

Rpt. 4.

REPORT ON MACHINERY.

Glasgow 34185
No. 8028

Received at London Office

28 AUG. 1917

Date of writing Report Aug 24th 1914 When handed in at Local Office Aug 24th 1914 Port of DUNDEE
 No. in Survey held at Dundee Date, First Survey Aug. 9th 1916 Last Survey Aug 23rd 1914
 Reg. Book. on the S.S. "GARTHCLYDE" (River Clyde S. B. Co No. 2)
 Master Built at Glasgow By whom built River Clyde S.B. Works Tons { Gross
 Engines made at Dundee By whom made Coppey & Co. Ltd. (No. 186) when made 1914 Net
 Boilers made at Glasgow By whom made Hunsell & Jackson when made 1914
 Registered Horse Power Owners Harris Buys & Gylsen Ltd Port belonging to Glasgow
 Nom. Horse Power as per Section 28 228 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion Surface Condensing No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 21. 35. 54 Length of Stroke 36 Revs. per minute 74 Dia. of Screw shaft as per rule 11.49 Material of Cast Iron
 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 Solid If two
 liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 4-1 1/2"
 Dia. of Tunnel shaft as per rule 10.29 Dia. of Crank shaft journals as per rule 10.81 Dia. of Crank pin 11" Size of Crank webs 8" x 4 1/2" Dia. of thrust shaft under
 collars 11" Dia. of screw 4 1/2" - 9" Pitch of Screw 15' - 6" No. of Blades 4 State whether moveable No Total surface 45 Sq. ft.
 No. of Feed pumps 2 Diameter of ditto 3 1/4" Stroke 18" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 18" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 3 Sizes of Pumps Belmont 9" x 11" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2-2 3/4" P. & S. and 2, 2 3/4" in stokehold In Holds, &c. 7" Peak 1, 2 1/2" Tubes 2, 2 3/4"
 after hold 1, 2 1/2" Tunnel bulk 1-2 1/2" after pump 1, 2 1/2"
 No. of Bilge Injections 1 sizes 4 1/4" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes - 3"
 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 Home
 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 suction pipes How are they protected Wood sheathing
 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 Engine Room Top Platform

OILERS, &c.—(Letter for record 3) Manufacturers of Steel Colville & Glasgow Iron & Steel Co
 Total Heating Surface of Boilers 3434 sq. ft. Is Forced Draft fitted Yes No. and Description of Boilers 3 Single ended Marine
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 19-4-14 No. of Certificate 13458
 Can each boiler be worked separately Yes Area of fire grate in each boiler No. and Description of Safety Valves to
 each boiler 1 pair Spring loaded Area of each valve 4.06 sq. ft. Pressure to which they are adjusted Are they fitted with easing gear
 Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers Length Material of shell plates
 Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams
 Long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps
 Per centages of strength of longitudinal joint Working pressure of shell by rules Size of manhole in shell
 Size of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter
 Length of plain part Thickness of plates Description of longitudinal joint No. of strengthening rings
 Working pressure of furnace by the rules Combustion chamber plates: Material Thickness Sides Back Top Bottom
 Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules
 Material of stays Area at smallest part Area supported by each stay Working pressure by rules End plates in steam space:
 Material Thickness Pitch of stays How the stays are secured Working pressure by rules Material of stays
 Area at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom
 Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules
 Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays
 Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and
 thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each
 Working pressure by rules 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
 Material of Safety Valves Pressure to which each is adjusted Is Easing Gear fitted

IS A DONKEY BOILER FITTED?

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

SPARE GEAR. State the articles supplied:— 2 top & 2 bottom end bolts & nuts, 2 main bearing bolts & nuts, one set coupling bolts, one set feed, & one set bilge pump valves. Pump valves for air, circulating & donkey pumps. Feed check valve. 12 boiler tubes. Associated bolts & nuts, & iron of various sizes. One escape valve spring for each size. One safety valve spring. One propeller. Spare piston rings for H.P. and I.P. pistons.

The foregoing is a correct description,

FOR COOPER & GREIG LIMITED.

W. H. Cooper

Manufacturer.

Dates of Survey while building: During progress of work in shops - - - AUG. 9, 21, 28. NOV. 2, 15. DEC. 2, 15. JAN. 8, 11, 15, 26, 31. FEB. 3, 5. MAR. 16. APR. 3, 6. MAY 1, 29, 31. During erection on board vessel - - - JUNE 4, 9, 13, 18, 21, 25, 28. JULY 4, 10, 12, 14, 19, 31. AUG. 6, 9, 14, 15, 20, 23. (Glasgow) 17, 14, Aug. 3, 22, 30. Sep. 14, 21, 25, 28. Oct. 2. (8 visits) Total No. of visits 238

Is the approved plan of main boiler forwarded herewith? *Yes*

Dates of Examination of principal parts: Cylinders 7.8.14 Slides 7.8.14 Covers 7.8.14 Pistons 7.8.14 Rods 7.8.14 Connecting rods 7.8.14 Crank shaft 7.8.14 Thrust shaft 7.8.14 Tunnel shafts 7.8.14 Screw shaft 7.8.14 Propeller 7.8.14 Stern tube 7.8.14 Steam pipes tested 19-9-14 Engine and boiler seatings 30-8-14 Engines holding down bolts 14-9-14 Completion of pumping arrangements 3-10-14 Boilers fixed 14-9-14 Engines tried under steam 3-10-14 Completion of fitting sea connections 3-8-14 Stern tube 3-8-14 Screw shaft and propeller 3-8-14 Main boiler safety valves adjusted 28-9-14 Thickness of adjusting washers 7/32 - 4/32 inch 3/16 - 3/16 inch

Material of Crank shaft Steel Identification Mark on Do. 4322-444. Material of Thrust shaft Steel Identification Mark on Do. 8803 J.H.M. Material of Tunnel shafts Steel Identification Marks on Do. 8803 J.H.M. Material of Screw shafts Steel Identification Marks on Do. 8803 J.H.M. Material of Steam Pipes Copper Test pressure 360 lbs per sq inch

Is an installation fitted for burning oil fuel? *Yes* 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? *Yes*

Is this machinery duplicate of a previous case? *Yes* If so, state name of vessel 'ELMPARK' (under Rpt. No. 4994).

General Remarks (State quality of workmanship, opinions as to class, &c. The engines for this vessel have been built under special survey, and in accordance with the Society's Rules. They have been sent to Glasgow, where they will be fitted on board the vessel.

The materials and workmanship are sound & good. When the machinery has been satisfactorily completed on board, the spare gas checked & the pumping arrangements completed, it will be eligible in my opinion to have record of L.M.C. (with date) made in the Register Book.

The machinery has been securely fitted on board & tried under full working conditions & found satisfactory.

For full particulars of main & donkey boilers, please see Glasgow Reports.

The machinery of this vessel is eligible, in my opinion, to have the Record L.M.C. 10-14.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 10.17.

The amount of Entry Fee ... £ 2 : 0 : When applied for, 2/3 Special ... £ 20 : 18 : 6 25.8.14 Donkey Boiler Fee ... £ : : When received, Travelling Expenses (if any) £ : : 24.9.14

Committee's Minute GLASGOW. 16 OCT. 1917

Assigned + L.M.C. 10.17

MACHINERY CERTIFICATE WRITTEN 17.10.17

John Mackintosh 17/10/17
Engineer Surveyor to Lloyd's Register of Shipping.

Fred. A. Ferguson
6/10/14

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