

REPORT ON STEAM TURBINE MACHINERY. No. 65121

pt. 4a.

Date of writing Report 19th Feb 1942 When handed in at Local Office 21: 2: 18 Port of Glasgow Received at London Office 26 FEB 1942
 No. in Survey held at Reg. Book. Date, First Survey 18th Sep 1941 Last Survey 30th Jan 1942
 on the T.W. Sc. EMPIRE MIGHT (Number of Visits 18)
 Built at Greenock By whom built Greenock Dockyard Co. Yard No. 450 When built
 Engines made at Glasgow By whom made Barclay Curle & Co Ltd Engine No. 6W.77 When made 1942
 Boilers made at By whom made Boiler No. When made
 Shaft Horse Power at Full Power 2500 Total for 2 turbines Owners Port belonging to
 Nom. Horse Power as per Rule 416 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
 Trade for which Vessel is intended

TEAM TURBINE ENGINES, &c.—Description of Engines Two L.P. turbines with D.R. gearing & hydraulic coupling

No. of Turbines Ahead 2 Direct coupled, single reduction geared } 10 2 propelling shafts. No. of primary pinions to each set of reduction gearing one
 Astern ✓ double reduction geared }
 direct coupled to { Alternating Current Generator ✓ phase ✓ periods per second { rated ✓ Kilowatts ✓ Volts at ✓ revolutions per minute;
 for supplying power for driving ✓ Propelling Motors, Type ✓
 rated ✓ Kilowatts ✓ Volts at ✓ revolutions per minute. Direct coupled, single or double reduction geared to ✓ propelling shafts.

TURBINE LADING.	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							264"	36.77"	6			
2ND							3.47"	38.48"	"			
3RD							4.29"	40.08"	"			
4TH							5.12"	41.73"	"			
5TH							5.94"	43.39"	"			
6TH							7.12"	45.75"	"			
7TH							8.27"	48.03"	"			
8TH												
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine { H.P. ✓ I.P. ✓ L.P. 2500 }
 Total Shaft diameter at journals { H.P. ✓ I.P. ✓ L.P. 170 1/2" }
 Pitch Circle Diameter { 1st pinion 10.4979" 1st reduction wheel 64.7015" 2nd pinion 17.1395" main wheel 93.1959" }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 610 A2F 1st reduction wheel 2165 1/2" A2F 2nd pinion 940 A2F main wheel 1160 1/2" A2F }

TRANSMISSION & PINION { 1st 115 1/2" 2nd ✓ }
 Pinion Shafts, diameter at bearings { External 1st 160 1/2" 2nd 380 1/2" Internal 1st ✓ 2nd 315 1/2" }

Wheel Shafts, diameter at bearings { 1st 280 1/2" A2F main 880 1/2" }
 Generator Shaft, diameter at bearings { 1st 1550 1/2" main 2268 1/2" }

Intermediate Shafts, diameter { as per rule ✓ as fitted ✓ }
 Thrust Shaft, diameter at collars { as per rule ✓ as fitted 381 1/2" }

Propeller Shaft, diameter { as per rule ✓ as fitted ✓ }
 Tube Shaft, diameter { 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

Rule 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

Other appliance fitted at the after end of the tube shaft { Length of Bearing in Stern Bush next to and supporting propeller }
 Is an approved Oil Gland

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

Condenser 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 }

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

Holds, &c.

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

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 fired 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

How are they protected Have they been tested as per rule

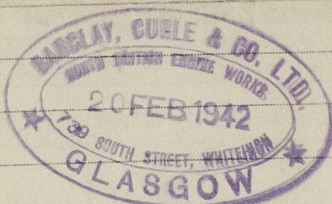
Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

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

worked from

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?
Plans. Are approved plans forwarded herewith for Shafting 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:— as per attached list



FOR BARCLAY, CURLE & CO., LTD.

Alexander Macnutt
Chief Draftsman

Manufacturer, Llan...

The foregoing is a correct description,

Dates of Survey while building { During progress of work in shops -- 1941 Sep. 18 Oct. 10-17 Nov. 7, 20, 21, 28 Dec. 3, 16, 24, 31 (1942) Jan. 8, 13, 20, 22
During erection on board vessel --- 30
Total No. of visits 18

Dates of Examination of principal parts—Casings 7-11-41 & 20-11-41 Rotors 3-12-41 Blading 21-11-41 Gearing 20-1-42

Wheel shaft 20-1-42 Thrust shaft 20-1-42 Intermediate shafts Tube shaft Screw shaft

Propeller Stern tube Engine and boiler seatings Engine holding down bolts

Completion of pumping arrangements Boilers fired Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

Rotor shaft, Material and tensile strength S.M. Ingot Steel 35.8 tons Identification Mark 6726, H.A.I. 233-4, 20-1-42

1st Red. & Transmission Flexible Pinion Shaft, Material and tensile strength Nickel Steel 46.8 & 45.5 tons/10" Identification Mark 10726, H.A.I. 2743-4, 20-1-42

2nd Red. Pinion shaft, Material and tensile strength Nickel Steel 44.2 & 45.0 tons/10" Identification Mark 10892, F84-5, H.A.I. 20-1-42

1st Reduction Wheel Shaft, Material and tensile strength S.M. Ingot Steel 28.8 tons/10" Identification Mark 10726, D.B. 158-9, 20-1-42

Wheel shaft, Material S.M. Ingot Steel Identification Mark 10726, H.A.I. 46-1, 20-1-42 Thrust shaft, Material S.M. Ingot Steel Identification Mark 10726, D.B. 24, 20-1-42

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 in accordance with the Rules.

Special Survey and in accordance with the Rules.

The materials and workmanship are good.

It will be fitted on board Messrs Greenock Dockyard Co's yard no 45.

in conjunction with Messrs J.B. Kincaid & Co. Ltd Eng no 734.

Please see machinery report GRK N° 6471.

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