

11 MAR 1929

Rpt. 4b

## REPORT ON OIL ENGINE MACHINERY.

No. 90.

Date of writing Report 30<sup>th</sup> Nov. 1928 When handed in at Local Office 30<sup>th</sup> Nov. 1928 Port of Winterthur  
 No. in Survey held at Winterthur Date, First Survey 22<sup>nd</sup> Dec. 1927 Last Survey 20<sup>th</sup> Oct. 1928.  
 Reg. Book. Number of Visits  
 on the <sup>Single</sup> ~~Twin~~ ~~Triple~~ ~~Quadruple~~ Screw vessel M.S. "AYALA MENDI" Tons <sup>Gross</sup> ~~Net~~  
 Built at Bilbao By whom built Messrs. Euskalduna & Co. Yard No. 79 When built 1928  
 Engines made at Winterthur By whom made Messrs. Sulzer Bros. Engine No. 5897 When made 1928.  
 Donkey Boilers made at By whom made Boiler No. When made  
 Brake Horse Power 1400 Owners Messrs. Sola y Aznar Port belonging to  
 Nom. Horse Power as per Rule 388 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
 Trade for which vessel is intended

OIL ENGINES, &c.—Type of Engines Sulzer Diesel Engine 2 or 4 stroke cycle 2 Single or double acting Single  
 Maximum pressure in cylinders 550 lbs. Diameter of cylinders 600 mm. Length of stroke 1060 mm. No. of cylinders 4 No. of cranks 4  
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 810 mm. Is there a bearing between each crank Yes  
 Revolutions per minute 110 Flywheel dia. 2100 mm. Weight 11,000 kg. Means of ignition Compression Kind of fuel used heavy fuel oil  
 Crank Shaft, dia. of journals as per Rule 379 mm. Crank pin dia. 405 mm. Crank Webs Mid. length breadth 550 mm. Thickness parallel to axis  
 as fitted 405 mm. Mid. length thickness 225 mm. shrunk Thickness around eyehole  
 Flywheel Shaft, diameter as per Rule 379 mm. Intermediate Shafts, diameter as per Rule 270 mm. Thrust Shaft, diameter at collars as per Rule 283.5 mm.  
 as fitted 405 mm. as fitted  
 Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule Is the { tube } shaft fitted with a continuous liner {  
 as fitted  
 Bronze Liners, thickness in way of bushes as per Rule Thickness between bushes as per rule Is the after end of the liner made watertight in the  
 as fitted propeller boss If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner  
 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 Length of Bearing in Stern Bush next to and supporting propeller  
 Propeller, dia. Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet  
 Method of reversing Engines direct Is a governor or other arrangement fitted to prevent racing of the engine when disengaged Yes Means of lubrication  
 forced. Thickness of cylinder liners 45 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  
 Cooling Water Pumps, No. 2 for cylinders & 2 for pistons Is the sea suction provided with an efficient strainer which can be cleared within the vessel  
 (1 off each spare)  
 Bilge Pumps worked from the Main Engines, No. 1 Diameter 130 mm. Stroke 330 mm. Can one be overhauled while the other is at work  
 Pumps connected to the Main Bilge Line No. and Size How driven  
 Ballast Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size  
 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  
 In Holds, &c.  
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size  
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes 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  
 Are all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Are the Overboard Discharges above or below the deep water line  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate  
 What pipes pass through the bunkers How are they protected  
 What pipes pass through the deep tanks 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  
 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 Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from  
 If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork  
 Main Air Compressors, No. 1 No. of stages 3 Diameters 570/480/150 Stroke 400 mm. Driven by crank shaft  
 Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 240/80 Stroke 140 " Driven by electric motor  
 Small Auxiliary Air Compressors, No. 1 No. of stages 1 Diameters 70 Stroke 80 " Driven by petrol engine  
 Scavenging Air Pumps, No. 1 double acting Diameter 1370 mm. Stroke 700 mm. Driven by crank shaft  
 Auxiliary Engines crank shafts, diameter as per Rule 124 mm 94 mm  
 as fitted 125 " 105 "

