

Rpt. 4a.

REPORT ON STEAM TURBINE MACHINERY. No. 64917

Received at London Office

15 JAN 1942

Date of writing Report

19

When handed in at Local Office

12. 1.

1942 Port of

Glasgow

No. in Survey held at

Glasgow

Date, First Survey

22 : 11 : 40

Last Survey

5 : 1 :

1942

Reg. Book.

18803 on the

S.S. "Ilmaria"

(Number of Visits)

14

Gross

6852

Net

4004

Built at

Glasgow

By whom built

Barclay, Currie & Co. Ltd.

Yard No.

When built

Engines made at

do

By whom made

do

Engine No.

When made

Boilers made at

do

By whom made

do

Boiler No.

When made

Shaft Horse Power at Full Power

Owners

Port belonging to

Nom. Horse Power as per Rule

630

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

Trade for which Vessel is intended

STEAM TURBINE ENGINES, &c.—Description of Engines *one L.P. Turbine with DR 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 *—* 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.
						66 7/8	822 1/2	1			
						84.	868 "	1			
						103 .	926 "	1			
						122 "	944 "	1			
						142 "	984 "	1			
						163 "	1026 "	1			
						186 "	1070 .	1			

Shaft Horse Power at each turbine { H.P. *—* I.P. *—* L.P. *990* } Revolutions per minute, at full power, of each Turbine Shaft { H.P. *—* I.P. *—* L.P. *2420* } 1st reduction wheel *514* main shaft *90*

Rotor Shaft diameter at journals { H.P. *—* I.P. *—* L.P. *125 1/4* } Pitch Circle Diameter { 1st pinion *8.3555* 1st reduction wheel *60.6307* 2nd pinion *14.2834* main wheel *49.1298* } Width of Face { 1st reduction wheel *260 1/4* main wheel *600 1/4* }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion *225 1/4* 2nd pinion *442.5* } 1st reduction wheel *360 1/4* main wheel *525 1/4*

TRANSMISSION Flexible Pinion Shafts, diameter { 1st *115 1/4* 2nd *—* } Pinion Shafts, diameter at bearings { External *125 1/4* Internal *35 1/4* } 1st *125 1/4* 2nd *250 1/4* } diameter at bottom of pinion teeth { 1st *7.4789* 2nd *13.511* }

Wheel Shafts, diameter at bearings { 1st *230 1/4* 2nd *250 1/4* } diameter at wheel shroud, { 1st *1460 1/4* } Generator Shaft, diameter at bearings *—* Propelling Motor Shaft, diameter at bearings *—*

Intermediate Shafts, diameter { as per rule *—* as fitted *—* } Thrust Shaft, diameter at collars { as per rule *—* as fitted *362 1/4* } 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 *20 8 x 9 x 18*

Are two independent means arranged for circulating water through the Oil Cooler { *Yes* } 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 { *—* }

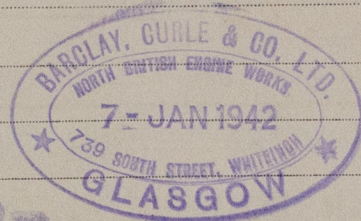
What pipes pass through the deep tanks { *—* } Have they been tested as per rule { *—* }

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 { *—* }

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:—

See List Attached.



Alexander Macnaulty

Manufacturer.

The foregoing is a correct description,

Dates of Survey while building { During progress of work in shops - - } 1940 Nov: 22 Dec: 20 (1941) Jan: 16-31 Feb: 13-28 Mar: 10 Apr: 11 May 5 June 6 July 2 Sep: 8
{ During erection on board vessel - - - } Oct: 1 (1942) Jan 5
Total No. of visits 14

Dates of Examination of principal parts—Casings 2.4.41 Rotors 16.1.41 Blading 5.5.41 Gearing 6.6.41
Wheel shaft 31.1.41 Thrust shaft 5.5.41 TRANSMISSION Intermediate shafts 6.6.41 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 1 In. Ingot steel 34.0 tons Identification Mark 9696-HAT-814-13/14

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

Pinion shafts Material and tensile strength Ingot steel 1 1/2 48.8 tons 2 1/2 48.0 tons Identification Mark 9696-HAT-1540-14/15
9696-10051-HAT-51/52

1st Reduction Wheel Shaft, Material and tensile strength 1 In. Ingot steel 30.6 tons Identification Mark 9696-HAT-812-22/24
9696-HAT-810

Wheel shaft, Material 1 In. Ingot steel Identification Mark 6/8/40 Thrust shaft, Material 1 In. Ingot steel Identification Mark 9696-HAT-815
TRANSMISSION Intermediate shafts, Material do Identification Marks 26/7/40 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 9/2 If so, state name of vessel ITRIA No report No. 62387.
Sullama

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

The amount of Entry Fee ... £ : When applied for, ... 19.
Special ... £ : When received, ... 19.
Donkey Boiler Fee ... £ :
Travelling Expenses (if any) £ :
See Quoting Sheet

Prof. Edmund M. A.T. Brown & A.P. Gibbons
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 13 JAN 1942 *ink.*

Assigned SEE ACCOMPANYING MACHINERY REPORT



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