

REPORT ON OIL ENGINE MACHINERY.

Bldo 6263.

No. 2247

Received at London Office MON. JAN. 29 1923

Date of writing Report 22 Jan. 1923 When handed in at Local Office

Port of Stockholm

No. in Survey held at Stockholm

Date, First Survey 9 Sept. 1922

Last Survey 14 Jan. 1923

Reg. Book.

Number of Visits 10

Single
on the Twin } Screw vessels
TripleTons Gross 31.44
Net

Master Built at Bilbao

By whom built Soc. Española de Constr.

Yard No. 22 When built 1923

Engines made at Stockholm

By whom made J. C. I. Bolander Co. Ltd.

Engine No. 15146 When made 1923

Donkey Boilers made at

By whom made

Boiler No. When made

Brake Horse Power 160

Owners Sociedad Española de Construcción Naval Port belonging to Bilbao

Nom. Horse Power as per Rule 46

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

OIL ENGINES, &c.—Type of Engines Bolinders Oil Engine 2 stroke cycle Single or double acting

Maximum pressure in cylinders 17 kg/cm No. of cylinders 4 No. of cranks 4 Diameter of cylinders 300 mm 11 7/16

Length of stroke 310 mm Revolutions per minute 350 Means of ignition Hot bulb Kind of fuel used Crude Oil

Is there a bearing between each crank Yes Span of bearings (Page 22, Section 2, par. 7 of Rules) 600 mm

Distance between centres of main bearings 600 mm Is a flywheel fitted Yes Diameter of crank shaft journals as per Rule 121 mm as fitted 128 mm

Diameter of crank pins 128 mm Breadth of crank webs as per Rule 161 mm as fitted 170 mm Thickness of ditto as per Rule 68 mm as fitted 71.5 mm

The flywheel is fitted at fore end of the crank shaft Diameter of tunnel shaft as per Rule 116 mm as fitted 116 mm

Diameter of flywheel shaft as fitted Diameter of thrust shaft as fitted

Diameter of screw shaft as fitted Is the screw shaft fitted with a continuous liner the whole length of the stern tube

Is the after end of the liner made watertight in the propeller boss If the liner is in more than one length are the joints turned

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 If without liners, is the shaft arranged to run in oil

Type of outer gland fitted to stern tube Ordinary gland Length of stern bush 4 ft Diameter of propeller 1220 mm

Pitch of propeller 1474 mm No. of blades 3 state whether moveable no Total surface 4274 DCM² square feet

Method of reversing Timing Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Thickness of cylinder liners none fitted

Are the cylinders fitted with safety valves no Means of lubrication pumps Are the exhaust pipes and silencers water cooled or lagged with

non-conducting material lagged into funnel of the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine exhaust

No. of cooling water pumps 2 Is the sea suction provided with an efficient strainer which can be cleared

within the vessel Yes No. of bilge pumps fitted to the main engines Diameter of ditto 100 mm Stroke 50 mm

Can one be overhauled while the other is at work No. of auxiliary pumps connected to the main bilge lines how How driven

Sizes of pumps No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps In engine room 1-1 1/2

and in holds, etc. 1-1 1/2 No. of ballast pumps How driven Sizes of pumps

Is the ballast pump fitted with a direct suction from the engine room bilges State size Is a separate auxiliary pump suction fitted in

Engine Room and size Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine Room always accessible Yes

Are the sluices on Engine Room bulkheads always accessible Are all connections with the sea direct on the skin of the ship Yes

Are they valves or cocks both Are they fired sufficiently high on the ship's side to be seen without lifting the floor plates Yes

Are the discharge pipes 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 all pipes, cocks, valves and pumps in connection with the machinery accessible at all times Yes Are the bilge suction pipes, cocks and valves arranged so as to prevent any

communication between the sea and the bilges Yes Is the screw 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

No. of main air compressors none fitted No. of stages 1 Diameters 3 1/2 Stroke 3 Driven by Hand wheel

No. of auxiliary air compressors 1 No. of stages 1 Diameters 3 1/2 Stroke 3 Driven by

No. of small auxiliary air compressors one No. of stages 1 Diameters 3 1/2 Stroke 3 Driven by

No. of scavenging air pumps Diameter Stroke Driven by

Diameter of auxiliary Diesel Engine crank shafts as per Rule as fitted Are the air compressors and their coolers made so as to be easy of access

AIR RECEIVERS:—No. of high pressure air receivers Internal diameter Cubic capacity of each

material Seamless, lap welded or riveted longitudinal joint Range of tensile strength

thickness working pressure by Rules No. of starting air receivers Internal diameter 434 mm

Total cubic capacity 280 litres Material S.M. Steel Seamless, lap welded or riveted longitudinal joint lap welded

Range of tensile strength min 23 tons 1/4 inch thickness 8 mm Working pressure by rules 257 lbs 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 manhole door Is there a drain arrangement fitted at the lowest part of each receiver yes

IS A DONKEY BOILER FITTED?

