

Used Converted to Forced Draft oil burning 1929 at St. Johns.

Rpt. 4.

REPORT ON MACHINERY

No. 1309
WED. FEB. 2 1921

Received at London Office

Date of writing Report Nov. 10 1920 When handed in at Local Office Nov 10 1920 Port of Montreal

No. in Survey held at Sherbrooke P.Q. Date, First Survey Apr. 20. 1920 Last Survey Dec 4th 1920
Reg. Book. on the Steel Single Screw Steamer "Canadian Sapper" (Number of Visits)

Master McGregor Fraser Built at New Glasgow, N.S. By whom built Nova Scotia Steel & Coal Co. Ltd. When built 1920
Engines made at Sherbrooke P.Q. By whom made Canadian Ingersoll Rand Ltd. when made 1920
Boilers made at partly at New Glasgow By whom made Dominion Bridge Co & Nova Scotia Steel & Coal Co. Ltd. when made 1920

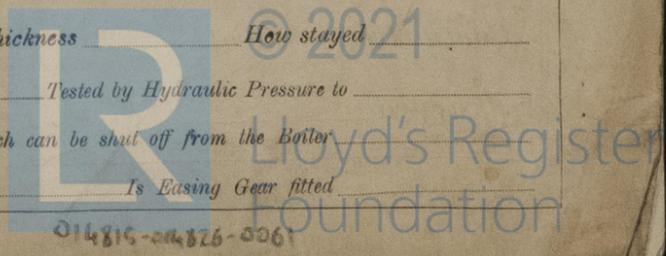
Registered Horse Power _____ Owners Canadian Govt. Merchant Marine Port belonging to Montreal
Nom. Horse Power as per Section 28 166 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion Surface Condensing No. of Cylinders 3 of Cranks 3
 Dia. of Cylinders 14 1/2" - 28 3/4" - 44" Length of Stroke 33 Revs. per minute 88 Dia. of Screw shaft as per rule 9 3/4" Material of screw shaft Steel
 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 _____ Length of stern bush 41"
 Dia. of Tunnel shaft as per rule 8 5/16" Dia. of Crank shaft journals as per rule 8.9" Dia. of Crank pin 9 3/8" Size of Crank webs 6 1/2" x 33 1/2" Dia. of thrust shaft under collars 9 3/4" Dia. of screw 12 1/4" Pitch of Screw MIN. 12-6 MAX. 13-2" No. of Blades 4 State whether moveable No Total surface 48.28 sq'
 No. of Feed pumps 2 Diameter of ditto 2 3/4" Stroke 18" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 3" Stroke 18" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 2 Sizes of Pumps 8 x 5 1/2 x 15" Aux. FEED & G.S.P. 10 1/2 x 12 x 21" Ballast No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 5-2 1/2" dia. In Holds, &c. 5-2 1/2" dia. and one
to Tunnel Well - 2 1/2" dia.
 No. of Bilge Injections 1 sizes 6" Connected to _____ to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes, 2 1/2" dia.
 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 Valves & Cocks
 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 at or below line
 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 Ward deck urine & soil pipes How are they protected Steel plates
 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 Steering Engine Platform

BOILERS, &c.—(Letter for record _____) Manufacturers of Steel _____

Total Heating Surface of Boilers _____ Is Forced Draft fitted _____ No. and Description of Boilers _____
 Working Pressure _____ 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 _____
 long. seams _____ Diameter of rivet holes in long. seams _____ Pitch of rivets _____ Lap of plates or width of butt straps _____
 Per centages 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 _____ Thickness of plates _____ crown _____ Description of longitudinal joint _____ No. of strengthening rings _____
 bottom _____ 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:—

2 Connecting Rod Top end bolts & nuts	6 oil cones slides & nuts
2 " " Bottom end " "	6 standard " " " "
2 Main Bearing bolts & nuts	12 Junkie rings " "
3 connecting " "	2 1/2 condenser tubes & 50 ferrules
1 Feed pump suction & discharge valve	1 set of piston rings for each cylinder
1 Pipe " " " "	

The foregoing is a correct description.

C. V. Danks *mechanical Engineer* *Shebrooke Que.* Manufacturer.



Dates of Survey while building: During progress of work in shops -- *Apr. 20, May 4, 21, June 11, 24, July 16, Aug. 23, Sept 10, Oct. 5, 31.*
 During erection on board vessel --- *Oct. 1-11-30, Nov. 14-15-16, 30, Dec 4, 1920.*
 Total No. of visits *19.*

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Cylinders *Oct 5-1920* Slides *31-10-20* Covers *31-10-20* Pistons *5-10-20* Rods *5-10-20*

Connecting rods *5-10-20* Crank shaft *5-10-20* Thrust shaft *5-10-20* Tunnel shafts *22-6-20* Screw shaft *7-9-20* Propeller *1-10-20*

Stern tube *Oct 1st 1920* Steam pipes tested *Oct. 30th 1920* Engine and boiler seatings *Oct 30th 1920* Engines holding down bolts *Nov 4th 1920*

Completion of pumping arrangements *Nov. 30th 1920* Boilers fixed *Nov. 10th 1920* Engines tried under steam *Dec. 4th 1920*

Completion of fitting sea connections *Oct 1st 1920* Stern tube *Oct 10th 1920* Screw shaft and propeller *Oct 11th 1920*

Main boiler safety valves adjusted *Dec. 4th 1920* Thickness of adjusting washers *Starb^d Ford 3/8" Port. Aft 3/4"*

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 *Steel* Identification Marks on Do. *O.T.J.* Material of Screw shafts *Steel* Identification Marks on Do. *O.T.J.*

Material of Steam Pipes *Steel* Test pressure *55.5 lbs per sq*

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 *S/S. Volunda.*

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

This machinery has been constructed under special survey and in accordance with the rules. The workmanship and materials are good.

*Engines have been satisfactorily installed on board, and together with aux's tried under steam with satisfactory results, and in our opinion eligible to be classed * L.M.C. 12-20.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 12.20.

Bell. 8/2/21 9/2/21

The amount of Entry Fee ... £	<i>15.00</i>	When applied for,	
Special <i>Hilifax N.S.</i> ... £	<i>60.00</i>	Nov. 10 1920	
Donkey Boiler Fee ... £	<i>64.50</i>	Jan 12 1921	
Travelling Expenses (if any) £	<i>78.00</i>	When received,	
		24 1/2 1921	

FRI. 11 FEB. 1921

Committee's Minute

Assigned

+ L.M.C. 12.20

W. J. Allison & J. S. MacArthur
Engineer Surveyor to Lloyd's Register of Shipping.



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CERTIFICATE WRITTEN

Hilifax N.S.

Certificate (if required) to be sent to
The Surveys are requested not to write on or below the space for Committee's Minute.