

REPORT ON MACHINERY.

No. 1681

JUN 2 1919

Received at London Office

Date of writing Report *May 19 1919* When handed in at Local Office *May 23 1919* Port of *Montreal*
No. in Survey held at *Montreal* Date, First Survey *July 18 1918* Last Survey *Jan 30 1919*
Reg. Book. on the *S.S. "Canadian Pioneer"* (Number of Visits *45*)
Master *A. R. Coffin* Built at *Montreal* By whom built *Canadian Vickers Ltd.* Tons { Gross *5758*
Engines made at *Montreal* By whom made *Canadian Vickers Ltd.* Net *3548*
Boilers made at *"* By whom made *"* When built *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" 44" 73"* Length of Stroke *48"* Revs. per minute *75* Dia. of Screw shaft *15.5"* Material of *5*
Is the screw shaft fitted with a continuous liner the whole length of the stern tube *No* 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 *Soldered* 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 *13.3"* Dia. of Crank shaft journals *13.96"* Dia. of Crank pin *14 1/2"* Size of Crank webs *52 x 28 x 9* Dia. of thrust shaft under
collars *14 1/2"* Dia. of screw *18 1/4"* Pitch of Screw *15 1/4"* No. of Blades *4* State whether moveable *Yes* Total surface *95' 0"*
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 *5.9 1/2" x 7 1/8" 5.10 1/2" x 14 1/4" 5.10 1/2" x 14 1/4" 5.10 1/2" x 14 1/4"* No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room *2-3 1/2"* No. 1. *2-3 1/2"* No. 2. *2-3 1/2"* No. 3. *2-3 1/2"* In Holds, &c. *1-3" 1-4" 1-5" 2-3" 2-3" 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 *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 *Both*
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 *Upper deck level in E.R.*

BOILERS, &c.—(Letter for record *S.*) Manufacturers of Steel *Lukens Steel Co. Pa.*
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 *26-10-18* No. of Certificate *444*
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 *184 lbs* Are they fitted with easing gear *Yes*
Smallest distance between boilers or uptakes and bunkers or woodwork *16 in* 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.*
long. seams *D.B.S. T.R.* 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 1/2"*
Per centages of strength of longitudinal joint *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. Heighston* Material *S* Outside diameter *4' 2 1/2"*
Length of plain part *19' 32"* Thickness of plates *19' 32"* Description of longitudinal joint *Weld.* No. of strengthening rings *Yes*
Working pressure of furnace by the rules *187* Combustion chamber plates: Material *S* Thickness: Sides *5/8"* Back *5/8"* Top *5/8"* Bottom *1 1/8"*
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 *No* Working pressure by rules *197*
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 1/2"* Pitch of stays *18" x 15"* How are stays secured *Weld.* 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 *1 3/16"* Material of Lower back plate *S* Thickness *1 3/16"* Greatest pitch of stays *13 1/2" x 8 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*

W132-0153

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded: ☒

SPARE GEAR. State the articles supplied:—

| | | |
|-------------------------------------|--|-------------------------------------|
| 2 Connecting Rod & end bolts & nuts | 1 set Main & Donkey Feed check valves. | 2 Bronze Propeller blades. |
| 2 " " " " | 6 cylinder cover studs & nuts. | 1 H.P. piston valve. |
| 2 Main Bearing bolts & nuts. | 6 chamber " " " | 1 set each H.P. & I.P. piston rings |
| 6 Connecting bolts & nuts. | 12 crank ring studs & nuts. | 18 ordinary & 6 boiler stay bolts. |
| 1 set Feed pump valves. | Assorted bolts & nuts. | 36 condenser bolts and 50 for nuts. |
| 1 set Bridge " " | " bars round & flat iron | 1 set of fire bars for one boiler. |

The foregoing is a correct description,

W. Miller
General Manager.

Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1918. July. 18. 24. 25. Aug. 6. 9. 14. 21. 26. Sept 2. 4. 9. 26. 28. Oct. 5. 7. 12. 14. 15. 18. 22. 24. 29. Nov. 1. 4. 6. 13. 15.
During erection on board vessel -- Dec. 6. 13. 17. 19. 26. 31. 1919. Jan. 2. 8. 9. 15. 17. 27. 30. May. 7. 8.
Total No. of visits 45

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

Dates of Examination of principal parts—Cylinders 14-10-18 Slides 2-12-18 Covers 27-11-18 Pistons 18-11-18 Rods 28-11-18
Connecting rods 13-11-18 Crank shaft 30-10-18 Thrust shaft 22-10-18 Tunnel shafts 1-11-18 Screw shaft 16-11-18 Propeller 27-11-18
Stern tube 1-11-18 Steam pipes tested 23-12-18 Engine and boiler seatings 3-11-18 Engines holding down bolts 19-12-18
Completion of pumping arrangements 8-5-19. Boilers fixed 16-11-18. Engines tried under steam 15-1-19
Completion of fitting sea connections 2-12-18 Stern tube 28-11-18 Screw shaft and propeller 2-12-18
Main boiler safety valves adjusted 2-2-19 Thickness of adjusting washers P. Bl. 5.64" C. Bl. 5.64" S. Bl. 5.578"
Material of Crank shaft *S.* Identification Mark on Do. 406 Material of Thrust shaft *S.* Identification Mark on Do. 384
Material of Tunnel shafts *S.* Identification Marks on Do. 437 Material of Screw shaft *S.* Identification Marks on Do. 402
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 *No* If so, state name of vessel

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 & workmanship are good. They have been fitted on board together with the auxiliary machinery and were tried under steam and found to be working satisfactorily.

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 185 lbs.

The joints of the tail shaft liner having been soldered should in my opinion be specially examined when the shaft is drawn.

In my opinion the machinery of this vessel is in good and efficient condition, eligible to be classed in the Society's Register Book and to have the record of F.L.M.C. 5-19.

It is submitted that this vessel is eligible for

THE RECORD. + LMC 5.19. F.D.

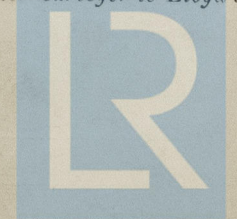
Subject to the screw shaft at joint of liner being specially examined before the end of 15. 21.

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|--------------------------------|----------|---|-------------------|
| The amount of Entry Fee ... | £ 15.00 | { | When applied for, |
| Special ... | £ 230.00 | | May. 7. 1919. |
| Donkey Boiler Fee ... | £ : | | When received, |
| Travelling Expenses (if any) £ | 43.15 | | May. 16. 1919. |

H. J. Alderson
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute 100 JUL. 1-1919

Assigned *W. D.* + LMC 5.19



Lloyd's Register Foundation

Montreal

Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.