

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office **4 MAR 1947**

Port of **Sunderland**

Date, First Survey **22 May 46** Last Survey **27 Jan 1947**
(Number of Visits **76**)

Survey held at **Sunderland**

Reg. Book **"RIO TEUCO"**

on the **Sunderland** By whom built **Short Bros. Ltd.**

Engines made at **Sunderland** By whom made **G. Clark (1938) Ltd.**

Boilers made at **Sunderland** By whom made **G. Clark (1938) Ltd.**

Registered Horse Power **528** Owners **Volta Mercante del Bolado** Port belonging to **Buenos Aires**

Nom. Horse Power as per Rule **528** Is Refrigerating Machinery fitted for cargo purposes **No.** Is Electric Light fitted **Yes.**

Trade for which vessel is intended **NHP 475**

ENGINES, &c. Description of Engines **Triple Expansion (Poppet valves on HP & MP - vertical)** Revs. per minute **69**

of Cylinders **24" - 39" - 68"** Length of Stroke **48"** No. of Cylinders **3** No. of Cranks **3**

as per Rule **13.48"** Crank pin dia. **14"** Mid. length breadth **24"** Thickness parallel to axis **HP 1 1/2" MP 9 1/4" LP 9"**

as fitted **14"** Crank webs **HP 1 1/2" MP 9 1/4" LP 9"** shrunk Thickness around eye-hole **9"**

as per Rule **13.13"** Mid. length thickness **13.48"** as fitted **13 1/2"**

Intermediate Shafts, diameter as fitted **13 1/4"** Thrust shaft, diameter at collars as fitted **14"**

as per Rule **14.642"** as fitted **15"** Is the tube screw shaft fitted with a continuous liner **Yes.**

as fitted **15"** Is the after end of the liner made watertight in the

as per Rule **4"** Thickness between bushes as fitted **2 1/32"** **one length.**

as fitted **3 1/4"** If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

as per Rule **56"** Is an approved Oil Gland or other appliance fitted at the after end of the tube

as fitted **2 1/32"** Length of Bearing in Stern Bush next to and supporting propeller **5-0 1/2"**

as per Rule **18-6"** Pitch **14-3"** No. of Blades **4** Material **Bronze** whether Moveable **No.** Total Developed Surface **120** sq. feet

as fitted **18-6"** Can one be overhauled while the other is at work **Yes.**

as per Rule **4 1/2"** Stroke **26"** Can one be overhauled while the other is at work **Yes.**

as fitted **2 @ 9 1/2" x 4" x 21"** Pumps connected to the Main Bilge Line { No. and size **1 @ 9" x 10" x 10"** & **1 @ 5 1/2" x 6" x 15"** How driven **Steam**

as fitted **1 @ 9" x 10" x 10"** Lubricating Oil Pumps, including Spare Pump, No. and size **-**

as per Rule **4 @ 3" 2 @ 2 1/2" (oil bilge) 1 bilge pump & 1 transfer pump 1 @ 2 1/2" free end of tunnel 1-3 length hull**

as fitted **N° 4. 3" 1/2" N° 5. 3" 1/2"** In Holds, &c. **N° 1. 3" 1/2" N° 2. 3 1/4" N° 3 (keel bulk) 2 1/2" 1/2"**

as per Rule **1 @ 8"** Independent Power Pump Direct Suctions to the Engine and/or Boiler Room Bilges, and size **1 @ 5"**

as fitted **1 @ 5"** Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes **Yes.**

as per Rule **1 @ 5"** Are they fitted with Valves or Cocks **Both**

as fitted **1 @ 5"** Are the Overboard Discharges above or below the deep water line **Below**

as per Rule **1 @ 5"** Are the Blow Off Cocks fitted with a spigot and brass covering plate **Yes**

as fitted **1 @ 5"** How are they protected **-**

as per Rule **1 @ 5"** Have they been tested as per Rule **Yes.**

as fitted **1 @ 5"** Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times **Yes.**

as per Rule **1 @ 5"** 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.**

as fitted **1 @ 5"** Is the Shaft Tunnel watertight **Yes.**

as per Rule **1 @ 5"** Is it fitted with a watertight door **Yes.**

as fitted **1 @ 5"** worked from **Deck.**

as per Rule **1 @ 5"** IN BOILERS, &c. - (Letter for record **S.**) Total Heating Surface of Boilers **6699 sq. ft. 1188 sq. ft.**

as fitted **1 @ 5"** Which Boilers are fitted with Forced Draft **all**

as per Rule **1 @ 5"** Which Boilers are fitted with Superheaters **all**

as fitted **1 @ 5"** Working Pressure **220 lbs/sq. in.**

as per Rule **1 @ 5"** A REPORT ON MAIN BOILERS NOW FORWARDED? **Yes.**

as fitted **1 @ 5"** A DONKEY BOILER FITTED? **No.** If so, is a report now forwarded?

