

DUAL SURVEY
L. R. & R. I.

REPORT ON OIL ENGINE MACHINERY.

No. 8994

Rpt. 4b.

Date of writing Report 29/5/25 When handed in at Local Office 29/5/25 Port of Genoa
 No. in Survey held at Genoa (Augsburg) Date, First Survey GENOA AUGSBURG 7th JULY Last Survey 20th DEC 1924
 Reg. Book. 60 Number of Visits 22 Tons Gross 1685 Net 965
 on the Single Screw vessels "METEOR" [MOTOR TANKER] [MACH. AFT.]
 Master By whom built N. ODERO FU ALESS Yard No. 321 When built 1925
 Engines made at Augsburg By whom made Maschinenfabrik Augsburg-Munich A.G. Engines No. 287370 When made 1925-5
 Donkey Boilers made at Sestri Ponente By whom made N. Odero fu Aless & Co. Boiler No. 287380 When made 1925-5
 Brake Horse Power 2x300 = 600 Owners La Columbia Soc. Maritt. Port belonging to Genoa
 Nom. Horse Power as per Rule 215 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

TYPE OF ENGINES, &c.—Type of Engines 2 Sets Diesel M.A.N. Type. 2 or 4 stroke cycle 4 Single or double acting Single
 Maximum pressure in cylinders 45 kg/cm² No. of cylinders 12 (6 per motor) No. of cranks 12 Diameter of cylinders 13 9/16" (345 mm)
 Length of stroke 19 1/16" (500 mm) Revolutions per minute 200 Means of ignition Compression - Solid Injection Kind of fuel used Diesel Oil
 Is there a bearing between each crank Yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 418 mm
 Distance between centres of main bearings 630 mm Is a flywheel fitted Yes Diameter of crank shaft journals as per Rule 210 mm as fitted 210 mm
 Diameter of crank pins 210 mm Breadth of crank webs as per Rule 310 mm as fitted 310 mm Thickness of ditto as per Rule 110 mm as fitted 110 mm
 DIAMETER OF FLYWHEEL FITTED BETWEEN CRANK & THRUST SHAFT COUPLINGS. Diameter of flywheel shaft as per Rule 210 as fitted 220 Diameter of tunnel shaft as per Rule 132 as fitted 145 Diameter of thrust shaft as per Rule 139 as fitted 150
 Diameter of screw shaft as per Rule 146 as fitted 156 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 Yes LINER THICKNESS MADE 12

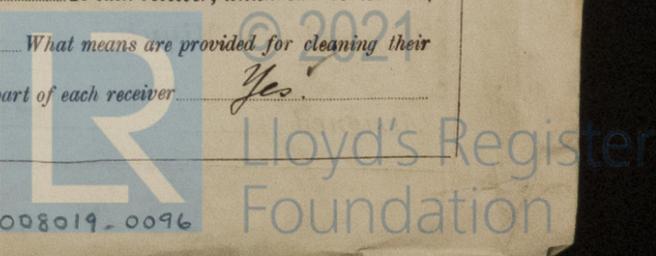
If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive —
 If two liners are fitted, is the shaft lapped or protected between the liners — If without liners, is the shaft arranged to run in oil —
 Type of outer gland fitted to stern tube Lignum Vitae Length of stern bush 620 mm Diameter of propeller 2100 mm
 Pitch of propeller 1600 mm No. of blades 4 state whether moveable No Total surface 1.33 square metres per propeller
 Method of reversing Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched — Thickness of cylinder liners 27 mm
 Are the cylinders fitted with safety valves Yes 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 EXHAUST UP FUNNEL

No. of cooling water pumps 1 PER MOTOR 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 per motor Diameter of ditto 80 mm Stroke 110 mm
 Can one be overhauled while the other is at work Yes No. of auxiliary pumps connected to the main bilge lines 1 in ER. 1 Forward How driven Steam
 Sizes of pumps 190 x 220 x 254 mm No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room 2@65, 2@60 mm
 and in holds, etc. F.P.K. 70 mm Forehold 65 mm A.P.P.K. 70 mm No. of ballast pumps 2 How driven Steam Sizes of pumps 220 x 220 x 254 Ford. 190 x 220 x 254 E.R.
 Is the ballast pump fitted with a direct suction from the engine room bilges Yes State size 65 mm Is a separate auxiliary pump suction fitted in Engine Room and size Yes - 65 mm 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 None 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 NONE MACH. AFT. 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 - SOLID INJ. No. of stages — Diameters — Stroke — Driven by —
 No. of auxiliary air compressors Two No. of stages Two Diameters 220 - 88 Stroke 225 Driven by HOT TUB MOTORS
 No. of small auxiliary air compressors WORKED BY ECCENTRIC FROM MAIN SHAFTING No. of stages Two Diameters 230 - 114 Stroke 200 Driven by MAIN SHAFTING
 No. of scavenging air pumps — Diameter — Stroke — Driven by —
 Diameter of auxiliary Diesel Engine crank shafts as per Rule 83.5 mm as fitted 70 mm APPROVED LTR'E 3/11/24. Are the air compressors and their coolers made so as to be easy of access Yes
 OWNERS LETTER OF AGREEMENT ATTACHED.

