

REPORT ON STEAM TURBINE MACHINERY.

Received at London Office 26 APR 1929

Date of writing Report 24.4.1929 When handed in at Local Office 24.4.1929 Port of **NEWCASTLE-ON-TYNE**

No. in Survey held at **Wallsend** Date, First Survey **18 Feb** Last Survey **24.4.1929**
 Reg. Book. **31441** on the **Baner. Wash Turbines for the T. S. S. Port Sydney.** (Number of Visits, **29**) Tons { Gross **9136**
 Net **5835**

Built at **Belfast** By whom built **Worham Clark & Co** Yard No. **-** When built **1919-4**
 Engines made at **Belfast** By whom made **Worham Clark & Co** Engine No. **-** When made **1919**
TURBINES ~~Engines~~ made at **Wallsend** By whom made **Worham Clark & Co** Boiler No. **1322** When made **1929**
 Shaft Horse Power at Full Power **2532** Owners **Lanarkshire & Lanarkshire** Port belonging to **London**
 Nom. Horse Power as per Rule **---** Is Refrigerating Machinery fitted for cargo purposes **Yes** Is Electric Light fitted **Yes**

STEAM TURBINE ENGINES, &c.—Description of Engines **L.P. Turbines** No. of Turbines Ahead **Two**
 Astern **-**

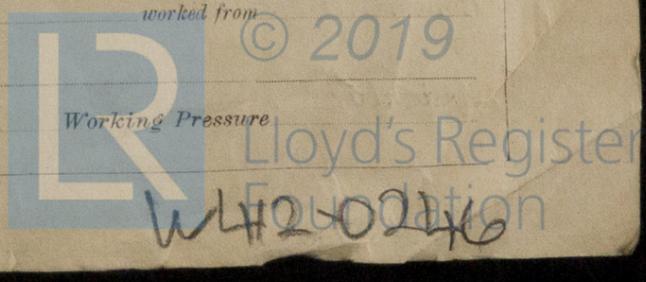
Direct coupled, single or double reduction geared to **2** propelling shafts. No. of primary pinions to each set of reduction gearing **-**, direct coupled to **-** phase
 periods per second, Alternating Current Generator rated **-** Kilowatts Volts at **-** revolutions per minute; for supplying power for driving
 Propelling Motors. Propelling Motors, Type **-**
 rated **-** Kilowatts Volts at **-** revolutions per minute. Direct coupled, single or double reduction geared to **-** propelling shafts.

PARTICULARS OF 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							40 m/m.	890 m/m.	6			
2ND							93 "	936 "	"			
3RD							114 "	984 "	"			
4TH							142 "	1034 "	"			
5TH							140 "	1090 "	"			
6TH							200 "	1150 "	"			
7TH												
8TH												

Shaft Horse Power at each turbine **1266** Revolutions per minute, at full power, of each Turbine Shaft **3500** 1st reduction wheel **545**
 main shaft **84** Pitch Circle Diameter, 1st pinion **230.95 m/m** 2nd pinion **345.46 m/m** 1st reduction wheel **1489.41 m/m** main wheel **2318.04 m/m**
 Width of Face, 1st reduction wheel **280 m/m** main wheel **540 m/m** Distance between centres of pinion and wheel faces and the centre of the adjacent bearings,
 1st pinion **250 m/m** 2nd pinion **430 m/m** 1st reduction wheel **3457 m/m** main wheel **550 m/m** Flexible Pinion Shafts, diameter 1st **95 m/m** 2nd **-**
 Pinion Shafts, diameter at bearings External 1st **140 m/m** 2nd **350 m/m** diameter at bottom of teeth of pinion 1st **216.319 m/m** 2nd **360.826 m/m**
 Internal 1st **140 m/m** 2nd **295 m/m**
 Wheel Shafts, diameter at bearings, 1st **1904.260 m/m** main **500 m/m** diameter at wheel shroud, 1st **320 m/m** main **543 m/m**
 Generator Shafts, diameter at bearings **-** Propelling Motor Shafts, diameter at bearings **-**
 Main Shafting, diameter of Tunnel Shafting as per rule **13.5"** as fitted **13.5"** diameter of Thrust Shafting as per rule **14.19"** as fitted **360 m/m**
 diameter of Screw Shaft as per rule **-** as fitted **-** Is the screw shaft fitted with a continuous liner the whole length of the stern tube **-** Is the after end of the liner
 made watertight in the propeller boss **-** If the liner is in more than one length are the joints burned **-** 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 appliance fitted at the after end of the shaft to permit of it being efficiently
 lubricated **-** Length of Stern Bush **-** Diameter of Propeller **-**
 Pitch of Propeller **-** No. of Blades **-** State whether Moveable **-** Total Surface **-** square feet. If Single Screw, are
 arrangements made so that steam can be led direct to the L.P. Turbine, and either the H.P. or L.P. Turbine can exhaust direct to the Condenser
 No. of Turbines fitted with astern wheels **-** Total number of power driven Main and Auxiliary Pumps
 No. and size of Feed Pumps **-** How driven **-** No. and size of Pumps connected to the Main Bilge Line
 How driven **-** No. and size of Ballast Pumps **-** No. and size of Lubricating Oil Pumps, including
 Spare Pump **-** Are two independent means arranged for circulating water through the Oil Cooler **-** No. and size of suction
 connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room **-** and in Holds, &c.
 No. and size of Main Water Circulating Pump Bilge Suctions **-** No. and size of Donkey Pump Direct Suctions
 to the Engine Room Bilges **-** 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 connections with the sea direct on the skin of the ship **-** Are they Valves or Cocks
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates **-** Are the Discharge Pipes 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 are carried through the bunkers **-** How are they protected
 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 Screw 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 Boiler fitted?

