

REPORT ON OIL ENGINE MACHINERY,

No. 7819

JUN 14 1937

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No. in Survey held at Hongkong Reg. Book. Date, First Survey Dec. 17th 1936 Last Survey May 7th 1937 Number of Visits 29

Single on the Twin Triple Quadruple } Screw vessel "LEGAZPI"

Tons } Gross 1178.68 Net 675.59

Built at Hongkong By whom built Hongkong Wharves Dock Co Yard No. 767 When built 5-1937

Engines made at Copenhagen By whom made A/S Burmeister + Wain Engine No. 2601 When made 1936

Donkey Boilers made at None By whom made Boiler No. When made

Brake Horse Power 1750 Owners La Naviera Filipina Inca. Port belonging to Cebu, P.I.

Nom. Horse Power as per Rule 337 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended Inter-island trade, Philippine Islands.

OIL ENGINES, &c.—Type of Engines Heavy oil, vertical trunk type, solid injection 2 or 4 stroke cycle 2 Single or double acting Single
 Maximum pressure in cylinders 49 kg/cm² Diameter of cylinders 500 mm Length of stroke 900 mm No. of cylinders 5 No. of cranks 5
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 680 mm Is there a bearing between each crank Yes
 Revolutions per minute 160 Flywheel dia. 1652 mm Weight 1400 kg/m² Means of ignition Compression Kind of fuel used Condens. oil, flash point 150°K
 Crank Shaft, dia. of journals as per Rule 320 mm as fitted 340 mm Crank pin dia. 340 mm Crank Webs Mid. length breadth 620 mm Mid. length thickness 192 mm Thickness parallel to axis 208 mm Thickness around eyelets 175 mm
 Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted 9 1/2" Thrust Shaft, diameter at collars as per Rule as fitted 300 mm
 Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted 10 1/2" Is the tube screw shaft fitted with a continuous liner Yes
 Bronze Liners, thickness in way of bushes as per Rule as fitted 1/16" Thickness between bushes as per Rule as fitted 9/16" 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 one length

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 fits tightly
 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 Length of Bearing in Stern Bush next to and supporting propeller 3'-7 3/8"

Propeller, dia. 11'-5" Pitch 8'-3" No. of blades 4 Material Bronze whether Moveable fixed Total Developed Surface 48 sq. feet
 Method of reversing Engines direct reversible Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication Forced Thickness of cylinder liners 3/16" Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine funnel led up

Cooling Water Pumps, No. 1 driven by 15 H.P. El. Motor 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. one Diameter 150 mm Stroke 175 mm Can one be overhauled while the other is at work Yes
 Pumps connected to the Main Bilge Line No. and Size 1-150 mm x 175 mm 2-Rotary, 250 Gall. per min at 3510 R.P.M. only one shown on plan How driven main engines 20 H.P. Westinghouse electric motors 1-200 g.p. diff. driven by M. Eng.

Ballast Pumps, No. and size 1-Worthington 2 1/2 R-2 Type Lubricating Oil Pumps, including Spare Pump, No. and size 1-Rotary, 433 Gall. per min driven by 25 H.P. Electric motor
 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 3-2 1/4" in E.P. 2-2" in Cofferdam, 1-2 1/4" in tunnel well.
 In Holds, &c. 2-2 3/4" in Fore hold; 2-2" + 1-2 3/4" in aft hold + 1-2" in cofferdam.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2-3 1/4" dia.
 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 Valves
 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 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 pass through the bunkers None How are they protected Yes
 What pipes pass through the deep tanks None 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 upper decks.
 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. None No. of stages 1 Diameters 1" Stroke 1" Driven by 15 H.P. El. Motor
 Auxiliary Air Compressors, No. Two No. of stages Two Diameters 6" x 7" Stroke 6" Driven by 20 H.P. El. Motor
 Small Auxiliary Air Compressors, No. One No. of stages Two Diameters 1 3/4" x 4" Stroke 3" Driven by H.O. engine
 Scavenging Air Pumps, No. one Diameter Rotary Stroke 1" Driven by Main engines

Auxiliary Engines crank shafts, diameter as per Rule as fitted 110 x 120 mm
AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes
 Can the internal surfaces of the receivers be examined Yes What means are provided for cleaning their inner surfaces Manholes, Connection for shore steam.
 Is there a drain arrangement fitted at the lowest part of each receiver Yes

High Pressure Air Receivers, No. None Cubic capacity of each 7.5 cub. ft. Internal diameter 16" thickness 17/32"
 Auxiliary engine starting air receivers 3
 Seamless, lap welded or riveted longitudinal joint Seamless Material Steel Range of tensile strength See letter Working pressure by Rules 500 lbs.
 Starting Air Receivers, No. Two Total cubic capacity 282 cub. ft. Internal diameter 3'-6 1/2" thickness 1/2"
 Seamless, lap welded or riveted longitudinal joint DR. D.B.S. Material Steel Range of tensile strength 28-32 Tons Working pressure by Rules 367.5 lbs.

