

# REPORT ON MACHINERY.

No. 15567

Standard "A"

Received at London Office

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Mab report 10263

Date of writing Report 7<sup>th</sup> November 1918 When handed in at Local Office 10/11/18 Port of West Hartlepool  
Date, First Survey 5<sup>th</sup> July/18 Last Survey 7<sup>th</sup> Nov. 1918

Survey held at W. Hartlepool  
on the Steel Screw Steamer "War Linnet" (Craig Taylor & Co's S.S. No. 212)  
By whom built Craig Taylor & Co. Ltd.  
When built 1918

Engines made at W. Hartlepool By whom made Central Marine Engine Works when made 1918  
Boilers made at W. Hartlepool By whom made Central Marine Engine Works when made 1918

Registered Horse Power 517 Owners \_\_\_\_\_ Port belonging to \_\_\_\_\_  
Nom. Horse Power as per Section 28 517 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 27", 44", 73" Length of Stroke 48" Revs. per minute \_\_\_\_\_  
Dia. of Screw shaft as per rule 14.7 Material of Input steel  
as fitted 15.2 screw shaft

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  
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 60 1/2"

Dia. of Tunnel shaft as per rule 13.334 Dia. of Crank shaft journals as per rule 14 Dia. of Crank pin 14 1/2" Size of Crank webs 9" x 22 3/4" Dia. of thrust shaft under  
as fitted 13 1/2" as fitted 14 1/2" collars 14 3/4" Dia. of screw 17-6" Pitch of Screw 16-6" No. of Blades 4 State whether moveable No Total surface 98.2 #

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 three (3) Sizes of Pumps Ballast 10 1/2" x 14" x 24" No. and size of Suctions connected to both Bilge and Donkey pumps  
Feed 9 1/2" x 7" x 18" General Service 9 1/2" x 7" x 18"  
In Engine Room 4, 3 1/2" In Holds, &c. 6, 3 1/2"

No. of Bilge Injections one size 13" 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 Some, others 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 Below  
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  
Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door No worked from \_\_\_\_\_

## BOILERS, &c.—(Letter for record S.) Manufacturers of Steel J. Spencer Hors; Stewarts & Lloyds; Steel Coy. of Scotland.

Total Heating Surface of Boilers 7668 # Is Forced Draft fitted Yes No. and Description of Boilers Three (3), Single ended  
Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 4/10/18 No. of Certificate 3515

Can each boiler be worked separately Yes Area of fire grate in each boiler 63.3 # No. and Description of Safety Valves to  
each boiler Two (2), Spring Area of each valve 9.62 # 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 42" Mean dia. of boilers 15-6" Length 11-6" Material of shell plates Steel  
Thickness 1 1/4" Range of tensile strength 28/32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.P.L  
long. seams 3/16, 1/8, 3/32 Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 19 1/2"

Per centages of strength of longitudinal joint rivets 88.3 Working pressure of shell by rules 182 lbs Size of manhole in shell 18" x 12"  
plate 85.6 Size of compensating ring flanged No. and Description of Furnaces in each boiler 3, Dighton's Material Steel Outside diameter 50 3/16"

Length of plain part top Thickness of plates crown 19/32 Description of longitudinal joint welded No. of strengthening rings Corrugated  
bottom Working pressure of furnace by the rules 188 lbs Combustion chamber plates: Material Steel Thickness: Sides 23/32 Back 1/16" Top 23/32 Bottom 23/32

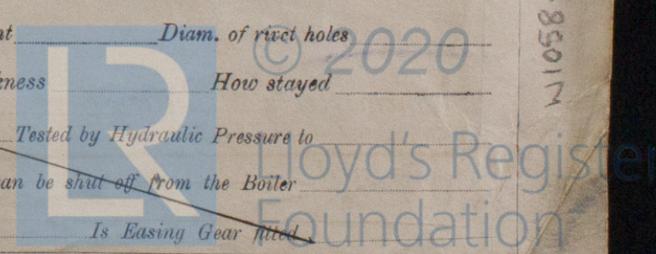
Pitch of stays to ditto: Sides 10 5/8" x 9 1/4" Back 10 1/4" x 8 3/4" Top 10 5/8" x 9 1/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180 lbs  
Material of stays Steel Area at smallest part 2.395 # Area supported by each stay 10 5/8" x 9 1/4" Working pressure by rules 219 End plates in steam space:  
Material Steel Thickness 1/32" Pitch of stays 2 1/4" x 20 1/2" How are stays secured double nuts Working pressure by rules 190 lbs Material of stays Steel

Area at smallest part 8.29 # Area supported by each stay 2 1/4" x 20 1/2" Working pressure by rules 193 Material of Front plates at bottom Steel  
Thickness 31/32" Material of Lower back plate Steel Thickness 27/32" Greatest pitch of stays 14" x 8 3/4" Working pressure of plate by rules 180 lbs

