

Rpt. 4.

REC'D NEW YORK Dec. 17-1918.

# REPORT ON MACHINERY.

No. 31  
TUE. 31 DEC. 1918

Date of writing Report Nov 25 1918 REC'D NEW YORK Dec. 4-1918.  
When handed in at Local Office

Received at London Office  
Port of PORT ARTHUR ONTARIO

No. in Survey held at PORT ARTHUR ONTARIO Date, First Survey 9-29-17 Last Survey 10-30-1918  
Reg. Book. on the Steam Single Screw Steamer "War Horns." (Number of Visits)

Master Port Arthur, Ont. Built at Port Arthur, Ont. whom built Port Arthur Ship Bldg Co. When built 1918  
Engines made at PORT ARTHUR ONT By whom made PORT ARTHUR SHIPBUILDING CO when made 1918

Boilers made at PORT ARTHUR ONT. By whom made PORT ARTHUR SHIPBUILDING CO when made 1918

Registered Horse Power 1520 Owners IMPERIAL MUNITION BOARD Port belonging to Port Arthur, Ont.  
Nom. Horse Power as per Section 28 267.32 Is Refrigerating Machinery fitted for cargo purposes NO Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines 3 cycle 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 12 1/2 Material of 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 ✓ 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 10.94 Dia. of Crank shaft journals 11.48 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 14 9" Pitch of Screw 14 6" No. of Blades 4 State whether moveable 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 B 7 1/2 X 8 1/2 X 10 A 9 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 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 5) Manufacturers of Steel Luke's, U.S.A.  
Total Heating Surface of Boilers 4670 Is Forced Draft fitted NO No. and Description of Boilers Scotch Single Ended  
Working Pressure 190 Tested by hydraulic pressure to 285 lbs. Date of test SEPT 12 1918 No. of Certificate 14  
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 7.74 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 2.8 R.  
long. seams 5 Rivets to 6" Diameter of rivet holes in long. seams 1 1/2 Pitch of rivets 10" X 5" Lap of plates or width of butt straps 21 X 1.156  
Per centages of strength of longitudinal joint rivets 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 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 5" X 6.5 How are stays secured single with 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 9.25 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 \_\_\_\_\_

003891-003898-0044



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, two connecting rod bottom end bolts and nuts. Two main bearing bolts, one set of coupling bolts, one set of feed and bilge pump valves, one set of piston springs, one quantity of assorted bolts and nuts, iron of various sizes with following additions. 10 gauge glasses for main boilers, one set of air pump valves, 1 set circulating pump valves, one set feed pump valves, 4 patent straps for main boiler, one spare propeller, 25 condenser pipe tubes, and 12 boiler tubes.*

The foregoing is a correct description,

Port Arthur Shipbuilding Co. Limited.

*L. J. Haige*  
General Manager

Manufacturer.

Dates of Survey while building { During progress of work in shops - - }  
{ During erection on board vessel - - - }  
Total No. of visits

*AUG. 15. SEPT. 20 OCT 22 101AL 57*

Is the approved plan of main boiler forwarded herewith *No* ✓

" " " donkey " " "

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

Connecting rods Crank shaft Thrust shaft Tunnel shafts Screw shaft Propeller *SEPT. 1918*

Stern tube *10-4-18* Steam pipes tested *10-19-18* Engine and boiler seatings *SEPT 27-18* Engines holding down bolts

Completion of pumping arrangements *10-29-18* Boilers fixed *OCT 5-18* Engines tried under steam *OCT 26-18*

Completion of fitting sea connections *10-3-18* Stern tube *10-4-18* Screw shaft and propeller *OCT 5-18*

Main boiler safety valves adjusted *OCT 27-18* Thickness of adjusting washers *1/2"*

Material of Crank shaft *Steel* Identification Mark on Do. *LR. 1161, 1124* Material of Thrust shaft *Steel* Identification Mark on Do. *LR. 1200*

Material of Tunnel shafts *Steel* Identification Marks on Do. *1176, 1229, 1145* Material of Screw shafts *Steel* Identification Marks on Do. *LR. 1144*

Material of Steam Pipes *Steel* Test pressure *510 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 *No* ✓ If so, state name of vessel ✓

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

*These engines and boilers have been built under special survey with the 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 10.18*

It is submitted that  
this vessel is eligible for  
THE RECORD. + LMC 10.18.

*JWD. 10/1/19.*

*Thomas MacLachlan*  
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... *£ 15 : 00* : When applied for,  
Special ... *£ 165 : 00* : *NOV 21 1918*  
Donkey Boiler Fee ... *£* : : When received,  
Travelling Expenses (if any) *£* : : *NOV 21 1918*

Committee's Minute

Assigned

WRITTEN.

*101AL 57*

*+ LMC 10.18*



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Foundation