

REPORT ON STEAM TURBINE MACHINERY. No. 4801 (b)

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No. in Survey held at MELBOURNE & BRISBANE Date, First Survey 23. 6. 42 Last Survey 15. 11. 1944

Reg. Book. on the SINGLE SCREW STEAMER "RIVER FITZROY" (Number of Visits 31)

Tons } Gross 5107.9
Net 2788.21

Built at BRISBANE By whom built EVANS DEAKIN & CO. LTD. Yard No. 12 When built 1944

TURBINE & GEARS Engines made at MELBOURNE & CASTLEMAINE By whom made TURBINE THOMPSONS ENGINES & PIPE CO. LTD. GEAR. " " " " Engine No. When made 1944

Boilers made at SYDNEY, N.S.W. By whom made BABCOCK & WILCOX LTD. Boiler No. When made 1944

Shaft Horse Power at Full Power 830 Owners COMMONWEALTH OF AUSTRALIA. Port belonging to BRISBANE

Nom. Horse Power as per Rule 75 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted YES.

Trade for which Vessel is intended INTERNATIONAL

TEAM TURBINE ENGINES, &c.—Description of Engines ONE L.P. TURBINE WITH D.R. GEARING AND HYDRAULIC COUPLING ✓

No. of Turbines Ahead ONE ✓ Direct coupled, single reduction geared } to ONE propelling shaft. No. of primary pinions to each set of reduction gearing ONE ✓
Astern ✓ 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 LADING.	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							2.9134"	35.3544"	1			
2ND							3.7008"	36.9292"	1			
3RD							4.4882"	38.5040"	1			
4TH							5.2756"	40.0788"	1			
5TH							6.0630"	41.6536"	1			
6TH							6.9685"	43.4646"	1			
7TH							7.8740"	45.2756"	1			
8TH												
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine { H.P. _____
I.P. _____
L.P. 830 ✓ } Revolutions per minute, at full power, of each Turbine Shaft { H.P. _____
I.P. _____
L.P. 3444 } 1st reduction wheel 502.5 ✓
main shaft 89.6

Rotor Shaft diameter at journals { H.P. _____
I.P. _____
L.P. 6.693" ✓ } Pitch Circle Diameter { 1st pinion 8.784" 1st reduction wheel 60.2024" Width of Face { 1st reduction wheel 10.25"
2nd pinion 14.2834" main wheel 79.1298" } main wheel 23.625"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion For^o 10²⁷/₆₄" Aft. 8⁵⁵/₆₄" 1st reduction wheel For^o 61⁵/₈" Aft. 14¹/₆₄"
2nd pinion For^o & Aft. 16⁴/₆₄" main wheel For^o & Aft. 20²/₃₂" }

TRANSMISSION Flexible Pinion Shafts, diameter { 1st 4¹/₃₂"
2nd ✓ } Pinion Shafts, diameter at bearings External 1st 4⁵⁹/₆₄" ✓ 2nd 12¹⁹/₃₂" ✓ Internal 1st 1³/₈" 2nd 9²³/₃₂" diameter at bottom of pinion teeth { 1st 8.2074"
2nd 13.511" }

Wheel Shafts, diameter at bearings { 1st For^o 9¹/₁₆" Aft. 9²⁷/₃₂" diameter at wheel shroud, { 1st 57" Generator Shaft, diameter at bearings ✓
main For^o & Aft. 19¹/₁₆" } main 75³/₄" } Propelling Motor Shaft, diameter at bearings ✓
as per rule 13.4" 13.25" ex turbine for 220/b as per rule 14.078" 13.91" for 220/b ex turbine
as fitted 13¹/₂" ✓ Thrust Shaft, diameter at collars as per rule 14¹/₆₄" ✓ Tube Shaft, diameter as fitted _____

Screw Shaft, diameter as per rule _____ Is the { tube } shaft fitted with a continuous liner { _____ } Bronze Liners, thickness in way of bushes as per rule _____
as fitted _____ } screw } as fitted _____ }
Thickness between bushes as per rule _____ 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 _____ 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 Oil Gland or other appliance fitted at the after end of the tube shaft _____ Length of Bearing in Stern Bush next to and supporting propeller _____

Propeller, diameter _____ Pitch _____ No. of Blades _____ Stale whether Moveable _____ Total Developed Surface _____ square feet.

