

## REPORT ON MACHINERY.

No. 15473.

THU. 11 APR. 1918

Received at London Office

Date of writing Report 6<sup>th</sup> April, 1918 When handed in at Local Office

9/4/18 Port of West Hartlepool

No. in Survey held at W. Hartlepool

Date, First Survey 14<sup>th</sup> May 17 Last Survey 27<sup>th</sup> March 1918.

Reg. Book.

on the Steel Screw Steamer "War Country" Standard "C" type - W. Gray &amp; Co. 894 Tons

Master H. Richardson Built at W. Hartlepool

By whom built W. Gray &amp; Co., Ltd.

When built 1918-3

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 430

Owners Shipping Controller (F. W. Patten, Mgrs. Newcastle-on-Tyne)

Port belonging to London

Nom. Horse Power as per Section 28 430

Is Refrigerating Machinery fitted for cargo purposes No.

Is Electric Light fitted Yes.

## ENGINES, &amp;c.—Description of Engines

Triple Expansion

No. of Cylinders three (3) No. of Cranks 3

Dia. of Cylinders 25", 41", 68" Length of Stroke 45" Revs. per minute 75 Dia. of Screw shaft as per rule 13.57" Material of screw shaft 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 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 60"

Dia. of Tunnel shaft as per rule 12.41" Dia. of Crank shaft journals as per rule 13.04" Dia. of Crank pin 13 1/4" Size of Crank webs 8 3/8" x 20 3/4" Dia. of thrust shaft under

collars 13 1/4" Dia. of screw 16-0" Pitch of Screw 16-3" No. of Blades 4 State whether moveable No. Total surface 80 sq. ft.

No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work Yes.

No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work Yes.

No. of Donkey Engines three (3) Sizes of Pumps aux. feed 9 1/2" x 7" x 18" duplex No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4, 3"; in tunnel, one, 3 1/2" In Holds, &amp;c. 8, 3" &amp; 2, 2 1/2"

No. of Bilge Injections one, size 8" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room &amp; 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, except main injection &amp; tank filling secured to plating of built recess. 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 Suctions to forward How are they protected hood-cased

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, &amp;c.—(Letter for record S.) Manufacturers of Steel J. Spencer &amp; Sons, Ltd.

Total Heating Surface of Boilers 6336 sq. ft. 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 11/12/17 No. of Certificate 3481

Can each boiler be worked separately Yes. Area of fire grate in each boiler 51 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 13-9 3/4" Length 11-6" Material of shell plates steel

Thickness 1/8" Range of tensile strength 28 3/4/33 Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams double

long. seams 3/16" double butt Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 18"

Per centages of strength of longitudinal joint rivets 89.4 plate 86 Working pressure of shell by rules 187.5 lbs. Size of manhole in shell 16" x 12"

Size of compensating ring flanged No. and Description of Furnaces in each boiler 3, Sighton's Material steel Outside diameter 43"

Length of plain part top Thickness of plates crown 17/32" Description of longitudinal joint welded No. of strengthening rings corrugated

Working pressure of furnace by the rules 190 lbs. Combustion chamber plates: Material steel Thickness: Sides 11/16" Back 3/4" Top 11/16" Bottom 11/16"

Pitch of stays to ditto: Sides 9 3/8" x 9" Back 10 1/2" x 9" Top 9 3/8" x 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 193.4 lbs.

Material of stays steel Area at smallest part 2.066 sq. in. Area supported by each stay 9 3/8" x 9" Working pressure by rules 221 lbs. End plates in steam space:

Material steel Thickness 1/32" Pitch of stays 23 3/4" x 19 1/2" How are stays secured double nuts &amp; Working pressure by rules 181.1 lbs. Material of stays steel

Area at smallest part 8.29 sq. in. Area supported by each stay 23 3/4" x 19 1/2" Working pressure by rules 202 lbs. Material of Front plates at bottom steel

Thickness 3/32" Material of Lower back plate steel Thickness 27/32" Greatest pitch of stays 13 1/2" x 9" Working pressure of plate by rules 187 lbs

Diameter of tubes 2 3/4" Pitch of tubes 4" Material of tube plates steel Thickness: Front 31/32" Back 3/4" Mean pitch of stays 8" x 12"

Pitch across wide water spaces 13 1/2" Working pressures by rules 184.5 lbs. Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 10 1/2" x 1 1/2" Length as per rule 35 1/2" Distance apart 9 3/8" Number and pitch of stays in each 3, 9"

Working pressure by rules 200 lbs. Steam dome: description of joint to shell 96% 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

