

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 **Walsend** Date, First Survey 18 Feb Last Survey 24.4.1929
 Reg. Book. **31441** on the **Bauer** 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 1918-4.
 Engines made at **Belfast** By whom made **Worham Clark & Co.** Engine No. — When made 1918.
TURBINES **Boilers** made at **Walsend** By whom made **Worham Clark & Co.** Boiler No. 1322. When made 1929.
 Shaft Horse Power at Full Power 2532. Owners **Lawrence & Co. Ltd.** 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 **Two**.
 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 153 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 153 m/m

Wheel Shafts, diameter at bearings, 1st 190 m/m 2nd 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

Is Forced Draft fitted — No. and Description of Boilers

Working Pressure

© 2019

Lloyd's Register

W412-0246

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*
(If not state date of approval)

Main Boilers

Auxiliary Boilers

Donkey Boilers

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

The foregoing ~~is~~ correct description,

SWAN, HUNTER & WIGHAM RICHARDSON, LTD.

Manufacturer.

G. F. Hewitt
DIRECTOR

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 38/32 Tons per sq. in. Identification Mark on Do. 5.985.0
Material and tensile strength of Rotor shaft Steel 39. 2 Tons per sq. in. Identification Mark on Do. 5.985.0
Material and tensile strength of Pinion Shaft Steel 40/44 Tons per sq. in. Identification Mark on Do. ~ do
Material and tensile strength of Pinion shaft Steel 38/32 Tons per sq. in. Identification Mark on Do. ~ do
Material and tensile strength of Reduction Wheel Shaft Steel 45. 2 Tons per sq. in. Identification Mark on Do. ~ do
Material of Wheel shaft Steel Identification Mark on Do. 5.985.0 Material of Thrust shaft Steel Identification Mark on Do. ~ do
Material of Tunnel shafts Steel Identification Marks on Do. 5.985.0 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.

The amount of Entry Fee ... £ : :
Special ... £ 42 : 4 :
Donkey Boiler Fee ... £ 2 : 2 :
Travelling Expenses (if any) £ : :
Survey as

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 Hwe. (yft.g) attached



© 2019

Lloyd's Register Foundation