

REPORT ON MACHINERY

Received at London

Date of writing Report 31st Dec 1929 When handed in at Local Office 31st Dec 1929 Port of Montreal
 No. in Survey held at Montreal Date, First Survey 7th Feb 1929 Last Survey No. 3195
 Reg. Book. on the Twin Screw Ice Breaker "Saurcel" (Number of Volls)
 Master Built at Montreal By whom built Canadian Vickers Ltd. When
 Engines made at Montreal By whom made Canadian Vickers Ltd. when made 1929.
 Boilers made at Montreal By whom made Canadian Vickers Ltd. when made 1929.
 Registered Horse Power Owners Canadian Government Port belonging to Ottawa
 Nom. Horse Power as per Section 28 492 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion (Two) No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 20½" x 32" x 52" Length of Stroke 30" Revs. per minute 130 Dia. of Screw shaft as per rule 10½" Material of screw shaft O. H. forged 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 ✓ 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 4' 11½" ✓
 Dia. of Tunnel shaft as per rule 9.48 as fitted 10½" Dia. of Crank shaft journals as per rule 9.95 as fitted 11½" Dia. of Crank pin 11½" Size of Crank webs 21½" x 7½" Dia. of thrust shaft under collars 11½" Dia. of screw 11" Pitch of Screw 11" 9" 18" No. of Blades 4 State whether moveable Yes Total surface 42.3 sq. ft.
 No. of Feed pumps 2 Main Diameter of ditto 8" Stroke 22" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 8½" Stroke 8" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 1 Duplex Sizes of Pumps 10" x 7" x 12" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Bilge: Two 6" and Seven 3" Gun. Ser. Thr. & In Hold, &c. 6" Bilge Suct. P.S.
 1 Sanitary Pump 4½" x 4½" x 5" Duplex. Two Fresh Water Pumps 4½" x 4½" x 5" Duplex.
 No. of Bilge Injections 2 sizes 6" Connected to condenser, or to circulating pump Air Pump Is a separate Donkey Suction fitted in Engine room & size Yes 3" ✓
 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 2 Bilge and 2 Ballast How are they protected Through special Tunnel
 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
 Dates of examination of completion of fitting of Sea Connections 30th Oct 1929 of Stern Tube 30th Oct 29 Screw shaft and Propeller 30th Oct 1929
 the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper deck

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel Lukens Co. Coatsville, Pa. U.S.A.
 Total Heating Surface of Boilers 7809 Is Forced Draft fitted Yes No. and Description of Boilers 3 SRV's 3' dia x 11'0" long
 Working Pressure 190 lbs per sq. in. Tested by hydraulic pressure to 380 lbs Date of test F. 8-10-29 G.A. No. of Certificate F. 85. P. 86. S. 87. G.A.
 In each boiler be worked separately Yes Area of fire grate in each boiler 66½ sq. ft. No. and Description of Safety Valves to each boiler One double spring loaded Area of each valve 9.6211" Pressure to which they are adjusted 190 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 15'3" Length 11'0" Material of shell plates Steel
 Thickness 1½" Range of tensile strength 27 to 31 tons Are the shell plates welded or flanged Flanged Descrip. of riveting: cir. seams Double, Lap
 1. seams Triple, Butt Diameter of rivet holes in long. seams 1½" Pitch of rivets 9½" Lap of plates or width of butt straps 20½"
 Percentages of strength of longitudinal joint rivets 93% plate 85.2% Working pressure of shell by rules 192 lbs Size of manhole in shell 16" x 12"
 of compensating ring 38" x 33" No. and Description of Furnaces in each boiler 3- Dighton Material Steel Outside diameter 4'2½"
 Length of plain part top Thickness of plates crown 5" Description of longitudinal joint No. of strengthening rings bottom 5"
 Working pressure of furnace by the rules 193 lbs Combustion chamber plates: Material Steel Thickness: Sides 5" Back 5" Top 5" Bottom 15"
 No. of stays to ditto: Sides 9 x 7½" Back 8 x 8½" Top 7½ x 9" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 197 lbs
 Material of stays Steel Diameter at smallest part 2.3 1/2" Area supported by each stay 75 sq. in. Working pressure by rules 190 lbs End plates in steam space: Material Steel Thickness 1½" Pitch of stays 17½ x 15½ How are stays secured Double nuts Working pressure by rules 194 lbs Material of stays Steel
 Diameter at smallest part 5.05" Area supported by each stay 267 Working pressure by rules 194 lbs Material of Front plates at bottom Steel
 Thickness 13/16" Material of Lower back plate Steel Thickness 15/16" Greatest pitch of stays 13½ x 8½ Working pressure of plate by rules 215
 Diameter of tubes 2½" Pitch of tubes 3½ x 3½ Material of tube plates Steel Thickness: Front 13/16" Back 3/4" Mean pitch of stays 11½ x 7½
 across wide water spaces 3½ x 8½ Working pressures by rules 194 lbs Girders to Chamber tops: Material Steel Depth and
 width of girder at centre 10" x 4" Length as per rule 30½ Distance apart 9" Number and pitch of stays in each 3 at 7½"
 Working pressure by rules 270 lbs Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked separately
 Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness
 If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed
 Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

