

Rpt. 4.

REPORT ON MACHINERY

No. 1309

WED. FEB. 2 1921

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 Montreal and 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 *17 1/2" - 28 3/4" - 47"* Length of Stroke *33* Revs. per minute *88* Dia. of Screw shaft *9 3/8"* 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 *✓* If two
 liners are fitted, is the shaft lapped or protected between the liners _____ Length of stern bush *41"*
 Dia. of Tunnel shaft *8 1/16"* as per rule *8 1/16"* Dia. of Crank shaft journals *8 3/8"* as per rule *8 3/8"* 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 3/8"* Dia. of screw *12 1/4"* Pitch of Screw *MAX. 13-2"* No. of Blades *4* State whether moveable *No* Total surface *48.28"*
 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 *✓*
 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 bottom 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 duck union & 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 _____ Thickness of plates _____ Description of longitudinal joint _____ No. of strengthening rings _____
 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 Rods top end bolts & nuts

6 oil cones slides & nuts

2 " " bottom end " "

6 standard " " " "

2 Main Bearing bolts & nuts

12 Junk rings " "

3 Crankpins " "

2 1/2 Condensate Pipes & 50 feet

1 Feed pump suction & discharge valve

1 set of piston rings for each cylinder

1 Key " " " "

The foregoing is a correct description.

C. H. Danks

mechanical engineer



Manufacturer.

Shebrooke Que.

Dates { 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. 4. 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" AFE 1/4" Port. Ford 1/2" AFE 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.

Cell. 8/2/21 9/2/21

The amount of Entry Fee ... £ 15.00
Special Halifax N.S. 60.00
Donkey Boiler Fee ... £ 64.50
Travelling Expenses (if any) £ 78.00

When applied for, Nov. 10 1920
When received, Jan 12 1921

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

Committee's Minute

Assigned

FRI. 11 FEB. 1921

+ L.M.C. 12.20

CERTIFICATE WRITTEN



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