

Rpt. 4b.  
Com. No. 684875

# REPORT ON OIL ENGINE MACHINERY.

No. 315

Received at London Office

MAR 24 1939

Date of writing Report 16.3.1939 When handed in at Local Office 21.3.1939 Port of D ü s s e l d o r f  
No. in Survey held at C o l o g n e Date, First Survey 15th Oct. 1938 Last Survey 14th March 1939.  
Reg. Book. Number of Visits 16

Single  
on the Twin } Screw vessel  
Triple }  
Quadruple }  
Built at Port Glasgow By whom built Ferguson Bros. Ld. Yard No. 341 When built 486563/70  
Engines made at Cologne By whom made Klöckner-Humboldt-Deutz AG Engine No. / When made 1939  
Donkey Boilers made at By whom made Boiler No. When made  
Brake Horse Power 400 Owners Port belonging to  
Nom. Horse Power as per Rule 94 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
Trade for which vessel is intended

IL ENGINES, &c.—Type of Engines Heavy Oil engine R.V. 8 M 345 2 or 4 stroke cycle 4 Single or double acting single  
Maximum pressure in cylinders 50 kgs/cm<sup>2</sup> Diameter of cylinders 280 mm Length of stroke 450 mm No. of cylinders 8 No. of cranks 8  
Mean Indicated Pressure 6.6 kgs/cm<sup>2</sup>

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 307.5 mm Is there a bearing between each crank yes  
Revolutions per minute 300 Flywheel dia. 1250 mm Weight 1660 kg. Means of ignition sol. inject Kind of fuel used on test bed gas oil

Crank Shaft, { Solid forged dia. of journals as per Rule 190 mm Crank pin dia. 170 mm Crank Webs Mid. length breadth 340 mm Thickness parallel to axis shrunk  
{ Semi built as fitted  
{ All built

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted 190 mm Thrust Shaft, diameter at collars as per Rule as fitted

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted Is the { tube } shaft fitted with a continuous liner { screw }

Bronze Liners, thickness in way of bushes as per Rule as fitted Thickness between bushes as per Rule as fitted Is the after end of the liner made watertight in the

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 directly by hand Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication forced

Thickness of cylinder liners 25 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material cooled 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. one Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from the Main Engines, No. one Diameter 100 mm Stroke 100 mm Can one be overhauled while the other is at work yes

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 Driven Lubricating Oil Pumps, including Spare Pump, No. and size Capacity 80 lts./min. at 1400 rev. per min. 1 tooth wheel pump two stages

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. one No. of stages two Diameters 145/60 mm Stroke 100 mm Driven by main engine

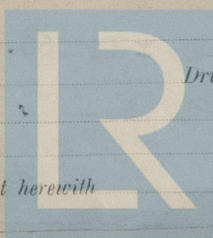
Small Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

What provision is made for first Charging the Air Receivers

Scavenging Air Pumps, No. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule as fitted Position

Have the Auxiliary Engines been constructed under special survey Is a report sent herewith



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**AIR RECEIVERS:**—Have they been made under survey yes ✓ State No. of Report or Certificate attached to the report  
Is each receiver, which can be isolated, fitted with a safety valve as per Rule yes ✓ copy sent to Glasgow Rpt

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

**Injection Air Receivers, No.** \_\_\_\_\_ **Cubic capacity of each** \_\_\_\_\_ **Internal diameter** \_\_\_\_\_ **thickness** \_\_\_\_\_  
**Seamless, lap welded or riveted longitudinal joint** \_\_\_\_\_ **Material** \_\_\_\_\_ **Range of tensile strength** \_\_\_\_\_ **Working pressure** <sup>by Rules</sup> \_\_\_\_\_ <sup>Actual</sup> \_\_\_\_\_  
**Starting Air Receivers, No.** two **Total cubic capacity** 2 x 500 lts **Internal diameter** 450 mm **thickness** 12 mm  
**Seamless, lap welded or riveted longitudinal joint** lap welded **Material** S.M. Steel **Range of tensile strength** 38-44 **Working pressure** <sup>by Rules</sup> 30 <sup>Actual</sup> 30 kgs/cm<sup>2</sup>

**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 212480 1.9.36. Receivers G.O.244 21.7.32. Separate Fuel Tanks

**Donkey Boilers** \_\_\_\_\_ **General Pumping Arrangements** \_\_\_\_\_ **Pumping Arrangements in Machinery Space** \_\_\_\_\_

**Oil Fuel Burning Arrangements** \_\_\_\_\_

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied y e s ✓

State the principal additional spare gear supplied

The foregoing is a correct description,

**Klöckner-Humboldt-Deutz AG**

Manufacturer.

