

# REPORT ON OIL ENGINE MACHINERY.

No. 34766

Received at London Office

22 OCT 1947

23 OCT 1947

Date of writing Report

When handed in at Local Office 15 October 1947 Port of Sunderland

No. in Survey held at Reg. Book.

Sunderland

Date, First Survey 25th September 1946 Last Survey 14th October 1947

Number of Visits 85

Single on the Twin Screw vessel

PELAYO

Tons Gross 2578.77 Net 1001.96

Built at Sunderland

By whom built Wm. Leafford & Sons Ld.

Yard No. 444 When built 1944

Engines made at Sunderland

By whom made Wm. Leafford & Sons Ld.

Engine No. 744 When made 1944

Donkey Boilers made at Amman

By whom made Cochran & Co (Amman) Ld.

Boiler No. 16892 When made

Brake Horse Power 4100

Owners MacAndrews & Co Ld.

Port belonging to London

Nom. Horse Power as per Rule 866

Is Refrigerating Machinery fitted for cargo purposes No.

Is Electric Light fitted Yes.

Trade for which vessel is intended

OIL ENGINES, &c. Type of Engines Approved piston Airless injection 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 640 lbs. Diameter of cylinders 600 mm Length of stroke 1160 mm No. of cylinders 5 No. of cranks 5 (3 throws)

Mean Indicated Pressure 88 lbs. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 940 mm Is there a bearing between each crank? Between each triple throw.

Revolutions per minute 122 Flywheel dia. 2200 mm Weight 2.2 tons Medium of ignition Compression Kind of fuel used -

Crank Shaft, Solid forged 440 mm dia. of journals as fitted 431.5 mm Crank pin dia. 450 mm Crank Webs Mid. length breadth 650 mm Thickness parallel to axis 255 mm

Flywheel Shaft, diameter as fitted 431.5 mm Intermediate Shafts, diameter as fitted 350 mm Thrust Shaft, diameter at collars as fitted 450 mm

Tube Shaft, diameter as per Rule - Screw Shaft, diameter as fitted 392 mm Is the tube shaft fitted with a continuous liner Yes.

Bronze Liners, thickness in way of bushes as per Rule 21.5 mm Thickness between bushes as per Rule 16.45 mm Is the after end of the liner made watertight in the propeller boss 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 -

If two liners are fitted, is the shaft lapped or protected between the liners - Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft No.

Propeller, dia. 15'-2" Pitch 14'-3 1/2" g. of blades 4 Material Bronze whether Movable No. Total Developed Surface 89.1 sq. feet

Method of reversing Engines Hand lever Is a governor or other arrangement fitted to prevent racing of the engine when disengaged Yes. Means of lubrication forced

Thickness of cylinder liners 25 mm Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Yes.

Cooling Water Pumps, No. Two (Electric driven) Is the sea suction provided with an efficient strainer which can be cleared within the vessel (F.W. Cooling)

Bilge Pumps worked from the Main Engines, No. none Diameter - Stroke - Can one be overhauled while the other is at work -

Pumps connected to the Main Bilge Line No. and Size Two 6" x 6" (Duplex) How driven Electric motor.

Is the cooling water led to the bilges No. If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements -

Ballast Pumps, No. and size 1 Rotary Centrifugal 250 tons/hr. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2-40 tons/hr. Electric

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 4 @ 3 1/2" E.R. In Pump Room 1 @ 2 1/2" Diesel hull.

In Holds, &c. N°1. 3" φrs. N°2. 3" φrs. N°3. 2 1/2" φrs. N°4. 2 1/2" φrs + 1 @ 2 1/2" well at aft end.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 8" (Ballast Pump) 1-6" (Bilge Pump. S.)

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 Below.

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 none How are they protected -

What pipes pass through the deep tanks none 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 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.

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork - worked from E. Room. to bilge

Main Air Compressors, No. Two No. of stages 3 Diameters 11 1/2" - 2 3/4", 11 1/2" - 9 1/2", 2 3/4" - 4" Driven by Electric motor

Auxiliary Air Compressors, No. One No. of stages 2 Diameters 6" - 1 1/2", 2 1/4" Stroke 4 1/2" Driven by Steam 4 1/2" x 4"

Small Auxiliary Air Compressors, No. - No. of stages - Diameters - Stroke - Driven by -

What provision is made for first Charging the Air Receivers Steam driven Compressor.

Scavenging Air Pumps, No. One Diameter 1550 mm Stroke 1200 mm Driven by Main Engine Crankshaft.

Auxiliary Engines crank shafts, diameter as per Rule Yes. Position Port side of E. Room (in line fore shaft)

Have the Auxiliary Engines been constructed under special survey Yes. Is a report sent herewith Yes. (Con. Rpt. 114404).

