

REPORT ON MACHINERY

No. 43741

Received at London Office

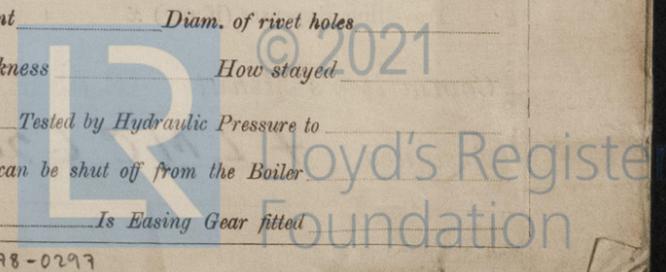
JUN. 18 1924

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 1924 Last Survey 10th June 1924
 Reg. Book. on the S.S. "Bulan" (Number of Visits 26)
 Master Glasgow Built at Glasgow By whom built A. Stephen & Sons Tons } Gross 1048
 Engines made at Glasgow By whom made A. Stephen & Sons N°503 when made 1924 Net 442
 Boilers made at do By whom made do N°503 when made 1924 When built 1924-6
 Registered Horse Power 165 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 17 1/2" 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 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 light fit
 If two liners are fitted, is the shaft lapped or protected between the liners yes 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 9 1/8" Size of Crank webs 17x6 1/4" Dia. of thrust shaft under collars 9 5/8" 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 3 1/2" Stroke 15" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 15" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 1-Ballast Sizes of Pumps 8" x 7" x 18" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2-2 1/2" In Holds, &c. N°1. 2. 3. Holds 2-2 1/2"
BOILER ROOM 2-2 1/2" Tunnel 1-2 1/2" Corndam 1-2 1/2"
 No. of Bilge Injections 1 sizes 5 1/2" Connected to circulating pump Is a separate Donkey Suction fitted in Engine room of size 3"
 Are all the bilge suction pipes fitted with Mud Boxes Are the Mud Boxes 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
 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 63/64" 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 1 1/16" Pitch of rivets 7 1/2" Length of plates or width of butt straps 15 3/4"
 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 35" x 31" x 7/8" No. and Description of Furnaces in each boiler 3cf. B. iron Material S. Outside diameter 33 1/32"
 Length of plain part top 13" Thickness of plates crown 13/32" Description of longitudinal joint weld No. of strengthening rings 19
 bottom 13/32" 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 8 1/2" Back 9" x 8 3/4" Top 9 1/2" 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 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 3/32" Material of Lower back plate S. Thickness 28/32" Greatest pitch of stays 14 1/8" x 9" Working pressure of plate by rules 200
 Diameter of tubes 3" Pitch of tubes 4 1/4" x 4 1/4" Material of tube plates S. Thickness: Front 27/32" Back 13/16" Mean pitch of stays 10 1/2" x 8 1/2"
 Pitch across wide water spaces 14 1/2" 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 9 1/2" Number and pitch of stays in each 3-8"
 Working pressure by rules 173 Steam dome: description of joint to shell yes % of strength of joint

SUPERHEATER. 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, 27, 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 Yes

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 7-5-24
 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 Per the P 3/8 S 5/16 Starter P 1/4 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. Slight top wear. Test pressure 510

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 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

Jas Cairns
 Engineer Surveyor to Lloyd's Register of Shipping.
 19/6/24

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



GLASGOW

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