

REPORT ON STEAM TURBINE MACHINERY. No. 48696

List 4a.

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of writing Report 26-12-1928 When handed in at Local Office 19 Port of Glasgow
 No. in Survey held at Clydebank Date, First Survey Last Survey 22-12-1928
 Reg. Book. on the Twin Screw "Duchess of Richmond" (Number of Visits)
 built at Clydebank By whom built John Brown & Co. Ltd. Yard No. 523 Tons { Gross 1928
 engines made at do By whom made do Engine No. 523 When made 1928
 boilers made at do By whom made do Boiler No. 523 When made 1928
 shaft Horse Power at Full Power 19000 Owners Canadian Pacific Ry Co. Port belonging to London
 om. Horse Power as per Rule 3748 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes
 trade for which Vessel is intended North Atlantic.

STEAM TURBINE ENGINES, &c.—Description of Engines Twin screw single reduction turbines.

No. of Turbines 6 Direct coupled, single reduction geared } to 2 propelling shafts. No. of primary pinions to each set of reduction gearing 3
 4 double reduction geared }
 Direct coupled to { Alternating Current Generator phase periods per second rated Kilowatts Volts at revolutions per minute;
 supplying power for driving Propelling Motors, Type
 ed Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

TURBINE LOADING.	H.P.			I.P.			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.
EXPANSION												
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shaft Horse Power at each turbine { H.P. 3167 I.P. 3167 L.P. 3167 }
 Reolutions per minute, at full power, of each Turbine Shaft { H.P. 1900 I.P. 1900 L.P. 1590 }
 1st reduction wheel 120
 main shaft 120
 tor Shaft diameter at journals { H.P. 7" I.P. 8" L.P. 11" }
 Pitch Circle Diameter { H.P. 9.397" I.P. 9.397" L.P. 11.746" }
 1st reduction wheel 12'-11.93"
 main wheel 12'-11.93"
 1st reduction wheel 2'-10 7/8"
 main wheel 2'-10 7/8"

tance between centres of pinion and wheel faces and the centre of the adjacent bearings { H.P. 3'-11 3/8" I.P. 3'-11 3/8" L.P. 3'-7 3/8" }
 1st pinion 8 1/2" 2nd pinion 4 1/2" main wheel 8'-6.86"
 diameter at bottom of pinion teeth 11.0326
 xible Pinion 1st 2nd
 shafts, diameter Pinion Shafts, diameter at bearings External Internal 1st 2nd
 Generator Shaft, diameter at bearings 150.75"
 Propelling Motor Shaft, diameter at bearings 18 3/4"
 Tube Shaft, diameter 19 1/2"
 Thrust Shaft, diameter at collars 17 3/4"
 as per rule 12-11-26
 as fitted 17 3/4"

Intermediate Shafts, diameter as per rule 12-11-26 as fitted 17 3/4"
 Propeller Shaft, diameter as per rule 12-11-26 as fitted 19 1/2"
 Is the screw shaft fitted with a continuous liner Yes
 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 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
 Is an approved Oil Gland other appliance fitted at the after end of the tube shaft No
 Length of Bearing in Stern Bush next to and supporting propeller 9'-11 1/2"

Propeller, diameter 18'-9" Pitch 17'-6" No. of Blades 4 State whether Moveable Solid Total Developed Surface 132 square feet.
 Single Screw are arrangements made so that steam can be led direct to the L.P. Turbine Yes
 Can the H.P. or I.P. Turbine exhaust direct to the condenser Yes
 No. of Turbines fitted with astern wheels 4
 Feed Pumps No. and size 2- Bilge, 2- Ballast, 2- F. S. each 200 tons per hour
 How driven Motor.

Ballast Pumps, No. and size 2- 200 tons per hour Lubricating Oil Pumps, including Spare Pump, No. and size 4- 5" disch.
 two independent means arranged for circulating water through the Oil Cooler Yes
 Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge pumps, No. and size:—In Engine and Boiler Room E.R. 2- 3 1/2" 1- 3" B.R. 6- 2 1/2" 2- 3 1/2" 1- 6" 8mm, 1- 3 1/2" Cofferdam.
 Holds, &c. N° 1- 1- 3 1/2" N° 2- 1- 3 1/2" N° 3- 1- 3 1/2" N° 4- 1- 3 1/2" Pipe Tunnel 1- 3 1/2" Chain Locker 1- 2 1/2" N° 5- 2- 3 1/2" N° 6- 2- 2 1/2"
 in Water Circulating Pump Direct Bilge Suctions, No. and size 2'- 13" Independent Power Pump Direct Suctions to the Engine Room

Bilges, No. and size 2- 7" Bilge Suction 2- 13" 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 in the skin of the ship Yes Are they fitted with 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 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 None How are they protected Yes
 What pipes pass through the deep tanks Yes 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 Yes worked from Bridge

