

## REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office.

2 DEC 1942

Date of writing Report 23rd. Sept. 42 When handed in at Local Office 23rd. Sept. 42 Port of Vancouver, B. C.

No. in Survey held at Victoria, B. C. Date, First Survey 6th June, 1942 Last Survey 15th Sept. 1942

Reg. Book. Steel Single Screw Steamer "FORT LIARD" (Number of Visits 35) Tons { Gross 7131.2 Net 4262.91

Built at Victoria, B. C. By whom built Victoria Machinery Depot Co. Ltd. Yard No. 22 When built 1942

Engines made at Lachine, P.Q. By whom made Dominion Engineering Wks. Ltd. Engine No. 26 When made 1942

Boilers made at Vancouver, B. C. By whom made Vancouver Iron Works, Ltd. Boiler No. 209 When made 1942

Registered Horse Power 229 Owners Minister of Munitions & Supply of Canada. Port belonging to 211

Nom. Horse Power as per Rule 504 Is Refrigerating Machinery fitted for cargo purposes. No Is Electric Light fitted Yes

Trade for which Vessel is intended General Cargo.

ENGINES, &c.—Description of Engines Triple Expansion. Superheat to 575°F. Revs. per minute 80

Dia of Cylinders 24½"x37"x70" Length of Stroke 48" No. of Cylinders 3 No. of Cranks 3

Crank shaft, dia. of journals 13.99" as per Rule 14½" as fitted 14½" Crank pin dia. 14½" Crank webs shrunk Mid. length breadth -- Thickness parallel to axis 9" & 9½" L.P.

Intermediate Shafts, diameter 13.33" as per Rule 13.5" as fitted 13.5" Thrust shaft, diameter at collars 13.99" as per Rule 14.25" as fitted 14.25" Thickness around eye-hol 7½" Pin

Tube Shafts, diameter -- as per Rule -- as fitted -- Screw Shaft, diameter 14.87" as per Rule 15.25" as fitted 15.25" Is the {screw} shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes .75" as per Rule .78125 as fitted .78125 Thickness between bushes .565" as per Rule .68" as fitted .68" Is the after end of the liner made watertight in the propeller boss Yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner Solid

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 Tight fit

If two liners are fitted, is the shaft lapped or protected between the liners -- Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft No If so, state type -- Length of Bearing in Stern Bush next to and supporting propeller 61"

Propeller, dia. 18'-6" Pitch 16'-0" No. of Blades 4 Material Bronze whether Moveable Solid Total Developed Surface 117 sq. ft.

Feed Pumps worked from the Main Engines, No. None Diameter -- Stroke -- Can one be overhauled while the other is at work --

Bilge Pumps worked from the Main Engines, No. Two Diameter 4½" Stroke 26" Can one be overhauled while the other is at work Yes

Feed {No. and size Two - 8"x10½"x22" Pumps connected to the {No. and size Four (One) 10"x12"x10" (One) 9"x6"x10" Two Rams

Pumps {How driven Steam Worthington Simplex Main Bilge Line {How driven Duplex Steam Duplex Steam M.E.

Ballast Pumps, No. and size (One) 10"x12"x10" type Duplex Lubricating Oil Pumps, including Spare Pump, No. and size None

Are two independent means arranged for circulating water through the Oil Cooler -- Suctions, connected to both Main Bilge Pumps and Auxiliary bd

Bilge Pumps in Engine and Boiler Room 1-3" Dia. Port 1-3" Dia. Star in Blr. Rm. 1-3" Dia. Port 1-3" Dia. Star bd

in Engine Rm. 1-2½" Dia. in Thrust Recess. bd

1-2½" Dia. in Tunnel well In Holds, &c. 1-4" Dia. to F.P. 1-3" Dia. P&S to Nos.

1-2-3-4 & 5 Holds. 1-4" Dia. to A.P.

Main Water Circulating Pump Direct Bilge Suctions, No. and size (One) - 9" Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size (One) 5" Dia. Star bd side

Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes Yes

Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes

Are all Sea Connections fitted direct on the skin of the ship Yes. Main Injection Are they fitted with Valves or Cocks Valves and Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Overboard Discharges above or below the deep water line Below

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 pass through the bunkers Steel Air Pipes to No. 4 D.B. Tanks How are they protected Steel Straps welded across frames

What pipes pass through the deep tanks Bilge Suctions. No. 7 D.B. Air Pipes Have they been tested as per Rule Yes

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

Is the arrangement of Valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another Yes Is the Shaft Tunnel watertight Yes Is it fitted with a watertight door No worked from --

MAIN BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 7140 Sq. Ft.