**Dates of Survey while building** { **During progress of work in shops--** 15.10.37. 28.6. 19.10. 27.10. 3.11. 5.11. 20.12.38. 6.1. 26.1.  
**During erection on board vessel--** 27.1. 28.1. 15.2. 2.3. 6.3. 7.3. 14.3.39.  
**Total No. of visits** \_\_\_\_\_

**Dates of Examination of principal parts**—Cylinders 26/1;27/1;14/3. Covers 6/1;27/1;14/3. Pistons 14/3 Rods \_\_\_\_\_ Connecting rods 19/10;3/1  
Crank shaft 28/6; 15/2; 14/3 Flywheel shaft \_\_\_\_\_ Thrust shaft \_\_\_\_\_ Intermediate shafts 2/3; 6/3 Tube shaft 5/11;20/14/3.

Screw shaft \_\_\_\_\_ Propeller \_\_\_\_\_ Stern tube \_\_\_\_\_ Engine sealings \_\_\_\_\_ Engines holding down bolts \_\_\_\_\_

**Completion of fitting sea connections** \_\_\_\_\_ **Completion of pumping arrangements** \_\_\_\_\_ **Engines tried under working conditions** 7/3 on test

**Crank shaft, Material** S.M. Steel **Identification Mark** LLOYD'S 13930 M.B. 28.6.38. **Flywheel shaft, Material** \_\_\_\_\_ **Identification Mark** \_\_\_\_\_

**Thrust shaft, Material** \_\_\_\_\_ **Identification Mark** \_\_\_\_\_ **Intermediate shafts, Material** S.M. Steel **Identification Marks** LLOYD'S 3767 H.B. 6.3.39.

**Tube shaft, Material** \_\_\_\_\_ **Identification Mark** \_\_\_\_\_ **Screw shaft, Material** \_\_\_\_\_ **Identification Mark** \_\_\_\_\_

**Identification Marks on Air Receivers** No. 1522 2547  
LLOYD'S TEST 60 atm. LLOYD'S TEST 60 atm.  
W.P.30 atm. W.P.30 atm.  
L.S.15.10.37. L.S.27.10.38.

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 My. De Noord's Yard No. 559  
(Düsseldorf Report No. 122.)

**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 Society's

Rules and Regulations as well as in accordance with the approved plans and instructions thereto.

The material used in the construction is good and the workmanship satisfactory. The engine has

been tested on the Makers' test bed in the presence of the undersigned during 10 hours consecut-

ively running under full load and 10 % overload and was found to be in safe working condition

during the trials. After the trials all working parts of the engine have been opened out for

inspection and were found in good condition. In my opinion the vessel for which this engine

is intended will be eligible ~~xx~~ for the notation + L.M.C. (with date) when the whole machinery

has been fitted satisfactorily on board and tried under full working condition.

A copy of this report has been forwarded to the Glasgow Office.

The amount of Entry Fee .. £RM 40.-- When applied for, \_\_\_\_\_

Special ... .. £RM 470.-- 21.3. 1939

Donkey Boiler Fee ... £ : : When received, \_\_\_\_\_

Travelling Expenses (if any) £RM 60.-- 5<sup>th</sup> MAY 1939

Düsseldorf

A/c No. 12332

4/3 of the fees are to be credited to Glasgow.

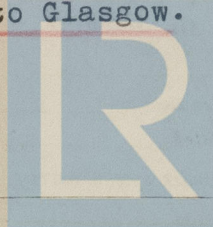
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

TUE 27 JUN 1939

See Sto 36 20771  
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