

REPORT ON OIL ENGINE MACHINERY.

11 JAN 1928

Received at London Office

Date of writing Report 24th Dec. 1927 When handed in at Local Office 28th Dec. 1927 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 19.1.27 Last Survey 22nd Dec. 1927
Reg. Book. Number of Visits 47

on the Single Twin Triple Quadruple Screw vessel **"PACHECO"** Tons { Gross 1246
Net 530

Built at Glasgow By whom built Harlands Wolff Ltd. Yard No. 7436 When built 1927-12

Engines made at do. By whom made do. Engine No. 743 When made 1927-12

Donkey Boilers made at do. By whom made None fitted. Boiler No. — When made —

Brake Horse Power 1550 Owners Free Andrews & Co. Ltd. Port belonging to Liverpool.

Nom. Horse Power as per Rule 355 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

Trade for which vessel is intended M. M. & Mediterranean Ports.

OIL ENGINES, &c.—Type of Engines Diesel: vertical, reciprocating, 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 500 lbs./in² Diameter of cylinders 630 mm. Length of stroke 1390 mm. No. of cylinders 6 No. of cranks 6

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 892 mm. Is there a bearing between each crank yes

Revolutions per minute 115 crank wheel dia. 1930 mm. Weight 1460 kg. Means of ignition compression Kind of fuel used Diesel

Crank Shaft, dia. of journals as per Rule 404 mm. Crank pin dia. 415 mm. Crank Webs Mid. length breadth 650 mm. Thickness parallel to axis 270 mm.
as fitted 415 mm. 12-3-26 12 3/16" Mid. length thickness 270 mm. Thickness around pulley 184.5 mm.
12-3-26 12 3/16" as per Rule 404 mm. as fitted 415 mm. as per Rule 12-3-26 12 3/16" as fitted 13 1/2"

Flywheel Shaft, diameter as per Rule 404 mm. Intermediate Shafts, diameter as per Rule 12 1/2" Thrust Shaft, diameter at collars as per Rule 13 1/2"
as fitted 415 mm. as fitted 12 1/2" as fitted 13 1/2"

Tube Shaft, diameter as per Rule 404 mm. Screw Shaft, diameter as per Rule 45 5/8" Is the lube screw shaft fitted with a continuous liner yes
as fitted 415 mm. as fitted 13 1/4" as per Rule 17 1/2" as fitted 19 1/2"

Bronze Liners, thickness in way of bushes as per Rule 3/4" Thickness between bushes as per Rule 17 1/2" 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 junctions made by fusion through the whole thickness of the liner 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 Oil Gland or other appliance fitted at the after end of the tube shaft no

Propeller, dia. 13'-0" Pitch 12'-4" No. of blades Four Material Alum. whether Moveable no Total Developed Surface 50 sq. feet

Method of reversing Engines compressed air Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication gravity

Thickness of cylinder liners 46x36 mm. Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material yes

If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine yes

Cooling Water Pumps, No. Two Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes

Bilge Pumps worked from the Main Engines, No. yes Diameter — Stroke — Can one be overhauled while the other is at work yes

Pumps connected to the Main Bilge Line { No. and Size Three. Bilge pump = 45 tons/hr. Ballast & Sanitary Pumps each = 75 tons/hr.
How driven Electric Motors.

Ballast Pumps, No. and size One @ 75 tons/hr. Lubricating Oil Pumps, including Spare Pump, No. and size Two. Each @ 30 tons/hr.

Are two independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces 2 @ 2 1/2"; 3 @ 2" Funnel, 1 @ 2 1/2" & 2 drain lets @ 2"

In Holds, &c. 2 each hold @ 2 1/2"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 @ 5"

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Spaces led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges yes

Are all Sea Connections fitted direct on the skin of the ship yes Are they fitted with Valves or Cocks Both

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates yes Are the Overboard Discharges above or below the deep water line In both line

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 pass through the bunkers — How are they protected —

What pipes pass through the deep tanks — Have they been tested as per Rule yes

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 Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Hand operated.

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork yes

Main Air Compressors, No. One No. of stages Three Diameters 600, 520 & 400 mm. Stroke 480 mm. Driven by Main Engine.

Auxiliary Air Compressors, No. Three No. of stages Three Diameters 320, 280 & 180 mm. Stroke 920 mm. Driven by Auxiliary Engine.

