

RECEIVED

Report on Steam Turbine Machinery.

No. 104293

Rpt. 4a.

Date of writing Report 19... When handed in at Local Office **114 FEB 1947** Port of **NEWCASTLE ON TYNE** Received at London Office **26 FEB 1947**
 No. in Survey held at **Newcastle on Tyne** Date, First Survey **20th MARCH 1946** Last Survey **Feb 1947**
 Reg. Book **85896** on the **SS. BEAVERCOVE** (Number of Visits **35**)

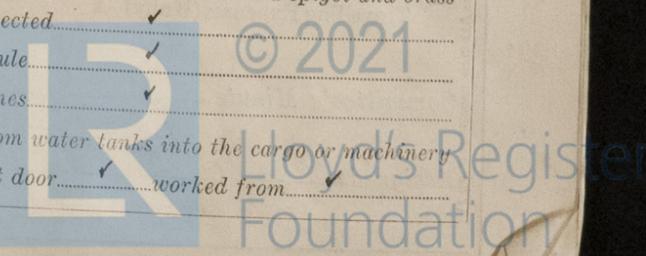
Built at **Glasgow** By whom built **Fairfield Co. Ltd.** Tons {Gross / Net} _____
 Engines made at **Newcastle on Tyne** By whom made **C.A. Parsons Co. Ltd.** Yard No. **728** When built **1946**
 Boilers made at _____ By whom made _____ Engine No. **2692-5** When made **1947**
 Shaft Horse Power at Full Power **9000** Owners **Canadian Pacific Railway Co. Ltd.** Boiler No. _____ When made _____
 Nom. Horse Power as per Rule **2052** Is Refrigerating Machinery fitted for cargo purposes **Yes** Is Electric Light fitted **Yes**
 Trade for which Vessel is intended **Open Service**

STEAM TURBINE ENGINES, &c.—Description of Engines **Turbo-Electric**
 No. of Turbines Ahead **2** Direct coupled, single reduction geared, double reduction geared } propelling shafts No. of primary pinions to each set of reduction gearing _____
 direct coupled to Alternating Current Generator **3** phase **57.5** periods per second } rated **7000** Kilowatts **3000** Volts at **3450** revolutions per minute;
 for supplying power for driving **ONE** Propelling Motors, Type **Three phase Synchronous - Double Unit, Each Unit**
 rated **3000** Kilowatts **108** Volts at **108** revolutions per minute. Direct coupled, single or double reduction geared to **one** propelling shafts.

TURBINE BLADING.	H. P. IMAUSE			H. P. REACTION			L. P.			ASTERN.		
	HEIGHT OF BLADES	DIAMETER AT TIP	NO. OF ROWS.	HEIGHT OF BLADES	DIAMETER AT TIP	NO. OF ROWS.	HEIGHT OF BLADES	DIAMETER AT TIP	NO. OF ROWS.	HEIGHT OF BLADES	DIAMETER AT TIP	NO. OF ROWS.
1st Expansion	.625"	28.575"	1	.74"	17.074"	6	.90"	21.769"	5			
2nd "	INLET .9685" OUTLET 1.0625"	29.375" (OUTLET)	1	.80"	17.194"	6	1.00"	21.969"	4			
3rd "				.86"	17.314"	5	1.15"	22.269"	4			
4th "	ROW 1. SHROUDED 3/32" THICK			.95"	17.494"	4	1.35"	22.669"	3			
5th "	ROW 2. " " 1/16" "			SHROUDED 1/16" THICK			1.75"		3			
6th "							2.00"		2			
7th "							2.25"		2			
8th "							2.50"		2			
9th "							2.75"		2			
10th "							3.00"		2			
11th "							3.25"		2			
12th "							3.50"		2			

Shaft Horse Power at each turbine H.P. **2100** I.P. _____ L.P. **6900** Revolutions per minute, at full power, of each Turbine Shaft H.P. **3450** I.P. _____ L.P. **3450**
 Rotor Shaft diameter at journals H.P. **5"** I.P. _____ L.P. **6" x 7"** Pitch Circle Diameter {1st pinion, 2nd pinion} 1st reduction wheel, main wheel, 1st reduction wheel, main wheel
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings {1st pinion, 2nd pinion} 1st reduction wheel, main wheel
 Flexible Pinion Shafts, diameter {1st, 2nd} Pinion Shafts, diameter at bearings External Internal {1st, 2nd} diameter at bottom of pinion teeth
 Wheel Shafts, diameter at bearings {1st, main} diameter at wheel shroud, Generator Shaft, diameter at bearings **9"**
 Intermediate Shafts, diameter as per rule, as fitted, Propelling Motor Shaft, diameter at bearings **18 1/2"**
 Tube Shaft, diameter as per rule, as fitted, Screw Shaft, diameter as per rule, as fitted, Thrust Shaft, diameter at collars as per rule, as fitted
 Bronze Liners, thickness in way of bushes as per rule, as fitted, Thickness between bushes as per rule, as fitted, Is the tube screw shaft fitted with a continuous liner
 propeller boss. If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner
 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. Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft. If so, state type
 Propeller, diameter, Pitch, No. of Blades, Length of Bearing in Stern Bush next to and supporting propeller, State whether Moveable, Total Developed Surface, square feet.
 If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine **No** Can the H.P. or I.P. Turbines exhaust direct to the Condenser **No**
 No. of Turbines fitted with astern wheels **NONE** Feed Pumps {No. and size, How driven}

