

## REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

30 MAY 1939

Date of writing Report 19<sup>th</sup> April 1939 When handed in at Local Office 19/4/39 Port of SYDNEY N.S.W.No. in Survey held at Sydney N.S.W. Date, First Survey 2<sup>nd</sup> June 1938 Last Survey 12<sup>th</sup> April 1939  
Reg. Book. (Number of Visits 65.)

on the steel single screw Tug "WAREE"

Built at Sydney N.S.W. By whom built Cockatoo Docks & Eng Co Pty Ltd Yard No. 125  
Engines made at Sydney N.S.W. By whom made Cockatoo Docks & Eng Co Pty Ltd Engine No. when made 1939  
Boilers made at Sydney N.S.W. By whom made Cockatoo Docks & Eng Co Pty Ltd Boiler No. when made 1939.Registered Horse Power Owners Waratah Tug & Salvage Co Pty Ltd Port belonging to Sydney  
Nom. Horse Power as per Rule 30 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

## ENGINES, &amp;c.—Description of Engines Triple expansion

Dia. of Cylinders 15, 25 & 40 Length of Stroke 27" Revs. per minute 133 No. of Cylinders 3 No. of Cranks 3  
Dia. of Crank shaft journals as per rule 8.1" 7.99" as fitted 8.4" Dia. of Crank pin 8 1/8" Crank webs Mid. length breadth 12" Thickness parallel to axis 5"  
Diameter of Thrust shaft under collars as per rule 8.1" 7.99" as fitted 8.8" Diameter of Tunnel shaft as per rule 7.2" 7.61" as fitted 7.34" Diameter of Screw shaft as per rule 8.4" 8.76" as fitted 8 1/16" 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 Yes

If the liner is in more than one length are the joints burned Yes 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 Yes

If two liners are fitted, is the shaft lapped or protected between the liners Yes Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated Yes Length of Stern Bush 3'-3" Diameter of Propeller 9'0"

Pitch of Propeller 11'-1 1/2" No. of Blades 4 State whether Moveable No Total Surface 31.8 square feet.

No. of Feed Pumps fitted to the Main Engines 2 Diameter of ditto 2 7/8" Stroke 13 1/2" Can one be overhauled while the other is at work Yes

No. of Bilge Pumps fitted to the Main Engines 2 Diameter of ditto 2 7/8" Stroke 13 1/2" Can one be overhauled while the other is at work Yes

Total number and size of power driven Feed and Bilge Auxiliary Pumps 2 Duplex:— 6" &amp; 4" dia by 6" stroke, 7 1/2" &amp; 5" dia by 6" stroke

No. and size of Pumps connected to the Main Bilge Line 3 pumps— 2, 2 1/8" bore x 13 1/2" stroke, 1, 7 1/2" &amp; 5" dia by 6" duplex.

No. and size of Ballast Pumps One— 7 1/2" &amp; 5" by 6" stroke No. and size of Lubricating Oil Pumps, including Spare Pump Yes

Are two independent means arranged for circulating water through the Oil Cooler Yes No. and size of suctions connected to both Main Bilge Pumps and Auxiliary Bilge Pumps:— In Engine and Boiler Room Three, 2 1/2" bore and in Holds, &amp;c. Two 2 1/2" bore

No. and size of Main Water Circulating Pump Bilge Suctions One— 5" bore No. and size of Donkey Pump Direct Suctions

to the Engine Room Bilges One— 2 1/2" bore 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 Both

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 above

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 bunks Steam pipes &amp; feed pipes How are they protected by a 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 Yes

## MAIN BOILERS, &amp;c.—(Letter for record) Total Heating Surface of Boilers 2437

Is Forced Draft fitted No No. and Description of Boilers 1 Multitubular Marine type Working Pressure 200 lbs

IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes

IS A DONKEY BOILER FITTED? No

If so, is a report now forwarded? Yes

PLANS. Are approved plans forwarded herewith for Shafting Yes Main Boilers Yes Auxiliary Boilers Yes Donkey Boilers Yes  
(If not state date of approval)

General Pumping Arrangements Yes (under separate cover) Oil Fuel Burning Piping Arrangements Yes

## SPARE GEAR. State the articles supplied:—

One complete bottom end bearing  
One complete top end bearing  
1 set of Metallic packing for piston rods  
1 set of coupling bolts  
1 set of pads (each hand) for Mitchell thrust  
1 set of feed & bilge pump valves  
1 set of valves for water end of duplex pumps  
1 set of air pump valves  
1 impeller shaft for circulating pump.  
1 valve lid for main feed check1 set of rings for H.P. piston.  
1 set of rings for H.P. piston valve  
12 boiler take stoppers  
Firebars for one furnace  
A quantity of assorted bolts, studs & nuts  
Steel bars & plates of various sizes  
Bottom end bearing with bolts for circulating pump  
Bottom end bearing with bolts for Dynamo Engine  
Two safety valve springs.

The foregoing is a correct description,

Manufacturer.

W1184-0192



During progress of work in shops - - 1938 - June 2, 17, July 21, 28, Aug 15, 24, 30 Sept 2, 28, Oct 7, 24, 27, 28, 31 Nov 2, 9, 14, 21, 24, 28, 30.  
Dec - 1, 6, 9, 12, 19, 22, 30, 1939 Jan 4, 6, 9, 11, 12, 16, 19, 24, 26, 27, 31, Feb 1, 2, 6, 8, 14, 16, 17, 21, 23, 24  
During erection on board vessel - - 1939 Feb 28 March 1, 2, 3, 8, 13, 16, 17, 20 22, 23 29, 31 April 5, 6, 11, 12.  
Total No. of visits 65.

Dates of Examination of principal parts - Cylinders H.P. 2/2/39. M.P. 24/1/39. L.P. 16/1/39 Slides 8/2/39.  
Covers 8/2/39 Pistons 23/2/39 Rods 23/2/39  
Connecting rods 23/2/39 Crank shaft 30/12/38 Thrust shaft 30/12/38  
Tunnel shafts 30/12/38 Screw shaft 30/12/38 Propeller 24/2/39.  
Stern tube 12/1/39 Engine and boiler seatings 10/2/39 Engines holding down bolts 20/3/39.  
Completion of pumping arrangements 20/3/39 Boiler fixed 20/3/39 Engines tried under steam 23/3/39.  
Completion of fitting sea connections 25/1/39 Stern tube 4/1/39 Screw shaft and propeller 25/1/39  
Main boiler safety valves adjusted 23/3/39 Thickness of adjusting washers Port .355" Starb. .362"  
Material of Crank shaft Mild Steel Identification Mark on Do. Lloyds No 430 AJM.C 30.12.38  
Material of Thrust shaft " Identification Mark on Do. Lloyds No 431 AJM.C 30.12.38  
Material of Tunnel shafts " Identification Marks on Do. Lloyds No 432 AJM.C 30.12.38  
Material of Screw shafts " Identification Marks on Do. Lloyds No 433 AJM.C 30.12.38  
Material of Steam Pipes " Test pressure 600 lbs Date of Test 1/3/39 & 16/3/39.  
Is an installation fitted for burning oil fuel No 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 duplicate of a previous case - If so, state name of vessel -

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, approved plans & letters of instructions. The materials & workmanship are good, the installation has been fitted on board in an efficient manner, afterwards tested under steam & is now eligible in our opinion to have record in the Register Book of LMC 4.39.

The amount of Entry Fee ... £ 3 : 15 : - When applied for,  
Special ... £ 65 : 0 : - 12/4/1939  
Donkey Boiler Fee ... £ : : - When received,  
Travelling Expenses (if any) £ : : - 20/4/1939

Committee's Minute TUE 13 JUN 1939

Assigned

+ LMC 4.39

CL

Engineer Surveyor & Jas. C. C. Smith  
Lloyd's Register of Shipping.



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Foundation