

REPORT ON STEAM TURBINE MACHINERY. No. 19560 (a)

pt. 4a.

Date of writing Report 10th March 1944 When handed in at Local Office 19 Port of Sydney, N. S. W.
 No. in Survey held at Sydney & Melbourne Date, First Survey 28/7/42 Last Survey 29th Feb 1944
 Reg. Book. S.S. "RIVER GLENELG" (Number of Visits 25)
 on the S.S. "RIVER GLENELG" Tons Gross 4914 Net 2627
 Built at Whyalla (S. Aust.) By whom built Broken Hill Pty Co Ltd Yard No. 3 When built 1944
 Engines made at Port Kembla (N.S.W.) By whom made Australian Iron & Steel Ltd Engine No. 4 When made 1944
 Boilers made at Newcastle N.S.W. By whom made Broken Hill Pty Co Ltd Boiler No. - When made 1944
 Horse Power at Full Power 830 Owners Commonwealth of Australia Port belonging to Adelaide
 Horse Power as per Rule 75 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes
 for which Vessel is intended International

STEAM TURBINE ENGINES, &c. — Description of Engines One L.P. Turbine with D.R. Gearing & Hydraulic Coupling

Turbines One Direct coupled to One propelling shaft. No. of primary pinions to each set of reduction gearing One
single reduction geared
double reduction geared
 coupled to { Alternating Current Generator - phase - periods per second - rated - Kilowatts - Volts at - revolutions per minute;
 Direct Current Generator -
 supplying power for driving - Propelling Motors, Type -
- Kilowatts - Volts at - revolutions per minute. Direct coupled, single or double reduction geared to - propelling shafts.

	H. P.			I. P.			L. P.			ASTERN.		
EXPANSION	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.
"							2.9134"	35.3544"	1			
"							3.7008	36.9292	1			
"							4.4882	38.5040	1			
"							5.2756	40.0788	1			
"							6.0630	41.6536	1			
"							6.9685	43.4646	1			
"							7.8740	45.2756	1			
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Horse Power at each turbine { H.P. 830 I.P. 810 L.P. 830 }
 Shaft diameter at journals { H.P. 6.693" I.P. 6.693" L.P. 6.693" }
 Pitch Circle Diameter { 1st pinion 8.784" 1st reduction wheel 60.2024" 2nd pinion 14.2834" main wheel 79.1298" }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion F. 10.37", A. 8.55" 2nd pinion F. & A. 16.41" }
 Pinion Shafts, diameter at bearings { 1st 4.57" 2nd 4.57" }
 External diameter at bottom of pinion teeth { 1st 12.19" 2nd 9.37" }

Generator Shaft, diameter at bearings 57"
 Propelling Motor Shaft, diameter at bearings 75.13"
 Thrust Shaft, diameter at collars 14.078"
 Screw Shaft, diameter 13.4"

Size Liners, thickness in way of bushes 13.4"
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner -
 Is the after end of the liner made watertight in the -
 Is an approved Oil Gland or other appliance fitted at the after end of the tube -
 Length of Bearing in Stern Bush -

Propeller, diameter - Pitch - No. of Blades - State whether Moveable - Total Developed Surface - square feet.
 Angle Screw, are arrangements made so that steam can be led direct to the L.P. Turbine - Can the H.P. or I.P. Turbine exhaust direct to the -
 No. of Turbines fitted with astern wheels - Feed Pumps -

Connections connected to the Main Bilge Line { No. and size - How driven - }
 Lubricating Oil Pumps, including Spare Pump, No. and size -
 Two independent means arranged for circulating water through the Oil Cooler - Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge -
 In Pump Room -

Main Water Circulating Pump Direct Bilge Suctions, No. and size - Independent Power Pump Direct Suctions to the Engine Room -
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-bones -
 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 - worked from -

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 }

Is the donkey boiler intended to be used for domestic purposes

Plans. Are approved plans forwarded herewith for Shafting
(If not state date of approval)

Superheaters

General Pumping Arrangements

Oil Fuel Burning Arrangements

Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied see list forwarded with ss. "River Clarence" Rpt. No 19252.

for Reduction
Gearing:—

Commonwealth Government Marine Engine Works
Manager. MELBOURNE.

for Turbine:—

The foregoing is a correct description,

Dates of Survey while building { During progress of work in shops -- 28/7/42, 8/9/42, 5/10/42, 20/11/42, 23/11/42, 30/12/42, 18/1/43, 25/1/43, 16/2/43, 22/3/43, 5/4/43, 17/5/43, 9/6/43, 10/6/43, 17/8/43.
During erection on board vessel --- 15/11/43, 7/12/43, 21/12/43, 12/1/44, 21/1/44, 13/2/44, 24/2/44, 26/2/44, 29/2/44
Total No. of visits 25

Dates of Examination of principal parts—Casings 22/3/43 Rotors 9/6/43 Blading 9/6/43 Gearing 17/8/43

Wheel shaft 17/8/43 Thrust shaft 17/8/43 Intermediate shafts Tube shaft Screw shaft

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

Completion of fitting sea connections 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. 36.6 tons per sq. in. Identification Mark Lloyds No 192 A.D.

Transmission Flexible Pinion Shaft, Material and tensile strength M.S. 31.6 tons Identification Mark M 317/3 B.P.F.

Pinion shaft, Material and tensile strength 3 1/2% Nickel Steel, Transverse 48.6, Longit! 48.6 tons Identification Mark M 317/2 B.P.F.

1st Reduction Wheel Shaft, Material and tensile strength M.S. 31.6 tons per sq. in. Identification Mark M 317/1 B.P.F.

Wheel shaft, Material M.S. 32 tons Identification Mark M 317/1 B.P.F. Thrust shaft, Material M.S. 29.3 tons Identification Mark M 316/2 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 Is an installation fitted for burning oil fuel

Is the flash point of the oil to be used over 150°F. See attached 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

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with

Is this machinery a duplicate of a previous case Yes If so, state name of vessel "RIVER CLARENCE"

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

This Turbine & Gearing have been built under special survey in accordance with the Rules & approved plans. The materials & workmanship are good. They have been efficiently installed on board the Vessel, tried under full power working conditions with satisfactory results and in our opinion now eligible for record recommended in attached Machinery Report.

The amount of Entry Fee ... £ : : When applied for,
Special ... £ : : 19
Donkey Boiler Fee ... £ : :
Charged on attached Machy Report:
Travelling Expenses (if any) £ : : 19

Committee's Minute

THURS 11 MAY 1944

Assigned

See p. machy rpt.



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