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# REPORT ON STEAM TURBINE MACHINERY. No. 75447

Received at London Office 11 MAY 1950

Date of writing Report 10 When handed in at Local Office 2. 5. 1950 Port of GLASGOW.  
No. in Survey held at Date, First Survey 23. 12. 48 Last Survey 15. 4. 1950  
Reg. Book. on the 5/ ORDIA B.W. 108. (Number of Visits 4)  
Built at DUMBARTON. By whom built W<sup>M</sup> DENNY, BROS L<sup>D</sup> Yard No. 1433 Tons } Gross  
Engines made at GLASGOW By whom made BARCLAY CURLE & CO Engine No. BW 108 When built  
Boilers made at By whom made Boiler No. When made  
Shaft Horse Power at Full Power 1020 Owners 1140 eq. H. P. Rappaport Port belonging to  
Nom. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
Trade for which Vessel is intended

## STEAM TURBINE ENGINES, &c.—Description of Engine One L.P. Turbine with D.R. Gearing, 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;  
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 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.
1ST EXPANSION							7 1/2	8 9/8	1			
2ND							9 1/2	9 3/8	1			
3RD							11 1/2	9 7/8	1			
4TH							13 1/2	10 1/8	1			
5TH							15 1/2	10 5/8	1			
6TH							17 1/2	11 1/4	1			
7TH							20 1/2	11 5/8	1			
8TH												
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine { H.P. - I.P. - L.P. 1020  
Revolutions per minute, at full power, of each Turbine Shaft { H.P. - I.P. - L.P. 3320  
Rotor Shaft diameter at journals { H.P. - I.P. - L.P. 170 7/8  
Pitch Circle Diameter { 1st pinion 8.784 1st reduction wheel 60.202 2nd pinion 15.1404 main wheel 78.2728  
Width of Face { 1st reduction wheel 260 7/8 main wheel 600 7/8  
Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 225 7/8 1st reduction wheel 1565 7/8 2nd pinion 422.57 2nd reduction wheel 360 7/8 main wheel 525 7/8

### TRANSMISSION

Pinion Shafts, diameter at bearings { 1st 250 7/8 2nd 500 7/8  
Wheel Shafts, diameter at bearings { 1st 1448 7/8 2nd 1890 7/8  
Generator Shaft, diameter at bearings { 1st 1448 7/8 2nd 1890 7/8  
Propelling Motor Shaft, diameter at bearings { 1st 1448 7/8 2nd 1890 7/8  
Intermediate Shafts, diameter as per rule as fitted Thrust Shaft, diameter at collars as per rule as fitted 360 7/8  
Tube Shaft, diameter as per rule as fitted  
Screw Shaft, diameter as per rule as fitted 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 as fitted 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 made 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  
Is an approved Oil Gland or 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.  
If 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

In Holds, &c.

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

Bilges, No. and size 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 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

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

What pipes pass through the bunkers How are they protected

What pipes pass through the deep tanks 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



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 Yes, 25.2.49 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:— Spare gear supplied as per Rule requirements, and attached list.

The foregoing is a correct description,

For BARCLAY, CURLE & Co., Ltd

Wm G Bivona

Manufacturer

Dates of Survey while building { During progress of work in shops - - 1949 Dec 23 1950 Mar 17 Apr 4 15  
During erection on board vessel - - -  
Total No. of visits

Dates of Examination of principal parts—Casings 17.3.50 Rotors 30.12.49 Blading 17.3.50 Gearing 28.3.50

Wheel shaft 5.4.50 Thrust shaft 5.4.50 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 O.H.I.S.

Identification Mark LR18147 DB 891 30.12.49

LR 18147 DB 894

Identification Mark 30.12.48

1st A12804 R1492 LR1512 RR

2nd Identification Mark LR18147 HAI 8947 4.11.48

Identification Mark LR18147 DB 894 30.12.49

LR18147 HAI 896 23.12.48

Identification Mark

TRANSMISSION  
Pinion shaft, Material and tensile strength O.H.I.S.

1st Reduction Wheel Shaft, Material and tensile strength O.H.I.S.

Wheel shaft, Material O.H.I.S. Identification Mark LR18147 30.12.49

Intermediate shafts, Material Identification Marks

Screw shaft, Material Identification Marks

Date of test

Is the flash point of the oil to be used over 150°F.

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo

Is this machinery a duplicate of a previous case

General Remarks (State quality of workmanship, opinions as to class, &c.

This machinery has been constructed under Special Survey in accordance with the Society's Rules and the approved plans. Materials and workmanship are good.

The machinery has been despatched to Greenock to be installed in Messrs B's Denny Bros Yard No 1433

This turbine has been efficiently installed & coupled to the Main engine for recommendation please see Machinery FE GRK No 24205.

The amount of Entry Fee ... £ 29 15

Special ... £

Donkey Boiler Fee ... £

Travelling Expenses (if any) £

Committee's Minute

Assigned

Deferred for comp.

When applied for, 10 MAY 1950

When received, 19

13 SEP 1950

GLASGOW 10 MAY 1950

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