

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

1 DEC 1924

Date of writing Report 15/10/1924 When handed in at Local Office 16/10/1924 Port of Sydney N.S.W.
 No. in Survey held at Sydney N.S.W. Date, First Survey 29/9/22 Last Survey 14/10/1924
 Reg. Book. 69680 on the Steel Twin Screw Steamer "FERNDALE" (Number of Visits 91)
 Built at Sydney N.S.W. By whom built Commonwealth Dockyard Yard No. 48 Tons Gross 9686.4
 Engines made at Sydney N.S.W. By whom made Commonwealth Dockyard Engine No. 48 Net 5664.3
 Boilers made at Sydney N.S.W. By whom made Commonwealth Dockyard Boiler No. 48 when made 1924
 Registered Horse Power 1205 Owners Australian Commonwealth Line of Steamers Port belonging to Sydney N.S.W.
 Nom. Horse Power as per Rule 1205 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Screw Quadruple Expansion
 Dia. of Cylinders 28 1/2" 34" 48 1/2" 40" Length of Stroke 54" Revs. per minute 80 No. of Cylinders 4 No. of Cranks 4
 Dia. of Crank shaft journals as per rule 14 1/4" as fitted 14 1/4" Dia. of Crank pin 15" Crank webs Mid. length breadth 19 3/4" Thickness parallel to axis 10 1/4"
 Diameter of Thrust shaft under collars as per rule 14 1/4" as fitted 14 1/4" Diameter of Tunnel shaft as per rule 13 5/8" as fitted 13 5/8" Diameter of Screw shaft as per rule 14 1/4" as fitted 15 1/4" 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 2 lengths, dovetail bronze rings pressed in If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with 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 No Length of Stern Bush 4'-0" Diameter of Propeller 14'-6"
 Pitch of Propeller 14'-6" to 19'-0" No. of Blades 4 State whether Moveable Yes Total Surface 92 square feet.
 No. of Feed Pumps fitted to the Main Engines 2 Diameter of ditto 4 1/4" Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Bilge Pumps fitted to the Main Engines 2 Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work Yes
 Total number and size of power driven Feed and Bilge Auxiliary Pumps { 3 Feed Simplex 10 1/2" x 8" x 24" — 1 General Simplex 10 1/2" x 8" x 24" — 1 Air Pump 8" x 18" Simplex
 1 Ballast Duplex 12" x 14" x 15" — 1 Sanitary Simplex 8" x 8" x 18" — 1 Thrust Water Simplex 6" x 6" x 12" }
 No. and size of Pumps connected to the Main Bilge Line 2 Main Engine Bilge Pumps 5" x 24" Ballast Pump Duplex 12" x 14" x 15" General S. Pump Simplex 10 1/2" x 8" x 24"
 No. and size of Ballast Pumps 1 Duplex 12" x 14" x 15" No. and size of Lubricating Oil Pumps, including Spare Pump —
 Are two independent means arranged for circulating water through the Oil Cooler — No. and size of suction connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room 4, 3 1/2" diameter and in Holds, &c. 2 in each Hold 3 1/2" diameter; 1 between
 Tunnels in No 6 Hold, 3" diameter; 1 in thrust recess and tunnel well, 3" diameter; 1 in forepeak, and 1 in after peak 4" diameter
 No. and size of Main Water Circulating Pump Bilge Suctions 2, 16" diameter No. and size of Donkey Pump Direct Suctions to the Engine Room Bilges 1, 5" diameter 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 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 Bridge to Fore Peak How are they protected Steel casings
 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 E.R. top platform

MAIN BOILERS, &c.—(Letter for record) Total Heating Surface of Boilers 18150 sq ft
 Is Forced Draft fitted Yes No. and Description of Boilers 6 Single end, Multitubular Working Pressure 220 lbs per sq inch.
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes
 IS A DONKEY BOILER FITTED? — If so, is a report now forwarded? —

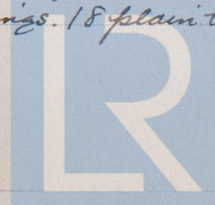
PLANS. Are approved plans forwarded herewith for Shafting No Main Boilers No Auxiliary Boilers — Donkey Boilers —
 (If not state date of approval) (BOILERS - 2/6/20) (SHAFTS, 21/7/21)
 General Pumping Arrangements No — APPROVED 2/2/20 — Oil fuel Burning Piping Arrangements No — APPROVED 2/2/20 —

