

REPORT ON STEAM TURBINE MACHINERY.

No. 84490

Date of writing Report 19 22/7/29 When handed in at Local Office Port of Newcastle - on - Tyne. Received at London Office 23 JUL 1929

No. in Survey held at Walsend Date, First Survey 19 Feb Last Survey 10 July 1929

Reg. Book. 1466 on the Two Bauer-Wach Turbines for the T. S. S. "Port Melbourne" (Number of Visits 27)

Built at Belfast. By whom built Warkman Black & Co. Yard No. - Tons } Gross 915.2
 Net 585.2

Engines made at Belfast. By whom made do do When built 1914-1.

Boilers made at Walker By whom made Kuan Hinder, W R Sm, & Co. Engine No. - When made 1914-1

Boiler No. 1320 When made 1929.

Shaft Horse Power at Full Power 2118 shp. Owners Laurie & Co. Ltd. Liverpool Port belonging to Laurie

Nom. Horse Power as per Rule 2118 shp. Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

Trade for which Vessel is intended Great Trade.

STEAM TURBINE ENGINES, &c.—Description of Engines Two Low Pressure Bauer-Wach Turbines.

No. of Turbines 2 Ahead 1st Step Direct coupled, single reduction geared } to 2 propelling shafts. No. of primary pinions to each set of reduction gearing 6
double reduction geared }

direct coupled to { Alternating Current Generator phase periods per second }
 Direct Current Generator } rated Kilowatts Volts at revolutions per minute;

for supplying power for driving Propelling Motors, Type

rated Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

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												
2ND							409	890	6			
3RD							93	936	"			
4TH							114	984	"			
5TH							142	1034	"			
6TH							140	1090	"			
7TH							200	1150	"			
8TH												
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine { H.P. - }
 I.P. - } Revolutions per minute, at full power, of each Turbine Shaft { H.P. - }
 L.P. 1266 } { I.P. - }
 { L.P. 3500 } { 1st reduction wheel 545
 { } { main shaft 84

Rotor Shaft diameter at journals { H.P. - }
 I.P. - } Pitch Circle Diameter { 1st pinion 230.9864 } 1st reduction wheel 1482.418 } width of { 1st reduction wheel 280
 L.P. 140 } { 2nd pinion 348.463 } main wheel 2318.0468 } Face { main wheel 540

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 250.4380 } 1st reduction wheel 246.91535
 { 2nd pinion 430 } main wheel 550

Flexible Pinion Shafts, diameter { 1st 95 } Pinion Shafts, diameter at bearings External 1st 140 } 2nd 350 } diameter at bottom of pinion teeth { 1st 216.3194
 { 2nd - } Internal 1st - } 2nd 295 } { 2nd 360.826

Wheel Shafts, diameter at bearings { 1st 190 } diameter of shaft at wheel throat { 1st 320 } Generator Shaft, diameter at bearings
 { main 500 } diameter of shaft at wheel throat { main 543 } Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter as per rule 18.5 } Thrust Shaft, diameter at collars as per rule 14.19 } Tube Shaft, diameter as per rule
 as fitted 13.5 } as fitted 360 } as fitted

Screw Shaft, diameter as per rule 18.5 } Is the { tube } shaft fitted with a continuous liner { } } Bronze Liners, thickness in way of bushes as per rule
 as fitted 13.5 } screw } { } } as fitted

Thickness between bushes as per rule 18.5 } Is the after end of the liner made watertight in the propeller boss no } If the liner is in more than one length are the junctions
 as fitted 13.5 } made by fusion through the whole thickness of the liner no } 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 no } If two liners are fitted, is the shaft lapped or protected between the liners no } Is an approved Oil Gland
 or other appliance fitted at the after end of the tube shaft no } Length of Bearing in Stern Bush next to and supporting propeller no

Propeller, diameter no Pitch no No. of Blades no State whether Moveable no Total Developed Surface no square feet.
 If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine no Can the H.P. or I.P. Turbine exhaust direct to the

Condenser No. of Turbines fitted with astern wheels no Feed Pumps { No. and size no
 How driven no

