

REPORT ON STEAM TURBINE MACHINERY. No. 64917

Received at London Office 15 JAN 1942

Date of writing Report 19 42 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. 38803 on the S.S. "Umaria" (Number of Visits 1st) Gross 6852
 Tons Net 4004
 Built at Glasgow By whom built Baird & C. Ltd Yard No. 684 When built
 Engines made at do By whom made do Engine No. 684 When made 1941
 Boilers made at do By whom made do Boiler No. 684 When made 1941
 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, double reduction geared } to out. propelling shafts. No. of primary pinions to each set of reduction gearing one
 Astern _____
 direct coupled to { Alternating Current Generator _____ phase _____ periods per second } rated _____ Kilowatts _____ Volts at _____ revolutions per minute;
 Direct Current Generator _____
 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							66 1/2"	882 1/2"	1			
2ND							84"	868"	1			
3RD							103"	926"	1			
4TH							122"	944"	1			
5TH							142"	984"	1			
6TH							163"	1026"	1			
7TH							186"	1070"	1			
8TH												
9TH												
10TH												
11TH												
12TH												

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 }
 Rotor Shaft diameter at journals { H.P. _____ I.P. _____ L.P. 125 1/4" } Pitch Circle Diameter { 1st pinion 8.3555" 1st reduction wheel 60.630" 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 422.5" } 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 1st 125 1/4" 2nd 520 1/4" } Internal 1st 35" 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 _____ }
 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 } 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 2 2 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 _____ Working Pressure _____

Is Forced Draft fitted _____ No. and Description of Boilers _____

Is a Report on Main Boilers now forwarded? _____

Is { a Donkey } Boller 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:— _____

In full attached.



Alvando Macnutt

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 18
 { During erection on board vessel --- } Oct: 1 (1942) Jan 5
 Total No. of visits 11

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 1st 48.8 tons 2nd 48.0 tons Identification Mark 9696-HAT-1540-14/15
 9696-10051-HAT-15/16

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

Wheel shaft, Material 1 in. Ingot steel Identification Mark 6/8/40 Thrust shaft, Material 1 in. Ingot steel Identification Mark 9696-HAT-818-25/26

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 9/4 ✓ If so, state name of vessel ITRIA No report No. 62387.
Orlana

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

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

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

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

Assigned SEE ACCOMPANYING MACHINERY REPORT



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