

REPORT ON STEAM TURBINE MACHINERY.

Received at London Office

of writing Report. 19 When handed in at Local Office 5. 1. 1927. Port of **NEWCASTLE-ON-TYNE**
 in Survey held at **Trallan & Co. Ltd.** Date, First Survey **26 July** Last Survey **21 Dec 1926**
 g. Book. 83 on the **TWINS 'EMPERESS OF AUSTRALIA'** (Number of Visits **28**)
 Tons { Gross **21861**
 Net **12292**
 By whom built **Tulcanwerke A.G.** Yard No. When built **1914**
 By whom made **Johns & Co. Ltd.** Engine No. **237** When made **1927**
 By whom made Boiler No. When made
 Horse Power at Full Power **22,000** Owners **Canadian Pacific Ry. Co.** Port belonging to **London**
 m. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

STEAM TURBINE ENGINES, &c.—Description of Engines **Reaction single reduction turbine** No. of Turbines Ahead **Six**
 Astern **Four**
 direct coupled, single or double reduction geared to **2** propelling shafts. No. of primary pinions to each set of reduction gearing, direct coupled to phase
 periods per second, Alternating Current Generator rated Kilowatts Volts at revolutions per minute; for supplying power for driving
 Propelling Motors. Propelling Motors, Type
 Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

PARTICULARS OF TURBINE BLADING.

	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												
"	15/8"			2 3/4"								
"	10			10								
"	3 3/4"			6 3/8"								
"												
"												

Horse Power at each turbine **3666** Revolutions per minute, at full power, of each Turbine Shaft **1860** 1st reduction wheel
 Pitch Circle Diameter, 1st pinion 2nd pinion 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
 on Shafts, diameter at bearings External 1st 2nd diameter at bottom of teeth of pinion 1st 2nd
 Internal 1st 2nd
 Shafting, diameter at bearings, 1st main diameter at wheel shroud, 1st main
 Propelling Motor Shafts, diameter at bearings
 Shafting, diameter of Tunnel Shafting as per rule as fitted diameter of Thrust Shafting as per rule as fitted
 of Screw Shaft as per rule as fitted Is the screw shaft fitted with a continuous liner the whole length of the stern tube Is the after end of the liner
 watertight in the propeller boss If the liner is in more than one length are the joints burned If the liner does not fit tightly at the
 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
 lapped or protected between the liners Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently
 Length of Stern Bush Diameter of Propeller
 of Propeller No. of Blades State whether Moveable Total Surface square feet. If Single Screw, are
 arrangements made so that steam can be led direct to the L.P. Turbine, and either the H.P. or I.P. Turbine can exhaust direct to the Condenser
 of Turbines fitted with astern wheels Total number of power driven Main and Auxiliary Pumps
 and size of Feed Pumps How driven No. and size of Pumps connected to the Main Bilge Line
 driven No. and size of Ballast Pumps No. and size of Lubricating Oil Pumps, including
 Pump Are two independent means arranged for circulating water through the Oil Cooler No. and size of suction
 ted to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room and in Holds, &c.
 and size of Main Water Circulating Pump Bilge Suctions No. and size of Donkey Pump Direct Suctions
 Engine Room Bilges Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes
 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
 all connections with the sea direct on the skin of the ship Are they Valves or Cocks
 they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Discharge Pipes above or below the deep water line
 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
 pipes are carried through the bunkers How are they protected
 all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times
 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
 ment to another Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

ERS, &c.—(Letter for record) Total Heating Surface of Boilers
 forced Draft fitted No. and Description of Boilers

Is a Report on Main Boilers now forwarded?

Is a Donkey Boiler fitted?

If so, is a report now forwarded?

Plans. Are approved plans forwarded herewith for Shafting
(If not state date of approval)

Main Boilers.

Auxiliary Boilers

Donkey Boilers

Spare Gear. State the articles supplied:—

For particulars of spare gear please see attached list.

The foregoing is a correct description,

Manufacturer.

R. J. Walker
DIRECTOR

1926
Dates of Survey of Survey while building { During progress of work in shops -- July 26, 30, Aug. 9, 16, 30, Sept. 6, 7, 9, 22, 30, Oct. 4, 7, 11, 13, 21, 25, 28, Nov. 3, 8, 11, 12, 18, 22, 24, 30.
During erection on board vessel -- Dec. 3, 7, 21.
Total No. of visits 28.

Dates of Examination of principal parts—Casings. *Sept 1926.* Rotors. *Sept 1926.* Blading. *Oct 1926.* Gearing.

Wheel shaft Thrust shaft Tunnel shafts Screw shaft Propeller

Stern tube Engine and boiler seatings Engines holding down bolts

Completion of pumping arrangements Boilers fixed Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers.

Material and tensile strength of Rotor shaft *See 34-38 Tons* Identification Mark on Do. *DX*

Material and tensile strength of Flexible Pinion Shaft Identification Mark on Do.

Material and tensile strength of Pinion shaft Identification Mark on Do.

Material and tensile strength of 1st Reduction Wheel Shaft Identification Mark on Do.

Material of Wheel shaft Identification Mark on Do. Material of Thrust shaft Identification Mark on Do.

Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Identification Marks on Do.

Material of Steam Pipes 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 carrying and burning oil fuel been complied with

Is this machinery a duplicate of a previous case If so, state name of vessel.

General Remarks (State quality of workmanship, opinions as to class, etc. *This machinery has been built under Special Survey, the material & workmanship is sound & good*

The machinery is now being forwarded to Glasgow where it is to be installed on board.

The amount of Entry Fee ... £ *Charged* When applied for, ... 19...
Special ... £ *on* When received, ... 19...
Donkey Boiler Fee ... £ *General*
Travelling Expenses (if any) £ *Report*

S. H. H. H. H. H.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 14 JUN 1927

Assigned

See G.S. Rpt. No. 46750

FRI. 24 JUN 1927
FRI. 29 JUL 1927



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Foundation