If so, is a report now forwarded?

Plans. Are approved plans forwarded herewith for Shafting yes Main Boilers Auxiliary Boilers Donkey Boilers
(If not state date of approval)

Spare Gear. State the articles supplied:— as per attached list.

The foregoing ~~is~~ ^{for} a correct description,
SWAN, HUNTER & WIGHAM RICHARDSON, LTD.

G. F. Mew
DIRECTOR
Manufacturer.

Dates of Survey while building: During progress of work in shops -- 1929 Feb. 18. 19. 20. 22. 25. 26. 27. 28. Mar. 1. 6. 8. 13. 15. 18. 20. 21. 25. 26. 27. 28. Apr. 4. 8. 11. 12. 14.
During erection on board vessel --- 16. 18. 21. 24.
Total No. of visits 29.

Dates of Examination of principal parts—Casings 25. 2. 29 Rotors 24. 2. 29 Blading 24. 2. 29 Gearing 19. 2. 29.
Wheel shaft 19. 2. 29 Thrust shaft 19. 2. 29 Tunnel shafts --- Screw shaft --- Propeller ---
Stern tube --- Engine and boiler seatings --- Engines holding down bolts 18. 4. 29.
Completion of pumping arrangements --- Boilers fired --- Engines tried under steam 24. 4. 29.

Main boiler safety valves adjusted --- Thickness of adjusting washers ---
Transmission shaft --- Steel 39/32 Tens. per sq. in. --- Identification Mark on Do. 5980/5A
Material and tensile strength of Rotor shaft --- Steel 39. 2 Tens. per sq. in. --- Identification Mark on Do. 5. 2. 29
Material and tensile strength of ~~Pinion~~ Pinion Shaft --- Steel 40/44 Tens. per sq. in. --- Identification Mark on Do. ~ do
Material and tensile strength of ~~Pinion~~ Pinion shaft --- Steel 38/32 Tens. per sq. in. --- Identification Mark on Do. ~ do
Material and tensile strength of ~~Reduction~~ Reduction Wheel Shaft --- Steel 45. 2 Tens. per sq. in. --- Identification Mark on Do. ~ do
Material of ~~main~~ Wheel shaft --- Steel --- Identification Mark on Do. 5985. 0. Material of Thrust shaft --- Steel --- Identification Mark on Do. ~ do
Material of ~~main~~ Tunnel shafts --- Steel --- Identification Marks on Do. 5985. 0. Material of Screw shafts --- --- Identification Marks on Do. ---
Material of Steam Pipes --- --- 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? no If so, state name of vessel ---

General Remarks (State quality of workmanship, opinions as to class, &c. The Machinery has been built under special survey in accordance with the approved plans & the Rules of the Society. The workmanship & materials are of good quality throughout. The Machinery has been securely fitted on board the vessel, tried under full working conditions & found satisfactory.)

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

The amount of Entry Fee ... £ : :
Special ... £ 42 : 4 :
~~Donkey Boiler~~ Fee ... £ 2 : 2 :
Travelling Expenses (if any) £ : :
When applied for, 25 APR 1929
When received, 3. 5. 29

Geo. A. Seymour
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 7 MAY 1929
Assigned See Awe. (yft. q) attached

