

# REPORT ON MACHINERY.

No. 15315

TUE NOV. 28. 1916

Date of writing Report 20<sup>th</sup> Nov. 1916 When handed in at Local Office 21<sup>st</sup> 11/1916 Port of West Hartlepool  
 No. in Survey held at W. Hartlepool Date, First Survey 20<sup>th</sup> July 1915 Last Survey 20<sup>th</sup> Nov. 1916  
 Reg. Book. on the Steel S.S. "Carmarthen" (W. Gray & Co's SS No. 868)

Master G. Roberts -14-16 Built at W. Hartlepool By whom built W. Gray & Co. Ltd.  
 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 404 Owners James & David Jenkins (Jenkins Bros. & Sons) Port belonging to Cardiff  
 Nom. Horse Power as per Section 28 404 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders three (3) No. of Cranks 3  
 Dia. of Cylinders 26" 42" 70" Length of Stroke 48" Revs. per minute 64 Dia. of Screw shaft as per rule 14" 6/16" Material of screw shaft as fitted 15 3/4" Scrap 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 Yes If two  
 liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 63"  
 Dia. of Tunnel shaft as per rule 12.98" Dia. of Crank shaft journals as per rule 13.63" Dia. of Crank pin 14" Size of Crank webs 20" x 8 3/4" Dia. of thrust shaft under  
 collars 14" Dia. of screw 18" 0" Pitch of Screw 16-9" No. of Blades 4 State whether moveable No Total surface 102 sq. ft.  
 No. of Feed pumps 2 Diameter of ditto 3 3/4" Stroke 28" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4 1/4" Stroke 28" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines three (3) Sizes of Pumps 9" x 10 1/2" x 10" duplex No. and size of Suctions connected to both Bilge and Donkey pumps  
 in Engine Room four (4), 3 1/2" 5 1/2" x 3 1/2" x 5 In Holds, &c. six (6), 3 1/2"  
 in tunnel, one, 3 1/2"  
 No. of Bilge Injections One size 6 1/2" Connected to condenser, or to circulating pump pump 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 brass covering plate Yes  
 What pipes are carried through the bunkers None How are they protected  
 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 14/7/16 of Stern Tube 14/7/16 Screw shaft and Propeller 26/9/16  
 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 6729 sq. ft. Is Forced Draft fitted No No. and Description of Boilers Three (3), Single-ended  
 Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 20/6/16 No. of Certificate 3433  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 63 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 15" Mean dia. of boilers 15-3" Length 11-0" Material of shell plates Steel  
 Thickness 1 3/32" Range of tensile strength 27/30 tons Are the shell plates welded or flanged Both Descrip. of riveting: cir. seams 3ble, lap  
 long. seams 3ble, dble. 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 rivets 86.6 Working pressure of shell by rules 183 lbs. Size of manholes in shell 16" x 12"  
 plate 85.5 No. and Description of Furnaces in each boiler Three (3), Brighton Material Steel Outside diameter 46 1/2"  
 Length of plain part top Corrug Thickness of plates crown 9/16 Description of longitudinal joint welded No. of strengthening rings Corrug  
 bottom Working pressure of furnace by the rules 191 lbs. Combustion chamber plates: Material Steel Thickness: Sides 10/16" Back 10/16" Top 10/16" Bottom 10/16"  
 Pitch of stays to ditto: Sides 8 3/4" x 8 1/2" Back 8 3/4" x 8 3/4" Top 9 5/8" x 7 1/2" 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 8 3/4" x 8 1/2" Working pressure by rules 192 lbs. End plates in steam space:  
 Material Steel Thickness 1 3/8" Pitch of stays 22 1/2" x 20" How are stays secured dble. nuts Working pressure by rules 186 lbs. Material of stays steel  
 Diameter at smallest part 3.161" Area supported by each stay 22 1/2" x 20" Working pressure by rules 181 lbs. Material of Front plates at bottom steel  
 Thickness 1" Material of Lower back plate steel Thickness 1 5/16" Greatest pitch of stays 15" x 8 3/8" Working pressure of plate by rules 206 lbs.  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" Material of tube plates steel Thickness: Front 1" Back 3/4" 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 3 1/5" Distance apart 7 1/2" Number and pitch of stays in each 2, 9 5/8"  
 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  
 No. of Visits 8 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:— Cast-iron 4-bladed propeller, Screw shaft fitted with continuous brass liners, 2 top end & 2 bottom end (connecting rod) bolts & nuts, 2 main bearing bolts & nuts, one set coupling bolts, 2 feed & 2 bilge pump valves, one set H.P. piston springs, 24 spring liners for H.P. piston, fire-bars & furnace front baffle plates—sufficient for one boiler, & assorted bolts & nuts & iron bars.