Small Auxiliary Air Compressors, No. One No. of stages Two Diameters 80 & 32 mm. Stroke 150 mm. Driven by Hand.

Scavenging Air Pumps, No. — Diameter — Stroke — Driven by —

Auxiliary Engines crank shafts, diameter as per Rule 168 mm. as fitted 180 mm.

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule safety valves on pipelines: fusible plug receivers

Can the internal surfaces of the receivers be examined yes What means are provided for cleaning their inner surfaces Loose ends & Con. holes

Is there a drain arrangement fitted at the lowest part of each receiver yes

High Pressure Air Receivers, No. Six Cubic capacity of each Three @ 88 lbs. Internal diameter 295 mm. thickness .60 ins.

Seamless, lap welded or riveted longitudinal joint Seamless Material Steel Range of tensile strength 28-32 tons Working pressure by Rules 4420 lb./in²

Starting Air Receivers, No. One Total cubic capacity 610 ft³ Internal diameter 6'-4 3/16" thickness Shell - 1 1/2" Ends - 1 1/2" & 1 3/4"

Seamless, lap welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength 28-32 tons Working pressure by Rules 356 lbs./in²

Im. 1927.

IS A DONKEY BOILER FITTED? *No!*

If so, is a report now forwarded?

PLANS. Are approved plans forwarded herewith for Shafting *Approved 12-3-26*

17-6-26

Receivers *Bel. Rpt. 9827*

Separate Tanks *With No. Rpt. 47200*

Done

Donkey Boilers *None fitted.*

General Pumping Arrangements *As per attached list.*

Oil Fuel Burning Arrangements *Done*

SPARE GEAR *As per attached list.*

For HARLAND & WOLFF, LTD.

S. C. Green

The foregoing is a correct description,

MANAGER FINNISTON WORKS

Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1927 Jan 19-21 May 23-30 Jun 17-20-23 July 5 Aug 5-10-18-19-20-23-30-31 Sep 2-6-7-12-14-15-21-23-27-28-30 Oct 3-5
During erection on board vessel -- 10-12-13-14-20 Nov 1-2-7-8-9-18-19 Dec 1-8-12-15-19-22
Total No. of visits 47

Dates of Examination of principal parts—Cylinders 216-9-27 Covers 216-9-27 Pistons 1819-8-27 Rods 1819-8-27 Connecting rods 19-8-27

Crank shaft 20-8-27 Flywheel shaft 20-8-27 Thrust shaft 14-9-27 Intermediate shafts { 14-9-27 10-10-27 Tube shaft ✓

Screw shaft 14-10-27 Propeller 20-10-27 Stern tube 20-10-27 Engine seatings 2-11-27 Engines holding down bolts 8-12-27

Completion of fitting sea connections 10-2-11-27 Completion of pumping arrangements 19-12-27 Engines tried under working conditions 22-12-27

Crank shaft, Material *Steel* Identification Mark *LLOYD'S 1730* Flywheel shaft, Material *Steel* Identification Mark *open crank*

Thrust shaft, Material *Steel* Identification Mark *LLOYD'S 1730* Intermediate shafts, Material *Steel* Identification Marks *1730*

Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material *Steel* Identification Mark *LLOYD'S 1730*

Is the flash point of the oil to be used over 150° F. *Yes*

Have the requirements of the Rules for oil fuel pipes and tank fillings 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 ✓

Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *M.V.'s "Palacio" & "Palays"*

General Remarks (State quality of workmanship, opinions as to class, &c.) *These engines have been built under special survey in accordance with the Rules of this Society & the approved plans. The materials & workmanship are good. Along with the Air Reservoir (Bel. Rpt. 9827) they have been properly fitted on board and tried under full power at sea with satisfactory result.*

This vessel's machinery is eligible, in my opinion, to be classed in the Register Book with notation: L.M.C. — 12.27; C.L.; Oil Engines.

The amount of Entry Fee ... £ 5 : - : When applied for, 19 JAN 1928
Special ... £ 78 : 5/ :
Donkey Boiler Fee ... £ - : - :
Travelling Expenses (if any) £ - : - : When received, 23-1-28

J. D. Boyle
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW** 10 JAN 1928
Assigned *+ LMC 12,27*

CERTIFICATE WRITTEN.