AIR RECEIVERS:—No. of high pressure air receivers 2 Internal diameter 800 mm Cubic capacity of each 3500 litres
 Material S.M. Steel Seamless, lap welded or riveted longitudinal joint Yes Range of tensile strength 34 - 41 kg/cm²
 Thickness 16 mm working pressure by Rules 25 kg/cm² No. of starting air receivers for aux. mach. 2 Internal diameter 1400
 total cubic capacity 10 cub. m. (5 cu. m. each) Material Steel Seamless, lap welded or riveted longitudinal joint Yes
 Range of tensile strength 44 - 50 kg/cm² thickness 10 mm Working pressure by rules 10 kg/cm² 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 Mouth door Is there a drain arrangement fitted at the lowest part of each receiver Yes



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IS A DONKEY BOILER FITTED? *Yes*

If so, is a report now forwarded? *Yes*

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS		45 kg/cm ²	90 kg		
" " COVERS		4 "	20 "		Bremen Rpt. 736
" " JACKETS		4 "	9 "		
" PISTON WATER PASSAGES	<i>None</i>				
MAIN COMPRESSORS—1st STAGE	<i>None - Solid Injection</i>				
" 2nd "					
" 3rd "					
AIR RECEIVERS—STARTING		25 kg.	39 kg		
" INJECTION	<i>None</i>				
AIR PIPES (MANOEUVRING)	<i>5/3/25</i>	25 kg.	50 kg		
FUEL PIPES		250 kg.	1000 kg.		Bremen Rpt. 736
FUEL PUMPS		250 kg	500 "		" " "
SILENCER					
" WATER JACKET	<i>None</i>				
SEPARATE FUEL TANKS	<i>5/3/25</i>		Rule Heads		

PLANS. Are approved plans forwarded herewith for shafting *YES.* Receivers *No - 15/8/24* Separate Tanks *Plans now sent*

SPARE GEAR *1 cyl cover complete for main motors, one complete set of valve, seats & springs for main motors and fuel injection valves for 6 cylinders, one cover complete (hot ball) for aux motors, 1 piston complete and one set of rings for main motor, set of rings for aux motor, set of gear wheels for main motor, 2 top pins 2 bottom pins & 2 main bearing bolts for main & aux motors, set of coupling bolts for crank shaft & set for thrust (no intermediate) shaft, complete set of compressor rings, half set of compressor valves, complete set of fuel pump parts, main & aux motors set of valves for daily fuel pump, water cam pump & one bilge pump. Also a very considerable number of additional spares for practically all important parts.*
 The foregoing is a correct description.

P. N. ODERO in ALESS. & C. *V. Giacominis* Manufacturer.

Dates of Survey while building
 During progress of work in shops - *See Bremen Rpt. 736*
 During erection on board vessel - *1924 Oct. 3, Nov 6, 8, Dec 3, 18 - 1925 Jan 9, 20, 23, Feb. 13, 22, 26, 28, Mar 5, 9, 14, 19, 27, 30, Apr 4, 6, 8*
 Total No. of visits *BREMEN 17 + GENOA 22 = 39.*

Dates of Examination of principal parts—Cylinders — Covers — Pistons — Rods — Connecting rods —
 Crank shaft — Thrust shafts *6/11/24* Tunnel shafts *None* Screw shafts *9/1/25* Propellers *8/11/24* Stern tube *20/1/25* Engine seatings *3/12/25*
 Engines holding down bolts *19/3/25* Completion of pumping arrangements *8/4/25* Engines tried under working conditions *8/4/25*
 Completion of fitting sea connections *19/3/25* Stern tube *23/1/25* Screw shaft and propeller *5/3/25*
 Material of crank shaft *Steel* Identification Mark on Do. *LLOYDS 6284-85* Material of thrust shaft *Steel* Identification Mark on Do. *LLOYDS 367-375 A.S.M.*
 Material of tunnel shafts *None* Identification Marks on Do. — Material of screw shafts *Steel* Identification Marks on Do. *LLOYDS 364-365 A.S.M.*

the flash point of the oil to be used over 150° F. *Yes*
 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. *See Bremen Report 736 on Main Motors.*
The main motors have been installed in a satisfactory manner on board the air receivers (approved 15/3/24) have been built in accordance with the approval of the Society Rules, and have been tested hydraulically as required & found tight. Materials and workmanship are good. The auxiliary motors have been built and surveyed as required (see Secretary's letter E. 3/11/24) & on completion have been tried under working conditions and found satisfactory. Bureau letter accepting these motors is attached. A sample taken from the crankshaft showed a tensile strength of 65.9 kg/cm² with an elongation of 19% on a standard test piece. In our opinion the vessel is eligible for the Record Class L.M.C. 4. 25 (Oil Eng.).

Amount of Entry Fee ... *£ 468 =*
 Special *INSTALLATION ONLY* ... *£ 1258 =*
 Donkey Boiler Fee ... *£ 550 =*
 Travelling Expenses (if any) *£ 172 =*
 When applied for, *27/5/25*
 When received, *8/6/25*

Alex Sawance
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
 Signed *Emb. 4. 25. C.L.*
 oil engines