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS	14.12.22	17 kg/cm	37 kg/cm	LLOYD'S TEST 37 KG AI 14.12.22 A	
COVERS	14.12.22	ditto	ditto		
JACKETS	14.12.22	—	3.5 kg/cm		
PISTON WATER PASSAGES	(open pistons)				
MAIN COMPRESSORS—1st STAGE					
2nd	none fitted				
3rd					
AIR RECEIVERS—STARTING	4.1.23	15 kg/cm	30 kg/cm	No 2223 LLOYD'S TEST 30 KG WP 15 KG AI 4.1.23 A	
INJECTION					
AIR PIPES					
FUEL PIPES					
FUEL PUMPS					
SILENCER	14.12.22		3.5 kg/cm	HYDR. TEST 3.5 KG AI 14.12.22 A	
WATER JACKET	14.12.22		ditto		
SEPARATE FUEL TANKS					

PLANS. Are approved plans forwarded herewith for shafting E 7.11.22

SPARE GEAR to be supplied, and inspected on delivery. — 2- top end bolts & nuts. 2- m. bearing studs & nuts. 1- disc. Valve for bridge & ballast pump. 1- disc. Valve. 3 studs for injection bulb. 1- Stud for cylinder. 1- bolt for thrust bearing. 1- bolt for lubr. apparatus. 1- bolt for feed pump eccentric. 1- bolt for oscillating lever. 1- bolt for governor weight. 2- disc. Valves for suc. pump. 2- coupling bolts and nuts.

The foregoing is a correct description.

SOCIEDAD ESPAÑOLA DE CONSTRUCCION NAVAL

R. A. Villalón

for Engineering Board

Dates of Survey while building	During progress of work in shops — 29. 19. 1.22 & 30. 4.11.13 & 14 1922, 14 1923
During erection on board vessel —	15.12.22, 30.12.19.22, 23. Jan. 1. 7.9.12.16, 23. Apr. 12.23, May 21. June. 4. 19. July 12. Jan 23. 23.
Total No. of visits	10 in shop 15 in vessel
Dates of Examination of principal parts—Cylinders	11.14.22
Covers	11.14.22
Pistons	11.14.22
Rods	11.14.22
Connecting rods	4.11.22
Crank shaft	11.14.22
Thrust shaft	11.14.22
Tunnel shafts	11.14.22
Screw shaft	19.2.23
Propeller	22.2.23
Stern tube	19.2.23
Engine settings	12.2.23.
Engines holding down bolts	1-3-23
Completion of pumping arrangements	21.5-23
Engines tried under working conditions	21.5-23
Completion of fitting sea connections	22.2-23
Stern tube	22.2-23
Screw shaft and propeller	22.2-23
Material of crank shaft	Stel.
Identification Mark on Do.	LLOYD'S No 32/5 AI 19.10.22 A
Material of thrust shaft	Stel.
Identification Mark on Do.	LLOYD'S No 3222 AI 22.11.22 A
Material of tunnel shafts	Stel.
Identification Marks on Do.	
Material of screw shafts	Stel.
Identification Marks on Do.	142-23-1-23. W.B.E.
Is the flash point of the oil to be used over 150° F.?	Yes.
Is this machinery duplicate of a previous case?	no
If so, state name	

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

I am of opinion that this motor is of superior material and workmanship, and as it has been designed and constructed under my special survey, I have respectfully to submit, that it will be eligible to be classed LMC, as soon as it has been fitted in a classed vessel to the satisfaction of the Society's Surveyors. This machinery has been securely fitted on board, the materials and workmanship are good and has been tried under working conditions and found satisfactory. In my opinion it is eligible to be classed with the record of L.M.C. 7.23.

The amount of Entry Fee ... £

Special Survey in shop ... £

Donkey Boiler Fee ... £

Travelling Expenses (if any) ... £

Committee's Minute

FRI. 14 SEP. 1923

Assigned

+ L.M.C. 7.23

Thomas Miller

Engineer Surveyor to Lloyd's Register of Shipping,
assisted by Mr. A. J. Anderson



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Foundation