

# REPORT ON STEAM TURBINE MACHINERY.

No. 67129

Received at London Office

20 MAY 1943

Date of writing Report

When handed in at Local Office

24.5.43 Port of **GLASGOW**

No. in Survey held at

**GLASGOW**

Date, First Survey

21st July 1943

Last Survey

19th May 1943

Reg. Book

on the

Tw Sc **CLAN UROUHART**

(Number of Visits 9)

Tons

Gross 9216

Net 5607

Built at

**GREENOCK**

By whom built

**GREENOCK D.K.Y.D. CO. LD.** Yard No.

When built

1944

Engines made at

**-DO-**

By whom made

**J.G. KINCAIDY CO. LD.** Engine No.

When made

1944

TURBINES

Boilers made at

**GLASGOW**

By whom made

**BARCLAY CURLEY CO. LD.** No.

When made

1943

Shaft Horse Power at Full Power **2500**

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

## STEAM TURBINE ENGINES, &c.—Description of Engines **2-LP TURBINES WITH D.R. GEARING + HYD. COUPLING**

No. of Turbines Ahead **2** Direct coupled, single reduction geared } to **2** propelling shafts. No. of primary pinions to each set of reduction gearing **ONE**  
Astern **1** 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 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							2.64"	36.77"	ONE			
2ND							3.47"	38.43"	"			
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** } Revolutions per minute, at full power, of each Turbine Shaft { H.P. **-** I.P. **-** L.P. **3175** } 1st reduction wheel **515** main shaft **92**

Rotor Shaft diameter at journals { H.P. **-** I.P. **-** L.P. **170 mm** } Pitch Circle Diameter { 1st pinion **10.4979"** 1st reduction wheel **64.7015"** 2nd pinion **17.1395"** main wheel **93.1959"** } Width of Face { 1st reduction wheel **280 mm** main wheel **640 mm**

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion **610 mm** 1st reduction wheel **2165 mm** 2nd pinion **940 mm** main wheel **1160 mm**

TRANSMISSION Flexible Pinion Shafts, diameter { 1st **115 mm** 2nd **-** } Pinion Shafts, diameter at bearings External 1st **160 mm** 2nd **380 mm** Internal 1st **-** 2nd **-** } diameter at bottom of pinion teeth { 1st **9.9213"** 2nd **16.5629"**

Wheel Shafts, diameter at bearings { 1st **280 mm** main **880 mm** } diameter at wheel shroud, { 1st **1550 mm** Generator Shaft, diameter at bearings } main **2268 mm** Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter as per rule **-** as fitted **-** Thrust Shaft, diameter at collars as per rule **-** as fitted **381 mm** Tube Shaft, diameter as per rule **-** as fitted **-**

Screw Shaft, diameter as per rule **-** as fitted **-** Is the { tube } 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 **-** worked from **-**

NOTE.—The words which do not apply should be deleted.

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 \_\_\_\_\_ 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 ✓



FOR BARCLAY, CURLE & Co., Ltd.

Alexander Macneil,

Chief Engineer

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1943 Jan 21 Mar 2. 18. 24 Apr 2 12. 19 May 6. 19  
 { During erection on board vessel --- }  
 Total No. of visits 9.

Dates of Examination of principal parts—Casings 24-3-43 Rotors 21-1-43 Blading 2-3-43 Gearing 2-4-43

Wheel shaft 2-4-43 Thrust shaft 2-4-43 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 36.4/48 tons Identification Mark 735s 736p AJB

Flexible Pinion Shaft, Material and tensile strength - Identification Mark -

Pinion shaft, Material and tensile strength S.M. Steel 47.2/48 tons Identification Mark 746 AJB

1st Reduction Wheel Shaft, Material and tensile strength S.M. Steel 32.4 tons Identification Mark 714p 713s AJB

Wheel shaft, Material S.M. Steel Identification Mark 747x 748 AJB Thrust shaft, Material S.M. Steel Identification Mark 723p 790s AJB

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 Yes If so, state name of vessel Barclay Curle's BW 78 GLS Rpt. No 65708 ✓

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

This machinery has been built under special survey in accordance with the Rules and approved plans, and the materials and workmanship are good. It has been sent to Gruncak for installation in the vessel.

This machinery has been efficiently installed in the vessel & tested under full working conditions. See Main Machinery report  
 Checks of Hunter Jamnook

The amount of Entry Fee	£ -	When applied for,
Special	£ 41 : 12	25 MAY 1943
Donkey Boiler Fee	£ :	When received,
Travelling Expenses (if any)	£ :	19

A. J. Brown  
 Engineer Surveyor in Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 25 MAY 1943**

Assigned Deferred for compn N29



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(The Surveyors are requested not to write on or below the space for Committee's Minute.)  
 Certificate (if required) to be sent to...

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