

REPORT ON OIL ENGINE MACHINERY.

No. 1211

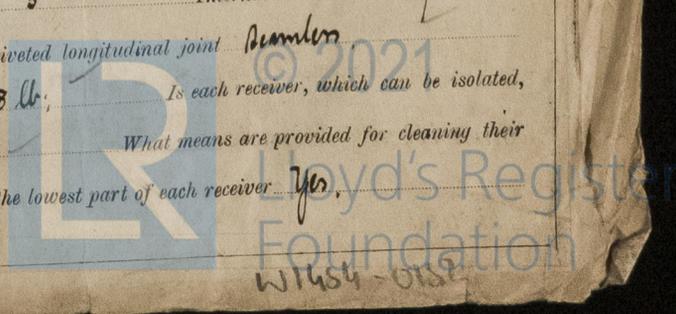
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Date of writing Report 29th Jan. 1921 When handed in at Local Office 29th Jan. 1921 Port of Rio de Janeiro
 No. in Survey held at Rio de Janeiro Date, First Survey 22nd Aug. 1919 Last Survey 26th Jan. 1921
 Ref. Book. 61528 on the ^{Single} ~~Triple~~ Screw vessels Wood Aux 4 mpt Br "Italia" Constructors Navais Tons Gross 1598 Net 1056
 Master Built at Rio de Janeiro By whom built Empresa Brasileira de Yard No. When built 1930
 Engines made at Winton & Co. By whom made Sulzer Bros Engine No. When made 1917
 Donkey Boilers made at Annan By whom made Cochran & Co. Boiler No. 8357 When made 1906
 Brake Horse Power 420 Owners Lloyd Nacional Port belonging to Rio de Janeiro
 Nom. Horse Power as per Rule 84 82 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

OIL ENGINES, &c.—Type of Engines Diesel 2 or 4 stroke cycle 2 Single or double acting Single
 Maximum pressure in cylinders 32 Atmos No. of cylinders 4 No. of cranks 4 Diameter of cylinders 340 mm
 Length of stroke 540 mm Revolutions per minute 210 Means of ignition Kind of fuel used Grade oil
 Is there a bearing between each crank Yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 422 mm
 Distance between centres of main bearings 650 mm Is a flywheel fitted Yes Diameter of crank shaft journals as fitted 215 mm
 Diameter of crank pins 215 mm Breadth of crank webs as fitted 280 mm Thickness of ditto as fitted 115 mm
 Diameter of flywheel shaft as fitted 215 mm Diameter of tunnel shaft as fitted 163 mm Diameter of thrust shaft as fitted 175 mm
 Diameter of screw shaft as fitted 175 mm Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes
 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 joints burned
 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 Length of stern bush 825 mm Diameter of propeller 4'-4"
 Pitch of propeller 4'-1" No. of blades 3 state whether moveable Yes Total surface 14 square feet
 Method of reversing Diesel Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Thickness of cylinder liners 2.5 mm
 Are the cylinders fitted with safety valves No Means of lubrication Forced 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
 Funnel fitted 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 1 Diameter of ditto 113 mm Stroke 113 mm
 Can one be overhauled while the other is at work No. of auxiliary pumps connected to the main bilge lines 2 How driven Steam & air
 Sizes of pumps 7 1/2" x 5" x 6" No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room 2-3"
 and in holds, etc. 2-3" 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 Yes 3"
 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 Yes Are all connections with the sea direct on the skin of the ship Yes
 Are they valves or cocks Both Are they fixed 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 Iron sheathing

AIR RECEIVERS:—No. of high pressure air receivers 1 Internal diameter 247 mm Cubic capacity of each 4 cub ft.
 material Steel Seamless, lap welded or riveted longitudinal joint seamless Range of tensile strength
 thickness 10 mm working pressure by Rules 977 lb No. of starting air receivers 3 Internal diameter 400 mm
 Total cubic capacity 53 cub ft Material Steel Seamless, lap welded or riveted longitudinal joint seamless Is each receiver, which can be isolated, Range of tensile strength thickness 16 mm Working pressure by rules 1078 lb
 filled 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 None Is there a drain arrangement fitted at the lowest part of each receiver Yes