UPERHEATER. Type Date of Approval of P. 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

all  
furnaces  
revised  
9/19  
Hamm  
18932

002918-002988-0211



IS A DONKEY BOILER FITTED? *No.* ✓

If so, is a report now forwarded? ✓

**SPARE GEAR.** State the articles supplied:— 2 connecting rod top end + 2 bottom end bolts + nuts; 2 main bearing bolts + nuts; 3 crank shaft + 3 tunnel shaft <sup>couplings</sup> bolts + nuts; one suction + one discharge valve for feed pump; one suction + one discharge valve for bilge pump; 3 main + 3 donkey feed check valves; 6 cylinder cover + 6 steam chest cover studs + nuts; 12 piston pin & ring studs + nuts; one cast iron propeller; H.P. piston valve; 10 main condenser tubes; 50 condenser fernules; one opening for feed pump escape valve; one set air pump valves; 6 studs of each size fitted to boiler mountings; 150 fire bars (plain) + 10 wing fire bars; 10 boiler tubes (plain); 2 boiler safety valve springs; 27 furnace baffle plates (sides right + left, top + door); 12 furnace front mica plates; assorted bolts + nuts + iron bars; Some spare parts for circulating pump engine, fan engine + for feed, ballast + several service donkeys. ✓

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

(W. Gray & Co. Ltd.)

*John B. Williams* *J.B.*

Manufacturer.

**Dates of Survey while building** { During progress of work in shops -- 1917 May 14, June 25, 26, 27, 28, July 3, 5, 6, 9, 10, 12, 20, 24, 25, 26, 27, 30, Aug 1, 2, 14, 17, 20, 22, 23, 24, 27, 29, 30, 31  
During erection on board vessel -- Sep 3, 4, 5, 6, 10, 11, 12, 17, 19, 23, 25, Oct 1, 2, 3, 5, 8, 9, 10, 11, 12, 15, 16, 17, 18, 19, 22, 23, 24, 25, 26, 29, 30, Nov 1, 3, 5, 7, 8, 9, 12, 14, 16, 19, 23, 26, 27, 28, 29, Dec 4, 5, 6, 7, 10, 11, 12, 14, 17, 18, 19, 20, 21, 25, 1918 Jan 4, 5, 9, 10, 21, Feb 5, 6, 7, 8, 12, 19, 20, 27 Mar 4, 6, 7, 12, 18, 19, 20, 22, 23, 26, 27.  
Total No. of visits 115.

Is the approved plan of main boiler forwarded herewith *Yes.* ✓

" " " donkey " " " ✓

**Dates of Examination of principal parts**—Cylinders 16/11/17 Slides 28/11/17 Covers 12/2/18 Pistons 26/11/17 Rods 5/10/17  
Connecting rods 24/10/17 Crank shaft 30/10/17 Thrust shaft 30/10/17 Tunnel shafts 9/1/18 Screw shaft 14/11/17 Propeller 12/12/17  
Stern tube 9/1/18 Steam pipes tested 6/2 - 26/3/18 Engine and boiler seatings 24/1/18 Engines holding down bolts 20/3/18  
Completion of pumping arrangements 20/3/18 Boilers fixed 4/3/18 Engines tried under steam 27/3/18  
Completion of fitting sea connections 13/3/18 Stern tube 13/3/18 Screw shaft and propeller 13/3/18  
Main boiler safety valves adjusted 27/3/18 Thickness of adjusting washers *Part M.B. - P. valve 1/2" S. valve 7/16"*  
*middle " " 5/16 " 13/32"*  
*Starb " " 13/32 " 13/32"*  
Material of Crank shaft *Hot Steel* Identification Mark on Do. 5946 Material of Thrust shaft *Hot Steel* Identification Mark on Do. 5946  
Material of Tunnel shafts *do.* Identification Marks on Do. 5946 Material of Screw shafts *do.* Identification Marks on Do. 5946  
Material of Steam Pipes *Steel* ✓ 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 —

If so, state name of vessel *Standard "C" Type of Machinery.*

**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.  
Bronze surface condenser, of non-vacuum type, also fitted + fixed in machinery space.

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. And are now, in my opinion, in safe working condition.

The case is respectfully submitted for the record of *L.M.C. 3,18* in the Register Book.  
FD

It is submitted that  
this vessel is eligible for  
THE RECORD. + L.M.C. 3,18. F.D.

The amount of Entry Fee ... £ : :  
Special *Yes* ... £ 68-17-4  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
When applied for, 5/11/18  
When received, 8/14/18

Committee's Minute

FRI. APR. 1919.

Assigned

+ L.M.C. 3:18 F.D.

MACHINERY CERTIFICATE  
WRITTEN

Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation