

REPORT ON STEAM TURBINE MACHINERY

25 AUG 1936
 Sld. No. 31892
 29 JUN 1936

4a. of writing Report 19 When handed in at Local Office 23/6/1936 Port of NEWCASTLE-ON-TYNE
 in Survey held at Newcastle on Tyne Date, First Survey 4 May 1936 Last Survey 17/6/1936
 on the S/S ST. MARGARET. (Number of Visits 7)

It at Sunderland By whom built J.L. Thompson & Co Yard No. 574 Tons } Gross 4312
 } Net 2684
 Lines made at Newcastle on Tyne By whom made White's Marine Eng Co Ltd Engine No. 5.C. When built 1936
 Turbine made at ditto By whom made R.W. Hawthorn, Leslie & Co Turbine No. 9849 When made 1936
 Horse Power at Full Power 640 Owners St. Quentin Shipping Co. Ltd Port belonging to Newport
 Horse Power as per Rule 304 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
 for which Vessel is intended combined with Recip. Engine. See note letter 17.6.36

4 M TURBINE ENGINES, &c. — Description of Engines 4 CYLR. COMPOUND RECIP. ENG WITH S.R. GEARING, Combined with L.P. TURBINE WITH D.R. GEARING TO ONE SCREW SHAFT.

of Turbines Ahead ONE } COMBINED Direct coupled, single reduction geared } to ONE propelling shaft. No. of primary pinions to each set of reduction gearing ✓
 Astern ONE } COMBINED double reduction geared }
 coupled to Alternating Current Generator ✓ phase periods per second } FOR GEARING, SEE LONDON RPT. NO.
 Direct Current Generator } rated Kilowatts Volts at revolutions per minute;
 applying power for driving ✓ Propelling Motors, Type ✓
 Kilowatts ✓ Volts at ✓ revolutions per minute. Direct coupled, single or double reduction geared to ✓ propelling shafts.

EXPANSION	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.
							2 rows parallel, thus					
							1" 22" 2.					
							8 rows in taper:-					3 Row impulse wheel
							1 1/2 22 1/2 8					mean diam of 22 1/2"
							25 3/4					Blade heights
							6 rows in taper:-					1 1/4" to 2"
							2 3/8 to 25 3/4 6					
							5 7/16 to 30 7/8					
							The Rotor is parallel, 20" dia					

Horse Power at each turbine { H.P. — }
 { I.P. — }
 { L.P. 640 ✓ }
 Shaft diameter at journals { H.P. — }
 { I.P. — }
 { L.P. 4" }
 EXHAUST TURBINE.

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion }
 { 2nd pinion }
 Pinion Shafts, diameter at bearings { External }
 { Internal }
 Shaft diameter at bearings { 1st }
 { 2nd }
 Generator Shaft, diameter at bearings { 1st }
 { 2nd }
 Propelling Motor Shaft diameter at bearings { 1st }
 { 2nd }

Intermediate Shafts, diameter as per rule
 as fitted
 Thrust Shaft, diameter at bottom as per rule
 as fitted
 Shaft, diameter as per rule
 as fitted
 Screw Shaft, diameter as per rule
 as fitted
 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 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 so, state type
 Is an approved Oil Gland or other appliance fitted at the after end of the tube
 Length of Bearing in Stern Bush next to and supporting propeller

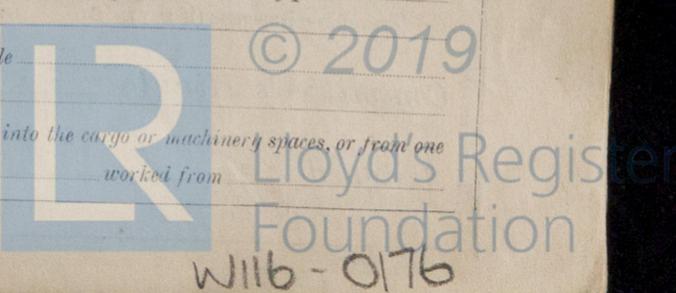
er, diameter Pitch No. of Blades State whether Movable Total Developed Surface square feet.
 e Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Can the H.P. or I.P. Turbine exhaust direct to the
 No. of Turbines fitted with astern wheels Feed Pumps { No. and size }
 { How driven }

connected to the Main Bilge Line { No. and size }
 { How driven }
 Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size
 Independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge
 No. and size:—In Engine and Boiler Room In Pump Room

