

REPORT ON OIL ENGINE MACHINERY.

No. 8338

9 SEP 1933

Received at London Office

Survey Report 30th Aug. 1933 When handed in at Local Office 1st Sept. 1933 Port of Bilbao
 Survey held at Bilbao Date, First Survey 30.1.32 Last Survey 30.8.1933
 Number of Visits 156.

on the ~~Twin~~ ^{Single} Screw vessel CAMPERO Tons { Gross
 Net
 made at Bilbao By whom built Messrs. Echevarrieta y Lamiara No. 27 When built 1933
 By whom made Soc. Esp. de Const. Naval Engine No. 25160333 When made 1933
 Boilers made at By whom made Boiler No. When made
 Horse Power 2 x 1500 Owners C. A. M. P. S. A. Port belonging to
 Horse Power as per Rule 776 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted
 for which vessel is intended

ENGINES, &c.—Type of Engines Constructores Naval Bulzer 2 or 4 stroke cycle 2 Single or double acting Single
 pressure in cylinders 600 lbs. Diameter of cylinders 600 mm Length of stroke 1040 mm No. of cylinders 2 x 4 No. of cranks 2 x 4
 bearings, adjacent to the Crank, measured from inner edge to inner edge 440 mm Is there a bearing between each crank Yes.
 revs per minute 130 Flywheel dia. 2100 mm Weight 7800 kgs Means of ignition Air inj. Kind of fuel used
 Shaft, dia. of journals as per Rule 390 mm Crank pin dia. 390 mm Crank Webs Mid. length breadth 620 mm Kind of fuel used
 as fitted 390 mm Mid. length thickness 225 mm Thickness parallel to axis 245 mm
 Thrust Shaft, diameter as per Rule 400 mm Intermediate Shafts, diameter as fitted 400 mm Thickness around eyehole 185 mm
 as per Rule 400 mm Is the tube screw shaft fitted with a continuous liner
 as fitted 400 mm Is the after end of the liner made watertight in the
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of 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
 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
 If so, state type Length of Bearing in Stern Bush next to and supporting propeller

of reversing Engines Air Servomotor Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes. Means of lubrication
 Thickness of cylinder liners Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled or lagged with
 lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine
 Water Pumps, No. 2 Bonst. Naval Drysdale Is the sea suction provided with an efficient strainer which can be cleared within the vessel
 pumps worked from the Main Engines, No. 1 ea. eng. Diameter 140 mm Stroke 320 mm Can one be overhauled while the other is at work
 connected to the Main Bilge Line No. and Size How driven

Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size 2 Bonst. Naval Drysdale 30 tons.
 independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge
 No. and size:—In Machinery Spaces In Pump Room
 &c.
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size
 the Bilge Suction pipes in Holds and Tunnel Well fitted with strum boxes Are the Bilge Suctions in the Machinery Spaces

readily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges
 Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks
 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
 each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spiral and brass covering plate
 pipes pass through the bunkers How are they protected
 pipes pass through the deep tanks Have they been tested as per Rule
 Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

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
 on vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork
 Air Compressors, No. 1 ea. engine No. of stages 3 Diameters 570/480/150 Stroke 400 mm Driven by Main Engine
 Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 240 & 80 mm Stroke 140 mm Driven by Aux. Diesel Eng.
 Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by
 Lifting Air Pumps, No. 1 ea. engine Diameter 1340 mm Stroke 650 mm Driven by Main Eng.
 Auxiliary Engines crank shafts, diameter as per Rule 135 mm

RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes.
 internal surfaces of the receivers be examined and cleaned Yes. Is a drain fitted at the lowest part of each receiver Yes.
 Pressure Air Receivers, No. 2 receiver Cubic capacity of each 150 litres Internal diameter 400 mm thickness 12 mm
 Is lap welded or riveted longitudinal joint Certificate enclosed Range of tensile strength 2 ships Working pressure by Rules 2021 Actual
 Lifting Air Receivers, No. 2 Total cubic capacity 24 c.m. Internal diameter 1740/1800 mm thickness 30 mm
 Is lap welded or riveted longitudinal joint riveted Material S.M. Steel Range of tensile strength 41-47 kgs Working pressure by Rules 30 kgs/cm² Actual

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

Is the donkey boiler intended to be used for domestic purposes only?

PLANS. Are approved plans forwarded herewith for Shafting No. 25/2/32. 26/2/32. Receivers No. 12.4.32. Separate Tanks

Donkey Boilers

General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR.

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

State the principal additional spare gear supplied. *Main engines:- 1 Cyl. liner complete with m/bn & copper
1 piston rod & 1 crosshead complete with guide shoes.
Aux. Engines:- 1 Cylinder liner, 1 Cylinder cover, 1 crosshead & 1 piston
with rod & rings.*

SOCIEDAD ESPAÑOLA DE CONSTRUCCION NAVAL

Astilleros y Talleres de Gastos

P. A. del Director

The foregoing is a correct description,

del Departamento de Maquinaria.

Manufacturer.

Dates of Survey while building
During progress of work in shops --
During erection on board vessel --
Total No. of visits 156 IN SHOPS.

Dates of Examination of principal parts --
Cylinders 5.18.21/4/33 Covers 5.7.5/33 Pistons 12.13.19/12/32 Rods 1.13/7/32 Connecting rods 1.13/7/32
Crank shaft S- 2.11/32 Flywheel shaft S- 20.7.32 Thrust shaft Combined with flywheel shaft Intermediate shafts Tube shaft

Screw shaft Propeller Stern tube Engine seatings Engines holding down bolts

Completion of fittings & connections Completion of pumping arrangements Engines tried under working conditions

Crank shaft, Material S.M. Steel Identification Mark S- N° 165 Flywheel shaft, Material S.M. Steel Identification Mark S- N° 164

Thrust shaft, Material Combined with flywheel shaft 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.

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with.

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo

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.

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. *The above machinery has been constructed*

under special survey in accordance with the society's Rules & Regulations, the approved plans and the Secretary's letters. The materials used in the construction & the workmanship are good. Shop trials of the main & auxiliary engines have been carried out with satisfactory results. The starting air receivers were tested by water pressure to 44 kg/cm² and found good & tight.

In our opinion the vessel for which this machinery is intended will be eligible to have the notation + LMC [with date] when the machinery has been satisfactorily fitted on board & tried under full working conditions.

(Herewith 6 forging Reports & 1 Certificate for H.P. air receiver)

The amount of Entry Fee 192 =
4/5 Special Sur. Main Engs 5480 =
Special Sur. Aux 412 =
Starting Air Receivers 505 =
Donkey Boiler Fee
Travelling Expenses (if any) 150 =
Sunday & Late Fee 168 =
Committee's Minute

When applied for,

5/9/33

When received,

5/9/33

Engineer Surveyor to Lloyd's Register of Shipping

Assigned

See Adj. 1422



Lloyd's Register Foundation