AIR RECEIVERS: - Have they been made under survey *Yes.* State No. of Report or Certificate *Qls. Cr. N° 60813.*

Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes.* Is a drain fitted at the lowest part of each receiver *Yes.*

Injection Air Receivers, No. - Cubic capacity of each - Internal diameter - thickness -

Seamless, lap welded or riveted longitudinal joint - Material - Range of tensile strength - Working pressure by Rules - Actual -

Starting Air Receivers, No. *Two* Total cubic capacity *240 cu ft.* Internal diameter *4'-0"* thickness *1 1/8"*

Seamless, lap welded or riveted longitudinal joint - Material *M/Steel* Range of tensile strength *28/32* Working pressure by Rules - Actual *100 lbs.*

IS A DONKEY BOILER FITTED? *Yes.* If so, is a report now forwarded? *Yes.*

Are approved plans forwarded herewith for Shafting *Yes.* Separate Fuel Tanks *Yes.*

Donkey Boilers - General Pumping Arrangements - Pumping Arrangements in Machinery Space *Yes.*

Oil Fuel Burning Arrangements - SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes.*

State the principal additional spare gear supplied *1 Cylinder liner & pack complete, 1 main piston head & 24 rings, 2 (each) Side & centre top & butt. 2nd bearing bolts & nuts, 2 main bearing slides & nuts, 6 fuel valves complete, 1 N.A. Air Slitting valve & 1 G.L. relief valve complete, 3 Seawater pumps 1/2 sizes, 4 fuel pump bodies with Seawater Chambers, Valves, Slides & tappets, main water & H.H.O. 1 Set Coupling bolts & nuts, 1 Set Thrust pads & 3 pads for int. steel shaft bearings, 10 rubber hoses for piston cooling service, 1 C.I. Propeller, 1 Screw Shaft & 6 links roller chain for Camshaft drive, Spherical bearing for side & cent. Conn rod bolt ends & main bearing & nuts.*

The foregoing is a correct description of the spare gear required by the Rules. *WILLIAM DOXFORD & SONS, LIMITED.* Manufacturer.

*Wm. G. Swaine* Director.

Dates of Survey while building - During progress of work in shops - 1946 Sep 25, 27 Oct 2, 3, 4, 7, 9, 15, 21 Nov 1, 6 Dec 18, 19, 20, 24, 30, 31

During erection on board vessel - 1947 Jan 6, 8, 10, 17, 20, 30 Feb 3, 4, 5, 12, 14, 18, 19, 20, 24, 27 Mar 4, 6, 7, 11, 12, 14, 17, 18, 19, 20, 26, 27, 31 Apr 1, 3, 8, 9, 10, 11, 14, 15, 16, 17, 18, 25, 28, 29 May 1, 6, 7, 8, 16, 20, 21, 22 Jun 2, 3, 5, 6, 9, 10, 11, 12 Jul 10, 24, 25 Sep 12, 17, 23 Oct 2, 6, 14.

Total No. of visits *85*

Dates of Examination of principal parts - Cylinders *18/12/46, 20/12/46, 24/12/46* Pistons *20/5/47* Rods *20/5/47* Connecting rods *24/3/47*

Crank shaft *11/4/47* Flywheel shaft *as crank* Thrust shaft *as crank* Intermediate shafts *25/4/47* Tube shaft -

Screw shaft *4/5/47* Propeller *15/4/47* Stern tube *20/12/46 & 30/12/46* Engine seatings *(Bank top)* Engines holding down bolts *12/9/47*

Completion of fitting sea connections *30/12/46* Completion of pumping arrangements *6/10/47* Engines tried under working conditions *14/10/47*

Crank shaft, Material *Ingot Steel* Identification Mark *N° 44 N.H.F. 11/4/47* Flywheel shaft, Material *as crank* Identification Mark *as crank*

Thrust shaft, Material *as crank* Identification Mark *as crank* Intermediate shafts, Material *Ingot Steel* Identification Marks *N° 15837-638/9/47*

Tube shaft, Material - Identification Mark - Screw shaft, Material *Ingot Steel* Identification Mark *N.H.F. 25/4/47*

Identification Marks on Air Receivers *K. 1948/9. L.R. 22404 A.R.S. 3/4/47.*

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 fittings been complied with *Yes.*

Description of fire extinguishing apparatus fitted *1 1/2" h. 1. perforated pipe for steam led around E.H. 8-2 full. Foamite Cont. aminol.*

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 *PINTO (Std. Rpt. 34448).*

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 materials & workmanship are good. It has been securely fitted on board the vessel & tried under working conditions at sea with satisfactory results. The donkey boiler has also been securely fixed on board, fitted to burn oil fuel (F.P. above 150° F) & safety valves adjusted under steam to working pressure. Section 20 of the rules has been complied with. The machinery is eligible in my opinion to have notation 10.44 (oil Eng.), T.S (C2) 1 D.B. 100 lbs.*

The amount of Entry Fee .. £ : : When applied for, Special ... £ 161 : 12 : *OCT 21 1947* Donkey/Boiler Fee *handed back* £ 19 : - : When received, Travelling Expenses (if any) £ : : 19

Committee's Minute *21 NOV 1947* Assigned *+ LMC 10.47 Oil Eng. O.L. D.B. 100 lbs.*