Which Boilers are fitted with Forced Draft All Three Which Boilers are fitted with Superheaters All Three

No. and Description of Boilers 3 Single ended multitubular Working Pressure 220 lbs. per sq. inch

IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes

IS A DONKEY BOILER FITTED? No If so, is a report now forwarded? --

Can the donkey boiler be used for domestic purposes only --

PLANS. Are approved plans forwarded herewith for Shafting Approved Plans Main Boilers U.K. Auxiliary Boilers -- Donkey Boilers --

(If not state date of approval)

Superheaters Approved Plans in General Pumping Arrangements U.K. Oil fuel Burning Piping Arrangements --

## SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied --

As per List forwarded with Vancouver Report No. 5718 - S.S. "FORT ST. JAMES"

The foregoing is a correct description

PER

Manufacturer.



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002232-002246-0116



During progress of work in shops - - See Montreal Report No. 5634  
Dates of Survey while building  
During erection on board vessel - - -  
1942. - June 6, 11, 15, 19, 23, 24, 25, 28, 30. July 4, 10, 17, 18, 24, 25, 29.  
Aug. 1, 5, 15, 19, 20, 26, 27, 29, 31 Sept. 2, 3, 4, 8, 9, 10, 11, 12, 14, 15.  
Total No. of visits 35

Dates of Examination of principal parts - Cylinders Slides Covers  
Pistons Piston Rods Connecting rods  
Crank shaft See Montreal Rpt. No. 5634 Thrust shaft July 18th, 1942. Intermediate shafts July 18th, 1942.  
Tube shaft June 19th, 1942. Screw shaft June 24th, 1942. Propeller June 24th, 1942.  
Stern tube June 19th, 1942. Engine and boiler seatings July 25th, 1942 August 5th, 1942 Engines holding down bolts August 5th, 1942.  
Completion of fitting sea connections June 28th, 1942.  
Completion of pumping arrangements Sept. 3rd, 1942 Boilers fixed July 25th, 1942 Engines tried under steam August 26th, 1942 September 12th, 1942  
Main boiler safety valves adjusted September 2nd, 1942 Thickness of adjusting washers P.V. 500" P.V. 500" P.V. 5625" P.V. 5625"  
Crank shaft material O.H. Steel Lloyd's 3237 Identification Mark H.S. 24-4-42 Thrust shaft material O.H. Steel Lloyd's 5052 Identification Mark T.M. 16-1-42  
Intermediate shafts, material O.H. Steel Lloyd's #5377, 5376, 5306, 5383, 5382 Identification Marks 1-5-42 T.M. 1-5-42  
Screw shaft, material O.H. Steel Lloyd's 4038 Identification Mark 1-11-41 Steam Pipes, material S.D. Steel Test pressure 660 lbs. per sq. inch. Date of Test July 24, 1942 Aug. 15, 1942  
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 the Rules for the use of oil as fuel been complied with --  
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo No If so, have the requirements of the Rules been complied with --  
If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with --  
Is this machinery duplicate of a previous case Yes If so, state name of vessel S.S. "FORT McLEOD" (Ver. Rpt. No. 5776)  
General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery of this Vessel has been constructed under special survey of the Montreal Surveyors, and installed on board under special survey in accordance with the approved plans, New York letters and otherwise in conformity with the Society's Rules. The materials and workmanship are good and the tests required by the Rules have been satisfactorily carried out. The whole installation has been examined and tested under full working conditions on sea trials and afterwards part opened out examined and found satisfactory. The machinery has also been surveyed during construction and installed on behalf of Wartime Merchant Shipping, Ltd., to ensure that the terms of the specifications have been fully complied with and this work has been satisfactorily carried out.

The machinery of this vessel is eligible in our opinion to be classed in the Register Book with Notation of L.M.C. 9, 42 Screw Shaft C.L. 3 S.E. Blrs. 220 lbs. per sq. inch F.D.

#### Montreal fees charged in Montreal Rep't. No. 5634

The amount of Entry Fee	£	:	When applied for,
Special (Ver.)	£	\$133.00	15th Sept. 1942
Donkey Boiler Fee	£	:	When received,
Travelling Expenses (if any)	£	\$ 60.00	✓ 19.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

TUE 8 DEC 1942

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