

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. Ltd.

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. Ltd.) 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, &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

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 1/2" x 20 1/2" 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 duplex 9 1/2" x 7 x 18"

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, &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, 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 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 1/2" 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%

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, Brighton's

Material steel Outside diameter 43"

Length of plain part top

bottom

Thickness of plates crown

bottom 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"

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

Working pressure by rules 181.1 lbs

Material of stays steel

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 3/2"

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 3/2"

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

Pressure to which each is adjusted

Is Easing Gear fitted

Diameter of Safety Valve

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 flange 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 B. Williams

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. 29. 30. 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. 21. 26. 29. May 1. 2. 10. 15. 108. Total No. of visits

Is the approved plan of main boiler forwarded herewith Yes.

" " " donkey " " " ✓

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 Port Boiler, P. valve 3/8" S. valve 3/8" Middle do. " 3/8" " 1/32" Starb. do. " 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'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.R.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, 24/5/18 Travelling Expenses (if any) £ : : 24/5/18

Committee's Minute Assigned + R. Mc 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.