Pumps connected to the Main Bilge Line { No. and size no
 How driven no

Ballast Pumps, No. and size no Lubricating Oil Pumps, including Spare Pump, No. and size no
 Are two independent means arranged for circulating water through the Oil Cooler no Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge
 Pumps, No. and size:—In Engine and Boiler Room no

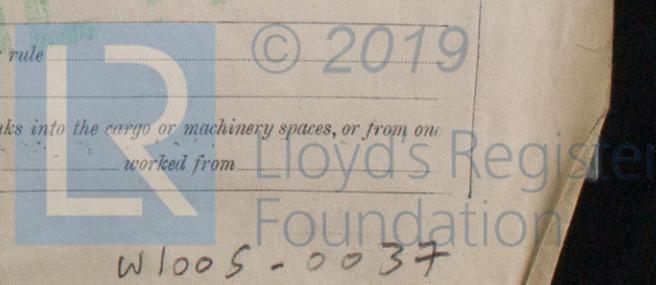
In Holds, &c. no Main Water Circulating Pump Direct Bilge Suctions, No. and size no Independent Power Pump Direct Suctions to the Engine Room no

Bilges, No. and size no Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes no
 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 no

Are all Sea Connections fitted direct on the skin of the ship no Are they fitted with Valves or Cocks no
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates no Are the Overboard Discharges above or below the deep water line no

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel no Are the Blow Off Cocks fitted with a spigot and brass covering plate no
 What pipes pass through the tankers no How are they protected no
 What pipes pass through the deep tanks no Have they been tested as per rule no

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times no
 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 no Is the Shaft Tunnel watertight no Is it fitted with a watertight door no worked from no



W1005-0037

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 (an Auxiliary) Boiler fitted? If so, is a report now forwarded?

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. State the articles supplied:— as per list attached

FOR SWAN, HUNTER & WIGHAM RICHARDSON, LTD.

The foregoing is a correct description,

R. W. Winter Manufacturer

Dates of Survey while building
 During progress of work in shops -- } Feb. 19. 26. Apr. 10. 12. 16. 18. May 1. 6. 8. 14. 21. 24. 28. 31. June 6. 7. 10. 11.
 During erection on board vessel --- } 12. 14. 19. 21. 22. 28 July 4. 5. 10.
 Total No. of visits 27.

Dates of Examination of principal parts—Casings 12. 4. 29. Rotors 12. 4. 29. Blading 14. 5. 29. Gearing 12. 4. 29.

Wheel shaft 12. 4. 29 Thrust shaft 12. 4. 29 Intermediate shafts - Tube shaft - Screw shaft -

Propeller - Stern tube - Engine and boiler seatings - Engine holding down bolts 12. 6. 29.

Completion of pumping arrangements - Boilers fired - Engines tried under steam -

Main boiler safety valves adjusted - Thickness of adjusting washers -

Transmission coupling Rotor shaft, Material and tensile strength Steel Identification Mark as per attached

Reduction Pinion Shaft, Material and tensile strength Steel Identification Mark as per attached

Pinion shaft, Material and tensile strength Steel Identification Mark as per attached

Reduction Wheel Shaft, Material and tensile strength Steel Identification Mark as per attached

Wheel shaft, Material Steel Identification Mark _____ Thrust shaft, Material Steel Identification Mark _____

Intermediate shafts, Material - Identification Marks _____ Tube shaft, Material - Identification Marks _____

Steam Pipes, Material - Test pressure -

Date of test 10. 4. 29. 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 yes If so, state name of vessel S. S. "Port Sydney"

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 & has been recently 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 below the space for Committee's Minute.)

The amount of Entry Fee ... £ : :
 Special ... £ 42 : 4 :
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 20 JUL 1929
 When received, 25. 7. 29

Fred. A. Ferguson
 Engineer Surveyor to Lloyd's Register of Shipping.

TUE. 31 DEC 1929
 TUE. 19 AUG 1930

Committee's Minute WED. 7 AUG 1929
 Assigned as per list attached

TUE. 14 JAN 1930
 TUE. 20 JAN 1931
 TUE. 5 DEC 1933