as per Rule **1 @ 5"** Is the donkey boiler be used for other than domestic purposes

as fitted **1 @ 5"** Are approved plans forwarded herewith for Shafting (If not state date of approval) **Yes.**

as per Rule **1 @ 5"** Main Boilers **Yes.** Auxiliary Boilers **-** Donkey Boilers **-**

as fitted **1 @ 5"** Superheaters **Yes.** General Pumping Arrangements **Yes.** Oil fuel Burning Piping Arrangements **Yes.**

as per Rule **1 @ 5"** SPARE GEAR.

as fitted **1 @ 5"** Is the spare gear required by the Rules been supplied **Yes.**

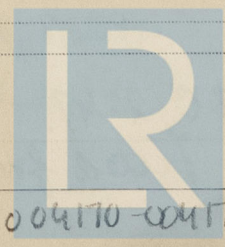
as per Rule **1 @ 5"** Is the principal additional spare gear supplied

The foregoing is a correct description.

GEORGE CLARK (1938) LTD.

A. J. Schaffer.
RESIDENT MANAGER.

Manufacturer.



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Dates of Survey while building
 During progress of work in shops - - - 1946 May 22, 31 June 3, 12 Aug. 8, 17, 22, 29 Jan. 2, 9, 12, 17, 18, 24, 25, 26, 27 Oct. 1, 3, 7, 11, 18, 21, 22, 25, 29, 30 Nov. 1, 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 18, 19, 20, 21, 22, 25, 26, 27, 29, Dec. 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
 During erection on board vessel - - - 12, 16, 18, 20, 22, 24, 30, 31 47/ Jan. 2, 8, 16, 17, 30 Feb. 3, 4, 5, 12, 27
 Total No. of visits 76

Dates of Examination of principal parts—Cylinders 13/11/46 HP. 13/11/46 MP. 15/11/46 L.P. Slides 20/11/46 Poppet Valve from 20/11/46
 Pistons 13/9/46 Piston Rods 11/10/46 Connecting rods 13/11/46
 Crank shaft 2/9/46 Thrust shaft 15/10/46 Intermediate shafts 12/11/46, 15/11/46, 19/11/46, 26/11/46
 Tube shaft - Screw shaft 12/11/46 Propeller 15/5/46 (B.K.M.)
 Stern tube 30/10/46, 8/11/46 Engine and boiler seatings 31/12/46 Engines holding down bolts 31/12/46
 Completion of fitting sea connections 8/11/46
 Completion of pumping arrangements 4/2/47 & 5/2/47 Boilers fixed 31/12/46 Engines tried under steam 3/2/47 & 24/2/47
 Main boiler safety valves adjusted 3/2/47 Thickness of adjusting washers P.B.V. S. 3/8 5/16 C.B.V. S. 3/8 1/4 S.B.V. S. 3/8
 Crank shaft material Ingot Steel Identification Mark 2/9/46 Thrust shaft material Ingot Steel Identification Mark 15/10/46
 Intermediate shafts, material Ingot Steel Identification Marks N° 8359, 60/11/2/8356/4/18 Tube shaft, material - Identification Mark -
 Screw shaft, material Ingot Steel Identification Mark N° 8354 N.H.F. S.D. Steel Test pressure 660 lb/sq. in. Date of Test 16/1/47
 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 the use of oil as fuel been complied with Yes.
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo No. 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 Not desired.
 Is this machinery duplicate of a previous case Yes. If so, state name of vessel "RIO DIAMANTE".

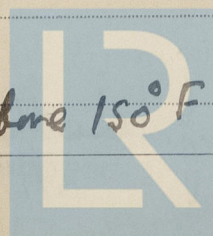
General Remarks (State quality of workmanship, opinions as to class, &c.) This machinery has been built under Special Survey in accordance with the approved plans & the rules of the Society. The material & workmanship are good.
 It has been securely fitted on board the vessel & tried under heavy conditions with satisfactory results.
 The machinery is eligible in our opinion to have notation L.M.C. 2.44 T.S. (CL) 3 SB (Spt) 220 lb/sq. in. F.D. Fitted to burn oil fuel F.P. above 150° F. 2.44.

The amount of Entry Fee ... £ - : : When applied for,
 Special ... £ 124 : 8 : MAR - 3 1947
 Donkey Boiler Fee ... £ : : When received,
 Travelling Expenses (if any) £ : : 19

Date FRI 7 MAR 1947

Committee's Minute + L.M.C. 2.47.

Fitted for oil fuel 2.47 F.P. above 150° F. F.D. C.L.



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in duplicate
 Certificate to be sent to
 SUNDERLAND.
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)