

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

Received at London Office

15 JAN 1945

Date of writing Report 20. 11. 1944 When handed in at Local Office

Port of BRISBANE

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

Engines made at MELBOURNE & CASTLEMAINE

By whom made TURBINE THOMPSONS ENGINES & PIPE CO. LTD.

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

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" 2nd pinion 14.2834" main wheel 79.1298" Width of Face 1st reduction wheel 10.25" main wheel 23.625"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion For 10.27" Aft 8.55" 1st reduction wheel For 61.5" Aft 14.64" 2nd pinion For 16.44" Aft 16.44" main wheel For 20.32" Aft 20.32"

Pinion Shafts, diameter at bearings External 1st 4.5964" 2nd 12.932" Internal 1st 1.38" 2nd 9.232" diameter at bottom of pinion teeth 1st 8.2074" 2nd 13.511"

Wheel Shafts, diameter at bearings 1st For 9.16" Aft 9.24" 2nd For 13.25" Aft 13.25" diameter at wheel shroud, 1st 57" 2nd 75.34" Generator Shaft, diameter at bearings ✓ Propelling Motor Shaft, diameter at bearings ✓

Intermediate Shafts, diameter as per rule 13.4" 13.25" ex turbine for 220lb as fitted 13.2" ✓ Thrust Shaft, diameter at collars as per rule 14.078" 13.91 for 220lb ex turbine as fitted 14.64" ✓ Tube Shaft, diameter as per rule as fitted

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

Thickness between bushes as per rule as fitted 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 State 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 Lubricating Oil Pumps, including Spare Pump, No. and size Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room

Ballast Pumps, No. and size Are two independent means arranged for circulating water through the Oil Cooler Main Water Circulating Pump Direct Bilge Suctions, No. and size Independent Power Pump Direct Suctions to the Engine Room

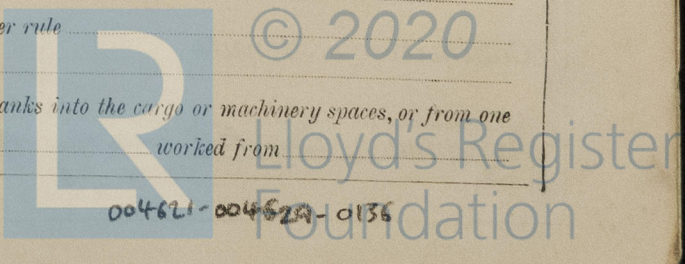
Bilges, No. and size SEE Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges

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



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?
(an Auxiliary)
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:—

The foregoing is a correct description,

Commonwealth Government Marine Engine Works

R. Mayall Manager

Manufacturer

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 1/2% NICKEL STEEL. LONGIT. 42.0 TONS. TRANSVERSE 42.0 TONS. Identification Mark 317/1 B.P.F.
WITH 2ND REDUCTION PINION.
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 Pips, 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 ... £ :
Special ... £ :
Donkey Boiler Fee ... £ :
Travelling Expenses (if any) £ :
When applied for, 19
When received, 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 TRI. 26 JAN 1945

Assigned *Su F.E. machy.rpt.*



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