The foregoing is a correct description,  
FOR THE CENTRAL MARINE ENGINE WORKS,  
(W. Gray & Co. Ltd.)

*John Williams* Manufacturer.  
ASSISTANT MANAGER.

Dates of Survey while building	{	During progress of work in shops --	1915 July 20, 21, 22, Sep. 21, Dec. 13, 16, 17, 20, 22, 24, 1916 Jan. 7, 10, 11, 12, 13, 14, 17, 18, 19, 21, 24, 26, 27, 28, Feb. 8, 21, 23, 24, March 1, 23, 24, 27, 28, 29, 31, April 10, 11, 12, 13, 14, 17, 18, 19, 20, 27, 28, May 1, 2, 3, 4, 5, 8, 7, 10, 11, 12, 13, 16, 18, 19, 22, 23, 26, 30, 31, June 2, 5, 6, 8, 9, 15, 16, 19, 20, 21, 22, 23, 27, 28, 29, July 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 18, 19, 20, 21, 24, 25, 26, 27, 28, Aug. 1, 2, 3, 4, 7, 8, 22, Sep. 13, 14, 15, 16, 19, 20, 22, 25, 26, 27, 28, 29, Oct. 2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 16, 17, 19, 20, 23, 25, 26, 27, 30, Nov. 2, 3, 6, 7, 8, 9, 10, 14, 15, 17, 20.
		During erection on board vessel --	
		Total No. of visits	148.
			Is the approved plan of main boiler forwarded herewith <i>Yes</i>

Dates of Examination of principal parts—Cylinders 27/9/16 Slides 11/10/16 Covers 20/10/16 Pistons 9/10/16 Rods 6/10/16  
Connecting rods 19/9/16 Crank shaft 25/9/16 Thrust shaft 25/9/16 Tunnel shafts 28/9/16 Screw shaft 25/9/16 Propeller 25/9/16  
Stern tube 19/7/16 Steam pipes tested 27/10/16 Engine and boiler seatings 13/9/16 Engines holding down bolts 25/10/16  
Completion of pumping arrangements 27/10/16 Boilers fixed 23/10/16 Engines tried under steam 8/11/16  
Main boiler safety valves adjusted 8/11/16 Thickness of adjusting washers Port Boiler 3/8" Middle Boiler 11/32" Starboard Boiler 7/16"  
Material of Crank shaft Scrap Iron Identification Mark on Do. 5806 Material of Thrust shaft Scrap Iron Identification Mark on Do. 5806  
Material of Tunnel shafts do. Identification Marks on Do. 5806 Material of Screw shafts do. Identification Marks on Do. 5806  
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. Histon (W. Gray & Co. SS No. 807)*

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

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

The workmanship is good. The Engines & Boilers of this vessel have been constructed under special survey & fitted on board in accordance with the requirements of the Society's Rules. They are now, in my opinion, in safe-working condition & the case is respectfully submitted for the record of LMC 11.16 in the Register Book.

It is submitted that  
this vessel is eligible for  
THE RECORD + LMC 11.16.

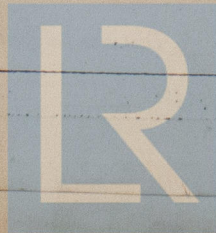
*J.W.D.* 29/11/16.

Amount of Entry Fee ...	£ 3 - -	{	When applied for,
Special ...	£ 40 - 4 -		20/11/16
Donkey Boiler Fee ...	£	{	When received, <i>23/11/16</i>
Travelling Expenses (if any) £			

Committee's Minute *FRI. 1-DEC. 1916*

Assigned *+ LMC 11.16*

MACHINERY CERTIFICATE



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Lloyd's Register  
Foundation

1201 Port.

*W.C.*  
*m. Gray*  
Specially Surveyed

*W.C.* hereby

For boilers  
Horse Power,  
above 200. The  
than £2 2s.

MEM.—In  
all cases where  
to be defrayed

No. *489*

his request is made

Foreign Shipping, which

the Committee use

that neither the Comm

port or certificate issued

for any error of judgment

RECEIVED

Secretary

Lloyd's Register

MIDLANDS