

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office. 8 JAN 1946

15th Nov., 1945. When handed in at Local Office. 15th Nov., 1945. Port of **Vancouver, B. C.**
 Survey held at **Esquimalt, B. C.** Date, First Survey **12th June, 1945.** Last Survey **8th Nov., 1945.**
 on the **Steel Twin Screw Steam Transport Ferry - H.M.L.S.T. "3534".** (Number of Visits **Constant attendance**)
Esquimalt, B.C. By whom built **Yarrows Ltd.** Yard No. **54** When built **10 - 1945.**
 made at **Lachine, P. Q.** By whom made **Dominion Bridge Co., Ltd.** Engine No. **P.-2149** When made **1945**
 made at **Vancouver, B. C.** By whom made **Vancouver Iron Works, Ltd.** Boiler No. **P.-790** When made **1944**
S.-833 When made **1945**
 Indicated Horse Power **-** Owners **My Lord's Commissioners of the Admiralty.** Port belonging to **-**
 Horse Power as per Rule **749** Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **Yes**
 for which Vessel is intended **Government Service.**

ENGINES, &c.—Description of Engines **2 Engines - Triple Expansion Reciprocating** Revs. per minute **185**
 of Cylinders **38 1/2" x 18 1/2" x 31" x 38 1/2"** Length of Stroke **30"** No. of Cylinders **4** No. of Cranks **4**
 shaft, dia. of journals as per Rule **10.03"** Crank pin dia. **10.5"** Crank webs Mid. length breadth **16.75"** Thickness parallel to axis **6.5"**
 as fitted **10.5"** Mid. length thickness **6.5"** Thickness around eye-hole **4.875"**
 Intermediate Shafts, diameter as per Rule **9.55"** Thrust shaft, diameter at collars as per Rule **10.03"**
 as fitted **10.5"** as fitted **10.5"**
 Shafts, diameter as per Rule **10.726"** Is the **main** shaft fitted with a continuous liner **No**
 as fitted **10.75"** as fitted **10.75"**
 Liners, thickness in way of bushes as per Rule **-** Thickness between bushes as per Rule **-** Is the after end of the **main** shaft made watertight in the **stern**
 as fitted **None** as fitted **-**
 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 **-**
 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 **-**
Yes If so, state type **"Newark" Oil Gland.** Length of Bearing in Stern Bush next to and supporting propeller **66"**
 Pitch **10'-2"** No. of Blades **3** Material **Bronze** whether Moveable **No** Total Developed Surface **35 sq. ft.**
 Pumps worked from the Main Engines, No. **None** Diameter **-** Stroke **-** Can one be overhauled while the other is at work **-**
 Pumps worked from the Main Engines, No. **None** Diameter **-** Stroke **-** Can one be overhauled while the other is at work **-**
 (No. and size **4 - 8" x 10 1/2" x 22"** Pumps connected to the **4 - Fire & Bilge Duplex - 10" x 8" x 10"**
 (How driven **Steam-Vertical "Weir" Type.** Main Bilge Line **How driven Steam**
 1st Pumps, No. and size **2-14" x 12" x 12" Steam Duplex.** Lubricating Oil Pumps, including Spare Pump, No. and size **-**
 independent means arranged for circulating water through the Oil Cooler **-** Suctions, connected to both Main Bilge Pumps and Auxiliary
 Pumps, In Engine and Boiler Room **Eng. Rm. - P. & S. - Each - 2-3" dia. - 1-2 1/2" dia. (Coff.) Blr. Rm. P. & S. - Each - 2-3" dia. - 1-2 1/2" dia.**
 Pump Room **For'd. - 1 - 3" dia.** In Holds, &c. **1 - Each - 3" dia., Spirit Rm., Aft Diesel Rm., Refrig. Machy. Rm.,**
Comps. #27-28, Chain Lockers, P. & S., Shaft Compt. P. & S., Cargo Space, 7-3" dia. - Steer. Gear Compt., 2-3" dia.
dia. - A.P. Tank (No. 1) & Skags - 3-3" dia., Coffdm. - 2-2 1/2" dia. - Petrol Tank Compt. - 1-5" dia.
 Water Circulating Pump Direct Bilge Suctions, No. and size **1-9" dia. P. & S. Rm.** Independent Power Pump Direct Suctions to the Engine Room Bilges,
 and size **1-2 1/2" dia. - P. & S. (Coffdm.)** Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes **Yes**
 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**
 Sea Connections fitted direct on the skin of the ship **Yes - On pads and strong stools.** Are they fitted with Valves or Cocks **Yes**
 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**
 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 **Yes**
 Pipes pass through the bunkers **Ballast Mains** How are they protected **-**
 pipes pass through the deep tanks **None** Have they been tested as per Rule **Yes**
 Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times **Yes**
 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 **watertight** **Yes** Is it fitted with a watertight **hatch** **Yes** worked from **Lower deck.**

IN BOILERS, &c.—(Letter for record **(a)**) Total Heating Surface of Boilers **2 Boilers - 12654 sq. ft.**
 which Boilers are fitted with Forced Draft **All-Closed Stokehold.** Which Boilers are fitted with Superheaters **None**
 and Description of Boilers **2 - "Yarrow" Type Water Tube** Working Pressure **(225 lbs. per sq. inch.)**
(Safety valves set 230 lbs.)