Water Circulating Pump Direct Bilge Suctions, No. and size Independent Power Pump Direct Suctions to the Engine Room
 No. and size Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes
 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
 Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks
 Are they sufficiently high on the ship's side to be seen without lifting the stowhold plates Are the Overboard Discharges above or below the deep water line
 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
 How are they protected
 How are they protected
 Have they been tested as per rule

Is the Shaft Tunnel watertight Is it fitted with a watertight door
 Is it worked from

FOR GEARING SEE LONDON RPT. NO. SR/DR



W116-0176

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)

Is the donkey boiler intended to be used for domestic purposes only _____

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 _____

Has the spare gear required by the Rules been supplied **yes, viz** **SPARE GEAR.**

State the principal additional spare gear supplied **2 Main Bearing Brushes; One Complete Carbon Ring for Cylinders; one Set "Michell" Thrust Pads; one Set Liners for forward side of Thrust Block; 2 Springs for Carbon Rings; One Relief Valve Spring; one Spring for Governor; 2 Studs & nuts for Bearings Keeps; one Stud, one Bolt & one fitter Bolt (each with nut) for Cylinder horizontal joint.**

The foregoing is a correct description,

For **R. & W. HAWTHORN, LESLIE & CO., LIMITED**
R. Johnson L.P. TURBINE-
 Manufacturer.
 DIRECTOR

Dates of Survey while building
 During progress of work in shops -- **1936 May 4. 5. 8. 28 Jun 8. 16. 17**
 During erection on board vessel ---
 Total No. of visits **7+**

Dates of Examination of principal parts—Casings **5/5/36** Rotors **4/5/36** Blading **17/6/36** Gearing ✓

Wheel shaft ✓ Thrust shaft ✓ Intermediate shafts ✓ Tube shaft ✓ Screw shaft ✓

Propeller ✓ Stern tube ✓ Engine and boiler seatings ✓ Engine holding down bolts ✓

Completion of fitting sea connections ✓ Completion of pumping arrangements ✓ Boilers fixed ✓ **L.P. TURBINE**
 Main boiler safety valves adjusted ✓ Thickness of adjusting washers ✓ **Engine tried under steam 19.6.36**

Rotor shaft, Material and tensile strength **SM. STEEL 55.2 Kg./mm² (35 tons/□)** Identification Mark **LLOYDS 852 EB 18-1-36 AW 17-6-36**

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

Pinion shaft, Material and tensile strength ✓ Identification Mark ✓

1st Reduction Wheel Shaft, Material and tensile strength ✓ Identification Mark ✓

Wheel shaft, Material ✓ Identification Mark ✓ Thrust shaft, Material ✓ Identification Mark ✓

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 the use of oil as fuel been complied with ✓

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo ✓ If so, have the requirements of the Rules been complied with ✓

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with ✓

Is this machinery a duplicate of a previous case **YES.** If so, state name of vessel **S/S ST. HELENA. T.W.C. No. 93812**

General Remarks (State quality of workmanship, opinions as to class, &c.) **This L.P. Turbine has been constructed under special survey in accordance with the Rules. The materials and workmanship are good. The Turbine was satisfactorily tested in the shop, then set up with the DR/SR Gearing, and dispatched to Sunderland to be fitted in Messrs J. L. Thompson's Slip no 574**

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

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

A. Watt.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 28 AUG 1936**

Assigned **See Id J.C. 31892**