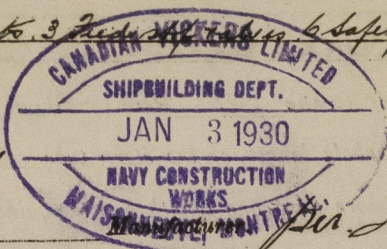
Is the vessel fitted? No

If so, is a report now forwarded? Yes

State the articles supplied: - One complete set of propeller blades, shafts and nuts. One tail shaft. One set of brasses and pins. One set of hp and lch shafts bolts and nuts. 12 boiler tubes and flanges. One half set of packing for all cylinders. Set of bushes for stern tube. 12 Bilge suction valves. One half set of shaft coupling bolts. 4 Main bearing bolts and nuts. One eccentric strap. One valve spindle with bottom flange and bolts. Complete set of drag links and brasses. 12 studs and nuts for cylinder covers and casing covers. 12 jointing bolts for piston. Set of metallic packing for all rods and spindles. A quantity of assorted bolts and nuts. 12 boiler bushes (flange). 12 Combustion chamber stays and nuts. 3 safety valve springs. 3 Main fuel check valves and other spare gear.

The foregoing is a correct description,

Canadian Vickers Limited
Montreal Canada.



For H. Cameron. (Naval Architect)

Dates of Survey while building: During progress of work in shops - 1929 Feb 7, 8, 11, 23, 28. Mar 4, 7, 11, 13, 18, 21, 22, 25, 26, 28. Apr 9, 11, 18. May 8, 23. June 14, 19, 21, 24, 27. July 10, 24, 29, 30. Aug 1, 2, 9, 15, 16, 19, 22. Sept 3, 6, 9, 11, 13, 14, 18, 24. Oct 1, 4, 7. Total No. of visits 66

Is the approved plan of main boiler forwarded herewith? Yes

Dates of Examination of principal parts: Cylinder 27.9.29, 15.9.29, Slides 24.9.29, Covers 27.9.29, Pistons 1.10.29, Rods 1.10.29, Connecting rods 12.10.29, Crank shaft 24.10.29, Thrust shaft 15.10.29, Tunnel shafts 15.10.29, Screw shaft 12.10.29, Propeller 12.10.29, Stern tube 11.9.29, Steam pipes tested 22.11.29, Engine and boiler seatings 30.9.29, Engines holding down bolts 6.10.29, Completion of pumping arrangements 5.12.29, Boilers fixed 22.11.29, Engines tried under steam 6.12.29, Main boiler safety valves adjusted 6.12.29, Thickness of adjusting washers Cen. Boiler 3/32", Port Boiler 3/32", Star Boiler 3/32", Port 3/32", Star 3/32", Identification Mark on Do 1849.T.S. 18.4.29, Port 1844.T.S. 29.4.29, Port 1838.T.S. 12.4.29, Identification Marks on Do 1841.T.S. 18.4.29, Port 1846.T.S. 29.4.29, Material of Crank shaft Steel, Identification Mark on Do 1849.T.S. 18.4.29, Port 1844.T.S. 29.4.29, Port 1838.T.S. 12.4.29, Material of Thrust shaft Steel, Identification Mark on Do 1841.T.S. 18.4.29, Port 1846.T.S. 29.4.29, Material of Tunnel shafts Steel, Identification Marks on Do 1841.T.S. 18.4.29, Port 1846.T.S. 29.4.29, Material of Steam Pipes Steel, Test pressure 600 lbs per sq. in.

Is an installation fitted for burning oil fuel? Yes

Is the flash point of the oil to be used over 150°F? Yes

Have the requirements of Section 49 of the Rules been complied with? Yes

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 machinery of this vessel has been constructed under special survey in accordance with the approved plans and the Rules of this Society; The materials and workmanship are good; The Boilers and steam pipes have been tested as above by hydraulic pressure and found sound and tight.

The machinery has been properly fitted on board and on completion tried under steam and found satisfactory. The safety valves have been adjusted under steam and tested for accumulation which did not exceed 8 lbs. per sq. in.

In my opinion the vessel is eligible for the record. * L.R.C. 12.29 in the Register Book.

It is submitted that this vessel is eligible for the record.

+ L.R.C. 12.29. C.L. F.D.

Fitted for oil fuel 12.29 H.P. above 150°F.

The amount of Entry Fee ... £ 25.00
Special ... £ 4.94
Donkey Boiler Fee ... £
Travelling Expenses (if any) £ 56.50

When applied for, 13 Jan 1930

When received, 30 Jan 1930

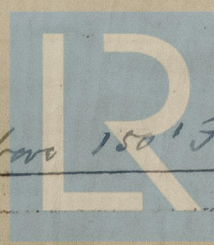
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

+ L.R.C. 12.29. C.L. F.D.

Fitted for oil fuel 12.29 H.P. above 150°F.



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