45
30
17
60

Lloyd's Register Foundation

W1320-0060

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

PLANS. Are approved plans forwarded herewith for Shafting *Kobe 5/9/36* Receivers *20-1-37 Kobe* Separate Tanks *17-3-37 Kobe*

Donkey Boilers General Pumping Arrangements *19-9-36 Kobe* Oil Fuel Burning Arrangements *29-12-36 Kobe*

SPARE GEAR *as per rules*

Additional Spare Gear: *One set of gearing for scavenging air blower, one chain for main engine cooling & lubricating oil pumps, one complete piston, 1 conn. rod, 1 crank bearing, 1 main bearing, 1 cyl. liner, one toothed wheel lub. oil pump and one complete fuel pump for the 75 D.H.P. auxiliary oil engine.*

Auxiliary Machinery: *1-75 D.H.P. oil engine (Deutz) driving a 47 H.W. Generator N° 46312 made by Elektromotoren Werke, Haver. 2-41 BHP oil engines (Deutz) driving 25 H.W. Generators N° 46371 + 46373 made by Elektromotoren Werke, Haver. 2-Air Compressor made by Worthington Pump & Machinery Corp. driven by 15+20 H.P. Westinghouse Electric Motor. 1-Small air compressor driven by an Abila Craig hand starting oil engine. 1-Worthington lub. oil pump driven by 25 H.P. Westinghouse electric motor. 1-circuler " " 15 H.P. 1 " Fire-bilge " " 20 H.P. 1 " Ballast-bilge " " 20 H.P. 1-1/2 Rotary cooling water pump for auxiliary engines, driven by a Century 1 HP electric motor. 1-1/4 Fuel oil transfer pump driven by a 1/2 H.P. Westinghouse Electric Motor. 1-1/4 Lub. oil " " 1 H.P. 2-1/4 F.W. pumps + 2-1/4 Rotary Sanitary pumps driven by 1 H.P. Westinghouse electric motors. 1-17 H.W. A.S.E.A. Generator driven by V-belt from main engine shafting.*

The foregoing is a correct description,

Neck

Manufacturer.

Dates of Survey while building: During progress of work in shops - *Hongkong, Dec. 17, 23, 24, 1936, Jan. 4th 11, 21, 29, Feb. 5th 15, 16, 23, 26, Feb. 15, Mar. 3, 10, 16, 19, 25, 29, 31, April 6, 8, 10, 13, 14, 19, 24, May 4 + 7 1937.* During erection on board vessel - *Feb. 15, Mar. 3, 10, 16, 19, 25, 29, 31, April 6, 8, 10, 13, 14, 19, 24, May 4 + 7 1937.* Total No. of visits *29*

Dates of Examination of principal parts: Cylinders *See Copenhagen Report N° 10130* Covers *✓* Pistons *✓* Rods *✓* Connecting rods *✓* Crank shaft *✓* Flywheel shaft *✓* Thrust shaft *✓* Intermediate shafts *21-2-37 26-2-37* Tube shaft *✓* Screw shaft *23-2-37* Propeller *17-2-37* Stern tube *17-12-36* Engine seatings *23-12-36* Engines holding down bolts *10-3-37* Completion of fitting sea connections *15-2-37* Completion of pumping arrangements *10-4-37* Engines tried under working conditions *4-5-37* Crank shaft, Material *S.M. Steel* Identification Mark *Lloyds N° 3421-22 C.V. 16-11-36* Flywheel shaft, Material *✓* Identification Mark *✓* Thrust shaft, Material *S.M. Steel* Identification Mark *Lloyds N° 3423 C.V. 16-11-36* Intermediate shafts, Material *0.11 Steel* Identification Marks *LLOYDS N° 6710 319, 21-2-37 G.H.M. 26-2-37* Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *0.H. Steel* Identification Mark *N° 6710, 23-2-37 G.H.M.*

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* ✓
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 *No* If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. *This engine has been constructed under special survey at Copenhagen (See Copenhagen Report N° 10130) + has been installed on board the vessel in accordance with the Rules + Instructions + satisfactorily tried under working conditions, a mean speed of 13.4 knots was maintained at 160 revs. per min.*

Forging reports for intermediate + tail shafts enclosed.
The auxiliary machinery was installed in accordance with the rules + all tried under working conditions + found satisfactory. (See Dusseldorf reports N° 150 + 156, Cleveland Report N° C18 + New York Report N° C. 1547.)

These engines are in my opinion of good quality + the workmanship is good, and it is recommended that the vessel be classed with Lloyd's Machinery Certificate and the record of + L.M.C-5-37, C.L. be made in the Register Book.

The amount of Entry Fee ... £ *✓* : : When applied for, *10th May 1937*
1/8th Special £30.8/- = \$492.00
Air Receivers £8.8/- = \$136.00
Donkey Boiler Fee ... £ : : When received, *26.6 19 37 28/6*
Travelling Expenses (if any) £ *60-00*

Committee's Minute *FRI 18 JUN 1937*
Assigned *+ LMC 5.37 Oil Eng CL*

J. Morrison for G.H. Macdonald + Self
Engineer Surveyor to Lloyd's Register of Shipping



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