

## REPORT ON MACHINERY.

No. 51

Received at London Office

REC'D NEW YORK July 12-1918.  
 Date of writing Report 20 June 1918 When handed in at Local Office 28 June 1918 Port of Toronto  
 No. in Survey held at Toronto Date, First Survey 10 & 11/17 Last Survey 20 June 1918  
 Reg. Book. on the S.S. TROJA Tons { Gross 2715.06  
 Net 1663

Master Built at Toronto By whom built The Thor Iron Works When built 1918  
 Engines made at Toronto By whom made John Englis Co. Ltd when made 1918  
 Boilers made at Toronto By whom made John Englis Co. Ltd when made 1918  
 Registered Horse Power 1400 Owners Great Lakes Transportation Co. Port belonging to Montreal  
 Nom. Horse Power as per Section 28 253 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Inverted Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders  $20 \times 33\frac{1}{2} \times 55$  Length of Stroke 40 Revs. per minute 80 Dia. of Screw shaft as per rule 11.7 as fitted 12 Material of screw shaft 10H Steel  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube No liners Is the after end of the liner made water tight in the propeller boss 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  
 Dia. of Tunnel shaft as per rule 10.42 as fitted 10.5 Dia. of Crank shaft journals as per rule 10.94 as fitted 10.16 Dia. of Crank pin 11 Size of Crank webs 20.5 x 3.5 Dia. of thrust shaft under collars 11 Dia. of screw 13.0 Pitch of Screw 13.6 No. of Blades 4 State whether moveable Solid Total surface 61 ft  
 No. of Feed pumps 2 Diameter of ditto 10 x 5 Stroke 12 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 1 Diameter of ditto 5 Stroke 12 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 4 Sizes of Pumps  $7\frac{1}{2} \times 8\frac{1}{2} \times 6$  6 x 5  $\frac{3}{4} \times 6$  No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 2.3" Suc. 1.3" Direct. Stokehold 2.3" Suc In Holds, &c. 2.3" Suc forward hold. 2.3" Suc aft. hold  
 1.3" Suction tunnel well  
 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 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 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 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 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 Main Deck  
**BOILERS, &c.**—(Letter for record S) Manufacturers of Steel Carnegie Steel Co

Total Heating Surface of Boilers 4534 ft Is Forced Draft fitted No No. and Description of Boilers 2, S.E. multitubular  
 Working Pressure 185 lb. Tested by hydraulic pressure to 280 Date of test 24 & 30 June 1918 No. of Certificate 18, 19  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 63 ft No. and Description of Safety Valves to each boiler Two Spring loaded Area of each valve 4.06 Pressure to which they are adjusted 185 lb. Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 1.6 Mean dia. of boilers 14.0 Length 12.0 Material of shell plates Steel  
 Thickness  $1\frac{1}{4}$  Range of tensile strength 25-32,000 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Double long. seams Triple Diameter of rivet holes in long. seams  $1\frac{1}{16}$  Pitch of rivets 9 Lap of plates on width of butt straps  $19\frac{1}{4}$   
 Per centages of strength of longitudinal joint rivets 89.2 plate 85.4 Working pressure of shell by rules 200 Size of manhole in shell 11 x 15  
 Size of compensating ring 34 x 30 No. and Description of Furnaces in each boiler 3 corrugated Material Steel Outside diameter 46"  
 Length of plain part top Thickness of plates crown 19 bottom 32 Description of longitudinal joint Welded No. of strengthening rings  
 Working pressure of furnace by the rules 205 Combustion chamber plates: Material Steel Thickness: Sides  $9\frac{1}{16}$  Back  $9\frac{1}{16}$  Top  $9\frac{1}{16}$  Bottom 1"  
 Pitch of stays to ditto: Sides  $6\frac{1}{4}$  Back 6 Top 4 If stays are fitted with nuts or riveted heads others riveted Working pressure by rules 207  
 Material of stays Steel Area at smallest part 994 Area supported by each stay 36 Working pressure by rules 193 Material of stays Steel  
 Material Steel Thickness 1 Pitch of stays  $15\frac{1}{2}$  How are stays secured Nuts Working pressure by rules 219 Material of Front plates at bottom Steel  
 Area at smallest part 4.9 Area supported by each stay 23.25 Working pressure of plate by rules 35.7  
 Thickness  $1\frac{3}{16}$  Material of Lower back plate Steel Thickness  $3\frac{1}{16}$  Greatest pitch of stays  $13\frac{1}{2} \times 6$  Working pressure of plate by rules 35.7  
 Diameter of tubes  $3\frac{1}{2}$  Pitch of tubes  $4\frac{1}{2}$  Material of tube plates Steel Thickness: Front  $1\frac{1}{16}$  Back  $3\frac{1}{16}$  Mean pitch of stays 10.12  
 Pitch across wide water spaces  $14\frac{1}{2}$  Working pressures by rules 216 Girders to Chamber tops: Material plates Depth and thickness of girder at centre  $8\frac{3}{4} \times 1\frac{1}{4}$  Length as per rule 2.5 Distance apart  $7\frac{3}{4}$  Number and pitch of stays in each 3 @ 7"  
 Working pressure by rules 206 Steam dome: description of joint to shell None % 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

