

# REPORT ON STEAM TURBINE MACHINERY. No. 62629

pt. 4a.

Date of writing Report 1940 When landed in at Local Office 22.7.40 Port of GLASGOW  
 No. in Survey held at GLASGOW Date, First Survey 1940 Apr. 2nd Last Survey 11th July 1940  
 Reg. Book. on the S/S "BURNSIDE" (Number of Visits 9)  
 Tons Gross 5659 Net 3280  
 Built at GLASGOW By whom built BARCLAY CURLE & CO. LD. Yard No. 676 When built 1940  
 Engines made at GREENOCK By whom made J. G. KINCAID & CO. LD. Engine No. 704 When made  
 Boilers made at GLASGOW By whom made BARCLAY CURLE & CO. LD. Boiler No. BW 69 When made 1940  
 Shaft Horse Power at Full Power 960 Owners Port belonging to  
 Nom. Horse Power as per Rule 160 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
 Trade for which Vessel is intended

STEAM TURBINE ENGINES, &c.—Description of Engines ONE L.P. TURBINE WITH D.R. GEARING AND HYDRAULIC COUPLING  
 No. of Turbines Ahead ONE Direct coupled, single reduction geared to ONE propelling shafts. No. of primary pinions to each set of reduction gearing ONE  
 Astern  
 Direct coupled to { Alternating Current Generator — phase — periods per second — Direct Current Generator — rated — Kilowatts — Volts at — revolutions per minute;  
 supplying power for driving — Propelling Motors, Type —  
 Direct coupled, single or double reduction geared to — propelling shafts.

	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.
1st EXPANSION							74mm	898mm	1			
2nd							94	938	1			
3rd							114	978	1			
4th							134	1018	1			
5th							154	1058	1			
6th							177	1104	1			
7th							200	1150	1			
8th												
9th												
10th												
11th												
12th												
13th												
14th												
15th												
16th												
17th												
18th												
19th												
20th												

Shaft Horse Power at each turbine { H.P. — I.P. — L.P. 960  
 Revolutions per minute, at full power, of each Turbine Shaft { H.P. — I.P. — L.P. 3340  
 1st reduction wheel 487 main shaft 85  
 Motor Shaft diameter at journals { H.P. — I.P. — L.P. 170mm  
 Pitch Circle Diameter { 1st pinion 8.784" 1st reduction wheel 60.2024" Width of Face { 1st reduction wheel 260mm main wheel 600mm  
 2nd pinion 14.2834" main wheel 79.1298" 1st reduction wheel 13607 F16657 main wheel 5257mm  
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion A2254 F2657 1st reduction wheel A3607 F16657 2nd pinion 422.57 F1A main wheel 5257mm  
 Pinion Shafts, diameter at bearings { External 1st 125mm 2nd 320mm diameter at bottom of pinion teeth { 1st 8.2094" 2nd 13.511"  
 Internal 1st 35mm 2nd 250mm  
 Wheel Shafts, diameter at bearings { 1st A250 F230 diameter at wheel shroud, { 1st 1448mm Generator Shaft, diameter at bearings — main 5007 F1A main 1910mm Propelling Motor Shaft, diameter at bearings —  
 Intermediate Shafts, diameter as per rule — Thrust Shaft, diameter at collars as per rule 360mm Tube Shaft, diameter as per rule —  
 as fitted —  
 Screw Shaft, diameter as per rule — 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 — 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  
 as fitted —  
 Sealed 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  
 stic 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  
 other appliance fitted at the after end of the tube shaft — 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.  
 Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine — Can the H.P. or I.P. Turbine exhaust direct to the  
 denser — No. of Turbines fitted with astern wheels — Feed Pumps { No. and size — How driven —  
 Pumps connected to the Main Bilge Line { No. and size — How driven —  
 Last Pumps, No. and size — Lubricating Oil Pumps, including Spare Pump, No. and size —  
 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 —  
 Folds, &c. —  
 Water Circulating Pump Direct Bilge Suctions, No. and size — Independent Power Pump Direct Suctions to the Engine Room —  
 No. and size — 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 Sea Connections fitted direct on the skin of the ship — Are they fitted with Valves or Cocks —  
 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  
 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 pass through the bunkers — How are they protected —  
 pipes pass through the deep tanks — Have they been tested as per rule —  
 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  
 compartment to another — Is the Shaft Tunnel watertight — Is it fitted with a watertight door — worked from —



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

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

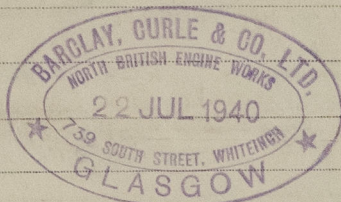
Is a Report on Main Boilers now forwarded?

Is { a Donkey } Boiler fitted? If so, is a report now forwarded?  
{ an Auxiliary }

Plans. Are approved plans forwarded herewith for Shafting 6/10/39 Main Boilers Auxiliary Boilers Donkey Boilers  
(If not state date of approval)

Superheaters General Pumping Arrangements Oil Fuel Burning Arrangements

Spare Gear. State the articles supplied:— List attached.



Barclay, Curle & Co. Ltd.

Alexander Macnair.

Chief Draughtsman

Manufacturer.

The foregoing is a correct description,

Dates of Survey while building { During progress of work in shops -- }  
{ During erection on board vessel --- }  
Total No. of visits 9

1940 Apr. 2, 22, May 10, 15, 30 June 5, 19, 25, July 11

Dates of Examination of principal parts—Casings 2-4-40 Rotors 2-4-40 Blading 19-6-40 Gearing 30-5-40

Wheel shaft 30-5-40 Thrust shaft 15-5-40 Intermediate shafts ✓ Tube shaft ✓ Screw shaft ✓

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

Completion of pumping arrangements ✓ Boilers fixed ✓ Engines tried under steam ✓

Main boiler safety valves adjusted ✓ Thickness of adjusting washers ✓

Rotor shaft, Material and tensile strength S.M. Steel 37.6 tons

Identification Mark 44 WTM. LT 16-2-40

TRANS<sup>2</sup> Flexible Pinion Shaft, Material and tensile strength S.M. Steel 28.2 tons

Identification Mark FD 10-4-40

Pinion shaft, Material and tensile strength S.M. Steel 46.8 tons

Identification Mark 765 LT 16-2-40

1st Reduction Wheel Shaft, Material and tensile strength S.M. Steel 30.8 tons

Identification Mark 729 LT 16-2-40

Wheel shaft, Material S.M. Steel Identification Mark 43 WTM

Thrust shaft, Material S.M. Steel

Identification Mark 715 FH 31-1-40

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 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, &c.) This machinery has been built under special survey and in accordance with the Rules, and the materials and workmanship are good. It will be fitted in the s/s "BURNSIDE" at Greenock in conjunction with Messrs J. G. Macnair & Co's. Reg. No. 704

This turbine has been efficiently installed on board the vessel & tried out under full working conditions with satisfactory results

Charles W. Hunter  
Glasgow  
8/10/40

The amount of Entry Fee ... £ : : When applied for,  
Special ... £ 16 : - : 2<sup>nd</sup> 19...  
Donkey Boiler Fee ... £ : : When received,  
Travelling Expenses (if any) £ : : 2<sup>nd</sup> SEPT. 1940.

Engineer Surveyor Lloyd's Register of Shipping.

Committee's Minute Glasgow 23 JUL 1940 JRA

Assigned Signed



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