

REPORT ON MACHINERY.

No. 1762

Received at London Office

Report of writing Report Nov. 27, 1919 When handed in at Local Office Nov. 29, 1919 Port of Montreal

Survey held at Montreal Date, First Survey Feb. 17, 1919 Last Survey Nov. 25, 1919
on the S. S. "CANADIAN NAVIGATOR" (Number of Visits)

Master E. Robertson Built at Montreal By whom built Canadian Vickers Ltd. Tons Gross 3161
Engines made at Montreal By whom made Canadian Vickers Ltd. Net 1929
Boilers made at " By whom made " When built 1919

Registered Horse Power 226.5 Owners Canadian Government Port belonging to Montreal

Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Registered Horse Power 226.5 Owners Canadian Government Port belonging to Montreal

GINES, &c.—Description of Engines Triple Expansion, Surface Condensing No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 25"-41"-67" Length of Stroke 45" Revs. per minute 70 Dia. of Screw shaft 13.6" 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

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

shafts are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 4'9"

Dia. of Tunnel shaft 12.5" Dia. of Crank shaft journals 13.25" Dia. of Crank pin 13.25" Size of Crank webs 8.75x4.5" Dia. of thrust shaft under

bars 13.25" Dia. of screw 16'3" Pitch of Screw 14'6" No. of Blades 4 State whether moveable No Total surface 83.2

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 See List No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room 1-3" P. 1-3" S. In Holds, &c. Bilgeat. For Pl. 1-3" No. 1. 1-3 1/2" No. 2. 3-3 1/2" No. 3. P. 2-3 1/2" S. 2-3 1/2"

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 2-3 1/2"

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 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 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 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

MANUFACTURERS, &c.—(Letter for record S) Manufacturers of Steel Lukens Iron & Steel Co. Penn. U.S.A.

Total Heating Surface of Boilers 5162 Is Forced Draft fitted Yes No. and Description of Boilers 2 Scotch type 2 S.B.

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 20/8/19 No. of Certificate 63

Can each boiler be worked separately Yes Area of fire grate in each boiler 66.12 No. and Description of Safety Valves to

each boiler 2 Spring loaded Area of each valve 9.6210 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 10" 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 DBS. TR Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 3/8" 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 16'4 1/2"

Size of compensating ring 37 1/2" x 33" x 1 3/8" No. and Description of Furnaces in each boiler 3. Deighton Material S. Outside diameter 4'2 1/2"

Length of plain part 19 1/2" Thickness of plates 19 1/2" 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 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 Weld Nuts Working pressure by rules 184 Material of stays S

Area at smallest part 5.270 Area supported by each stay 270 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 1/4" 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 1/4 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 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

Lloyd's Register Foundation
W661-0075

IS A DONKEY BOILER FITTED? *No.*

If so, is a report now forwarded?

Rpt. 13.

SPARE GEAR. State the articles supplied:—

2 Connecting Rod bottom end bolts & nuts	1 set Main & Donkey feed checks	1 Spare C.I. propeller
2 " " top end " "	6 cyl cover studs & nuts	1 H.P. piston valve.
2 Main bearing " "	6 steam chest studs & nuts	1 set each H.P. & Y.P. piston rings
6 Coupling " "	12 Gunk ring studs & nuts	18 plain & 6 Boiler stay tubes.
1 set of Feed pump valves.	Assorted bolts & nuts	36 condenser tubes & 50 screws
1 set of Bilge " "	Assorted bars round & flat iron	1 set of fire bars for one boiler

The foregoing is a correct description,

FOR CANADIAN MARINERS LIMITED

L. H. Miller

Manufacturer.

General Manager.

Dates of Survey while building: During progress of work in shops -- 1919, Feb. 17-25, Mar. 7, 12-14-18, 24-28, April 3, 9, 14, 25, 30, May 3, 6, 10, 12, 14, 15, 16, 19, 23, 27, 29, July 16, 18, 21, 25, Aug 6, 11, 19.

During erection on board vessel -- Oct. 20, 22, 24, 29, 30, Nov. 2, 6, 8, 11, 14, 17, 21, 23, 25.

Total No. of visits *47*

Is the approved plan of main boiler forwarded herewith *Yes*

" " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders *10-4-18* Slides Covers *10-4-18* Pistons *18-4-18* Rods *18-4-18*

Connecting rods *29-5-19* Crank shaft *24-3-19* Thrust shaft *29-5-19* Tunnel shafts *30-5-19* Screw shaft *16-5-19* Propeller *18-5-19*

Stern tube *29-5-19* Steam pipes tested *14-11-19* Engine and boiler seatings *15-10-19* Engines holding down bolts *14-11-19*

Completion of pumping arrangements *23-11-19* Boilers fixed *25-10-19* Engines tried under steam *18-11-19*

Completion of fitting sea connections *16-10-19* Stern tube *16-10-19* Screw shaft and propeller *17-10-19*

Main boiler safety valves adjusted *17-11-19* Thickness of adjusting washers P. 232" S. .378" P. 559" S. .474

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 *S.* Test pressure *54 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 *Canadian Voyager.*

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

The engines & boilers of this vessel have been constructed under special survey & in accordance with rules. The materials and workmanship are good. They have been fitted on board together with the auxiliary machinery and tried under full working conditions with satisfactory results.

The boilers have been tested to 360 lbs W.P. and found tight. The safety valves were adjusted under steam to blow at a pressure of 184 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 to have the record *LMC. 11-19*

It is submitted that this vessel is eligible for THE RECORD. *LMC. 11-19 F.D.*

J.W.D. *29/2/19* *J.P.R.*

The amount of Entry Fee	£ \$ 15.00	When applied for,
Special	£ 230.00	Nov. 26, 1919.
Donkey Boiler Fee	£ :	When received,
Travelling Expenses (if any)	£ 32.25	2/1/20
	277.25	10/4/20

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

Committee's Minute TUE. 9-MAR. 1920
Assigned *+ L.M.C. 11-19 J. G.*



Certificate (if required) to be sent to

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

MACHINERY CERTIFICATE
WRITTEN