IS A DONKEY BOILER FITTED? *Yes.*

If so, is a report now forwarded? *✓*

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS					
" " COVERS					
" " JACKETS.....					
" " PISTON WATER PASSAGES.....					
MAIN COMPRESSORS—1st STAGE.....					
" 2nd "					
" 3rd "					
AIR RECEIVERS—STARTING	18 - 8 - 20	1050 lb.	2100 lb.		
" INJECTION	18 - 8 - 20	900 lb.	2000 lb.		
AIR PIPES	18 - 8 - 20	1050 lb.	2100 lb.		
FUEL PIPES	18 - 8 - 20	900 lb.	2000 lb.		
FUEL PUMPS	30 - 9 - 20	900 lb.	2000 lb.		
SILENCER					
" WATER JACKET					
SEPARATE FUEL TANKS 2.....	24 - 8 - 20	None.	7 1/2 lb.		

PLANS. Are approved plans forwarded herewith for shafting *17/7/19* Receivers *✓* Separate Tanks *✓*
(If not, state date of approval)

SPARE GEAR *As per Section 6 of Rules for Diesel Engines.*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops - - } *✓* *Nov. 3. Jan. 24. 1921.*
 { During erection on board vessel - - } *1919 Aug. 22. 1920 Jan. 1. March. 20. April 9. 21. 23. 28. May 24. June 7. 14. 28. July 24. 29. Aug. 10. 19. 24. 30. Sept. 2. 14. 20.*
 Total No. of visits *21*

Dates of Examination of principal parts—Cylinders *22/8/19* Covers *22/8/19* Pistons *22/8/19* Rods *22/8/19* Connecting rods *22-8-19*
 Crank shaft *22/8/19* Thrust shaft *9/4/20* Tunnel shafts *9/4/20* Screw shaft *9/4/20* Propeller *28/4/20* Stern tube *9/4/20* Engine seatings *28/4/20*
 Engines holding down bolts *24/5/20* Completion of pumping arrangements *8/9/20* Engines tried under working conditions *30/9/20*
 Completion of fitting sea connections *23/4/20* Stern tube *28/4/20* Screw shaft and propeller *28/4/20*

Material of crank shaft *Steel* Identification Mark on Do. Material of thrust shaft *Steel* Identification Mark on Do.
 Material of tunnel shafts *Steel* Identification Marks on Do. Material of screw shafts *Steel* Identification Marks on Do.

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 *Wood Aux in "Brazil"*

General Remarks (State quality of workmanship, opinions as to class, &c. *The whole of the working parts of this engine has been examined & found in good order; it has been efficiently fitted on board & tried under working conditions with satisfactory results. It is eligible in my opinion to be classed L.M.C.*
A new vertical Cochran type donkey boiler marked N:8357 Lloyd's test, 200 lb. 12-10-06 A.M.E.K. has been secured & fitted on board, after being examined throughout, all plain tubes renewed. The boiler afterwards examined under steam & its safety valves adjusted to 100 lb. per sq. in.

The amount of Entry Fee ... \$ 100 \$00 : When applied for,
 Special ... \$ 500 \$00 : *27-1-1921*
 Donkey Boiler Fee ... £ :
 Travelling Expenses (if any) \$ 470 \$00 : *28/7/21*

Committee's Minute *WED. 30 MAR. 1921*

Assigned *L.M.C. 1.21 C.L.*
+ DB 10.06 oil Engines refitted 1.21 DB 1.21 (in sail separator)

e. Williamson
 Engineer Surveyor to Lloyd's Register of Shipping.
 MASHINERY CERT. FRI. AUG. 4 3 1923
 HALTET. 31-3-21
 TUE 23 JAN 1923
 TUE JUN 26 1923



The Surveyors are requested not to write on or below the space for Committee's Minute.