

Rpt. 4.

# REPORT ON MACHINERY.

No. 73898

Received at London Office

Date of writing Report 19 When handed in at Local Office 19 Port of Newcastle SAT. DEC. 1920  
 No. in Survey held at South Shields Date, First Survey 30<sup>th</sup> Dec 1919 Last Survey 8<sup>th</sup> Nov. 1920  
 Reg. Book. on the S.S. Port Laurie (Number of Visits 23)

Master Built at Lowestoft By whom built Messrs. Chambers & Co. Tons { Gross  
 Engines made at South Shields By whom made Geo. J. Grey & Co. Ltd. (W. 608) when made 1920 Net  
 Boilers made at Sunderland By whom made G. Clark & Co. when made 1920  
 Registered Horse Power Owners Messrs. R. Mc. Neal & Co. Port belonging to Bandiff  
 Nom. Horse Power as per Section 28 108 Is Refrigerating Machinery fitted for cargo purposes ☒ Is Electric Light fitted ☒

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks Three  
 Dia. of Cylinders 15" - 25" - 41" Length of Stroke 27" Revs. per minute 100 Dia. of Screw shaft 8.1" Material of Ingot steel  
 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 ☒ If two  
 liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 36 3/4"  
 Dia. of Tunnel shaft 8" Dia. of Crank shaft journals 8" Dia. of Crank pin 8" Size of Crank webs 11 1/2" x 5 1/4" Dia. of thrust shaft under  
 collars 8" Dia. of screw 9" - 4" Pitch of Screw 11" - 3" No. of Blades 4 State whether moveable No Total surface 43 sq ft  
 No. of Feed pumps 2 Diameter of ditto 2 1/2" Stroke 14" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 2 1/2" Stroke 14" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 2 Sizes of Pumps 6" x 4" x 6" + 8" x 9" x 8" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Three 2 1/2" One separate direct 2 1/2" In Holds, &c. Two 2" in each hold  
 No. of Bilge Injections 1 sizes 3 1/2" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size yes 2 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 ☒  
 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 For 4 Hold bilge & stokehold suction How are they protected Wood casings  
 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 ☒ Is it fitted with a watertight door ☒ worked from ☒

BOILERS, &c.—(Letter for record S) Manufacturers of Steel S  
 Total Heating Surface of Boilers Is Forced Draft fitted No. and Description of Boilers See Boilers Report enclosed  
 Working Pressure Tested by hydraulic pressure to Date of test No. of Certificate  
 Can each boiler be worked separately Area of fire grate in each boiler 55 sq ft No. and Description of Safety Valves to  
 each boiler Two Spring Loaded Area of each valve 5.939 Pressure to which they are adjusted 185 lb Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 18" 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 rivets 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 top Thickness of plates bottom 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 are stays 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  
 Diameter of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 2 Connecting rod top end bolts and nuts. 2 connecting rod bottom end bolts and nuts. 2 main bearing bolts and nuts. 1 set of Coupling bolts and nuts. 1 set of piston bolts and nuts. 1 set of air circulating feed & bilge pump valves & feed checkers. 1 spare propeller, 25 fire bars. 6 condenser tubes & 20 gunkles.

The foregoing is a correct description,

For GEO. T. GREY & CO. LTD.  
Humbly Grove Dredon Manufacturers of Main Engines

Dates of Survey while building  
During progress of work in shops -- 1919 Dec. 30 Jan. 21-26 Feb. 26 Apr. 15-22 May 31 Jun 2 Jul 2-20 Aug. 26-30 Sep. 9-16-24-30 Oct. 6  
During erection on board vessel -- 1920 Sep. 24 Oct. 6-19-26 Nov 4-15-18-29 Dec 30 1921 Jan 6-11-14-19 Feb 1-8-9-14-16-22 MAR 8.  
Total No. of visits 22 43.

Is the approved plan of main boiler forwarded herewith yes.

Dates of Examination of principal parts—Cylinders 30-9-20 Slides 26-2-20 Covers 26-2-20 Pistons 26-1-20 Rods 26-1-20

Connecting rods 9-9-20 Crank shaft 26-8-20 Thrust shaft 24-8-20 Tunnel shafts ✓ Screw shaft 15-4-20 Propeller 15-4-20

Stern tube 26-2-20 Steam pipes tested 14-1-21 Engine and boiler seatings 30-12-20 Engines holding down bolts 30-12-20

Completion of pumping arrangements 9-2-21 Boilers fixed 29-11-20 Engines tried under steam 9-2-21

Completion of fitting sea connections 29-7-20 Stern tube 27-7-20 Screw shaft and propeller 26-10-20

Main boiler safety valves adjusted 9-2-21 Thickness of adjusting washers  $7\frac{1}{4}$  S.  $5\frac{1}{2}$

Material of Crank shaft Ingot steel Identification Mark on Do. LLOYD'S No. 1640 W.G.N. 14-12-19

Material of Tunnel shafts ✓ Identification Marks on Do. Material of Thrust shaft Ingot steel Identification Mark on Do. LLOYD'S No. 2083 W.G.N. 23-3-21

Material of Steam Pipes Copper Test pressure 450 lbs.

Is an installation fitted for burning oil fuel ✓ 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 yes If so, state name of vessel S.S. 'Embynton'

General Remarks (State quality of workmanship, opinions as to class, &c. The engines of this vessel have been

constructed under special survey and the workmanship and materials are sound and good. On completion the engines were despatched to Lowestoft for installing on board.

The machinery of this vessel has been examined whilst being installed in vessel, afterwards tried under full power, & found satisfactory. The main & donkey boilers examined under steam & the safety valves adjusted to 185 & 100 lbs respectively, & is now eligible in our opinion for the record of + L.M.C. 3-21 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 3.21 CL

Reel 23/3/21 J.R.

The amount of Entry Fee ... £ 2 : 0 : 0 When applied for, Part only. Special ... £ 5 : 0 : 0 3-DEC-1920 21/3/21  
Donkey Boiler Fee ... £ 6 : 0 : 0  
Travelling Expenses (if any) £ 5 : 19 : 0 12-1/2/21

W. Findale. A.B. Farrmer + R. J. ... Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute  
Assigned  
+ L.M.C. 3.21  
C.L.

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