

REPORT ON STEAM TURBINE MACHINERY. No. 98022

Received at London Office 13 NOV 1939

When handed in at Local Office 10/11/39 Port of **NEWCASTLE-ON-TYNE**
 Survey held at **Newcastle on Tyne** Date, First Survey **17 July** Last Survey **27 Oct** 1939
 (Number of Visits **13**)

on the **S/S FLORIAN** Tons } Gross }
 } Net }
 made at **West Hartlepool** By whom built **Wm Gray & Co** Yard No. **1099** When built **1940**
 made at **Newcastle** By whom made **Central Marine Eng Wks.** Engine No. **1099** When made **1940**
 made at **Newcastle** By whom made **Swan Hunter & Wigham Richardson** Turbine No. **1632** When made **1940**
 Owners **Ellerman Lines, Ltd** Port belonging to **Liverpool**
 Is Refrigerating Machinery fitted for cargo purposes **yes** Is Electric Light fitted **yes**
 which Vessel is intended **Ocean going**

TURBINE ENGINES, &c. — Description of Engines **Exp. Steam Turbine (Bauer-Wach) with hydr. coupling**

Ahead **one** Direct coupled } to **one** propelling shaft. No. of primary pinions to **the** set of reduction gearing **one**
 Astern **—** double reduction geared }
 Alternating Current Generator **—** phase **—** periods per second **—** rated **—** Kilowatts Volts at **—** revolutions per minute;
 Direct Current Generator **—** rated **—** Kilowatts Volts at **—** revolutions per minute;
 Propelling Motors, Type **—**
 Direct coupled, single or double reduction geared to **—** propelling shafts.

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.
/	/	/	/	/	/	57.	864.	1.	/	/	/
/	/	/	/	/	/	78.	906.	1.	/	/	/
/	/	/	/	/	/	99.	948.	1.	/	/	/
/	/	/	/	/	/	120.	990.	1.	/	/	/
/	/	/	/	/	/	141.	1032.	1.	/	/	/
/	/	/	/	/	/	171.	1092.	1.	/	/	/
/	/	/	/	/	/	200.	1150.	1.	/	/	/

Revolutions per minute, at full power, of **the** Turbine Shaft } H.P. **—** 1st reduction wheel **500.**
 } I.P. **—** main shaft **87.**
 } L.P. **3245**
 Pitch Circle Diameter } 1st pinion **233.51** 1st reduction wheel **1515.13** Width of Face } 1st reduction wheel **260**
 } 2nd pinion **380.14** main wheel **2112.49** } main wheel **580**
 } 1st pinion **285** 1st reduction wheel **1645** } 1st reduction wheel **380**
 } 2nd pinion **440** main wheel **550** }
 Pinion Shafts, diameter at bearings } External 1st **150** 2nd **350** diameter at bottom of pinion teeth } 1st **218.87**
 } Internal 1st **—** 2nd **285** } 2nd **365.49**
 Generator Shaft, diameter at bearings **—**
 Propelling Motor Shaft, diameter at bearings **—**
 Thrust Shaft, diameter at collars **—**
 Screw Shaft, diameter **—** Is the { tube } shaft fitted with a continuous liner { **—**
 } screw }
 Thickness between bushes **—** Is the after end of the liner made watertight in the **—**
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner **—**
 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 **—**
 Total Developed Surface **—** square feet.
 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 **—**
 Lubricating Oil Pumps, including Spare Pump, No. and size **Two @ 8" x 9" x 18" Stroke**
 Oil Cooler **—** Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge **—**
 In Pump Room

Independent Power Pump Direct Suctions to the Engine Room **—**
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes **—**
 Are they fitted with Valves or Cocks **—**
 Are the Overboard Discharges above or below the deep water line **—**
 Are the Blow Off Cocks fitted with a spigot and brass covering plate **—**
 How are they protected **—**
 Have they been tested as per rule **—**
 Is it fitted with a watertight door **—** worked from **—**

RETAIN

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. ^{July} ~~Is~~ approved plans forwarded herewith for Shafting ^{Yes} 8/5/39. Main Boilers _____ Auxiliary Boilers _____ Donkey Boilers _____
 (If not state date of approval)
 Superheaters _____ General Pumping Arrangements _____ Oil Fuel Burning Arrangements _____

SPARE GEAR.

Has the spare gear required by the Rules been supplied }
 State the principal additional spare gear supplied } one bearing of each size fitted.
 one set of Thrust Pads for each size of Thrust
 one spring + set of washers for Emergency Governor

FOR SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

The foregoing is a correct description,

G. J. Sweeney

1939
 Dates of Survey while building { During progress of work in shops -- } July 17. Aug. 24. Sep. 5. 19. 20. 26. Oct. 6. 12. 16. 18. 24. 27.
 { During erection on board vessel --- }
 Total No. of visits 13.

Dates of Examination of principal parts—Casings 5/9/39. Rotors 29/8/39. Blading 24/10/39. Gearing 18/10/39.
 Wheel shaft 24/10/39. Thrust shaft Quill. Intermediate shaft 24/10/39. 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. Engines tried in Shop. under steam.
 Main boiler safety valves adjusted. Thickness of adjusting washers.

Rotor shaft, Material and tensile strength 7. Steel 36.2 tons/sq in. Identification Mark 8688 HA
 1st Redn. Pinion Shaft, Material and tensile strength 7. Nickel Steel 44.5 tons/sq in. Identification Mark 8742 DB
 2nd Redn. Pinion shaft, Material and tensile strength 7. Nickel Steel 44.4 tons/sq in. Identification Mark 59146 CS
 1st Reduction Wheel Shaft, Material and tensile strength 7. Steel 29.6 tons/sq in. Identification Mark 8742 HA

Wheel shaft, Material F Steel Identification Mark 8742 HA 348. Thrust shaft, Material. Identification Mark.
 Quill. Intermediate shaft, Material F Steel Identification Marks 8742 HA 351. 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 5/5 MALVERNIAN (SHAW'S L.P. JAW) 5/5 CORINTHIAN. C.
 General Remarks (State quality of workmanship, opinions as to class, &c.)

This L.P. Turbine with its D.R. Gearing has been constructed under special in accordance with the Society's Rules and the approved plan, and the materials and workmanship are good.

The machinery has been sent to West Hartlepool for installation on the vessel. This turbine installation has now been satisfactorily fitted and secured on board, tried under working conditions and found satisfactory.

Arthur W. Oxford.
 West Hartlepool
 A. Watt.
 Engineer Surveyor to Lloyd's Register of Shipping

The amount of Entry Fee ... £ : : When applied for,
 Special ... £ 17 : 8 : : 9 NOV. 1939
 Donkey Boiler Fee ... £ : : When received,
 Travelling Expenses (if any) £ : : 13/12/1939. D.H. Nicol.

Committee's Minute

FRI 26 APR 1940

Assigned

See Spl. T.C. 18031



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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.)