

REPORT ON MACHINERY.

Standard "H"

Received at London Office

Date of writing Report 3rd October 1918 When handed in at Local Office 8/10/1918 Port of West Hartlepool

No. in Survey held at W. Hartlepool Date, First Survey 16th May 18. Last Survey 26th Sept 1918.

Reg. Book. on the Steel Screw Steamer "War Mango" (W. Gray & Co's 88908)

(Number of Visits)

Tons { Gross 2499.25
Net 1487.53
When built

Master 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 1918

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

Registered Horse Power 266 Owners The Shipping Controller (Alexander & Macrae, Agents) Port belonging to London

Nom. Horse Power as per Section 28 266 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 22", 36", 59" Length of Stroke 39" Revs. per minute 69 Dia. of Screw shaft as per rule 12 1/4" Material of screw shaft as fitted 13" 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 58"

Dia. of Tunnel shaft as per rule 10.86" as fitted 11" Dia. of Crank shaft journals as per rule 11.4" as fitted 11 3/4" Dia. of Crank pin 12" Size of Crank webs 7 1/4" x 18 1/2" Dia. of thrust shaft under collars 12" Dia. of screw 15 1/2" Pitch of Screw 15 3/4" No. of Blades 4 State whether moveable No Total surface 77 sq ft

No. of Feed pumps 2 Diameter of ditto 3" 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 Feed 8 x 6 x 15" Ballast 10 1/2" x 12 1/2" x 18" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3, 3" General Service 8 x 6 x 15" In Holds, &c. 7 x 6, 3"; 6, 3"; 3, 3";

in Tunnel (well) one, 2 1/2"

No. of Bilge Injections one size 10" 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 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 Yes

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 Palmers', J. Spencer & Sons, Steel Coy. of Scotland

Total Heating Surface of Boilers 4500 sq ft Is Forced Draft fitted No No. and Description of Boilers two (2), Single ended

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 21/8/18 No. of Certificate 3508

Can each boiler be worked separately Yes Area of fire grate in each boiler 62 sq ft No. and Description of Safety Valves to each boiler two (2), Spring Area of each valve 8.295 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 34" Mean dia. of boilers 15 1/2" Length 10 1/2" 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, R, L

long. seams 3/16, dble straps Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9" Lap of plates or width of butt straps 19 1/2"

Per centages of strength of longitudinal joint rivets 88.5% plate 85.4% Working pressure of shell by rules 184 lbs Size of manhole in shell 16" x 12"

Size of compensating ring flanged No. and Description of Furnaces in each boiler 3, Dighton's Material Steel Outside diameter 49 3/16"

Length of plain part top bottom Thickness of plates crown bottom 3 7/64" Description of longitudinal joint welded No. of strengthening rings Corrugated

Working pressure of furnace by the rules 185 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/16" Back 2/32" Top 1/16" Bottom 1/16"

Pitch of stays to ditto: Sides 9 3/4" x 9" Back 9 5/8" x 10 1/8" Top 9 3/4" x 9" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 183 lbs.

Material of stays Steel Area at smallest part 2.066 sq in Area supported by each stay 10 1/8" x 9 5/8" Working pressure by rules 191 lbs End plates in steam space:

Material Steel Thickness 1 3/8" Pitch of stays 22" x 21" How are stays secured dble nuts Working pressure by rules 183 lbs Material of stays Steel

Area at smallest part 8.29 sq in Area supported by each stay 22" x 21" Working pressure by rules 186 lbs Material of Front plates at bottom Steel

Thickness 1 3/16" Material of Lower back plate Steel Thickness 1 5/16" Greatest pitch of stays 15 1/4" x 10 1/8" Working pressure of plate by rules 181 lbs.

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates Steel Thickness: Front 1 3/16" Back 3/4" Mean pitch of stays 11 1/4" x 8 3/4"

Pitch across wide water spaces 14 1/4" Working pressures by rules 262 lbs. Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7 7/8" x 1 3/4" Length as per rule 32" Distance apart 9" Number and pitch of stays in each 2, 9 3/4"

Working pressure by rules 180 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

0200-695400-555000

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; 2 main & 2 donkey feed check valves; 6 cylinder cover & 6 steam chest cover studs & nuts; 12 piston pin & ring studs & nuts; one c.i. propeller; 25 condenser tube ferrules; one spring for feed pump escape valve; one set air pump valves; 6 studs of each size fitted to boiler mountings; 58 fire bars, including 8 ring bars; 2 rings packing for each piston rod, & for each valve rod; 90 condenser tube packings; 2 boiler safety valve springs; furnace baffle plates, - 8 right & 8 left side, also 3 top; 6 furnace door plates; 6 links for turning engine chain; assorted bolts & nuts, rivets, iron bars & split pins; some parts for centrifugal pumps & for auxiliary feed, general service & ballast donkey pumps, also for evaporator & steam winches; 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 Williams

Manufacturer.

ASSISTANT MANAGER.

Dates of Survey while building: During progress of work in shops - 1918 May 10, 22, 27. June 4, 6, 10, 11, 13, 20, 21, 26, 27. July 1, 2, 3, 4, 8, 9, 11, 12, 16, 17, 18, 19, 23, 24, 25. During erection on board vessel - 26, 29, 30, 31. Aug 1, 2, 13, 14, 15, 16, 19, 21, 23, 27, 29. Sep 4, 9, 10, 12, 16, 17, 18, 24, 26. Total No. of visits 52.

Is the approved plan of main boiler forwarded herewith Yes.

" " " donkey " " " Yes.

Dates of Examination of principal parts - Cylinders 13/8/18 Slides 20/8/18 Covers 16/9/18 Pistons 13/8/18 Rods 16/8/18 Connecting rods 16/8/18 Crank shaft 29/7/18 Thrust shaft 29/7/18 Tunnel shafts 9/9/18 Screw shaft 14/8/18 Propeller 16/8/18 Stern tube 23/8/18 Steam pipes tested 27/8/18 Engine and boiler seatings 4/9/18 Engines holding down bolts 10/9/18 Completion of pumping arrangements 9/9/18 Boilers fixed 10/9/18 Engines tried under steam 24/9/18 Completion of fitting sea connections 17/9/18 Stern tube 17/9/18 Screw shaft and propeller 17/9/18 Main boiler safety valves adjusted 24/9/18 Thickness of adjusting washers S. boiler - P. valve 3/8" S. valve 15/32" 7/16"

Material of Crank shaft Best Steel Identification Mark on Do. 6006 Material of Thrust shaft Best Steel Identification Mark on Do. 6006

Material of Tunnel shafts Do. Identification Marks on Do. 6006 Material of Screw shafts Do. Identification Marks on Do. 6006

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. Yes.

Have the requirements of Section 49 of the Rules been complied with Yes.

Is this machinery duplicate of a previous case Yes. If so, state name of vessel S.S. "War Shell" (W. Gray & Co's No. 901)

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 dock trial of the Engines of this vessel extended over 3 3/4 hours up to 80 & mainly at about 76 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 now, in my opinion, in safe working condition.

The case is respectfully submitted for the record of LMC 9, 18 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + LMC 9. 18

J. M. 18 11-10-18 A.R.R.

The amount of Entry Fee ... £ : : : When applied for, Special ... £ 55-: 10-8 3/10/1918 Donkey Boiler Fee ... £ : : : When received, Travelling Expenses (if any) £ : : : 8/10/1918

J. M. 18

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. OCT. 25. 1918

Assigned

+ LMC 9. 18

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.