

## REPORT ON MACHINERY.

No. 1404

REC'D NEW YORK July 23 1919.

Received at London Office

THU. 21 AUG. 1919

Date of writing Report

19

When handed in at Local Office

19

Port of Montreal.

No. in Survey held at *Lachine & Three Rivers*

Date, First Survey

*Jan. 29. 1918*

Last Survey

*July. 3.*

1919.

Reg. Book.

(Number of Visits)

on the *ENGINE N° 18 for I.M.B. S/S "WAR MINGAN"*

Gross 2216

Net 1329.

When built 1918

Master *R. Smith*Built at *Three Rivers P.Q.* By whom built *Kirkwood & Son*Engines made at *Lachine.*By whom made *Dominion Bridge Co Ltd.*

when made 1918.

Boilers made at *St. Catharines Ont.*By whom made *Eng & Machine Co of Canada Ltd.*

when made 1918

Registered Horse Power *146.83*Owners *British Ministry of Shipping.*

Port belonging to

Nom. Horse Power as per Section 28 *318.322.*Is Refrigerating Machinery fitted for cargo purposes *no.*Is Electric Light fitted *Yes.*ENGINES, &c.—Description of Engines *Triple Expansion (Vertical)* No. of Cylinders *3.* No. of Cranks *3.*Dia. of Cylinders *20"-33"-54"* Length of Stroke *40"* Revs. per minute *70* Dia. of Screw shaft as per rule *11.74"* Material of *Steel*Is the screw shaft fitted with a continuous liner the whole length of the stern tube *no 3 liners* Is the after end of the liner made water tightthe propeller boss *Yes.* If the liner is in more than one length are the joints burned *Soldered* the liner does not fit tightly at the partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *✓* If twoliners are fitted, is the shaft lapped or protected between the liners *✓* Length of stern bush *4'-1"*Dia. of Tunnel shaft as per rule *10.39"* Dia. of Crank shaft journals as per rule *10.9"* Dia. of Crank pin *11 1/8"* Size of Crank webs *3'-5"x7"* Dia. of thrust shaft undercollars *11 1/2"* Dia. of screw *14'-6"* Pitch of Screw *15'-3"* No. of Blades *4.* State whether moveable *no.* Total surface *66.4 Sqft.*No. of Feed pumps *2.* Diameter of ditto *3 1/2"* Stroke *20"* Can one be overhauled while the other is at work *Yes.*No. of Bilge pumps *2.* Diameter of ditto *3 1/2"* Stroke *20"* Can one be overhauled while the other is at work *Yes.*No. of Donkey Engines *4* Sizes of Pumps *6x4x6"-7 1/2x8 1/2x10"-10x6x12"-7 1/2x12"* No. and size of Suctions connected to both Bilge and Donkey pumpsin Engine Room *2-3" (1+5)* In Holds, &c. *No. 1 Hold 1 1/2" S-2 1/2"; No. 2 Hold 1-2 1/2"; C-3; S-2 1/2"*Tunnel bell *3'*No. of Bilge Injections *1* sizes *6"* Connected to condenser, or to circulating pump *pump* Is a separate Donkey Suction fitted in Engine room & size *Yes 6"*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*That pipes are carried through the bunkers *Exhaust steam from freecastle steam heat.* How are they protected *Asbestos lagged with wood casing*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 *No* Is it fitted with a watertight door *✓* worked from *E. R. lower platform*BOILERS, &c.—(Letter for record *S.*) Manufacturers of SteelTotal Heating Surface of Boilers *5280 Sqft* Is Forced Draft fitted *Yes.* No. and Description of Boiler *Two Horizontal Water Tube.*Working Pressure *185 lbs.* Tested by hydraulic pressure to

Date of test

No. of Certificate

Can each boiler be worked separately

Area of fire grate in each boiler

No. and Description of Safety Valves to

each boiler

Area of each valve

Pressure to which they are adjusted

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

Mean dia. of boilers

Length

Material of shell plates

Thickness

Range of tensile strength

Are the shell plates welded or flanged

Descrip. of riveting: cir. seams

Type of seams

Diameter of rivet holes in long. seams

Pitch of rivets

Lap of plates or width of butt straps

Percentage of strength of longitudinal joint

rivets.....

Working pressure of shell by rules

Size of manhole in shell

Size of compensating ring

No. and Description of Furnaces in each boiler

Material

Outside diameter

Length of plain part

top

bottom

Thickness of plates

crown

bottom

Description of longitudinal joint

No. of strengthening rings

Working pressure of furnace by the rules

Combustion chamber plates: Material

Thickness: Sides

Back

Top

Bottom

Pitch of stays to ditto: Sides

Back

Top

If stays are fitted with nuts or riveted heads

Working pressure by rules

Material of stays

Area at smallest part

Area supported by each stay

Working pressure by rules

End plates in steam space:

Material

Thickness

Pitch of stays

How are stays secured

Working pressure by rules

Material of stays

Area at smallest part

Area supported by each stay

Working pressure by rules

Material of Front plates at bottom

Thickness

Material of Lower back plate

Thickness

Greatest pitch of stays

Working pressure of plate by rules.

