

REPORT ON MACHINERY.

No. 18300

Received at London Office - 8 OCT. 1924

Date of writing Report 30/8/24 When handed in at Local Office 2nd October, 1924 Port of Greenock
 No. in Survey held at Greenock Date, First Survey 16th October, 1923 Last Survey 2. 10 1924
 Reg. Book. S/S "Bellair" (Number of Visits 67).
 Master P. Glasgow Built at Lithgow By whom built C. & A. (458) When built 1924
 Engines made at Greenock By whom made John & T. Caird when made 1924
 Boilers made at ditto By whom made ditto when made 1924
 Registered Horse Power 437 Owners Bellair & Kaushik C. & A. Port belonging to Glasgow
 Nom. Horse Power as per Section 28 437 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 26-42-40 Length of Stroke 48 Revs. per minute 65 Dia. of Screw shaft 14 1/4 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 Yes If two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 60
 Dia. of Tunnel shaft 12.97 Dia. of Crank shaft journals 13.62 Dia. of Crank pin 13 3/4 Size of Crank webs 20 1/2 x 8 3/4 Dia. of thrust shaft under collars 13 3/4 Dia. of screw 17.6 Pitch of Screw 17.9 No. of Blades 4 State whether moveable No Total surface 100 ft
 No. of Feed pumps 2 Diameter of ditto 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 2 Sizes of Pumps 9 x 13 x 10 8 x 6 x 8 5 1/4 x 3 1/2 x 5 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 3. 2 1/2" Tunnel & 1. 2 1/4" In Holds, &c. No. 1. 2-3" No. 2. 2-3 1/4" No. 3. 2-3 1/2-2. 3 1/4"

No. of Bilge Injections 1 sizes 8" Connected to condenser for circulating pump Yes Is a separate Donkey Suction fitted in Engine room & 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 Good 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 U.E.R. Platform

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Steel Co of Scotland, Colville
 Total Heating Surface of Boilers 6182 ft 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 11. 8. 24 No. of Certificate 1665
 Can each boiler be worked separately Yes Area of fire grate in each boiler 43.3 ft No. and Description of Safety Valves to each boiler Double Spring Area of each valve 11.04 Pressure to which they are adjusted 185 Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 18" 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 Yes 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 1/4"
 Per centages of strength of longitudinal joint 86.8% Working pressure of shell by rules 182 Size of manhole in shell 16 1/2 x 20 1/2"
 Size of compensating ring 36 3/4 x 32 1/4 x 1 1/32 No. and Description of Furnaces in each boiler 4 Single Ended Material S Outside diameter 44 1/4"
 Length of plain part top 1 1/32 bottom 1 1/32 Thickness of plates crown 1 1/32 bottom 1 1/32 Description of longitudinal joint weld No. of strengthening rings —
 Working pressure of furnace by the rules 187 Combustion chamber plates: Material S Thickness: Sides 5/8" Back 2 1/32 Top 5/8" Bottom 3/4"
 Pitch of stays to ditto: Sides 9 1/8" Back 9 1/8" Top 9 1/8" If stays are fitted with nuts or riveted heads No Working pressure by rules 181
 Material of stays S Area at smallest part 203 Area supported by each stay 100 Working pressure by rules 180 End plates in steam space: Material S Thickness 1 1/32 Pitch of stays 20 x 16 1/2" How are stays secured DW Working pressure by rules 184 Material of stays S
 Area at smallest part 5.56 Area supported by each stay 330 Working pressure by rules 184 Material of Front plates at bottom S
 Thickness 1 1/16" Material of Lower back plate S Thickness 1 1/32 Greatest pitch of stays 13 3/4" Working pressure of plate by rules 183
 Diameter of tubes 2 1/2" Pitch of tubes 33 1/4 x 3 1/16" Material of tube plates S Thickness: Front 1 1/16" Back 3/4" Mean pitch of stays 9 5/16"
 Pitch across wide water spaces 13 1/2" Working pressures by rules 184 Girders to Chamber tops: Material S Depth and thickness of girder at centre 9 x 1 1/2" Length as per rule 33 9/32 Distance apart 9 1/4" Number and pitch of stays in each 3 at 8"
 Working pressure by rules 181 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 —
 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 —

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Lloyd's Register Foundation

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Boilers on
No. of Certific

safety valves to
Are they fitted

Smallest distan
Material of sh

Descrip. of riv
Lap of plates

rules 103
boiler 2 fl

Description of
plates: Mater

Top 10 1/2 x 9 1/4
smallest part

Pitch of stays
Area supporte

Lower back p
Pitch of tubes

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girder at cent

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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 Field & Bilge Pump Tanks. a Quantity of assorted bolts & nuts. None of Garroch's

The foregoing is a correct description,
for JOHN G. KINCAID & COY., LIMITED.

Robert Green

Manufacturer.

Dates of Survey while building { During progress of work in shops - - (1923) Oct 16-30-31. Nov 7-12-26. Dec 3-13-14-17-24-27. (1924) Jan 9-11-23-30. Feb 4-13-15-28. Mar 3-6-11-24-27. Apr 3-10-16-21-25-30. During erection on board vessel - - - May 1-6-9-14-21-23-28-30. June 3-4-18-19-20-26-30. July 22-24-25. Aug 1-11-18-19-25-28. Sept 3-4-5-9-11-17-18-19-22-25-29. Oct 2. Total No. of visits 67.

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 6-5-24 Slides 21-5-24 Covers 6-5-24 Pistons 21-5-24 Rods 30-6-24 Connecting rods 30-6-24 Crank shaft 30-6-24 Thrust shaft 30-6-24 Tunnel shafts 19-8-24 Screw shaft 25-7-24 Propeller 25-7-24 Stern tube 22-7-24 Steam pipes tested 22-9-24 Engine and boiler seatings 24-7-24 Engines holding down bolts 11-9-24 Completion of pumping arrangements 2-10-24 Boilers fixed 11-9-24 Engines tried under steam 2-10-24 Completion of fitting sea connections 24-7-24 Stern tube 24-7-24 Screw shaft and propeller 4-9-24 Main boiler safety valves adjusted 29-9-24 Thickness of adjusting washers P 9 1/16 S 7 1/32 P 7 1/32 S 7 1/32 F 1 3/32 A 1 3/32

Material of Crank shaft S Identification Mark on Do. 6823 WGM Material of Thrust shaft S Identification Mark on Do. 691 WGM Material of Tunnel shafts S Identification Marks on Do. 609 WGM Material of Screw shafts Identification Marks on Do. 6965 WGM Material of Steam Pipes Copper (SD) Test pressure 360

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. These Engines & Boilers have been built under special survey in accordance with the approved plans & the workmanship & material are of good quality. They have been securely fitted on board & tried under steam & found satisfactory. The machinery is eligible in my opinion for the record of. LMC 10-24

It is submitted that this vessel is eligible for THE RECORD. + LMC 10. 24. FD. CL.

CERTIFICATE WRITTEN 1.11.24

W. Gordon Maclean 9/10/24

The amount of Entry Fee ... £ 5 : - : When applied for, Special ... £ 90 : 11 : 3.10.1924. Donkey Boiler Fee ... £ : : When received, Travelling Expenses (if any) £ : : 24

Committee's Minute GLASGOW 7-DEC 1924

Assigned + LMC 10, 24

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