

REPORT ON MACHINERY.

Received at London Office *15.10.1919*

Date of writing Report *Aug. 11. 1919* When handed in at Local Office *Aug. 19. 1919* Port of *Montreal*

No. in Survey held at *Montreal.* Date, First Survey *Oct. 24. 1918* Last Survey *Aug. 7. 1919*
Reg. Book. *S. S. "CANADIAN SEIGNEUR"* (Number of Visits *59*)

Builder *F. Ferguson* Built at *Montreal* By whom built *Canadian Vickers Ltd.* Tons Gross *5707* Net *3554*
Engines made at *Montreal* By whom made *Canadian Vickers Ltd* when made *1919*
Boilers made at *"* By whom made *"* when made *1919*
Registered Horse Power *266.5* Owners *Canadian Government Merchant Marine Ltd.* Port belonging to *Montreal*
Nominal Horse Power as per Section 28 *520* Is Refrigerating Machinery fitted for cargo purposes *No.* Is Electric Light fitted *Yes.*

GINES, & C.—Description of Engines *Triple Expansion Surface Condensing* No. of Cylinders *3* No. of Cranks *3*
Dia. of Cylinders *27" x 44" x 73"* Length of Stroke *48"* Revs. per minute *75* Dia. of Screw shaft *15.5"* Material of screw shaft *S.*
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 *Yes*
Is the propeller boss *Yes* If the liner is in more than one length are the joints burned *No* 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 shafts are fitted, is the shaft lapped or protected between the liners *Yes* Length of stern bush *5' 6 1/2"*

Dia. of Tunnel shaft *13.3"* Dia. of Crank shaft journals *13.96"* Dia. of Crank pin *14.5"* Size of Crank webs *52 x 28 x 9* Dia. of thrust shaft under bars *14.5"* Dia. of screw *18.0"* Pitch of Screw *15.9"* No. of Blades *4* State whether moveable *Yes* Total surface *98 sq ft*
No. of Feed pumps *2* Diameter of ditto *4"* Stroke *24"* Can one be overhauled while the other is at work *Yes*
No. of Bilge pumps *2* Diameter of ditto *4"* Stroke *24"* Can one be overhauled while the other is at work *Yes*
No. of Donkey Engines *4* Sizes of Pumps *2 1/2" x 7" x 8" Ballast 5. 1 1/2" x 4" x 2 1/2"* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *2 - 3 1/2"* In Holds, &c. Ballast *1-3" 1-4" 1-5" 2-3" 2-1-3" 5-2-3" 1-4-2-3"*
No. of Bilge Injections *1* sizes *9"* Connected to condenser or to circulating pump *Yes* Is a separate Donkey Suction fitted in Engine room & size *Yes 2-4"*
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 *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 *Yes*
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 *Yes*
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 *Top E.R. platform*
MILNERS, & C.—(Letter for record *S.*) Manufacturers of Steel *Lukens Steel Co. Pennsylvania*

Total Heating Surface of Boilers *7743* Is Forced Draft fitted *Yes* No. and Description of Boilers *3 Scotch type*
Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs* Date of test *12-2-19* No. of Certificate *53-54*
Can each boiler be worked separately *Yes* Area of fire grate in each boiler *66.12 sq ft* No. and Description of Safety Valves to each boiler *2 Spring loaded*
Area of each valve *8.30* Pressure to which they are adjusted *180 lbs* Are they fitted with easing gear *Yes*
Smallest distance between boilers or uptakes and bunkers or woodwork *16"* Mean dia. of boilers *15' 6"* Length *11' 6"* Material of shell plates *S.*
Thickness *1 3/8"* Range of tensile strength *26-28 Tons.* Are the shell plates welded or flanged *No.* Descrip. of riveting: cir. seams *D.R.*
g. seams *DBS, TR.* Diameter of rivet holes in long. seams *1 3/8"* Pitch of rivets *9 3/4"* Lap of plates or width of butt straps *19 7/8"*

Percentages of strength of longitudinal joint *87.4* Working pressure of shell by rules *183* Size of manhole in shell *16" x 12"*
No. of compensating rings *3 7/8" x 29" x 1 3/8"* No. and Description of Furnaces in each boiler *3 Heighton* Material *S.* Outside diameter *4' 2 1/4"*
Length of plain part *top 19" bottom 13 1/2"* Thickness of plates *bottom 1 3/2"* Description of longitudinal joint *Weld* No. of strengthening rings *—*
Working pressure of furnace by the rules *187* Combustion chamber plates: Material *S.* Thickness: Sides *5/8"* Back *5/8"* Top *5/8"* Bottom *15/16"*
Pitch of stays to ditto: Sides *9" x 7 1/2"* Back *8 1/2" x 8"* Top *9" x 7 1/2"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *197*

