

REPORT ON MACHINERY.

Date of writing Report Sept. 27, 1919 When handed in at Local Office Oct. 3, 1919 Port of Montreal

No. in Survey held at Montreal Date, First Survey Oct. 29, 1918 Last Survey Sept. 29, 1919
Reg. Book. on the S. S. "CANADIAN MILLER" (Number of Vistas 60)

Master J. T. Randall Built at Montreal By whom built Canadian Vickers Ltd Tons } Gross 5439
Net 2102
When built 1919

Engines made at Montreal By whom made Canadian Vickers Ltd when made 1919

Boilers made at Montreal By whom made Canadian Vickers Ltd when made 1919

Registered Horse Power 266.5 Owners Canadian Government Merchant Marine Ltd Port belonging to Montreal

Nom. Horse Power as per Section 28 520 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes

ENGINES, &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 14.88" Material of S.
 as fitted 15.5" screw shaft
 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 5' 6 1/2"
 Dia. of Tunnel shaft as per rule 13.3" Dia. of Crank shaft journals as per rule 13.96" Dia. of Crank pin 4.5" Size of Crank webs 52" x 28" x 9" Dia. of thrust shaft under
 collars 14.5" Dia. of screw 18' 0" Pitch of Screw 15' 9" No. of Blades 4 State whether moveable Yes Total surface 986
 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 7.5" x 7" x 18" Ballast 5.10" x 14" x 14" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2-3 1/2" In Holds, &c. Ballast 7.0" Peak 10.1" Tank 10.2" No. 3 1-4" 1-5" 2-3" P. 2-3" S. 2-3"
 No. of Bilge Injections 1 sizes 9" Connected to condenser Yes 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.

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Lubers 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 18-5-19 No. of Certificate 56-57-58.
 Can each boiler be worked separately Yes Area of fire grate in each boiler 66.12 sq No. and Description of Safety Valves to
 each boiler 2 Spring loaded Area of each valve 8.3 sq Pressure to which they are adjusted 185 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 DR.
 long. seams DBS. TR. Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 3/16" Lap of plates or width of butt straps 19 7/8"
 Per centages of strength of longitudinal joint rivets 87.4 Working pressure of shell by rules 183 Size of manhole in shell 16" x 12"
 Size of compensating ring 37 1/2" x 29" x 1 3/8" No. and Description of Furnaces in each boiler 3 Heighon Material S. Outside diameter 4' 2 1/4"
 Length of plain part top 19 1/2" Thickness of plates crown 19/32" Description of longitudinal joint Weld. No. of strengthening rings 1
 Working pressure of furnace by the rules 184 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 1/4" x 8" Top 9" x 7 1/2" If stays are fitted with nuts or riveted heads Nuts. Working pressure by rules 194.
 Material of stays S. Area at smallest part 1.76 sq Area supported by each stay 68.6 sq 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 Double Nuts. Working pressure by rules 184 Material of stays S.
 Area at smallest part 5.27 sq Area supported by each stay 270 sq Working pressure by rules 204 Material of Front plates at bottom S.
 Thickness 13/16" Material of Lower back plate S. Thickness 13/16" 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 3/16" 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 Yes % of strength of joint Yes
 Diameter Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet holes Yes
 Pitch of rivets Yes Working pressure of shell by rules Yes Crown plates Yes Thickness Yes How stayed Yes

SUPERHEATER. Type Yes Date of Approval of Plan Yes Tested by Hydraulic Pressure to Yes
 Date of Test Yes Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes
 Diameter of Safety Valve Yes Pressure to which each is adjusted Yes Is Easing Gear fitted Yes

IS A DONKEY BOILER FITTED?

No.

If so, is a report now forwarded?

✓

SPARE GEAR. State the articles supplied:—

2 connecting rod & gland bolts & nuts	✓	1 set of Main & Donkey Fuel chests	2 bronze propeller blades
2 " " " "	✓	6 cyl cover studs & nuts	1 H.P. piston valve
2 main bearings	✓	6 steam chest " "	1 set each H.P. & L.P. piston rings
6 connecting " " "	✓	12 junk ring " "	18 ordinary & 6 boiler slag tubes
1 set of fuel pump valves	✓	Assorted bolts & nuts	36 condenser tubes & 50 ferrules
1 " " " "	✓	bars round & flat iron	1 set of fire bars for one boiler

The foregoing is a correct description.

M. L. Lillie
Manufacturer.

Dates of Survey while building: During progress of work in shops -- Oct. 29, 31, Dec. 9, 16, 1919, Jan. 2, 6, 14, 18, 22, 23, 28, Feb. 3, 5, 7, 11, 12, 17, 25, 28, Mar. 7, 10, 12, 14, 17, 18, 19, 21, 24, 25, 28, Apr. 1, 3, 5, 9, 30 May, 3, 6, 10, 12, 19, 23, June 2, July 18, 2019
 During erection on board vessel --- Aug. 19, 21, 25, 26, 27, 28, Sept. 2, 4, 6, 8, 9, 10, 12, 20, 29.
 Total No. of visits 60.

Is the approved plan of main boiler forwarded herewith No.

" " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders ¹⁴⁻³⁻¹⁹ 2-4-19 Slides 19-5-19 Covers 12-5-19 Pistons 12-5-19 Rods 12-5-19
 Connecting rods 9-4-19 Crank shaft 25-2-19 Thrust shaft 25-2-19 Tunnel shafts 9-4-19 Screw shaft 30-5-19 Propeller 30-5-19
 Stern tube 16-7-19 Steam pipes tested 6-9-19 Engine and boiler seatings 15-8-19 Engines holding down bolts 16-8-19
 Completion of pumping arrangements 23-9-19 Boilers fixed 26-8-19 Engines tried under steam 20-9-19
 Completion of fitting sea connections 15-8-19 Stern tube 23-7-19 Screw shaft and propeller 30-4-19
 Main boiler safety valves adjusted 17-9-19 Thickness of adjusting washers P. 3/32 S. 3/32 P. 1/4 S. 3/16 P. 7/16 S. 3/16
 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 550 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 "San Pioneer", "San Ranger", "San, Seigneur"

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 materials and workmanship are good. They have been installed on board together with the auxiliary 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 per sq in & found tight. The safety valves have been adjusted under steam to blow at a pressure of 180 lbs.

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 I have the record of L.M.C. 9-19.

It is submitted that this vessel is eligible for THE RECORD + LMC 9.19. F.D.

J.W.D.
7/11/19
W.B.R.

N.J. Anderson
W.B. Swinburne
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £	\$ 15.00	When applied for,
Special £	23.00	Sept. 23, 1919.
Donkey Boiler Fee £	:	When received,
Travelling Expenses (if any) £	16.50	7/11/19

Committee's Minute TUE 11 NOV. 1919
Assigned + LMC 9 19 7D



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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.