

Rpt. 4.

REPORT ON MACHINERY.

No. 1930

REC'D NEW YORK DEC - 3 1921

Received at London Office

WFO 280 EC. 1921

Date of writing Report *Nov 28th* 1921 When handed in at Local Office *Nov 28th* 1921 Port of *Montreal*

No. in Survey held at *Three Rivers P.Q.* Date, First Survey *Sept. 7. 1920.* Last Survey *Nov 25th* 1921

Reg. Book. on the *Single Screw Steamer "Canadian Cruiser"* (Number of Visits *57*)

Master *Starratt* Built at *Halifax* By whom built *Halifax Shipyards Ltd.* Tons { Gross *177.64* Net *4413.44* When built *1921*

Engines made at *Three Rivers P.Q.* By whom made *Sidewater Shipbuilders Ltd.* when made *1921*

Boilers made at *Three Rivers P.Q.* By whom made *Sidewater Shipbuilders Ltd.* when made *1921*

Registered Horse Power *326* Owners *Canadian Government Merchant Marine Ltd.* Port belonging to *Halifax N.S.*

Nom. Horse Power as per Section 28 *705* Is Refrigerating Machinery fitted for cargo purposes *Yes* 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 *29 1/2" x 50" x 80"* Length of Stroke *54"* Revs. per minute *75* Dia. of Screw shaft *16"* as per rule *16"* as fitted *16 1/4"* 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 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 *Yes* Length of stern bush *6' 1 1/2"*

Dia. of Tunnel shaft *14.8"* as per rule *14.8"* as fitted *15.0"* Dia. of Crank shaft journals *15.5"* as per rule *15.5"* as fitted *15 3/4"* Dia. of Crank pin *16"* Size of Crank webs *4' 9" x 11"* Dia. of thrust shaft under collars *15 3/4"* Dia. of screw *19' 0"* Pitch of Screw *18' 6"* No. of Blades *4* State whether moveable *Yes* Total surface *110 sq. ft.*

No. of Feed pumps *2* Diameter of ditto *9' 1/2"* Stroke *24"* Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *2* Diameter of ditto *7 1/4"* Stroke *30"* Can one be overhauled while the other is at work *Yes*

No. of Donkey Engines *4* Sizes of Pumps *1-5 1/2" x 6" x 15"* *1-8" x 9" x 18"* *1-11" x 14" x 12" double* *1-4 1/2" x 5" x 12"* No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room *6 x 3 1/2"*, *1 x 4"* In Holds, &c. *12 x 3 1/2"*

No. of Bilge Injections *1* sizes *9"* Connected to condenser or to circulating pump *Is a separate Donkey Suction fitted in Engine room & size *Yes*, 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 *Below Main Decking*

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 *None*

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 grating in engine room.*

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

Total Heating Surface of Boilers *10848 sq. ft.* Is Forced Draft fitted *Yes* No. and Description of Boilers *4 Scotch Marine Type.*

Working Pressure *180 lbs* Tested by hydraulic pressure to *225 lbs* Date of test *Nov 25 1921* No. of Certificate *10848*

Can each boiler be worked separately *Yes* Area of fire grate in each boiler *100 sq. ft.* No. and Description of Safety Valves to each boiler *4* Are they fitted with easing gear *Yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *12"* Mean dia. of boilers *48"* Length *12'* Material of shell plates *Steel*

Thickness *3/16"* Range of tensile strength *45,000 lbs* Are the shell plates welded or flanged *Yes* Descrip. of riveting: cir. seams *Hand*

long. seams *Hand* Diameter of rivet holes in long. seams *1 1/8"* Pitch of rivets *4"* Lap of plates or width of butt straps *1"*

Per centages of strength of longitudinal joint *85%* Working pressure of shell by rules *180 lbs* Size of manhole in shell *18"*

Size of compensating ring *18"* No. and Description of Furnaces in each boiler *4* Material *Steel* Outside diameter *48"*

Length of plain part *12'* Thickness of plates *3/16"* Description of longitudinal joint *Hand* No. of strengthening rings *4*

Working pressure of furnace by the rules *180 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *3/16"* Back *3/16"* Top *3/16"* Bottom *3/16"*

Pitch of stays to ditto: Sides *12"* Back *12"* Top *12"* If stays are fitted with nuts or riveted heads *Yes* Working pressure by rules *180 lbs*

Material of stays *Steel* Area at smallest part *12"* Area supported by each stay *12"* Working pressure by rules *180 lbs* End plates in steam space: *Steel*

Material *Steel* Thickness *3/16"* Pitch of stays *12"* How are stays secured *Hand* Working pressure by rules *180 lbs* Material of stays *Steel*

Area at smallest part *12"* Area supported by each stay *12"* Working pressure by rules *180 lbs* Material of Front plates at bottom *Steel*

Thickness *3/16"* Material of Lower back plate *Steel* Thickness *3/16"* Greatest pitch of stays *12"* Working pressure of plate by rules *180 lbs*

Diameter of tubes *1 1/2"* Pitch of tubes *12"* Material of tube plates *Steel* Thickness: Front *3/16"* Back *3/16"* Mean pitch of stays *12"*

Pitch across wide water spaces *12"* Working pressures by rules *180 lbs* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *12"* Length as per rule *12"* Distance apart *12"* Number and pitch of stays in each *12"*

