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# REPORT ON STEAM TURBINE MACHINERY.

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Port of NEWCASTLE-ON-TYNE

No. in Survey held at NEWCASTLE-ON-TYNE  
Reg. Book. 8/3 "BEAVERLAKE"  
on the

Date, First Survey (1943) June 29 Last Survey May 9<sup>th</sup> 1946  
(Number of Visits 76) Tons Gross 9834 Net 5818

Built at PORT GLASGOW By whom built LITHGOWS LTD. Yard No. 1003 When built 1946  
Engines made at NEWCASTLE-ON-TYNE By whom made C.A. PARSONS & CO. LTD. Engine No. 2620-3 When made 1946  
Boilers made at By whom made Boiler No. When made  
Shaft Horse Power at Full Power 9000 Owners CANADIAN PACIFIC S.S. CO. LTD. Port belonging to London  
Nom. Horse Power as per Rule 1610 Is Refrigerating Machinery fitted for cargo purposes YES Is Electric Light fitted YES  
Trade for which Vessel is intended based on boiler heating surface only

## STEAM TURBINE ENGINES, &c.—Description of Engines

TURBO-ELECTRIC

No. of Turbines Ahead 2 Direct coupled, single reduction geared to propelling shafts. No. of primary pinions to each set of reduction gearing. Asten. double reduction geared.  
direct coupled to Alternating Current Generator 3 phase 57.5 periods per second rated 7000 Kilowatts 3000 Volls at 3450 revolutions per minute;  
for supplying power for driving ONE Propelling Motors, Type THREE PHASE SYNCHRONOUS - DOUBLE UNIT, EACH UNIT  
rated Kilowatts 3000 Volls at 108 revolutions per minute. Direct coupled, single or double reduction geared to ONE propelling shaft.

## TURBINE BLADING.

	H. P. IMPULSE			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 888" OUTLET 10625"	29.3755" (OUTLET)	1	80"	17.194"	6	100"	21.969"	4			
3RD				86"	17.314"	5	115"	22.269"	4			
4TH	Row 1. SHROUDING 3/32" THICK			95"	17.494"	4	135"	22.669"	3			
5TH	Row 2. " " 1/16" "			SHROUDING 1/16" THICK			174" 1.259"	23.541"	9			
6TH							25TH 1.736"	28.285"	6			
7TH							26TH 1.802"	28.889"	2			
8TH							31ST 2.15"	33.006"	1			
9TH							32ND 2.223"	33.602"	1			
10TH							33RD 2.553"	35.232"	1			
11TH							34TH 2.823"	37.889"	1			
12TH							35TH 3.28"	41.426"	1			
							36TH 3.83"	45.932"	1			
							37TH 4.713"	51.635"	1			
							38TH 5.620"	57.338"	1			
							39TH 6.658"	63.041"	1			
							40TH 7.991"	68.744"	1			
							41ST 9.8175"	74.447"	1			
							42ND 11.554"	80.150"	1			

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 { 1st pinion ✓  
Diameter { 2nd pinion ✓  
1st reduction wheel ✓  
main wheel ✓  
Width of Face { 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 1st ✓  
Internal 1st ✓  
2nd ✓  
diameter at bottom of pinion teeth { 1st ✓  
2nd ✓

Wheel Shafts, diameter at bearings { 1st ✓  
main ✓  
diameter at wheel shroud, { 1st ✓  
main ✓  
Generator Shaft, diameter at bearings 9" ✓  
Propelling Motor Shaft, diameter at bearings 18 1/2" ✓

Intermediate Shafts, diameter { as per rule ✓  
as fitted ✓  
Thrust Shaft, diameter at collars { as per rule ✓  
as fitted ✓

Tube Shaft, diameter { as per rule ✓  
as fitted ✓  
Screw Shaft, diameter { as per rule ✓  
as fitted ✓  
Is the { tube ✓  
screw } shaft fitted with a continuous liner { ✓

Bronze Liners, thickness in way of bushes { as per rule ✓  
as fitted ✓  
Thickness between bushes { as per rule ✓  
as fitted ✓  
Is the after end of the liner made watertight in the 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 ✓  
Length of Bearing in Stern Bush next to and supporting propeller ✓

Propeller, diameter ✓ Pitch ✓ No. of Blades ✓ 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 L.P. Turbine 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 ✓ Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room ✓  
In Pump Room ✓

In Holds, &c. ✓

Main Water Circulating Pump Direct Bilge Suctions, No. and size ✓ Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size ✓  
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 line ✓  
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 ✓

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