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

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

Ballast Pumps, No. and size _____ Lubricating Oil Pumps, including Spare Pump, No. and size _____

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

In 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 _____ SEE 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 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 _____

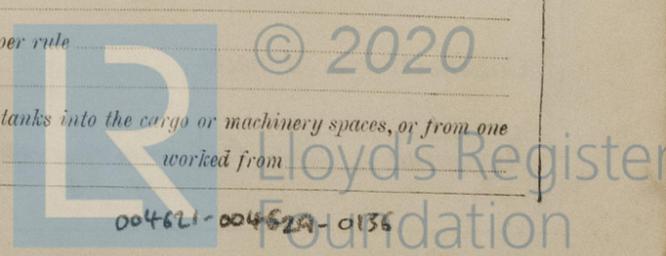
What pipes pass through the bunkers _____ How are they protected _____

What pipes pass through the deep tanks _____ Have they been tested as per rule _____

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 _____

Engine room given as 85



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? Report now forwarded?

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

Superheaters General Pumping Arrangements Oil Fuel Burning Arrangements

Spare Gear. State the articles supplied:—

Commonwealth Government Marine Engine Works
B. Mayall, Manager

The foregoing is a correct description,

Dates of Survey while building
During progress of work in shops -- 23.6.42, 28.7.42, 8.9.42, 5.10.42, 23.11.42, 5.4.43, 27.5.43, 10.6.43, 20.8.43, 30.8.43, 1.12.43, 28.2.44
During erection on board vessel --- 29.6.44, 13.7.44, 7.8.44, 10.8.44, 18.8.44, 24.8.44, 28.8.44, 9.9.44, 25.9.44, 26.9.44, 29.9.44, 4.10.44, 5.10.44, 13.10.44, 16.10.44, 30.10.44, 7.11.44, 14.11.44, 15.11.44
Total No. of visits 31.

Dates of Examination of principal parts—Casings 8-9-42 Rotors 8-9-42 Blading 20-8-43 Gearing 28-2-44

Wheel shaft 28-2-44 Thrust shaft 28-2-44 Intermediate shafts ✓ Tube shaft ✓ Screw shaft ✓

Propeller ✓ Stern tube ✓ Engine and boiler seatings ✓ Engine holding down bolts ✓

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 M.S. 34.8 T 35.2 TONS PER SQ. IN. Identification Mark M315/1 P.A.M.E.I. 28.2.44

TRANSMISSION Flexible Pinion Shaft, Material and tensile strength M.S. 32.0 TONS PER SQ. IN. Identification Mark 317/4 B.P.F.

Pinion shaft, Material and tensile strength 3/2% NICKEL STEEL. LONGIT. 42.0 TONS. TRANSVERSE 42.0 TONS. Identification Mark 317/1 B.P.F.

1st Reduction Wheel Shaft, Material and tensile strength NICKEL STEEL. LONGITUDINAL 39.8 TONS. 42.4 TONS. Identification Mark 317/1 B.P.F.

Wheel shaft, Material M.S. Identification Mark 317/4 B.P.F. Thrust shaft, Material M.S. Identification Mark 316/4 B.P.F.

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

Screw shaft, Material Identification Marks Steam Pipes, Material Test pressure

Date of test SEE ATTACHED MACHINERY REPORT. 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

Is this machinery a duplicate of a previous case. YES. If so, state name of vessel S.S. "RIVER BURDEKIN"

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

THIS TURBINE AND GEARING HAVE BEEN BUILT UNDER SPECIAL SURVEY IN ACCORDANCE WITH THE RULES AND APPROVED PLANS. THE MATERIALS AND WORKMANSHIP ARE GOOD.

THE INSTALLATION HAS BEEN EFFICIENTLY FITTED ON BOARD THE VESSEL, TRIED UNDER FULL POWER WORKING CONDITIONS WITH SATISFACTORY RESULTS, AND, IN OUR OPINION, IS NOW ELIGIBLE FOR RECORD RECOMMENDED IN ATTACHED MACHINERY REPORT.

The amount of Entry Fee ... £	When applied for,
Special £	19
Donkey Boiler Fee £	When received,
Travelling Expenses (if any) £	19

Fee charged on attached Machy Rpt.:

J.E. North, B.P. Fielden, & P.A. McIntyre
Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute FRI. 26 JAN 1945

Assigned Su F.E. machy rpt.

Certificate (if required) to be sent to SYDNEY, N.S.W.

