

REPORT ON STEAM TURBINE MACHINERY.

No. 60390

NOV 16 1938

4a.

Received at London Office
 Date of writing Report 12th Nov 1938 When handed in at Local Office 14. 11. 1938 Port of Glasgow
 Date, First Survey 19. 11. 37 Last Survey 11th Nov 1938
 (Number of Visits 45)
 Survey held at Glasgow
 on the Twin Screw S.S. CLAN FRASER
 Tons { Gross
 Net
 Built at Greenock By whom built Greenock Dockyard Co Ltd Yard No. 435 When built
 Engines made at Glasgow By whom made Barclay Curie & Co Ltd Engine No. B.W. 57 When made
 Boilers made at By whom made Boiler No. When made
 Shaft Horse Power at Full Power 2480 Owners Port belonging to
 Indicated Horse Power as per Rule 413 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
 Made for which Vessel is intended

STEAM TURBINE ENGINES, &c.—Description of Engines Two—L.P. Turbines with D.R. Gearing & Hydraulic Coupling

No. of Turbines 2 Ahead 2 Direct coupled single reduction geared to 2 propelling shafts. No. of primary pinions to each set of reduction gearing one
 Astern 2 double reduction geared
 Not 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
 Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

	H.P.			I.P.			L.P.			ASTERN.		
EXPANDING	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.
1-2-3							3 1/4	35 23/32	one			
"							3 5/8	37 3/32	one			
"							4 3/4	38 23/32	one			
"							5 1/4	40 3/32	one			
"							6 1/4	41 3/32	one			
"							6 3/8	43 1/16	one			
"							7 1/8	45 1/2	one			

Shaft Horse Power at each turbine { H.P. 1240 I.P. 1240 L.P. 1240
 Revolutions per minute, at full power, of each Turbine Shaft { H.P. 3320 I.P. 3320 L.P. 3320
 1st reduction wheel 457
 main shaft 92
 Pinion Shaft diameter at journals { H.P. 6.69" I.P. 6.69" L.P. 6.69"
 Pitch Circle Diameter { 1st pinion 8.784" 1st reduction wheel 63.8446" 2nd pinion 19.1397" main wheel 91.1279"
 Width of Face { 1st reduction wheel 11.0238" main wheel 25.194"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 11.22" + 12.496" 1st reduction wheel 15.448" + 69.489" 2nd pinion 18.504" + 18.504" main wheel 22.835" + 22.835"
 Pinion Shafts, diameter at bearings { 1st 6.29" 2nd 14.96" diameter at bottom of pinion teeth { 1st 8.207" 2nd 18.367"
 External Internal

Generator Shaft, diameter at bearings 60.48" Propelling Motor Shaft, diameter at bearings 86.81"
 Thrust Shaft, diameter at collars 15"
 Tube Shaft, diameter as per rule as fitted

Intermediate Shafts, diameter as per rule as fitted
 Propeller Shaft, diameter as per rule as fitted
 Is the tube shaft fitted with a continuous liner
 Is the after end of the liner made watertight in the propeller boss
 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

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 Movable Total Developed Surface square feet.
 Can the H.P. or I.P. Turbine exhaust direct to the

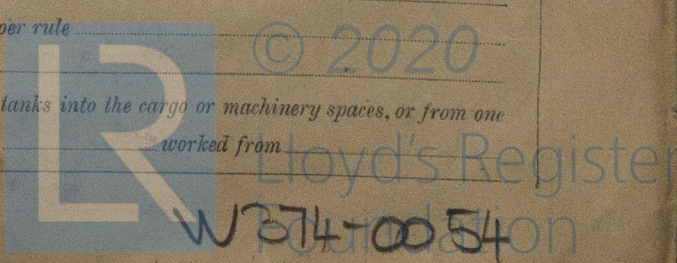
Condenser No. of Turbines fitted with astern wheels
 Feed Pumps No. and size How driven
 Pumps connected to the Main Bilge Line No. and size How driven

Ballast Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size
 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.

In 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 they fitted with Valves or Cocks

Are the Sea Connections fitted direct on the skin of the ship
 Are the Overboard Discharges above or below the deep water line
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates
 Are the Blow Off Cocks fitted with a spigot and brass covering plate
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel
 How are they protected
 Do the pipes pass through the bunkers
 Have they been tested as per rule

Do 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



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
(If not state date of approval)

Main Boilers

Auxiliary Boilers

Donkey Boilers

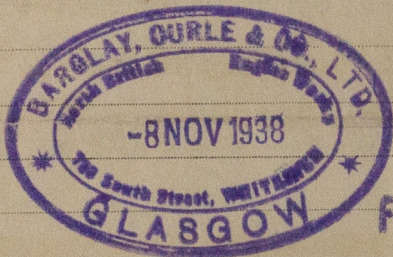
Superheaters

General Pumping Arrangements

Oil Fuel Burning Arrangements

Spare Gear. State the articles supplied:—

See attached list



FOR BARCLAY, CURLE & CO., LTD.

Alexander Macneil

Manufacturer.

The foregoing is a correct description,

Dates of Survey while building
During progress of work in shops -- 1937 Nov. 19 Dec. 8. 14. 20. 22 (1938) Jan. 13. 28 Feb. 9 Apr. 7. 15 May. 2. 5. 11. 30
During erection on board vessel --- June. 6. 13. 20. 30 July. 5. 13. 28 Aug. 1. 5. 9. 15. 23 Sep. 2. 8. 14. 15. 23. 27. 30 Oct. 4. 7. 11
Total No. of visits 45-17. 21. 24. 26. 28 Nov. 3. 4. 8. 11

Dates of Examination of principal parts—Casings 14-10-38 Rotors 13-6-38 Blading 26-10-38 Gearing 28-10-38

Wheel shafts 8-9-38 Thrust shaft 28-10-38 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 shafts Material and tensile strength S.M. Ingst Steel 36.7 ton & 34.2 ton Identification Mark N° 549 & 1049 9A

1st Red Flexible Pinion Shaft, Material and tensile strength Nickel Steel 42.3 ton & 41.1 ton Identification Mark N° 1055 & 1056 9A

2nd Red Pinion shaft, Material and tensile strength Nickel Steel 41.5 ton & 41.1 ton Identification Mark N° 2636 & 2637 9A

1st Reduction Wheel Shaft, Material and tensile strength S.M. Ingst Steel 31.1 ton Identification Mark N° 944 & 998 9A

Wheel shafts Material S.M. Ingst Steel Identification Mark N° 519 & 520 9A Thrust shaft, Material S.M. Ingst Steel Identification Mark N° 954 & 2642 9A

Intermediate shafts, Material S.M. Ingst Steel Identification Marks N° 918 & 919 9A 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 Yes If so, state name of vessel Barclay Curle B.W. 56 Sh. No. N° 60156

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. The materials and workmanship are good. The machinery has been shipped to Greenock for installation in the vessel.

9th 14/11/38 These turbines securely fitted on board. Fuel under steam found satisfactory. Wm. Gordon Macneil

The amount of Entry Fee ... £ : : When applied for, 15 NOV 1938
Special ... £ 41 : 6 :
Donkey Boiler Fee ... £ : : When received, 6 JAN 1939
Travelling Expenses (if any) £ : :

Committee's Minute GLASGOW 8861 10N51

Assigned TRANSMIT TO LONDON



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