

## REPORT ON MACHINERY.

No. 15251

Date of writing Report 25<sup>th</sup> May, 1916 When handed in at Local Office 16/ 1916 Port of West Hartlepool  
 No. in Survey held at W. Hartlepool Date, First Survey 23<sup>rd</sup> Sept/15 Last Survey 23<sup>rd</sup> May 1916  
 Reg. Book. on the Steel Screw Steamer "Merioneth" (W. Gray & Co., S.S. No 875) (Number of Vessels)  
 Master G. Roberts 1914-1916 Built at W. Hartlepool By whom built W. Gray & Co., Ltd. Tons { Gross 3003.55  
 Engines made at W. Hartlepool By whom made Central Marine Engine Works when made 1916  
 Boilers made at W. Hartlepool By whom made Central Marine Engine Works when made 1916  
 Registered Horse Power 288 Owners Harrgate Steamship Co. Ltd. Port belonging to Cardiff  
 Nom. Horse Power as per Section 28 288 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders three (3) No. of Cranks three (3)  
 Dia. of Cylinders 23", 36", 62" Length of Strokes 42" Revs. per minute 68 Dia. of Screw shaft as per rule 12.85" Material of Hyot 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 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 53"  
 Dia. of Tunnel shaft as per rule 11.44" Dia. of Crank shaft journals as per rule 11.98" Dia. of Crank pin 12 1/4" Size of Crank webs 17 1/2" x 7 1/2" Dia. of thrust shaft under  
 collars 12 1/4" Dia. of screw 15-9" Pitch of Screw 15-6" No. of Blades 4 State whether moveable No Total surface 80 sq. ft.  
 No. of Feed pumps two (2) Diameter of ditto 3" Stroke 30" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps two (2) Diameter of ditto 3" Stroke 30" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines two (2) Sizes of Pumps 4" x 6" & 8" x 8" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room four (4) 3 1/2" In Tunnel, one, 3 1/2" In Holds, &c. six (6) 3"  
 No. of Bilge Injections one sizes 6 1/2" Connected to condenser, or to circulating pump pumps Is a separate Donkey Suction fitted in Engine room & size Yes, 3 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 None  
 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 stowhold 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 brase covering plate Yes  
 What pipes are carried through the bunkers None How are they protected Yes  
 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  
 Dates of examination of completion of fitting of Sea Connections 1/3/16 of Stern Tube 8/5/16 Screw shaft and Propeller 8/5/16  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from top platform

BOILERS, &c.—(Letter for record S) Manufacturers of Steel J. Spencer & Sons, Ltd.  
 Total Heating Surface of Boilers 4691 Is Forced Draft fitted No No. and Description of Boilers Two (2), Single-ended  
 Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 17/3/16 No. of Certificate 3425  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 59.5 sq. ft. No. and Description of Safety Valves to  
 each boiler two (2), Spring Area of each valve 8.29 sq. in. Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 30" Mean dia. of boilers 15-6" Length 11-0" Material of shell plates Steel  
 Thickness 1 5/16" Range of tensile strength 27/30 tons Are the shell plates welded or flanged both Descrip. of riveting: cir. seams 3/16", lapped  
 long. seams 3/16", double straps Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9 1/16" Lap of plates or width of butt straps 19 1/4"  
 Per centages of strength of longitudinal joint 84.6 Working pressure of shell by rules 183 lbs. Size of manhole in shell 16" x 12"  
 Size of compensating ring flanged No. and Description of Furnaces in each boiler three (3), Brighton's Material Steel Outside diameter 47 1/8"  
 Length of plain part top Thickness of plates crown 9/16" Description of longitudinal joint welded No. of strengthening rings Corrugated  
 Working pressure of furnace by the rules 185 lbs. Combustion chamber plates: Material Steel Thickness: Sides 10/16" Back 10/16" Top 10/16" Bottom 14/16"  
 Pitch of stays to ditto: Sides 9" x 8" Back 9 1/2" x 8" Top 9 1/2" x 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 181 lbs.  
 Material of stays Steel Diameter at smallest part 1.508" Area supported by each stay 9 1/4" x 8" Working pressure by rules 193 lbs. End plates in steam spaces:  
 Material Steel Thickness 1 5/16" Pitch of stays 22" x 19 1/4" How are stays secured double nuts Working pressure by rules 180 lbs. Material of stays steel  
 Diameter at smallest part 3-16" Area supported by each stay 22" x 19 1/4" Working pressure by rules 192 lbs. Material of Front plates at bottom steel  
 Thickness 1" Material of Lower back plate steel Thickness 15/16" Greatest pitch of stays 16" Working pressure of plate by rules 180 lbs.  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" Material of tube plates Steel Thickness: Front 1" Back 12/16" Mean pitch of stays 9"  
 Pitch across wide water spaces 14 1/4" Working pressures by rules 189 lbs. Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 8 3/4" x 1 1/4" Length as per rule 30 5/8" Distance apart 8" Number and pitch of stays in each two (2), 9 1/4"  
 Working pressure by rules 181 lbs. Superheater or Steam chest: how connected to boiler Can the superheater be shut off and the boiler worked  
 separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet  
 holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness  
 If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed  
 Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear



IS A DONKEY BOILER FITTED? Yes

If so, is a report now forwarded? Yes

SPARE GEAR. State the articles supplied:— Two top and bolts, two bottom and bolts, two main bearing bolts, one set of coupling bolts, one set feed pump valves, one set bilge pump valves, one set H.P. piston springs, propeller, screw shaft, & assorted bolts & nuts & wire bars.

The foregoing is a correct description,  
FOR THE CENTRAL MARINE ENGINE WORKS.

(W. GRAY & CO., LD.)

A. Hogarth

Chief Draughtsman.

Manufacturer.

Dates of Survey while building  
During progress of work in shops -- 1915. Sep 23, 24, 27, 28. Oct 1, 3, 5, 11, 12, 14, 20, 22, 25, 26, 27, 28. Nov. 2, 3, 4, 5, 8, 9, 10, 11, 12, 15, 16, 17, 19, 20, 21, 24, 25, 26, 27, 28, 31. Dec 2, 3, 6, 7, 8, 9, 10, 12, 13, 16, 17, 20, 21, 22, 23, 24, 1916. Jan 5, 6, 7, 10, 11, 12, 13, 14, 17, 20, 21, 24, 25, 26, 27, 28, 31. Feb 1, 2, 3, 4, 7, 8, 9, 10, 11, 14, 16, 17, 18, 21, 22, 23, 24, 25, 29. March 1, 2, 9, 10, 13, 14, 21, 24, 27, 28, 31. April 5, 6, 7, 10, 11, 12, 13, 14, 17, 18, 19, 20, 26, 27, 28. May 1, 2, 3, 4, 8, 10, 11, 12, 17, 19, 22, 23, 24, 28. Total No. of visits 132

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " " Yes

Dates of Examination of principal parts—Cylinders 8/5/16 Slides 14/4/16 Covers 8/5/16 Pistons 14/4/16 Rods 22/2/16  
Connecting rods 22/2/16 Crank shaft 13/3/16 Thrust shaft 7/4/16 Tunnel shafts 8/5/16 Screw shaft 6/4/16 Propeller 14/4/16  
Stern tube 13/4/16 Steam pipes tested 10+11/4/16 Engine and boiler seatings 28/4/16 Engines holding down bolts 8/5/16  
Completion of pumping arrangements 10/5/16 Boilers fixed 10/5/16 Engines tried under steam 17/5/16  
Main boiler safety valves adjusted 17/5/16 Thickness of adjusting washers Start Port boiler, — Port valve, — 7/16 Starboard, — 7/16  
Material of Crank shaft Hot steel Identification Mark on Do. 5718 Material of Thrust shaft Hot steel Identification Mark on Do. 5718  
Material of Tunnel shafts Hot steel Identification Marks on Do. 5718 Material of Screw shaft Hot steel Identification Marks on Do. 5718  
Material of Steam Pipes Steel lap-welded Test pressure 600 lbs.

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 Yes If so, state name of vessel S.S. "Ubier" (W. Gray & Co's S.S. No 838)

General Remarks (State quality of workmanship, opinions as to class, &c. Workmanship good

Evaporator fitted on board — coils of same having been tested to 400 lbs & body to 50 lbs water pressure.

The Engines & Boilers of this vessel have been constructed under Special Survey & fitted on board in accordance with the Society's Rules. They are now, in my opinion, in safe working condition & the case is respectfully submitted for the record of LMC 5,16 in the Register Book.

It is submitted that  
this vessel is eligible for  
THE RECORD + LMC 5.16.

The amount of Entry Fee ... £ 2 - - - : When applied for, 31/5/1916  
Special ... £ 34 - 8 - - : When received, 2/6/1916  
Donkey Boiler Fee ... £ ... :  
Travelling Expenses (if any) £ ... :  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute TUE - 6 JUN. 1916  
Assigned + LMC 5.16

MACHINERY CERTIFICATE  
WRITTEN.



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Foundation