

REPORT ON MACHINERY.

REC'D NEW YORK Dec. 17-1918.

Date of writing Report: REC'D NEW YORK Dec. 4-1918. Received at London Office: TUE. 31 DEC. 1918
 When handed in at Local Office: _____ Port of: Port Arthur, Ontario
 No. in Survey held at: Port Arthur, Ont. Date, First Survey: _____ Last Survey: 1918
 Reg. Book: _____ on the Steel Single Screw Steamer "War Karma" (Number of Visits): _____

Master: _____ Built at: Port Arthur, Ont. By whom built: Port Arthur Shipbldg Co. Tons: Gross 2264.08 Net 1341.73
 When built: 1918

Engines made at: Port Arthur, Ont. By whom made: Port Arthur Shipbldg Co. when made: 1918
 Boilers made at: Port Arthur, Ont. By whom made: Port Arthur Shipbldg Co. when made: 1918

Registered Horse Power: 1520 Owners: Imperial Munitions Board Port belonging to: Port Arthur, Ont.
 Nom. Horse Power as per Section 28: 261-32 Is Refrigerating Machinery fitted for cargo purposes: No Is Electric Light fitted: Yes

ENGINES, &c.—Description of Engines: 3 cyl. triple expansion No. of Cylinders: 3 No. of Cranks: 3
 Dia. of Cylinders: 20 1/2 x 34 x 56 Length of Stroke: 40 Revs. per minute: 80 Dia. of Screw shaft: 11.95 Material of screw shaft: Forged 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: 4'6"

Dia. of Tunnel shaft: 10.69 Dia. of Crank shaft journals: 11.77 Dia. of Crank pin: 11.5 Size of Crank webs: 7 1/2 x 20 x 22 Dia. of thrust shaft under
 collars: 12" Dia. of screw: 1 1/4" Pitch of Screw: 1 1/4" No. of Blades: 4 State whether moceable: No Total surface: 70.8 sq ft

No. of Feed pumps: 3 Diameter of ditto: 10 Stroke: 24 Can one be overhauled while the other is at work: Yes
 No. of Bilge pumps: 3 Diameter of ditto: 20 Stroke: 20 Can one be overhauled while the other is at work: Yes

No. of Donkey Engines: One Sizes of Pumps: 3 1/2 x 8 1/2 x 10 4 1/2 x 6 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps
 in Engine Room: 3 7 x 7 x 10 2-3" In Holds, &c.: Five 3"

No. of Bilge Injections: 1 sizes: 6" Connected to condenser, or to circulating pump: Yes Is a separate Donkey Suction fitted in Engine room & size: Yes
 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: Yes

Are all connections with the sea direct on the skin of the ship: Yes Are they Valves or Cocks: Valves & cocks
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates: No 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: Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate: Yes
 What pipes are carried through the bunkers: Aux steam pipe How are they protected: Sheet iron guard

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: Yes worked from: Upper engine platform

BOILERS, &c.—(Letter for record: S) Manufacturers of Steel: Lukens U.S.A.

Total Heating Surface of Boilers: 4670 Is Forced Draft fitted: No No. and Description of Boilers: 2 Scotch single ended
 Working Pressure: 190 Tested by hydraulic pressure to: 285 lbs. Date of test: SEPT. 28 No. of Certificate: 15

Can each boiler be worked separately: Yes Area of fire grate in each boiler: 67.5 No. and Description of Safety Valves to
 each boiler: One twin 3" spring loaded Area of each valve: 7.07 Pressure to which they are adjusted: 190 lbs. Are they fitted with easing gear: Yes

Smallest distance between boilers or uptakes and bunkers or woodwork: 15" Mean dia. of boilers: 15'0" Length: 11'0" Material of shell plates: Steel
 Thickness: 1.5 Range of tensile strength: 28 to 32 Tons Are the shell plates welded or flanged: No Descrip. of riveting: cir. seams L.S.R.

long. seams: DBS treble riveted Diameter of rivet holes in long. seams: 1 1/2 Pitch of rivets: 10" + 5" Lap of plates or width of butt straps: 21 x 1.156
 Per centages of strength of longitudinal joint: 87.526 Working pressure of shell by rules: 217.93 Size of manhole in shell: 12 x 16

Size of compensating ring: 2'9" x 2'9" x 1.5 No. and Description of Furnaces in each boiler: 3 Morrison each Boiler Material: Steel Outside diameter: 49.8125
 Length of plain part: 8.8125 Thickness of plates: 6.51 Description of longitudinal joint: Welded No. of strengthening rings: _____

