

REPORT ON OIL ENGINE MACHINERY.

Received at London Office

22 JUL '36

Date of writing Report 15th July 1936 When handed in at Local Office 15th July 1936 Port of Bremen

No. in Survey held at Regensburg Date, First Survey 2nd April 1936 Last Survey 14th July 1936
Reg. Book. Number of Visits 72

on the Single Twin Triple Quadruple Screw vessel Motor tanker "Rigel" Tons ^{Gross} _{Net}

Built at Hamburg By whom built Deutsche Werft A. G. Yard No. 176 When built 1936

Engines made at Regensburg By whom made Maschinenfabrik Augsburg-Nürnberg Engine No. 580140 When made 1936

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

Brake Horse Power 500/560 Owners Port belonging to

Nom. Horse Power as per Rule 161 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Trade for which vessel is intended

IL ENGINES, &c. Type of Engines 9 1/2 50 14 3/8" 19 1/16" 2 or 4 stroke cycle 4 Single or double acting single
Maximum pressure in cylinders 49 atm Diameter of cylinders 265 mm Length of stroke 500 mm No. of cylinders 8 No. of cranks 8
Mean Indicated Pressure 7.1 atm

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 452 mm Is there a bearing between each crank yes

Revolutions per minute 190/215 Flywheel dia. 1500 mm Weight 2350 kg Means of ignition dir. ign. Kind of fuel used Piccolini on test bed

Crank Shaft, dia. of journals 220 mm as per Rule 220 mm as fitted Crank pin dia. 220 mm Crank Webs Mid. length breadth 360 mm Mid. length thickness 115 mm Thickness parallel to axis shrunk Thickness around eyehole

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted 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 screw shaft fitted with a continuous liner

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 Movable Total Developed Surface sq. feet

Method of reversing Engines direct by compr. air Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication forced

Thickness of cylinder liners 27 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes water cooled water cooled or lagged with non-conducting material

Cooling Water Pumps, No. 1, 23.4 cm³/h at 215 r.p.m. Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from the Main Engines, No. 1 Diameter 95 mm Stroke 160 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 (cap wheel) Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1, 3.9 cm³/h at 430 r.p.m.

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

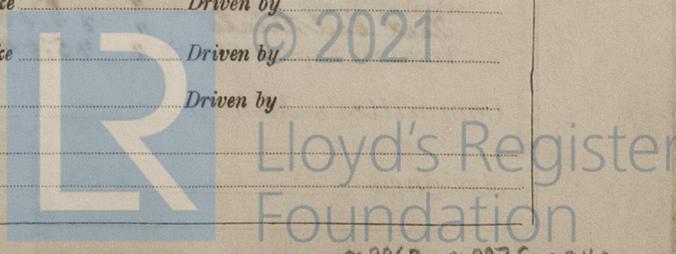
Main Air Compressors, No. No. of stages Diameters Stroke Driven by

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 as fitted No. Position



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. 2..... **Total cubic capacity** 2 x 800 lbs..... **Internal diameter** 5 7/8 in..... **thickness** 1/4 in

Seamless, lap welded or riveted longitudinal joint..... **Material** S.M. Steel..... **Range of tensile strength** 41-47 kg/cm²..... **Working pressure** by Rules Actual 30 aton

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 *yes, plan D 67737* Receivers *yes, plan H 20072* Separate Fuel Tanks.....
(If not, state date of approval) *Letter E 7.12.35* *Letter E 7.4.36*

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. *yes* ✓

State the principal additional spare gear supplied.....

The foregoing is a correct description

Maschinenfabrik Augsburg-Nürnberg A.-G.

H. K. K. K.

J. A. A.

Manufacturer.

Dates of Survey while building
 During progress of work in shops-- April 1936: 2, 3, 6, 7, 8, 9, 11, 16, 17, 18, 20, 21, 27, 28, 29, 30 May: 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 18, 19, 20, 22, 23, 25, 26, 27, 30
 During erection on board vessel-- June: 2, 3, 4, 5, 6, 8, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26, 27, 30 July: 1, 2, 3, 4, 7, 8, 9, 10, 11, 12
 Total No. of visits *times 18/19, 5.36*

Dates of Examination of principal parts—Cylinders *28.5.36* Covers *15.6.36* Pistons *16.6.36* Rods..... Connecting rods *3.6.36*

Crank shaft *13.7.36* Flywheel shaft..... 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.....

Crank shaft, Material *S.M. Steel* Identification Mark *MB 12103* Flywheel shaft, Material..... Identification Mark.....

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 *Campbell & Nicholson yard No. 397*

General Remarks (State quality of workmanship, opinions as to class, &c. *This heavy oil engine and its accessories have been constructed under special survey in accordance with the Soc. Rules and Regulations as well as with the approved plans & instructions thereto.*

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

The engine has been tested on the makers test bed during 15 hours consecutively running under full load, 10% overload and partial loads in the presence of the undersigned and was found to be in safe working condition during these trials. After the trials the engine has been opened out for inspection and was found in order.

In our opinion the vessel for which this engine 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

A Copy of this Report has been sent to the Hamburg Surveyors.

The amount of Entry Fee .. *£ 48.00* ; When applied for,
 1/5 Special *£ 644.00* ; 20.7.1936
 2 air receivers " *84.00*
 Donkey Boiler Fee " *84.00*
 Test bed trials " *84.00*
 Travelling Expenses (if any) *£ 45.00* ; 14.8.1936

Peterson H. A. ...
 Engineer Surveyor to Lloyd's Register of Shipping.

TUE. 29 DEC 1936

Committee's Minute.....

Assigned.....

See Hans J. G. 22126



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