodwork 18" Mean dia. of boilers 12" 6" Length 11" 0" Material of shell plates S.
 Thickness 63" Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams T.R.
 long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 176" Pitch of rivets 7½" Top of plates or width of butt straps 15¾"
 Per centages of strength of longitudinal joint rivets 92.3 Working pressure of shell by rules 172 Size of manhole in shell 16" x 12"
 Size of compensating ring 55" x 31" x 7/8" No. and Description of Furnaces in each boiler 3cf. B. iron Material S. Outside diameter 33 26/32"
 Length of plain part top ✓ Thickness of plates crown 13/32" Description of longitudinal joint weld No. of strengthening rings ✓
 Working pressure of furnace by the rules 170 Combustion chamber plates: Material S. Thickness: Sides 19/32" Back 5/8" Top 5" 9/16" Bottom 19/32"
 Pitch of stays to ditto: Sides 8" x 8½" Back 9" x 8¾" Top 9½" x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 172
 Material of stays S. Area at smallest part 1.625" Area supported by each stay 78.7" Working pressure by rules 177 End plates in steam space: Material S. Thickness 1/8" Pitch of stays 20" x 17" How are stays secured T.N. Working pressure by rules 171 Material of stays S.
 Area at smallest part 2.75" Area supported by each stay 323" Working pressure by rules 171 Material of Front plates at bottom S.
 Thickness 32" Material of Lower back plate S. Thickness 28" Greatest pitch of stays 14½" x 9" Working pressure of plate by rules 200
 Diameter of tubes 3" Pitch of tubes 4½" x 4½" Material of tube plates S. Thickness: Front 27/32" Back 13/16" Mean pitch of stays 10½" x 8½"
 Pitch across wide water spaces 14½" Working pressures by rules 173 Girders to Chamber tops: Material S. Depth and thickness of girder at centre 8" x 13/8" Length as per rule 32 9/16" Distance apart 9½" Number and pitch of stays in each 3-8"
 Working pressure by rules 173 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

UPERHEATER. 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?

no

If so, is a report now forwarded?

SPARE GEAR.

State the articles supplied:— As per Rules, and one screw shaft, two propeller blades, 2 valve spindles, 1 eccentric strap, 1 top and bottom end complete, 1 main bearing complete, 1 set coupling bolts, 1 air pump rod, impeller and shaft for centrifugal pump. etc.

The foregoing is a correct description,
ALEXANDER STEPHEN & SONS, LIMITED.

J.W. McNeil

Director.

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1924 Jan 11. 17. 24. 28. 31. Feb 5. 14. 25. Mar 4. 10. 17. 24. 31. Apr 3. 11. 16. 23. May 2. 7. 13. 15. 21. 23. 28. Jun 4. 10. }
{ During erection on board vessel - - - }
Total No. of visits 26

Is the approved plan of main boiler forwarded herewith

no

" " " donkey " " "

no

Dates of Examination of principal parts—Cylinders 31-3-24 Slides 23-4-24 Covers 31-3-24 Pistons 13-4-24 Rods 11-4-24
Connecting rods 11-4-24 Crank shaft 11-4-24 Thrust shaft 11-4-24 Tunnel shafts 11-4-24 Screw shaft 23-4-24 Propeller 16-4-24
Stern tube 16-4-24 Steam pipes tested 7-5-24 Engine and boiler seatings 23-4-24 Engines holding down bolts 21-5-24
Completion of pumping arrangements 4-6-24 Boilers fixed 21-5-24 Engines tried under steam 10-6-24
Completion of fitting sea connections 2-5-24 Stern tube 16-4-24 Screw shaft and propeller 2-5-24
Main boiler safety valves adjusted 4-6-24 Thickness of adjusting washers Port P 3/8 S 5/16 Star P 19/64 S 3/8

Material of Crank shaft S. Identification Mark on Do. HC. Material of Thrust shaft S. Identification Mark on Do. HC.

Material of Tunnel shafts S. Identification Marks on Do. HC. Material of Screw shafts S. Identification Marks on Do. HC.

Material of Steam Pipes Steel lap welded. Test pressure 510

Is an installation fitted for burning oil fuel no Is the flash point of the oil to be used over 150°F. no

Have the requirements of Section 49 of the Rules been complied with no

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 special survey in accordance with the approved plans, and the Society's Rules & requirements. The materials and workmanship are good, it has been securely fitted on board, and satisfactorily tried under steam and in my opinion is eligible for the records + L.M.C. 6-24, fitted for oil fuel 6-24 F.P. about 150°F.

It is submitted that
this vessel is eligible for
THE RECORD. + LMC 6.24. CL.

Fitted for oil fuel 6.24. F.P. above 150°F

The amount of Entry Fee ... £ 3 : - :
Special ... £ 41 : 5 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 17 JUNE 1924
When received, 17 JUN 1924

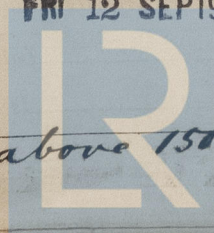
Committee's Minute GLASGOW

Assigned + LMC 6,24

Fitted for oil fuel 6.24 F.P. above 150°F

FRI 12 SEP 1924

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



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Foundation