Diameter of tubes 2 3/4" Pitch of tubes 4" x 3 7/8" Material of tube plates Steel Thickness: Front 31/32" Back 3/4" Mean pitch of stays 8" x 9.687"  
Pitch across wide water spaces 13 5/8" Working pressures by rules 180 lbs Girders to Chamber tops: Material Steel Depth and  
thickness of girder at centre 10" x 1 3/4" Length as per rule 35.56" Distance apart 10 5/8" Number and pitch of stays in each 3, 9 1/4"

Working pressure by rules 187 lbs 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 \_\_\_\_\_



11058-0132

IS A DONKEY BOILER FITTED? No. ✓

If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied: - 2 Connecting rod top and 2 bottom end bolts & nuts; 2 main bearing bolts & nuts; 3 crank shaft & 3 tunnel shaft coupling bolts & nuts; one suction & one discharge valve for feed pump, also for ledge pump; 3 main & 3 donkey feed check valves; 6 cylinder cover & 6 steam chest cover studs & nuts; 12 piston pin & ring studs & nuts; one c.i. propeller; 12 condenser tubes & 50 tube ferrules; 100 condenser tube packings; one spring for feed pump escape or 6 air pump valves; 6 studs of each size fitted in boiler mounting covers; 2 packing rings for each piston rod & for each valve; one valve disc for main engine stop valve; 12 boiler tubes (plain); 200 fire bars, including 10 wing bars; 9 furnace baffle plates & furnace front mica plates; 36 boiler purge glasses & 72 rings for same; assorted bolts & nuts, iron bars, split pins & washers; & some parts for circulating pump engine, fan engine, filter & steam winches.

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

John B. Williams, Esq.  
ASSISTANT MANAGER

Manufacturer.

Dates of Survey while building: During progress of work in shops - 1918 July 5, 12, 15, 17, 23, 24, 26, 30, 31. Aug 1, 2, 14, 16, 27. Sep 3, 4, 5, 6, 9, 10, 11, 12, 13, 18, 19, 23, 24, 25, 26, 27, 30. Oct 1, 2, 4, 7, 8, 9, 10, 11, 15, 16, 18, 21, 23, 25, 28, 29, 30. Nov 1, 2, 4, 5, 6, 7. Total No. of visits 57 x 5. at mab. Sep 27, Oct 7, Nov 27, 29. Is the approved plan of main boiler forwarded herewith? Yes. See 3.

Dates of Examination of principal parts - Cylinders 8/10/18 Slides 18/10/18 Covers 30/10/18 Pistons 8/10/18 Rods 3/10/18 Connecting rods 7/10/18 Crank shaft 7/10/18 Thrust shaft 7/10/18 Tunnel shafts 28/10/18 Screw shaft 21/10/18 Propeller 18/10/18 Stern tube 9/10/18 Steam pipes tested 2/11/18 Engine and boiler seatings 28/10/18 Engines holding down bolts 1/11/18 Completion of pumping arrangements 5/11/18 Boilers fixed 31/10/18 Engines tried under steam 6/11/18 Completion of fitting sea connections 7. 10. 18 Stern tube 7. 10. 18 Screw shaft and propeller 28. 10. 18 Main boiler safety valves adjusted 6/11/18 Thickness of adjusting washers Part Boiler - Port valve 5/16; Starboard valve 3/8; Middle " 1; Starboard " 3/8. Material of Crank shaft Ingot Steel Identification Mark on Do. 6010 Material of Thrust shaft Ingot Steel Identification Mark on Do. 6010 Material of Tunnel shafts " " Identification Marks on Do. 6010 Material of Screw shafts " " Identification Marks on Do. 6010 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. 'Har' Waptail (W. Gray & Co's SS No. 9)

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

Evaporator fitted - coils of same having been tested to 400 lbs. & body to 50 lbs. water pressure; brine surface condenser, of non-vacuum type, also installed & fixed in machinery space.

The dock trial of the engines of this vessel extended over 3 hours, up to 83 & mainly at about 78 revs. per minute.

The workmanship is good. The engines & Boilers of this vessel have been constructed under Special Survey & installed on board in accordance with the requirements of the Society's Rules. And are in our opinion, in safe working condition.

The case is respectfully submitted for the record of LMC 11, 18 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + LMC 12, 18 F.D.

J. H. 15  
18-12-15

W. H. Morris  
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ : : When applied for, Special ... £ 117 : 11. 14/12/18. Donkey Boiler Fee ... £ : : When received, Travelling Expenses (if any) £ : : 13. 1. 19. 19.

Committee's Minute FEB. DEC. 20, 1918

Assigned + LMC 12, 18 L. D.



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WEST HARTLEPOOL

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