

## REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

9 AUG 1945

17 AUG 1945

Received at London Office

Date of writing Report 10<sup>th</sup> July 1945 When handed in at Local Office

19 Port of Sydney, N. S. W.

No. in Survey held at Sydney N.S.W. & Whyalla S.A. Date, First Survey 14<sup>th</sup> Oct 1943 Last Survey 10<sup>th</sup> July 1945  
Reg. Book. on the S.S. "RIVER MURRUMBIDGEE" (Number of Visits 75)Built at Whyalla By whom built Broken Hill Pty Co Ltd Yard No. 6 Tons { Gross 5093  
Net 2846  
When built 1945

Engines made at Sydney By whom made Morts Dock &amp; Eng Co Ltd Engine No. 475. when made 1945

Boilers made at Melbourne &amp; Whyalla By whom made John Thompson Combustion Eng Co. &amp; Babcock &amp; Wilcox, &amp; BHP Co Boiler No. ✓ when made 1945

Nominal Registered Horse Power Recip. 493 Owners Commonwealth of Australia Port belonging to Port Adelaide  
Turbine 73  
Nom. Horse Power as per Rule 566 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes.

## ENGINES, &amp;c.—Description of Engines Triple expansion with Bauer Nach Exhaust Turbine &amp; D.R. Gearing

Dia. of Cylinders 24½", 40½", 67" Length of Stroke 48" Revs. per minute 85 No. of Cylinders 3 No. of Cranks 3

Dia. of Crank shaft journals as per rule 14.078" as fitted 14½" Dia. of Crank pin 14½" Crank webs Mid. length breadth 21½" If shrunk Thickness parallel to axis 9" Mid. length thickness 9" Thickness around eye-hole 6¾"

Diameter of Thrust shaft under collars as per rule 14.078" as fitted 14½" Diameter of Tunnel shaft as per rule 13.4" as fitted 13½" Diameter of Screw shaft as per rule 14.825" as fitted 15½" Is the Screw shaft

fitted with a continuous liner the whole length of the stern tube Yes 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 Yes (Liner thickness 25" &amp; 19") 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 5'-0½" Diameter of Propeller 17'-0"

Pitch of Propeller 16'-9" (average) No. of Blades four State whether Moveable Yes Total Surface 102 square feet.

No. of Feed Pumps fitted to the Main Engines ✓ Diameter of ditto ✓ Stroke ✓ Can one be overhauled while the other is at work ✓

No. of Bilge Pumps fitted to the Main Engines ✓ Diameter of ditto ✓ Stroke ✓ Can one be overhauled while the other is at work ✓

Total number and size of power driven Feed and Bilge Auxiliary Pumps { TWO MAIN FEED - 12" & 18" x 22", ONE GEN SERVICE (Aux feed) 10½" & 7" x 21"  
ONE BILGE - 9" & 10" x 24", ONE BALLAST (Con to Bilge Main) 10½" & 12" x 24"

No. and size of Pumps connected to the Main Bilge Line ONE BILGE - 9" &amp; 10" x 24", and ONE BALLAST - 10½" &amp; 12" x 24"

No. and size of Ballast Pumps { 1 BALLAST - 10½" &amp; 12" x 24" No. and size of Lubricating Oil Pumps, including Spare Pump Two - 8" &amp; 9" x 18"

Are two independent means arranged for circulating water through the Oil Cooler Yes No. and size of suction connected to both Main Bilge Pumps and Auxiliary

Bilge Pumps;—In Engine and Boiler Room Eng Room - Two 3", Boiler Room - Two 3" and in Holds, &amp;c. Thrust Recess - One 2½"

In Holds:—One 3" port & One 3" starbd in all Holds (Nos 1, 2, 3, 4 & 5), One 2½" port & starbd sides of  
Cofferdams & One 2½" in Tunnel well.

No. and size of Main Water Circulating Pump Bilge Suctions One 11" dia. No. and size of Donkey Pump Direct Suctions

to the Engine Room Bilges One 5" dia. Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes Yes

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 Yes

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks - Valves, except Blr &amp; Evap Blow down Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line both

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes

What Pipes are carried through the bunkers. Bilge pipes How are they protected steel casing.

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

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 Yes Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from { Eng Room, at level of 2nd Dk

MAIN BOILERS, &c.—(Letter for record ) Total Heating Surface of Boilers 7212 ft<sup>2</sup>

Is Forced Draft fitted Yes No. and Description of Boilers Two (B &amp; W Type) Working Pressure 240/lbs

IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes

IS A DONKEY BOILER FITTED? No.