A REPORT ON MAIN BOILERS NOW FORWARDED? **Yes**

A DONKEY BOILER FITTED? **No.**

If so, is a report now forwarded? **-**

the donkey boiler be used for domestic purposes only. **-**

ANS. Are approved plans forwarded herewith for Shafting **Approved plans in U.K.**
 (If not state date of approval) **As Fitted Plan**

heaters **-** General Pumping Arrangements **attached.**

Auxiliary Boilers **-** Donkey Boilers **-** Oil fuel Burning Piping Arrangements **-**

SPARE GEAR.

the spare gear required by the Rules been supplied **Yes**

the principal additional spare gear supplied

Additional spare gear as specified by British Admiralty Technical Mission.

The foregoing is a correct description

Shipbuilder.



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See Montreal, P. Q. Report No. 6571 - 13th June, 1945.

Dates of Survey while building

During progress of work in shops - - -

During erection on board vessel - - -

Total No. of visits

From 12th June, 1945 to 8th November, 1945. (Constant attendance)

Dates of Examination of principal parts - Cylinders - Slides - Covers -

Pistons -

Crank shaft - 6-3-45, 1-8-45, 10-8-45. Connecting rods -

Tube shaft - Thrust shaft - 31-5-45, 6-6-45, 24-7-45. Intermediate shafts - 31-5-45, 14-6-45. Propellers - 13-3-45, 21-3-45, 14-6-45.

Stern tube - 20-3-45, 21-3-45, 14-6-45. Screw shafts - 31-5-45, 14-6-45. Engines holding down bolts - 1-8-45, 10-8-45.

Engine and boiler seatings - 20-6-45

Completion of fitting sea connections - 20-6-45.

Completion of pumping arrangements - 28-9-45. Boilers fixed - 31-7-45. Engines tried under steam - 24-9-45, 11-10-45, 2-10-45, 24-10-45.

Main boiler safety valves adjusted - 3-10-45. Thickness of adjusting washers P.Blr. (P.V. - .630" S.V. - .490" S.Blr. (P.V. - .623" S.V. - .517"

Crank shaft material O.H. Steel Identification Mark 6912-8-2-45 H.G.L.P. Thrust shaft material O.H. Steel Identification Mark 6933-16-2-45 H.G.L.P.

Intermediate shafts, material O.H. Steel Identification Mark 3215-6-6-45 R.G. 2350-13-2-45 R.G. 31-5-45 R.G.

Screw shaft, material O.H. Steel Identification Mark 3061 31-5-45 R.G. Steam Pipes, material S.D. Steel Test pressure 675 lbs. Date of Test 21-6-45, 17-9-45.

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 the Rules for the use of oil as fuel been complied with As approved by British Admiralty Technical Mission specifications.

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 H.M.L.S.T. "3514" - Ver. Rpt. No. 6528.

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, P. Q. Surveyors and installed on board under Special Survey in accordance with the approved plans, British Admiralty Technical Mission Specifications and Instructions, New York letters and otherwise in general conformity with the Society's Rules.

The whole installation has been examined and tested under full working conditions on sea trials and was afterwards part opened out, examined and found satisfactory.

The Machinery of this vessel is eligible in my opinion to be classed in the Register Book, with notation, * L.M.C. 10-45 - Screw Shafts - 2 W.T. Boilers, 225 lbs. P.D. - Fitted for Oil Fuel, 10-45 Flashpoint above 150° Fah.

NOTE:- The Electrical installation of this vessel was carried out and tested under the supervision of the British Admiralty Technical Mission Resident Electrical Overseer.

(and Special Survey Fee charged on Montreal, P.Q. Rpt. No. 6571.)

The amount of Entry Fee \$

Special ... Ver. \$ 343.00

Donkey Boiler Fee ... \$

Travelling Expenses (if any) \$ 60.00

When applied for, 10th Nov. 1945

When received, 19

Committee's Minute

Assigned + LMC 11,45

FITTED FOR OIL FUEL 11,45 FLASH POINT ABOVE 150° F. P.D. O.G.

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