IR 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 L. riveted rees. manhole 300x400 mm.  
 Is there a drain arrangement fitted at the lowest part of each receiver 800 litres Internal diameter 540 mm. thickness 25 mm.  
 High Pressure Air Receivers, No. 1 Injection Cubic capacity of each 150 Internal diameter 300 mm. thickness 15 mm.  
 Seamless, lap welded or riveted longitudinal joint Seamless Material S.M. Steel Range of tensile strength 28 to 32 Tons Working pressure by Rules 104.5 " @ 47 kg. cm<sup>2</sup>  
 Starting Air Receivers, No. 1 Total cubic capacity 5 cub. metres Internal diameter 1200 mm. thickness 21 mm.  
 Seamless, lap welded or riveted longitudinal joint riveted Material S.M. Steel Range of tensile strength 28 to 32 Tons Working pressure by Rules 31 kg. cm<sup>2</sup>

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*If so, is a report now forwarded?*

Receivers 7-6-20, 3-5-27, 5-3-28, Separate Tanks

### Donkey Boilers

### General Pumping Arrangements

## Oil Fuel Burning Arrangements

## SPARE GEAR

*The foregoing is a correct description.*

*Manufacturer.*

Dates of Survey while building	{ During progress of work in shops- - { During erection on board vessel- - { Total No. of visits	22-12-27, 4-1-28, 20-1-28, 1-2-28, 22-2-28, 24-2-28, 14-3-28, 10-4-28, 4-5-28, 16-5-28, 7-6-28, 18-7-28, 20-7-28, 26-7-28, 26-7-28, 6-8-28, 8-8-28, 10-8-28, 11-8-28, 14-8-28, 17-8-28, 22-8-28, 23-8-28, 30-8-28, 31-8-28, 4-9-28, 13-9-28, 19-9-28, 22-9-28, 24-9-28, 9-10-28, 10-10-28, 15-10-28, 17-10-28, 19-10-28, 20-10-28,

Dates of Examination of principal parts—Cylinders 10-10-28 Covers 10-10-28 Pistons 10-10-28 Rods 24-9-28 Connecting rods 10-10-28

Crank shaft 15-10-28 Flywheel shaft 15-10-28 Thrust shaft 15-10-28 Intermediate shafts Tube shaft

Screw shaft ..... Propeller ..... Stern tube ..... Engine seatings ..... Engines holding down bolts

Completion of fitting sea connections..... Completion of pumping arrangements ..... Engines tried under working conditions

Crank shaft, Material Ann. S. M. Eng. Stl. Identification Mark Lloyd's T.L. 4416.13.6-28 Flywheel shaft, Material Ann. S. M. Eng. Stl. Identification Mark Lloyd's M. B. 7984.27-4-28

Thrust shaft, Material -do- Identification Mark see flywheel shaft Intermediate shafts, Material \_\_\_\_\_ Identification Marks \_\_\_\_\_

Tube shaft, Material ..... Identification Mark ..... Screw shaft, Material ..... Identification Mark .....

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

Is this machinery duplicate of a previous case yes If so, state name of vessel Amato Mendi

*General Remarks* (State quality of workmanship, opinions as to class, &c.)

*General Remarks* (State quality of workmanship, opinions as to class, &c.) This machinery has been constructed under Special Survey in accordance with the requirements of the Rules, the Secretary's letters and the approved plans. Materials and workmanship good. This machinery has been dispatched to Bilbao where the trials will be run when it is installed in the vessel.

The amount of Entry Fee	...	£	5 - 0 - 0	:	When applied for,
Special	...	£	83 - 4 - 0	:	29 <sup>th</sup> Nov. 1928
Donkey Boiler Fee	...	£	:	:	When received,
Travelling Expenses (if any)	£	:	:	:	1 <sup>st</sup> Dec. 1928

### Committee's Minute

TUE. 12 MAR 1929

Assigned Sec minute on Bbo Rpt

7460 attached

W. G. Vallis

*Engineer Surveyor to Lloyd's Register of Shipping.*

FRI. 21 JUN 1929

FRI. 19 JUL 1929

TUE. 24 SEP 1929

TUE. 19 NOV 1929

TUE 10 DEC 1929

TUE 14 JAN 1930

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Foundation