

Rpt. 4. REPORT ON MACHINERY. No. 27580

Received at London Office THU. 7--AUG. 1919

Date of writing Report 19 When handed in at Local Office -6 AUG 1919 Port of SUNDERLAND

No. in Survey held at Sunderland Date, First Survey 21 Jan Last Survey 30th July 1919

Reg. Book. 319 WAR HAGARA (Number of Visits 26) Gross 5578 Net 3367

Master Shield Built at Sunderland By whom built Sir Jas. Craig & Sons (676) When built 1919

Engines made at Sunderland By whom made J. Clark & Co (1088) when made 1919

Boilers made at Sunderland By whom made J. Clark & Co (1088) when made 1919

Registered Horse Power Owners Shipping Controller Port belonging to London

Com. Horse Power as per Section 28 517 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted 410

ENGINES, &c.—Description of Engines Triple No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 27, 44, 73 Length of Stroke 48 Revs. per minute 78 Dia. of Screw shaft 15 1/2 as per rule 14 1/2 Material of screw shaft 2 iron

Is the screw shaft fitted with a continuous liner the whole length of the stern tube 410 Is the after end of the liner made water tight

Is the propeller boss 410 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 If two

liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 5'-0 1/2"

Dia. of Tunnel shaft 13-32 as per rule 14 1/2 Dia. of Crank shaft journals 14 1/2 as fitted 14 1/2 Dia. of Crank pin 10 1/2 Size of Crank webs 22 1/2 x 9 Dia. of thrust shaft under

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 9

No. of Feed pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work 410

No. of Bilge pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work 410

No. of Donkey Engines 3 Sizes of Pumps 10 1/2, 14, 24, 2, 20, 9 1/2, 7, 16 No. and size of Suctions connected to both Bilge and Donkey pumps

in Engine Room Four 3 1/2" x 1, 3 1/2" to tank oil made from cargo pump Holds, &c. One 8' in each bilge tank, 2, 2 1/2 in aft hold

on tunnel flat, one 2 1/2 in tunnel with two 3" in fore and aft hold on deep tank top.

No. of Bilge Injections 1 sizes 13" Connected to circulating pump 410 Is a separate Donkey Suction fitted in Engine room & size 410 3 1/2"

Are all the bilge suction pipes fitted with roses 410 Are the roses in Engine room always accessible 410 Are the sluices on Engine room bulkheads always accessible none

Are all connections with the sea direct on the skin of the ship 410 Are they Valves or Cocks Both

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates 410 Are the Discharge Pipes above or below the deep water line above

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel 410 Are the Blow Off Cocks fitted with a spigot and brass covering plate 410

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 410

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges 410

Is the Screw Shaft Tunnel watertight 410 Is it fitted with a watertight door No worked from access by trunk

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel Spence & Sons

Total Heating Surface of Boilers 7668 4 Is Forced Draft fitted 410 No. and Description of Boilers Three Single iron

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 2.7.19, 4.7.19 No. of Certificate 3579, 3581

Can each boiler be worked separately 410 Area of fire grate in each boiler 63 9 No. and Description of Safety Valves to

each boiler Two spring valves Area of each valve 9.64" Pressure to which they are adjusted 185 lbs Are they fitted with easing gear 410

Smallest distance between boilers or uptakes and bunkers or woodwork way between Mean dia. of boilers 15-6 Length 11.7 Material of shell plates S

Thickness 1 1/4 Range of tensile strength 28.32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap riv.

Long. seams 1 1/4 riv. 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 Size of manhole in shell 12 x 16

Size of compensating ring 14 1/2 No. and Description of Furnaces in each boiler 3 Single iron Material S Outside diameter 4.2 3/4

Length of plain part top 12 Thickness of plates crown 12 Description of longitudinal joint Welded No. of strengthening rings -

bottom 32 Thickness: Sides 23/32 Back 1/6 Top 23/32 Bottom 23/32

Working pressure of furnace by the rules 187 Combustion chamber plates: Material S Thickness: Sides 23/32 Back 1/6 Top 23/32 Bottom 23/32

Pitch of stays to ditto: Sides 10 5/8 x 9 1/4 Back 8 3/4 x 10 1/2 Top 10 5/8 x 9 1/4 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180

Material of stays S Area at smallest part 2.36 0.1 Area supported by each stay 98.2 0.1 Working pressure by rules 216 End plates in steam space:

Material S Thickness 1 3/32 Pitch of stays 2 1/2 x 20 1/2 How are stays secured A 2 1/4" Working pressure by rules 190 Material of stays S

Area at smallest part 8.29 Area supported by each stay 482 0.1 Working pressure by rules 186 Material of Front plates at bottom S