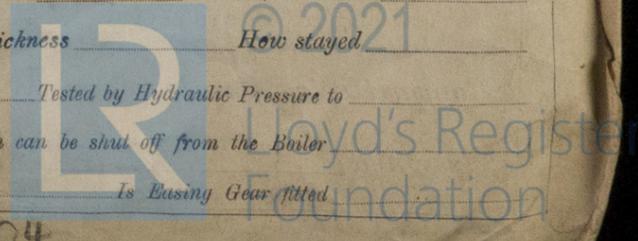
Working pressure by rules *180 lbs* Steam dome: description of joint to shell *Hand* % of strength of joint *85%*

Diameter *18"* Thickness of shell plates *3/16"* Material *Steel* Description of longitudinal joint *Hand* Diam. of rivet holes *1 1/8"*

Pitch of rivets *4"* Working pressure of shell by rules *180 lbs* Crown plates *Hand* Thickness *3/16"* How stayed *Hand*

138 SUPERHEATER. Type *Hand* Date of Approval of Plan *Hand* Tested by Hydraulic Pressure to *225 lbs* Date of Test *Hand* Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler *Yes* Diameter of Safety Valve *1 1/2"* Pressure to which each is adjusted *180 lbs* Is Easing Gear fitted *Yes*

W367-0004



IS A DONKEY BOILER FITTED? No.

If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied :-

1 Propeller shaft	1 stern tube bush	2 bottom end bolts & nuts	1 set air pump valves	3 Main & 3 turn stop valves
1 section crank shaft	1 set studs & nuts for blades	3 crank shaft coupling bolts	1 " bidge "	2 safety valve springs
1 eccentric straps	1 set of piston springs	1 set of thrust shaft "	6 cylinder studs & nuts	24 boiler tubes
1 Abut + 1 Adcock Eccentric Rod	1 set of metallic packing	1 pair of top end blowers	6 steam chest "	44 stay tubes
1 safety valve spindle	12 condenser tubes & 50 spacers	1 " bottom "	12 fuel g "	200 feet bar
2 Propeller blades	2 connecting rod big end bolts & nuts	2 main bearing "	48 baffle plates	

The foregoing is a correct description, TIDEWATER SHIPBUILDERS LIMITED, THREE RIVERS, QUE.

D. McKean, Manufacturer.

Dates of Survey while building: During progress of work in shops - 1920 August 17, Oct 26, Nov 13, Dec 14, 21, Feb 8, 14, 24, Mar 3, 4, 26, Apr 11, 27, May 7, 12, 17, 25, Jun 6, 14, 30, July 12. During erection on board vessel - 1921 July 29, Aug 3-5-8-9-10-11-12-15-17-18-23-24-25-26-30-31, Sept 1-2-6-8-9-12-13-14-15-19-20-23-27-28-29-30, July 6-7-8. Total No. of visits - 57. Is the approved plan of main boiler forwarded herewith? No. " " " donkey " " " " ✓

Dates of Examination of principal parts - Cylinders 24-2-21 Slides 1-8-21 Covers 1-8-21 Pistons 1-8-21 Rods 16-3-21 Connecting rods 16-3-21 Crank shaft 14-2-21 Thrust shaft 14-2-21 Tunnel shafts 4-4-21 Screw shaft 12-4-21 Propeller 3-8-21 Stern tube 14-6-21 Steam pipes tested 19-9-21 Engine and boiler seatings 3-8-21 Engines holding down bolts 6-9-21 Completion of pumping arrangements Oct 21st Boilers fixed 15-8-21 Engines tried under steam 30-9-21 Completion of fitting sea connections 8-7-21 Stern tube 7-7-21 Screw shaft and propeller 3-8-21 Main boiler safety valves adjusted 29-9-21, 30-9-21 Thickness of adjusting washers P.B. 5 11/32, C.B. 5 3/16, S.B. 5 5/32, For B. 5 5/16. Material of Crank shaft S. Identification Mark on Do. MR Material of Thrust shaft S Identification Mark on Do. T.S.M. Material of Tunnel shafts S Identification Marks on Do. T.S.M. Material of Screw shafts S Identification Marks on Do. T.S.M. Material of Steam Pipes Steel Test pressure 540 lbs. 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? ✓ If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c. These engines have been constructed in the shop under special survey and in accordance with the rules and approved plans. In my opinion they are eligible to be classed after being fitted in the ship to the Halifax surveyors satisfaction. The engines and auxiliary machinery have been satisfactorily installed on board and tried under steam both as a coal and oil burner with satisfactory results. The requirements of Section 49 of the Rules for the burning of oil fuel have been complied with, and the machinery is, in my opinion, eligible to receive the record + L.M.C. 11-21, fitted for oil fuel 11-21, F.P. above 150°F

It is submitted that this vessel is eligible for THE RECORD.

+ L.M.C. - 11.21. F.D. C.L.

Fitted for Oil Fuel, 11.21, F.P. above 150° F.

Handwritten notes: \$140 for sheets, (24/22)

Handwritten notes: 2/1/22, G.P.A.

The amount of Entry Fee ... £ 30.00
 Special ... £ 220.50
 Donkey Boiler Fee ... £ 250.25
 Travelling Expenses (if any) £ 92.50

When applied for: 19th July 18, 1921
 When received: 26/8/21

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

Committee's Minute: TUE. 30 JAN. 1922
 Assigned: + L.M.C. 11.21 F.D. C.L.
 Fitted for oil fuel 11.21.
 F.P. above 150° F.



Certificate (if required) to be sent to Halifax & S.

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

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