Material of stays *S.* Area at smallest part *1.760* Area supported by each stay *68.60* Working pressure by rules *230* End plates in steam space: Material *S.* Thickness *1 1/16"* Pitch of stays *18" x 15"* How are stays secured *With nuts* Working pressure by rules *184* Material of stays *S.*
Area at smallest part *5.270* Area supported by each stay *270.0* Working pressure by rules *204* Material of Front plates at bottom *S.*
Thickness *1 1/16"* Material of Lower back plate *S.* Thickness *9/16"* Greatest pitch of stays *13 1/2" x 18 1/2"* Working pressure of plate by rules *187*
Diameter of tubes *3"* Pitch of tubes *4 1/2"* Material of tube plates *S.* Thickness: Front *1 1/2"* Back *3/4"* Mean pitch of stays *8 1/2" x 8 1/2"*
Pitch across wide water spaces *13 1/2"* Working pressures by rules *205* Girders to Chamber tops: Material *S.* Depth and thickness of girder at centre *10" x 1 1/2"* Length as per rule *2' 6 7/8"* Distance apart *9"* Number and pitch of stays in each *3 - 7 1/2"*
Working pressure by rules *250* Steam dome: description of joint to shell *—* % of strength of joint *—*

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:-

2 connecting rod top end bolts & nuts ✓	1 set Main's Donkey Feed checks	2 bronze propeller blades.
2 " " bottom " " ✓	6 cylinder cover studs & nuts.	1 H.P. piston valve.
2 main bearing " " ✓	6 steam chest " " ✓	1 set each H.P. & I.P. piston rings
6. Coupling " " ✓	12 junk ring " " ✓	18 ordinary & 6 boiler stay tubes.
1 set of Feed pump valves. ✓	Assorted bolts & nuts ✓	36 condenser tubes & 50 ferrules
1 " " Bidge " " ✓	bars round & flat iron	1 set of fire bars for one boiler

The foregoing is a correct description,

FOR CANADIAN OWNERS LIMITED

J. Miller Manufacturer.

Dates of Survey while building

During progress of work in shops --	1918. Oct. 24, 29, 31 Nov. 13, 18, 27, Dec. 9, 16, 1919. Jan. 2, 6, 14, 10, 18, 23, 28, Feb. 3, 5, 6, 7, 12, 11, 12, 17, 25, 28, Mar. 7, 12, 14, 21, 24, 28, Apr. 2, 3, 30, May 5, 7.
During erection on board vessel --	1919. May. 10, 12, 14, 19, 20, 21, 23, 26, 27, 29, 30, 31, July. 17, 18, 21, 22, 26, 31, Aug. 1, 4, 5, 7.
Total No. of visits	59

Is the approved plan of main boiler forwarded herewith No

Dates of Examination of principal parts—Cylinders ⁵⁻²⁻¹⁹ 21-2-19 Slides 28-8-19 Covers 20-2-19 Pistons 21-8-19 Rods 21-3-19

Connecting rods 10-3-19 Crank shaft 7-2-19 Thrust shaft 3-2-19 Tunnel shafts 17-2-19 Screw shaft 3-4-19 Propeller 3-4-19

Stern tube 3-4-19 Steam pipes tested 30-5-19 Engine and boiler seatings 6-5-19 Engines holding down bolts 28-5-19

Completion of pumping arrangements 5-8-19 Boilers fixed 21-5-19 Engines tried under steam 7-8-19

Completion of fitting sea connections 29-4-19 Stern tube 24-4-19 Screw shaft and propeller 1-5-19

Main boiler safety valves adjusted 1-8-19 Thickness of adjusting washers $\frac{55}{32}$ $\frac{21}{32}$ $\frac{1}{2}$ $\frac{29}{64}$ $\frac{19}{32}$ $\frac{5-13/16-3/32}{1/2}$

Material of Crank shaft S. Identification Mark on Do. O.T.J. Material of Thrust shaft S. Identification Mark on Do. O.T.J.

Material of Tunnel shafts S Identification Marks on Do. O.T.J. Material of Screw shafts S Identification Marks on Do. O.T.J.

Material of Steam Pipes Steel Test pressure 540 lbs.

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 *Can. Pioneer "Can. Ranger"*

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

The engines and boilers of this vessel have been constructed under special survey and in accordance with the rules. The material and workmanship are good. They have been installed on board together with the matching machinery. The whole has been tried under steam with satisfactory results.

The boilers are of good workmanship and the material has been tested in accordance with the rules. They have been tested by water pressure to 360 lbs and found tight. The safety valves have been adjusted under steam to blow at a pressure of 180 lbs.

The joints in the tail shaft liner should be specially examined before the end of August 1921.

In my opinion the machinery of this vessel is in good and efficient condition eligible to be classed in the Register Book of the Society and to have the record of LMC 8-19.

It is submitted that this vessel is eligible for THE RECORD. + LMC 8. 19. F.D.

Subject to the screw shaft being specially reexamined at joints of liner before the end of August 1921.

The amount of Entry Fee ...	£ 15 ⁰⁰	When applied for,
Special ...	£ 230 ⁰⁰	Aug. 11, 1919.
Donkey Boiler Fee ...	£	
Travelling Expenses (if any) £	8 ²⁵	When received,
		28/8/19

H. J. Alderson Engineer Surveyor to Lloyd's Register of Shipping. *J.W.D.* 18/9/19.

Committee's Minute TUE. 23 SEP. 1919

Assigned *+ L.M.C. 8. 19* subject *F.D.*



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Lloyd's Register Foundation

Rpt. 13.

Port of

No. in Reg. Book

Owners

Yard No.

DESCRIP

One

high

Capacity

Where is

Position

Position