Thickness 3/16 Material of Lower back plate S Thickness 27/32 Greatest pitch of stays 13 5/8 x 8 3/4 Working pressure of plate by rules 183

Diameter of tubes 2 3/4 Pitch of tubes 4 x 3 7/8 Material of tube plates S Thickness: Front 3/16 Back 3/4 Mean pitch of stays 9 1/2

Pitch across wide water spaces 13 5/8 Working pressure by rules 184 Girders in Chamber tops: Material S Depth and

Thickness of girder at centre 10 x 1 3/4 Length as per rule 24 1/2 Distance apart 10 5/8 Number and pitch of stays in each 3, 9 1/4

Working pressure by rules 187 Steam dome: description of joint to shell 18 3/4 % of strength of joint -

Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes 2 1/2

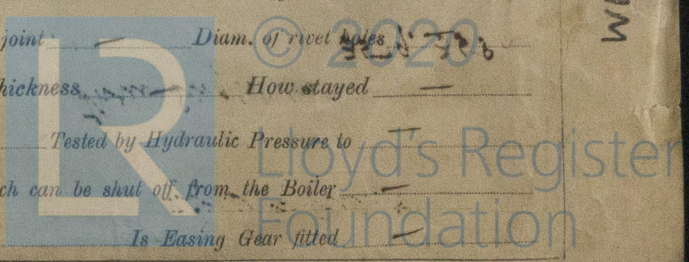
Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

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

W1196-0D55



IS A DONKEY BOILER FITTED? *NO*

If so, is a report now forwarded? *—*

SPARE GEAR. State the articles supplied:— *Two top end, two bottom end connecting rod bolts and nuts, two main bearing bolts, one set coupling bolts, one set pin and knee pump valves, assorted bolts and nuts. 2000 of various sizes on propeller*

The foregoing is a correct description,

FOR GEORGE CLARK LIMITED

169871111

Manufacturer.

Dates of Survey while building { During progress of work in shops -- *1919 Jan 21 30 Feb 4 14 Mar 26 10 17 Apr 24 7 May 9 12 20 26 27 June 2 3 4 July 2 4 10*
During erection on board vessel -- *11. 16. 23 30*
Total No. of visits *(96)*

Is the approved plan of main boiler forwarded herewith *410*

" " " donkey " " " *—*

Dates of Examination of principal parts—Cylinders *3.4.19* Slides *3.4.19* Covers *21.2.19* Pistons *9.5.19* Rods *3.4.19*
Connecting rods *3.4.19* Crank shaft *3.3.19* Thrust shaft *3.4.19* Tunnel shafts *3.4.19* Screw shaft *3.4.19* Propeller *3.4.19*
Stern tube *27.5.19* Steam pipes tested *27.5. 11.7.19* Engine and boiler seatings *2.7.19* Engines holding down bolts *2.7.19*
Completion of pumping arrangements *2.7.19* Boilers fixed *10.7.19* Engines tried under steam *15.7.19*
Completion of fitting sea connections *2.6.19* Stern tube *2.7.19* Screw shaft and propeller *2.7.19*
Main boiler safety valves adjusted *15.7.19* Thickness of adjusting washers *P.B. 1 1/2 5 3/8 L.M.C. 13 1/2 5 3/8 S.P. 13 1/2 5 3/8*
Material of Crank shaft *Iron* Identification Mark on Do. *1088 GAH* Material of Thrust shaft *Iron* Identification Mark on Do. *1088 GAH*
Material of Tunnel shafts *Iron* Identification Marks on Do. *1088 GAH* Material of Screw shafts *Iron* Identification Marks on Do. *1088 GAH*
Material of Steam Pipes *Iron* Test pressure *540 lbs sq"*

Is an installation fitted for burning oil fuel *410*

Is the flash point of the oil to be used over 150° F. *410*

Have the requirements of Section 49 of the Rules been complied with *410*

Is this machinery duplicate of a previous case *410* If so, state name of vessel *"War Pathen"*

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

The machinery of this vessel has been built under special survey, the materials and workmanship are sound and good and under the vessel's length in my opinion to have used 1st-L.M.C. 7.19. Litter for oil fuel 7.19 F.P. above 150° F.

It is submitted that this vessel is eligible for

TRADE RECORD + L.M.C. 7.19 F.D.

Fitted for oil fuel 7.19
F.P. above 150° F.

ReM
8/8/19

ARR

The amount of Entry Fee ... £ *9* : - :
Special ... £ *137* : *11* :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, *1.8.1919*
When received, *11/8/19 1919 RBN 12*

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

Committee's Minute *TUE. AUG. 12. 1919*

Assigned *Thurs 7.19*

*Notes for oil fuel 7.19
F.P. above 150° F*



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Foundation