Pumps connected to the Main Bilge Line {No. and size, How driven}
 Ballast Pumps, No. and size
 Lubricating Oil Pumps, including Spare Pump, No. and size
 Are two independent means arranged for circulating water through the Oil Cooler
 Bilge Pumps, No. and size:—In Engine and Boiler Room, Suctions, connected both to Main Bilge Pumps and Auxiliary In Pump Room
 Main Water Circulating Pump Direct Bilge Suctions, No. and size
 Independent Power Pump Direct Suctions to the Engine Room
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes
 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
 Are all Sea Connections fitted direct on the skin of the ship
 Are they fitted with Valves or Cocks
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates
 Are the Overboard Discharges above or below the deep water level
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel
 Are the Blow Off Cocks fitted with a spigot and brass covering plate
 What pipes pass through the bunkers
 How are they protected
 What pipes pass through the deep tanks
 Have they been tested as per rule
 Are all Pipes, Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times
 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
 Is the Shaft Tunnel watertight
 Is it fitted with a watertight door
 worked from



BOILERS, &c.—(Letter for record.....) Total Heating Surface of Boilers.....

Is Forced Draft fitted..... No. and Description of Boilers..... Working Pressure.....

Is a Report on Main Boilers now forwarded?.....

Is a Donkey Boiler fitted?..... If so, is a report now forwarded?.....
(an Auxiliary)

Is the donkey boiler intended to be used for domestic purposes only.....

Plans. Are approved plans forwarded herewith for Shafting..... Main Boilers..... Auxiliary Boilers..... Donkey Boilers.....
(If not, state date of approval)

Superheaters..... General Pumping Arrangements..... Oil Fuel Burning Arrangements.....

Has the spare gear required by the Rules been supplied? *Yes - 15 per Approved list (attached)*
State the principal additional spare gear supplied.....



The foregoing is a correct description,..... Manufacturer.....

Dates of Survey while building: During progress of work in shops - 1946 MAR 20, JUNE 12, JULY 15, 18, AUG 28, SEPT 4, 25, 30, OCT 7, 8, 12, 14, 19, 24, 29, 31, NOV 7, 11, 12, 14, 18;
During erection on board vessel - 22, 25, 27, DEC 3, 28 1947 JAN 7, 15, 28, 31, Feb 5, 6, 11
Total No. of visits..... 35

Dates of Examination of principal parts—Casings..... 12-6-46 etc. Rotors..... 20-3-46 etc. Blading..... 8-10-46 etc. Gearing.....

Wheel shaft..... Thrust shaft..... Intermediate shafts..... Tube shaft..... Screw shaft.....

Propeller..... Stern tube..... Engine and boiler seatings..... Engine holding down bolts.....

Completion of fitting sea connections..... Completion of pumping arrangements..... Boilers fixed..... Engines tried under steam.....

Main boiler safety valves adjusted..... Thickness of adjusting washers.....
Identification Mark.....

Alternator Rotor. Shaft, Material and tensile strength..... O.H. STEEL - 38.1 TONS/INS²..... Identification Mark.....

Motor. Shaft, Material and tensile strength..... O.H. STEEL - 30.8 TONS/INS²..... Identification Mark.....

Aux Gen. Rotor. Shaft, Material and tensile strength..... O.H. STEEL - 31.3 TONS/INS²..... Identification Mark.....

Wheel shaft, Material..... Identification Mark..... Thrust shaft, Material..... Identification Mark.....

Intermediate shafts, Material..... Identification Marks..... Tube shaft, Material..... Identification Marks.....

Screw shaft, Material..... Identification Marks..... Steam Pipes, Material..... Test pressure.....

Date of test..... Is an installation fitted for burning oil fuel.....

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..... 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 a duplicate of a previous case..... *Yes*..... If so, state name of vessel..... *BEAVERGLEN*

General Remarks. (State quality of workmanship, opinions as to class, &c.)..... *This Machinery has been constructed under Special Survey in accordance with Approved Plans - Society's Rules and Secretary's letters*

The Materials and workmanship are good.

The Machinery has been despatched to Glasgow.

Forging Reports etc attached

The amount of Entry Fee ... £ : : When applied for.....

7/5/27-12-0 Special ... £91 : - : 25 FEB 1947

Donkey Boiler Fee ... £ : : When received.....

Travelling Expenses (if any) £ : : 19

J.S. Martin *A.P. Southwell*
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute.....

Assigned.....

Certificate (if required) to be sent to.....
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

