

Newcastle-on-Tyne No. 96204  
**REPORT ON STEAM TURBINE MACHINERY.** No. 105778  
 Received at London Office 23 APR 1938

4a. of writing Report **23 APR 1938** When handed in at Local Office **23 APR 1938** Port of **London**  
 in Survey held at **West Drayton** Date, First Survey **Nov 3<sup>rd</sup> 1937** Last Survey **March 23<sup>rd</sup> 1938**  
 Book. on the **Reduction Gearing for** (Number of Visits **51x**)  
 It at By whom built **Messrs Bartram & Sons Ltd** Yard No. **279** When built  
 Lines made at **Asphurn on Tyne** By whom made **Whites Marine Eng Co Ltd** Engine No. **14c** When made  
 Makers made at By whom made Boiler No. When made  
**Power Plant Co Ltd, West Drayton**  
 ft Horse Power at Full Power Owners Port belonging to  
 n. Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
 de for which Vessel is intended

**STEAM TURBINE ENGINES, &c.**—Description of Engines **Reciprocating & Turbine Combination**  
 of Turbines Ahead  Direct coupled,  single reduction geared to **one** propelling shafts. No. of primary pinions to each set of reduction gearing **Recip: Unit 1. Turb: Unit 1.**  
 Astern  double reduction geared  
 coupled to  Alternating Current Generator  phase  periods per second  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.

TURBINE	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.
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ft Horse Power at each turbine **Recip: Eng. H.P. 310** 1st reduction wheel **400**  
**Turbine** I.P. **Revolutions per minute, at full power, of each Turbine Shaft** L.P. **3480** main shaft **62**  
 L.P. **1000**  
 for Shaft diameter at journals **Pitch Circle Diameter** 1st pinion **6.071"** 1st reduction wheel **52.129"** Width of Face 1st reduction wheel **18"**  
 2nd pinion **11.785"** main wheel **75.215"** main wheel **32"**  
 1st pinion **12"** 1st reduction wheel **12" + 11 1/2"**  
 2nd pinion **1-7 1/2" + 1-10"** main wheel **22"**  
**Turbine** External 1st **4 3/4"** 2nd **8 7/8"** diameter at bottom of pinion teeth  
 Internal 1st **4 3/4"** 2nd **6" hole**

Recip: Eng: 1st **5 9/16"** Pinion Shafts, diameter at bearings 1st **9 1/2" with 5.5" dia hole.** 1st **49 1/2"** Generator Shaft, diameter at bearings **5.631"**  
 2nd **5 1/4" 3/4"** diameter at wheel shroud, main **13 3/4"** main **7 1/8"** Propelling Motor Shaft, diameter at bearings **11.050"**  
 wheel Shafts, diameter at bearings 1st **9.5" with 2nd Red Pinion 5.5" hole**  
 Intermediate Shafts, diameter as per rule as fitted  
 Thrust Shaft, diameter at collars as per rule as fitted

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  
 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  
 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  
 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  
 If so, state type Length of bearing in Stern Bush next to and supporting propeller

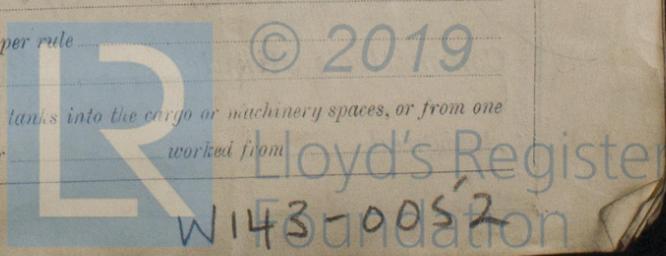
Propeller, diameter Pitch No. of Blades State whether **only** Moreable Total Developed Surface square feet.  
 Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Can the H.P. or L.P. Turbine exhaust direct to the  
 No. of Turbines fitted with astern wheels  
 Feed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

Lubricating Oil Pumps, including Spare Pump, No. and size  
 Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge In Pump Room  
 Main Bilge Line No. and size How driven  
 Ballast Pumps, No. and size  
 Are two independent means arranged for circulating water through the Oil Cooler  
 Pumps, No. and size:—In Engine and Boiler Room  
 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-bones  
 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  
 How are they protected  
 What pipes pass through the bunkers Have they been tested as per rule  
 What pipes pass through the deep tanks

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

*This report is for gearing only*



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?

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

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

THE POWER PLANT COMPANY LTD

R. S. Hughes  
WORKS MANAGER

The foregoing is a correct description, OF GEARING.

Dates of Survey while building  During progress of work in shops -- 1937: Nov 3, 23. 1938: Mar 1, 14, 22, 23  
 During erection on board vessel ---  
Total No. of visits 6 in shop.

Dates of Examination of principal parts—Casings  Rotors  Blading  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  Engines tried under steam

Main boiler safety valves adjusted  Thickness of adjusting washers

Rotor shaft, Material and tensile strength  Recip. Eng: Turb: Identification Mark

Flexible Pinion Shaft, Material and tensile strength. Nickel steel 48.8 tons 0" + 48.4 tons 0" Identification Mark

Pinion shaft, Material and tensile strength Nickel steel 47.2 tons 0" Identification Mark

1st Reduction Wheel Shaft, Material and tensile strength Nickel steel 48.4 tons 0" Identification Mark

Wheel shaft, Material Steel 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  If so, state name of vessel

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

The gearing has been constructed under Special Survey in accordance with the requirements of the Rules and approved plan. The materials have been made at Works approved by the Society and tested to requirements. The workmanship is good and the gearing is eligible in my opinion, for service in a classed vessel and to have notation of + LMC (with date) when satisfactorily installed and tested under full working conditions.

The amount of Entry Fee ... £ : :  
Special ... £ 9 : 0 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : 15 :  
When applied for, 1st Nov 24/38  
When received, 14. 7. 1938

J. H. Milton  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute  
Assigned  
FRI 29 JUL 1938



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