

4a.

REPORT ON STEAM TURBINE MACHINERY

Received at London Office

21 OCT 1927

NEWCASTLE-ON-TYNE

Date of writing Report

19

When handed in at Local Office

19th Oct 1927 Port of

Date, First Survey 30.9.26

Last Survey 19.10

1927

(Number of Visits 55)

Survey held at

Newcastle

Reg. Book.

on the Twin Screw Steamer BEAVERFORD

Built at Glasgow

By whom built Barclay Curle & Co. Ltd Yard No. 617

When built 1927

Engines made at Wallsend

By whom made Parsons Marine Steam Turbine Engine No. 241

When made 1927

Boilers made at Glasgow

By whom made Yarrow & Co. (1922) Ltd Boiler No.

When made 1927

Shaft Horse Power at Full Power 8000

Owners Canadian Pacific Steamships Ltd

Port belonging to

Horse Power as per Rule 1578

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

STEAM TURBINE ENGINES, &c.—Description of Engines Reaction Single Reduction No. of Turbines

Ahead 6

Aster 4

Accepted, single or double reduction geared to 200 propelling shafts. No. of primary pinions to each set of reduction gearing 3, 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.			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	1/16	Reaction		1 3/8" & 2 3/4" Ahead	Reaction		2"			1 5/16" and 2 9/16" Impulse		
"	1/4"			1 1/8" & 3 1/8" HP astern	Impulse		1 1/2"			1 3/4" & 3 1/2" Reaction		
Shaft Horse Power at each turbine	HP 1194	IP 1158	LP 1645	Revolutions per minute, at full power, of each Turbine Shaft			HP 2800	IP 2800	LP 2280	1st reduction wheel —		
Pitch Circle Diameter, 1st pinion	HP 1194			HP 1158			LP 1645			main wheel 144.3"		
1st reduction wheel	HP 1194			HP 1158			LP 1645			1st reduction wheel —		
2nd pinion	HP 1194			HP 1158			LP 1645			main wheel 144.3"		
ion Shafts, diameter at bearings	HP 1194			HP 1158			LP 1645			1st reduction wheel —		
External	HP 1194			HP 1158			LP 1645			main wheel 144.3"		
Internal	HP 1194			HP 1158			LP 1645			1st reduction wheel —		
Wheel Shafts, diameter at bearings, 1st	HP 1194			HP 1158			LP 1645			main wheel 144.3"		
2nd	HP 1194			HP 1158			LP 1645			1st reduction wheel —		
Motor Shafts, diameter at bearings	HP 1194			HP 1158			LP 1645			main wheel 144.3"		
HP 1194	HP 1194			HP 1158			LP 1645			1st reduction wheel —		
LP 1645	HP 1194			HP 1158			LP 1645			main wheel 144.3"		
in Shafting, diameter of Tunnel Shafting	HP 1194			HP 1158			LP 1645			1st reduction wheel —		
as per rule	HP 1194			HP 1158			LP 1645			main wheel 144.3"		
as fitted	HP 1194			HP 1158			LP 1645			1st reduction wheel —		
diameter of Screw Shaft	HP 1194			HP 1158			LP 1645			main wheel 144.3"		
as per rule	HP 1194			HP 1158			LP 1645			1st reduction wheel —		
as fitted	HP 1194			HP 1158			LP 1645			main wheel 144.3"		

Is the screw shaft fitted with a continuous liner the whole length of the stern tube — Is the after end of the liner

Is the liner 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 15' 9" Barclay Curle

No. of Blades — State whether Moveable — Total Surface — square feet. If Single Screw, are

engements 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

No. and size of Pumps connected to the Main Bilge Line

and size of Feed Pumps — How driven — No. and size of Lubricating Oil Pumps, including

No. and size of Ballast Pumps — Are two independent means arranged for circulating water through the Oil Cooler — No. and size of suction

ected 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

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 fired 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

to 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

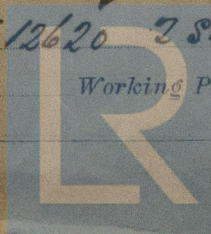
partment to another — Is the Screw Shaft Tunnel watertight — Is it fitted with a watertight door — worked from

Is it fitted with a watertight door — worked from

TERS, &c.—(Letter for record (S.) Total Heating Surface of Boilers 4 Yarrow & Co. 12620 2 SB 5200 Total 17820

Forced Draft fitted Yes No. and Description of Boilers 4 B & 2 SB Working Pressure 250 lbs

W339-0070

Lloyd's Register
Foundation

Is a Report on Main Boilers now forwarded? *No*

Is a Donkey Boiler fitted? *No*

If so, is a report now forwarded? ☒

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

25.8.26
5.10.26
14.12.26 Main Boilers ☒

Auxiliary Boilers ☒

Donkey Boilers ☒

Spare Gear. State the articles supplied:—

See separate list
Messrs Barclay Curle supplying auxiliary pump spares

The foregoing is a correct description,

Manufacturer.

THE PARSONS MARINE STEAM TURBINE CO. LIMITED

DIRECTOR

Dates of Survey while building
During progress of work in shops—*1926 Sept 30 Oct 4.7.11.13.18.21.25.28 Nov 3.8.11.16.18.22.27.30 Dec 3.7.10.15.21 1927 Jan 5.10.12.14.19 Feb 1.2.4.6.28 March 4.7.17.22.29 April 7.11.13.21.25.27.29 May 3.11.16.24.27 June 1.7.10 July 4 Oct 19*
During erection of board vessel—*4.6.28 March 4.7.17.22.29 April 7.11.13.21.25.27.29 May 3.11.16.24.27 June 1.7.10 July 4 Oct 19*
Total No. of visits *55*

Dates of Examination of principal parts—*Tested on various dates*
Casings *21.4.27* Rotors *31.4.27* Blading *31.4.27* Gearing *27.4.27*
Wheel shaft *27.4.27* Thrust shaft *27.4.27* 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 ☒ Condensers tested *30th*
Material and tensile strength of Rotor shaft *34 to 38 Iron Icy of steel* Identification Mark on Do. *See attached for marks*
Material and tensile strength of Flexible Pinion Shaft ☒ Identification Mark on Do.
Material and tensile strength of Pinion shaft *40 ton - 45 Nickel Steel (Admiralty)* Identification Mark on Do.
Material and tensile strength of 1st Reduction Wheel Shaft ☒ Identification Mark on Do.
Material of Wheel shaft *Icy of steel* Identification Mark on Do. Material of Thrust shaft *Icy of steel* 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 *No* 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 *No* If so, state name of vessel ☒

General Remarks (State quality of workmanship, opinions as to class, etc.) *The above mentioned turbines, bearing & thrust*

have been surveyed during construction & have now been dispatched to Messrs Barclay Curle & Co. to be on board. The materials and workmanship are good. All parts subjected to pressure have been hydraulically tested to at least twice the estimated working pressure. Each turbine was separately under steam with the rotor revolutions in excess of the overload requirements, subsequently the complete sets with gearing were erected, tested under steam & afterwards opened up & found satisfactory. In my opinion the vessel will be eligible for record of LMC with date when the machinery has been satisfactorily installed.

Fees to be paid by Barclay Curle & Co.

The amount of Entry Fee *Nine £ 6* =
Special *£ 139.9.0*
Donkey Boiler Fee *£ 55.16* =
Travelling Expenses (if any) *£ 3.2.28*

When applied for,

When received,

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned



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