W1251-0178



IS A DONKEY BOILER FITTED? *No.*

*If so, is a report now forwarded?*

SPARE GEAR. State the articles supplied:— Two connecting rod bottom end bolts & nuts. Two main bearing bolts & nuts. One set coupling bolts & nuts. One set of feed & bilge pump valves. One set piston springs. 50. Assorted bolts & nuts. Two iron rods of each size  $\frac{1}{2}$ " -  $\frac{5}{8}$ " -  $\frac{3}{4}$ " -  $\frac{7}{8}$ " - 1" -  $1\frac{1}{8}$ ". all 10 ft long

*The foregoing is a correct description,*

*Manufacturer.*

Dates of Survey while building	{	During progress of work in shops - -	March 2, 4, 7, 12, 20, 22, 25, 27, 29
		During erection on board vessel - -	April 2, 5, 9, 11, 12, 13, 16, 23, 26, May 9, 13, 15, 17, 21, 24, 25, June 1, 11, 15, 19, 20
		Total No. of visits	26

Is the approved plan of main boiler forwarded herewith

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

“ “ “ *donkey* “ “ “

Dates of Examination of principal parts—Cylinders 5.2.18 Slides 25.3.18 Covers 27.3.18 Pistons 22.3.18 Rods 27.3.18

Connecting rods 27.3.18 Crank shaft 28.3.18 Thrust shaft 29.3.18 Tunnel shafts 11.4.18 Screw shaft 11.4.18 Propeller 11.4.1

Stern tube 11.4.18 Steam pipes tested 17.5/18.30.5/18 Engine and boiler seatings 11.2.18 Engines holding down bolts 11.6.18

Completion of pumping arrangements 11. 6. 18 Boilers fixed 2. 3. 18. Engines tried under steam 15. 6. 18

Completion of fitting sea connections 13. 5. 18 Stern tube 11. 4. 18 Screw shaft and propeller 11. 4. 18

Main boiler safety valves adjusted 6.6.18 Thickness of adjusting washers Port boiler  $\frac{9}{16}$ " -  $\frac{9}{16}$ " Starboard boiler  $\frac{9}{16}$ " -  $\frac{9}{16}$ "

Material of Crank shaft CH Steel Identification Mark on Do. 323.293.18 RCB Material of Thrust shaft CH Steel Identification Mark on Do. 324.293.18  
332.333.11.18 RCB  
325.293.18 RCB  
Material of Tunnel shafts CH Steel Identification Marks on Do. 341.11.18 RCB Material of Screw shafts CH Steel Identification Marks on Do. 331.11.18

Material of Steam Pipes Rap welded steel pipe, cast steel flange Test pressure 550 lb  $\frac{1}{2}$ "

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. angoulême (S/o Orleans)

**General Remarks** (State quality of workmanship, opinions as to class, &c. The machinery & boilers of this vessel has been constructed under Special Survey. They are of good material & workmanship & have been fitted & secured on board in accordance with the Rules. They are now in good working condition and eligible in our opinion to have record + L.M.C 6-18

It is submitted that  
this vessel is eligible for  
THE RECORD. + LMC 6, 18.

The amount of Entry Fee	...	£ 10 : 00 :	When applied for,
Special	...	£ 163 : 25 :	9/7/1918
Donkey Boiler Fee	...	£ :	When received,
Travelling Expenses (if any)	£	12 : 75 :	17/9/1918

Robert C. Blythe John W. Payne  
Engineer Surveyor to Lloyd's Register of Shipping.

## Committee's Minute

FRI. AUG. 16, 1918

*Assigned*

+ Lm 6 18