

# REPORT ON OIL ENGINE MACHINERY.

No. 1834.  
16 OCT. 1936

Received at London Office

Date of writing Report 10<sup>th</sup> October 1936 When handed in at Local Office 10<sup>th</sup> October 1936 Port of Bremen

No. in Survey held at Augsburg Date, First Survey 27<sup>th</sup> May 1936 Last Survey 10<sup>th</sup> October 1936  
Reg. Book. Number of Visits 76

on the Single Twin Triple Quadruple Screw vessel Tons Gross Net

Built at Hamburg By whom built Deutsche Werft A.G. Yard No. 180 When built 1936

Engines made at Augsburg By whom made M.A.N. Engine No. 691190 When made

Donkey Boilers made at By whom made Boiler No. When made

Brake Horse Power 3500 Owners Port belonging to

Nom. Horse Power as per Rule 973 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Trade for which vessel is intended

OIL ENGINES, &c. Type of Engines 057<sup>2</sup> 60/110 23<sup>5</sup>/<sub>8</sub> 43<sup>5</sup>/<sub>16</sub> 2 or 4 stroke cycle 2 Single or double acting double

Maximum pressure in cylinders 45 atm Diameter of cylinders 600 mm Length of stroke 1100 mm No. of cylinders 5 No. of cranks 5

Mean Indicated Pressure 5.3 atm Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 885 mm Is there a bearing between each crank yes

Revolutions per minute 120 Flywheel dia. 2100 mm Weight 3400 kg Means of ignition direct ign. Kind of fuel used

Crank Shaft, dia. of journals as per Rule 420 mm Crank pin dia. 420 mm Crank Webs Mid. length breadth 770 mm Thickness parallel to axis 265 mm  
as fitted Mid. length thickness 265 mm shrunk Thickness around eye-hole 185 mm

Flywheel Shaft, diameter as per Rule 420 mm Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as per Rule  
as fitted as fitted 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 as fitted screw }

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 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 If so, state type 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 by Comp. air Is a governor or other arrangement fitted to prevent racing of the engine when declutched Means of lubrication  
forced Thickness of cylinder liners 40 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with

non-conducting material lagged 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. Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from the Main Engines, No. Diameter Stroke Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line { No. and Size  
How driven

Is the cooling water led to the bilges If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping  
arrangements

Ballast Pumps, No. and size main engine (log wheel type) Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1, 38-40 cm / 1/2 at 400 rpm

Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
Pumps, No. and size:—In Machinery Spaces In Pump Room

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

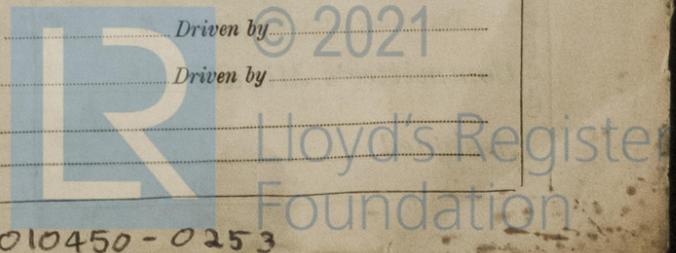
Main Air Compressors, No. No. of stages Diameters Stroke Driven by

Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

Small Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

Scavenging Air Pumps, No. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule 130 mm 13  
as fitted



**AIR RECEIVERS:**—Is each receiver, which can be isolated, fitted with a safety valve as per Rule.

Can the internal surfaces of the receivers be examined and cleaned. Is a drain fitted at the lowest part of each receiver

**High Pressure Air Receivers, No.** ..... Cubic capacity of each ..... Internal diameter ..... thickness .....

Seamless, lap welded or riveted longitudinal joint ..... Material ..... Range of tensile strength ..... Working pressure by Rules Actual

**Starting Air Receivers, No.** ..... Total cubic capacity *125 lbs* ..... Internal diameter *29.8 L* ..... thickness *10 L* ✓

Seamless, lap welded or riveted longitudinal joint *Seamless* Material *S. M. Steel* Range of tensile strength *44-50 kg/cm<sup>2</sup>* Working pressure by Rules Actual *30 atn*

**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 *D 114402 Letter 18.2.36* *114403 18.3.36* *aux. engines: D 57951* Receivers *Letter 24.1.36* 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

The foregoing is a correct description. **Maschinenfabrik Augsburg-Nürnberg A. G.**

*H. P. ...* Manufacturer.

Dates of Survey while building { During progress of work in shops - - } *May: 27, June: 16-17, 27-30 July: 1, 2, 6, 10, 14, 16, 23, 24, 25, 27, 29 August: 1, 3, 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30 September: 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 21, 22, 23, 24, 25, 26, 28, 29, 30 October: 1, 2, 3, 5, 6, 7, 8, 9, 10*  
Total No. of visits *lines 3-9-36*

Dates of Examination of principal parts—Cylinders *2/19/5.9.36* Covers *10/16.9.36* Pistons *12/14/18/16.9.36* Rods *9.9.36* Connecting rods *10.10.36*  
Crank shaft *11.9.36* Flywheel shaft *9.10.36* Thrust shaft ..... 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 *16/18.9.36*  
Crank shaft, Material *S. M. Steel* Identification Mark *LLOYD'S L.S. 142/143.1.9.36* Flywheel shaft, Material *S. M. Steel* Identification Mark *LLOYD'S HR 400 2.3.6.36*  
Thrust shaft, Material ..... Identification Mark ..... 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. ....  
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 *yes* If so, state name of vessel *Deutsche West A. S. of Hamburg yard No. 182 (6 cylinders)*

**General Remarks** (State quality of workmanship, opinions as to class, &c. *This heavy oil engine has been constructed under special survey in accordance with the Soc. Rules and Regulations as well as with the approval plans and instructions thereto. The material used in the construction is good and the workmanship is satisfactory. This main engine has not been tested on the makers test bed. The three auxiliary engines, Nos 491 290/300/310 have also been constructed under special survey in accordance with the Soc. Rules and Regulations as well as with the approval plans and instructions thereto. The material used in the construction of these auxiliary engines is good and the workmanship is satisfactory. These auxiliary engines have been tested on the test bed of the makers under full load, 10% overload and partial loads during 18 hours in the presence of the undersigned and were found to be in safe working conditions during these trials. After the trials the aux. engines were opened out for inspection and all parts were found in order.*)

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

The amount of Entry Fee .. *£ 96.00* When applied for, .....  
*1/5 Special* ..... *£ 1979.00* *14.10.1936*  
*Test bed inspection of Donkey Boiler Fee* ..... *£ 168.00*  
*1 main & 2 aux. engines* .....  
Travelling Expenses (if any) ..... *£ 3200* *13.10.1936*

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

Committee's Minute ..... **TUE 9 FEB 1937** .....  
Assigned *See Stam - J. E. 22176*



© 2021 Lloyd's Register Foundation

Certificate (if required) to be sent to  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)