Working pressure of furnace by the rules: 218.9 Combustion chamber plates: Material: Steel Thickness: Sides: 6.25 Back: 7.75 Top: 5.62 Bottom: 6.25
 Pitch of stays to ditto: Sides: 6.875 Back: 6.875 Top: 7 x 7.5 If stays are fitted with nuts or riveted heads: Nuts Working pressure by rules: 192

Material of stays: Steel Area at smallest part: 1.26 Area supported by each stay: 52.5 sq in Working pressure by rules: 208 End plates in steam space:
 Material: Steel Thickness: 1.217 Pitch of stays: 15 x 16.5 How are stays secured: Single nuts Working pressure by rules: 206.4 Material of stays: Steel

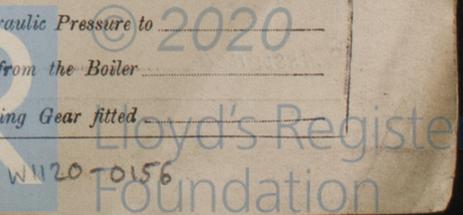
Area at smallest part: 4.909 Area supported by each stay: 247.5 Working pressure by rules: 206 Material of Front plates at bottom: Steel
 Thickness: 8.125 Material of Lower back plate: Steel Thickness: 6.875 Greatest pitch of stays: 6.875 x 13.5 Working pressure of plate by rules: 194.4

Diameter of tubes: 3.25 Pitch of tubes: 2.25 x 9.25 Material of tube plates: Steel Thickness: Front: 7.75 Back: 7.8125 Mean pitch of stays: 11"
 Pitch across wide water spaces: 13.75 Working pressures by rules: 194.4 Girders to Chamber tops: Material: Steel Depth and
 thickness of girder at centre: 8.625 x 1.5 Length as per rule: 30" Distance apart: 7.5 Number and pitch of stays in each: 3 x 7

Working pressure by rules: 220 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: _____



IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—Two connecting rod top end bolts and nuts, 2 connecting rod bottom end bolts and nuts, 2 main bearing bolts, 1 set coupling bolts, 1 set feed and bilge pump valves, 1 set piston springs, 1 quantity assorted bolts and nuts, iron of various sizes with following additions, 10 gauge glasses for main boilers, one set air pump valves, 1 set circulating pump valves, 1 set feed pump valves, 4 patent stays for main boiler, 1 spare propeller, 25 condenser pipe tubes and twelve boiler tubes.

The foregoing is a correct description,

Port Arthur Shipbuilding Co. Limited.

For *J. Waige* General Manager

Manufacturer.

Dates of Survey while building: During progress of work in shops - - - JULY 8 AUGUST 12 SEPT. 15 OCT 12 NOV 5 VISITS
During erection on board vessel - - -
Total No. of visits 52 VISITS

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

Is the approved plan of donkey boiler forwarded herewith

Dates of Examination of principal parts—Cylinders Slides Covers Pistons Rods

Connecting rods Crank shaft Thrust shaft Tunnel shafts Screw shaft Propeller

Stern tube OCT 25th 1918 Steam pipes tested NOV 3rd 1918 Engine and boiler seatings OCT 28th 1918 Engines holding down bolts

Completion of pumping arrangements NOV 14th 1918 Boilers fixed OCT 27th 1918 Engines tried under steam NOV 12th 1918

Completion of fitting sea connections Stern tube Screw shaft and propeller

Main boiler safety valves adjusted NOV 13th 1918 Thickness of adjusting washers 1/2"

Material of Crank shaft *Steel* Identification Mark on Do. Material of Thrust shaft *Steel* Identification Mark on Do.

Material of Tunnel shafts *Steel* Identification Marks on Do. Material of Screw shafts *Steel* Identification Marks on Do.

Material of Steam Pipes *STEEL* Test pressure 570 lbs.

Is an installation fitted for burning oil fuel 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 *"War Horus" report no 37*

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

These engines and boilers have been built under special survey with these rules and approved plans.

*The workmanship and materials are good and the engines and boilers will be eligible in my opinion to receive the notation *LMC 11.18*

It is submitted that this vessel is eligible for THE RECORD. + LMC 11.18.

J. Waige
10/11/19

J. Mac Colquhoun
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ 15 : 00 :
Special ... £ 165 : 00 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, NOV-22 1918
When received, NOV-22 1918

Committee's Minute

FRI. 10 JAN. 1919

Assigned

+ LMC 11.18

MACHINERY CERTIFICATE
WRITTEN



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Lloyd's Register Foundation

Rpt. 13.

Port of

No. in Reg. Book

Owners

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Certificate (if required) to be sent to
The Surveyors are requested not to write on or below the space for Committee's Minute.