Diameter of tubes

Pitch of tubes

Material of tube plates

Thickness: Front

Back

Mean pitch of stays

Pitch across wide water spaces

Working pressures by rules

Girders to Chamber tops: Material

Depth and

Thickness of girder at centre

Length as per rule

Distance apart

Number and pitch of stays in each

Working pressure by rules

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:—4 Connecting rod top end bolts & nuts. 2 Connecting rod top end bolts & nuts. 2 Main bearing bolts & nuts. 1 Set of coupling bolts & nuts. 1 Set of feed & bilge pump valves. 3 Sets of piston rings (2 for each piston). 1 Spare C.S. Propeller. 25 Condenser tubes, 5 condenser ferrules & packing. 1 Set of air & circulating pump valves. A quantity of assorted bolts & nuts & iron rods of various sizes.

The foregoing is a correct description,  
**DOMINION BRIDGE CO. LIMITED**

*A. E. Johnson* M.E.

Manufacturer.

Dates of Survey while building { During progress of work in shops - Jan 29 Feb 1, 4, 10, 16, 20 Mar 5, 9, 25. Apr 1, 5, 8, 19, 25. May 4, 15, 21, 28, 31. June 6, 8, 18, 28 July 3, 9, 10, 13, 16, 18, 19, 22.  
During erection on board vessel - 1918. Oct. 31. Nov 1, 11, 13, 30. Dec 9, 10, 18, 19, 19. Feb 6, 19, 26. Mar 3. May 5, 16, 26, 27. Jun 2, 9, 12, 20, 23, 30 July 2, 3.  
Total No. of visits 63.

Is the approved plan of main boiler forwarded herewith

No

Dates of Examination of principal parts—Cylinders 31-5-18 Slides 13-7-18. Covers 21-6-18. Pistons 13-7-18. Rods 13-7-18. Connecting rods 13-7-18. Crank shaft 8-6-18. Thrust shaft 28-5-18. Tunnel shafts 31-5-18. Screw shaft 18-6-18. Propeller 18-6-18. Stern tube 28-6-18. Steam pipes tested 13-11-18. Engine and boiler seatings 6-8-18. Engines holding down bolts 12-11-18. Completion of pumping arrangements 20-6-19. Boilers fixed 16-10-18. Engines tried under steam 20-6-19. Completion of fitting sea connections 6-8-18. Stern tube 27-6-18. Screw shaft and propeller 12-9-18. Main boiler safety valves adjusted 20-6-19. Thickness of adjusting washers PF  $\frac{7}{16}$ " FA  $\frac{1}{4}$ " ; SF  $\frac{3}{8}$ " SA  $\frac{7}{16}$ " T.M. Material of Crank shaft Steel Identification Mark on Do. W.E.S. Material of Thrust shaft Steel Identification Mark on Do. T.M. Material of Tunnel shafts Steel Identification Marks on Do. F.W.T. Material of Screw shafts Steel Identification Marks on Do. T.M. Material of Steam Pipes S.D. Steel Test pressure 600 lbs per sq in

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 *Osama. Niagara. Inche. Loch.*

General Remarks (State quality of workmanship, opinions as to class, &c. *These engines have been built under special survey. The materials and workmanship are satisfactory. The engines have been satisfactorily fitted in the vessel, tested under working conditions full ahead and full astern, the auxiliaries have been tried out. Upon examination after a 6 hour trial a groove was discovered running vertically the working length of the Sub. Engine Cylinder about  $\frac{3}{8}$ " deep and  $\frac{1}{4}$ " to  $\frac{3}{8}$ " wide. In our opinion the engines are eligible to be classed T.L.M.C. in the Register Book subject the Sub. Cylinder being retored at an early convenient opportunity.*

It is submitted that  
this vessel is eligible for  
**THE RECORD. + LMC 7. 19. F.D.**  
2 Watertube Boilers.

Subject to the screw shaft being specially  
examined at joints of hub before the end  
of July 1921.

Subject to the Watertube boilers being surveyed annually.

The amount of Entry Fee ... £ 15.00  
Special ... £ 61.00  
Donkey Boiler Fee ... £ 61.00  
Travelling Expenses (if any) £ 5.60

When applied for,

9th Aug 1918

When received,

21st Sept 1918

*J. Robinson*

Engineer Surveyor to Lloyd's Register of Shipping.

*A. J. Alderson*

Committee's Minute

Assigned

MACHINERY CERTIFICATE  
20.10.19

21st Sept 1918

29/10/1918

TUE 30 SEP 1919

FRI 2-JAN 1920

Lloyd's Register  
Foundation