

REPORT ON MACHINERY

No. 15496

Standard "C" Type

Received at London Office MON. 3 JUN. 1918

Date of writing Report 25th May 1918 When handed in at Local Office 31/5/18 Port of West Hartlepool

No. in Survey held at W. Hartlepool Date, First Survey 12th July 17 Last Survey 15th May 1918

Reg. Book. on the Steel Screw Steamer "Bar Foam" (W. Gray & Co's SS No. 895) (Number of Visits 108)

Master E. Miller Built at W. Hartlepool By whom built W. Gray & Co. Ld. Tons {Gross 3095.87 Net 1860.38 When built 1918-5

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 (G.B. Harland & Co. Sups) Port belonging to London

Com. Horse Power as per Section 28 430 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 25", 41", 68" Length of Stroke 45" Revs. per minute 75 Dia. of Screw shaft as per rule 13.57" Material of Ingot Steel as fitted 14.5" 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

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 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 3/16" 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 auxiliary 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" ballast 10 1/2" x 12 1/2" x 21" In Holds, &c. 8, 3" & 2, 2 1/2"

No. of Bilge Injections one size 8" 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, except main 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 cross Suctions to forward How are they protected hood-secured

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 & Sons, Ld.

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 7/1/18 No. of Certificate 3483

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" 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 1/8" Range of tensile strength 28 3/4/33 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams long. seams 3/16" double straps 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 Working pressure of shell by rules 187.5 lbs Size of manhole in shell 16" x 12" plate 86"

Size of compensating ring flanged No. and Description of Furnaces in each boiler 3, Brighton'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 bottom

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" 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 1/32" Pitch of stays 23 3/4" x 19 1/2" How are stays secured double nuts & washers 9 3/4" x 3/32"

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

Thickness 3/2" 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 3/32" Back 3/4" Mean pitch of stays 10" x 8"

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 % 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

2220-464700-884700

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 coupling bolts & nuts; one suction & one discharge valve for feed pump, also 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 c.i. propeller; 50 capped ferrules; one spring for feed pump escape valve; one set air pump valves; 6 studs of each size fitted to boiler mountings; 50 fire bars & 10 wing fire bars; 2 rings packing for each piston rod, also for each valve rod & for each feed pump; 90 condenser tube packings; 2 boiler safety valve springs; assorted bolts & nuts, ^{nuts,} iron bars & split pins; one bronze disc for main engine stop valve; some spare parts for circulating pump engine & fan engine; a few spare parts for steam whistles; 12 evaporator gudge flanges & 36 packing rings for same; one filter bucket; & 56 lbs. coir fibre for filter.

The foregoing is a correct description.

FOR THE CENTRAL MARINE ENGINE WORKS,
(W. Gray & Co. Ltd.)

John Williamson
ASSISTANT MANAGER

Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1917. July 12. Aug 1. 2. 3. 13. 14. 15. 20. 22. 27. 29. 30. Sep 3. 4. 5. 10. 11. 18. 19. 25. 27. 28. Oct 1. 2. 3. 5. 9. 10. 11. 12. 15. 17. 18. 23. 24. 25. 26. 30. 31. Nov 1. 2. 5. 6. 7. 8. 9. 12. 14. 16. 19. 21. 22. 23. 26. 27. 28. 29. 30. Dec 3. 4. 5. 6. 7. 10. 11. 12. 14. 17. 18. 19. 21. 1918. Jan 7. 8. 9. 10. 11. 15. 16. 17. 18. 21. 22. 23. 24. 25. 29. 30. Feb 8. 18. 19. 21. 26. 28. Mar 1. 6. 20. 25. 26. Apr 5. 8. 10. 12. 18. 26. 29. May 1. 2. 10. 15. Total No. of visits 108.

Is the approved plan of main boiler forwarded herewith Yes.

Is the approved plan of main boiler forwarded herewith Yes.

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Dates of Examination of principal parts—Cylinders 17/12/17 Slides 8/1/18 Covers 25/3/18 Pistons 8/1/18 Rods 6/11/17 Connecting rods 6/11/17 Crank shaft 7/12/17 Thrust shaft 18/2/18 Tunnel shafts 8/4/18 Screw shaft 18/2/18 Propeller 1/3/18 Stern tube 8/2/18 Steam pipes tested 10/4/18 Engine and boiler seatings 6/3/18 Engines holding down bolts 18/4/18 Completion of pumping arrangements 2/5/18 Boilers fixed 5/4/18 Engines tried under steam 10/5/18 Completion of fitting sea connections 26/4/18 Stern tube 26/4/18 Screw shaft and propeller 26/4/18 Main boiler safety valves adjusted 10/5/18 Thickness of adjusting washers Middle do. 3/8" S. valve 3/8" Starbl. do. 1/32" " 1/32" " 3/8" Material of Crank shaft Best Steel Identification Mark on Do. 5948 Material of Thrust shaft Best Steel Identification Mark on Do. 5948 Material of Tunnel shafts Do Identification Marks on Do. 5948 Material of Screw shafts Do Identification Marks on Do. 5948 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. 'War Country' (W. Gray & Co. Ltd's SS No. 894)

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. Single 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 LMC 5.18 in the Register Book. FD

It is submitted that this vessel is eligible for THE RECORD. + LMC 5.18. F.D.

J.W.D.
3/6/18
J.P.S.

J.W.D.

Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ : : When applied for, Special ... £ 68 - 16 - : 22/5/18. Donkey Boiler Fee ... £ : : When received, Travelling Expenses (if any) £ : : 24/5/18.

Committee's Minute TUE. JUN. 4 - 1918 Assigned + L.M.C. 5.18 J.S.

MACHINERY CERTIFICATE WRITTEN



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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.