SPARE GEAR. State the articles supplied:— 2 Connecting Rod bottom end bolts, 4 Connecting rod top end bolts, 4 Main Bearing bolts & nuts, 8 Crank shaft, and 8 tunnel shaft coupling bolts, 1 set of feed and bilge pump valves, 1 set of Piston rings for H.P., 1st I.P., 2nd I.P., and L.P. pistons. Quantity of assorted bolts, nuts, & iron of various sizes, 1 Propeller shaft, one right, & one left hand propeller blades, 14 Studs for propeller blades, 12 pads for Michell's thrust block, 1 set of rings for H.P. valve, 1 set of rings for I.P. valve, 24 screws for 2nd I.P. valve face, 100 main Condenser tubes, 200 main Condenser tube ferrules, 1 air pump rod, 1 bucket, & 1 set of valves, 2 half Connecting rod braces for bottom ends, 4 half Connecting rod top end braces, 1 L.P. eccentric strap complete, 3 sets metallic packing for piston rods, 3 sets metallic packing for valve spindles, 24 Junk ring Studs & nuts, 12 cylinder cover Studs & nuts, 12 valve chest studs & nuts, 2 G.M. nuts for main Stop valve rod, 1 Impeller Shaft for centrifugal pump, 1 set of piston rings, bucket rings, Suction & delivery valves for Fuel Oil Pumps, 2 sets top & bottom bolts & braces for Fan Engines, 4 feed check valves, 2 safety valve springs, 18 plain tubes for Main Boilers, 2 Crank shaft gauges.

The foregoing is a correct description,
 The Australian Commonwealth Shipping Board

R. Langdon, Director

Manufacturer.



Lloyd's Register
 Foundation

W591-0137

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During progress of work in shops -- 1922: Sept. 29; Oct. 6, 20, 24; Nov. 27; Dec. 19, 22; 1923: Jan. 17; Feb. 14, 19; Mar. 1, 6, 22, 29; Apr. 10, 20; May 2, 7, 15, 21, 25; June 15, 29; July 5, 17, 25, 27, 31; Aug. 6, 9, 13, 23, 28; Sept. 4, 6, 7, 10, 13, 25, 27, 28; Oct. 23, 30; Nov. 2, 12, 19, 22, 26, 29; Dec. 7, 12; 1924: Jan. 4, 14, 24, 31; Feb. 5; Mar. 3, 5, 7, 10, 11, 23, 20; Apr. 8, 14, 24, 29; May 13, 16; June 2, 16, 27

Dates of Survey while building During erection on board vessel -- 1924: July 4, 15, 22, 23, 28; Aug. 4, 7, 12, 19, 30; Sept. 1, 3, 6, 16, 18, 26; OCTOBER 8, 9, 14

Total No. of visits 91 (Ninety One)

Dates of Examination of principal parts - Cylinders	20/4/23, 17/7/23	Slides	13/8/23, 10/9/23
Covers	17/4/23, 28/8/23	Pistons	10/9/23, 23/10/23
Connecting rods	13/10/23, 7/12/23	Crank shaft	15/6/23, 31/4/23
Tunnel shafts	25/4/23, 29/11/23	Screw shaft	31/4/23, 29/11/23
Stern tubes	29/11/23	Engine and boiler seatings	29/4/23
Completion of pumping arrangements	1/9/24	Boilers fixed	23/4/24
Completion of fitting sea connections	20/5/24	Stern tubes	24/4/24, 29/4/24
Main boiler safety valves adjusted	18/9/24	Thickness of adjusting washers	-
Material of Crank shafts	Mild Steel	Identification Mark on Do.	Lloyds - No 48 - A.C.H. - 24.3.24
Material of Thrust shafts	Mild Steel	Identification Mark on Do.	Lloyds - No 48 - A.C.H. - 24.3.24
Material of Tunnel shafts	Mild Steel	Identification Marks on Do.	Lloyds - No 48 - A.C.H. - 24.3.24
Material of Screw shafts	Mild Steel	Identification Marks on Do.	Lloyds - No 48 - A.C.H. - 24.3.24
Material of Steam Pipes	Solid drawn Steel	Test pressure	660 lbs per sq. inch
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	T. S. S. "Lordsdale"

General Remarks (State quality of workmanship, opinions as to class, &c. This vessel's Engines and Boilers have been constructed under Special Survey in accordance with the approved plans and instructions, as well as with the printed rules, of tested materials and good workmanship and seen satisfactorily fitted and securely fastened in vessel.

The Engines and Boilers seen working well under steam at full load, together with the fuel oil & forced draught installations, and all auxiliary machinery working satisfactorily, and are now eligible in my opinion to have record of LMC 10-24 -- Forced Draught, -- Fitted for oil fuel 10-24, -- F.P. above 150°F. noted in Register Book.

Both Evaporators seen under steam, and safety valves adjusted and blowing freely at 12 lbs per sq. inch.

It is submitted that this vessel is eligible for THE RECORD. + LMC 10.24. FD. CL.

Fitted for oil fuel 10.24. F.P. above 150°F.

Subject to the screw shafts being specially examined at joints of liners before the end of October 1926.

The amount of Entry Fee	£ 6 : 0 : 0	When applied for,
Special	£ 195 : 3 : 9	15/10/1924
Donkey Boiler Fee	£ - : - : -	When received,
Travelling Expenses (if any)	£ 5 : 6 : 2	17/10/1924
Total	£ 206 - 9 - 11	

E. L. Cartwright.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
Assigned + LMC 10.24 Subject
Fitted for oil fuel 10.24 F.P. above 150°F