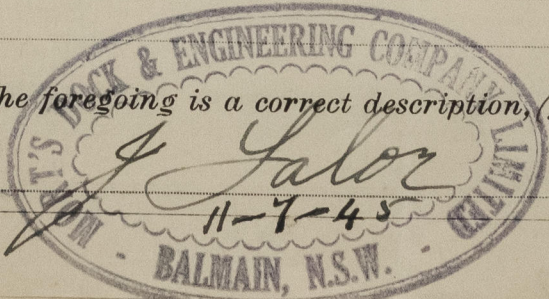
If so, is a report now forwarded? ✓

PLANS. Are approved plans forwarded herewith for Shafting No. Main Boilers 26/8/41 Auxiliary Boilers ✓ Donkey Boilers ✓  
(If not state date of approval) See Secretary's Letter E.28. 10/2/42, forwarding Copies of Plans for S.S. "BURNSIDE"

General Pumping Arrangements Approved 1/6/42 Oil Fuel Burning Piping Arrangements 3/7/41

SPARE GEAR. State the articles supplied:—As per Rules - (see list forwarded with Syd F.E. Rpt 19252 on S.S. RIVER CLARENCE)

The foregoing is a correct description, (for Main Engines)



Manufacturer.



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1943:- 14<sup>th</sup> Oct, 27<sup>th</sup> Oct, 2<sup>nd</sup>, 8<sup>th</sup>, 10<sup>th</sup> & 15<sup>th</sup> Nov. 1944:- Feb 2, 4, 7, 18, 29 March 4, 7, 8, 27  
During progress of work in shops - - 1944:- April 5, 11, 17, 26. May 11, 22, 29, June 8, 9, 14, 28. July 5, 10, 21, 24, 28 Aug 3, 4, 6, 10, 11, 17, 22, 30,  
Sept 4, 5, 6, 22 Oct 9, 23, Nov 2, 9, 28 Dec 4, 7, 11, 21. 1945:- Jan 3, 10, 15.  
Dates of Survey while building { During erection on board vessel - - - 1945:- Jan 26, 30, 31 Feb 1, 16, 22, 26, March 27, April 6, 15, 26, May 10, 14, 21  
June 3, 12, 20, 21, 25 July 10<sup>th</sup>  
Total No. of visits 75.

Dates of Examination of principal parts - Cylinders <sup>H.P.</sup> 30/8/44, <sup>M.P.</sup> 24/7/44, <sup>L.P.</sup> 22/8/44 Slides 30/8/44  
Covers 21/7/44 Pistons 19/6/44 Rods 4/9/44 & 23/10/44  
Connecting rods 3/8/44 & 23/10/44 Crank shaft 28/6/44 to 23/10/44 Thrust shaft 23/10/44  
Tunnel shafts 19/6/44 to 23/10/44 Screw shaft 19/6/44 & 23/10/44 Propeller 30/1/45  
Stern tube 23/10/44 Engine and boiler seatings 26/1/45 & 30/1/45 Engines holding down bolts 25/4/45  
Completion of pumping arrangements 21/5/45 Boilers fixed 10/5/45 Engines tried under steam 3/6/45 & 20/6/45  
Completion of fitting sea connections 26/2/45 Stern tube 16/2/45 Screw shaft and propeller 26/2/45  
Main boiler safety valves adjusted Thickness of adjusting washers inboard <sup>Port Boiler</sup> 44" Outboard 5", Superheater 3", Inb. 25" Outb. 25" Supr. 32"  
Material of Crank shaft Mild Steel Identification Mark on Do. LLOYDS No 313 & No 314 C.R.M. 23-10-44  
Material of Thrust shaft " " Identification Mark on Do. LLOYDS No 315 C.R.M. 23-10-44  
Material of Tunnel shafts " " Identification Marks on Do. " Nos 316 to 321 C.R.M. 23-10-44  
Material of Screw shafts " " Identification Marks on Do. " No 322 & spare No 323 C.R.M. 23-10-44  
Material of Steam Pipes Mild Steel Test pressure 720 lbs Date of Test 10/3/45 to 28/5/45  
Is an installation fitted for burning oil fuel Yes Is the flash point of the oil to be used over 150°F. Yes  
Have the requirements of the Rules for carrying and burning oil fuel been complied with Yes  
Is this machinery duplicate of a previous case Yes If so, state name of vessel "River Murchison" etc.  
General Remarks (State quality of workmanship, opinions as to class, &c.)

The Machinery of this Vessel has been built under Special Survey, in accordance with the Rules and approved plans. The materials and workmanship are good. The Installation has been fitted on board in an efficient manner, tested under working conditions and found satisfactory, and is now eligible in our opinion to be classed in the Society's Register Book, with record of  $\Delta$  L.M.C. 7, 45. T.S (C.L) and the Notations of - 2 W.T. Boilers 240 lbs (Spt 220 lbs), F.D., One L.P. Turbine with D.R. gearing & hydraulic coupling. Fitted for Oil Fuel 7, 45. F.P. above 150°F.

The amount of Entry Fee ... £ 7 : 10 : When applied for,  
Special ... £ 206 : 12 : 19  
Donkey Boiler Fee ... £ ✓ : : When received,  
Travelling Expenses (if any) £ 50 : 0 : 19

Committee's Minute

Assigned + LMC 745  
Fitted for Oil Fuel 7, 45 FLASH POINT ABOVE 130°F.

F.D. C.L. 2 W.T.B. 240 lb (Spt. 220 lb)

Engineer Surveyor to Lloyd's Register of Shipping.



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