

REPORT ON OIL ENGINE MACHINERY.

No. 1824.
28 SEP 1936

Received at London Office

Date of writing Report 22nd Sept. 1936 When handed in at Local Office 19 Port of BREMEN
No. in Survey held at VEGESACK Date, First Survey 12th Aug 1935 Last Survey 3rd Sept. 1936
Reg. Book. 85438 on the Single Screw vessel TANKER TORNUS Number of Visits 47

Built at VEGESACK By whom built BREMER VULKAN Yard No. 722 When built 1936
Engines made at VEGESACK By whom made BREMER VULKAN Engine No. 381/389 When made 1936
Donkey Boiler made at VEGESACK By whom made BREMER VULKAN Boiler No. 778 When made 1936
Brake Horse Power 3500 Owners SARAWAK OILFIELDS, LD. Port belonging to MIRI

Nom. Horse Power as per Rule 502 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes
Trade for which vessel is intended TANKER TRADE 25 9/16 55 1/8

OIL ENGINES, &c.—Type of Engines BREMER VULKAN-MAN. KVV 65/140 WITH WORKSHOP SUPERCHARGING 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 45 kg/cm² Diameter of cylinders 650 mm Length of stroke 1400 mm No. of cylinders 8 No. of cranks 8
Mean Indicated Pressure 8.5 kg/cm²

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 844 mm Is there a bearing between each crank yes
Revolutions per minute 120 Flywheel dia. 2100 mm Weight 5500 kg Means of ignition diesel principle Kind of fuel used diesel oil

Crank Shaft, dia. of journals as per Rule 445 mm as fitted 460 Crank pin dia. 460 mm Crank Webs Mid. length breadth shrunk Mid. length thickness shrunk Thickness parallel to axis 267/290 mm Thickness around eyehole 205 mm

Flywheel Shaft, diameter as per Rule 445 mm as fitted 460 mm Intermediate Shafts, diameter as per Rule 325 mm as fitted 470 mm Thrust Shaft, diameter at collars as per Rule 342 mm as fitted 460 mm

Tube Shaft, diameter as per Rule 360 mm as fitted 420 mm Screw Shaft, diameter as per Rule 360 mm as fitted 420 mm Is the tube shaft fitted with a continuous liner yes

Bronze Liners, thickness in way of bushes as per Rule 18.5 mm as fitted 23 mm Thickness between bushes as per rule 14 mm as fitted 17 mm 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 junctions made by fusion through the whole thickness of the liner one length
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 fit tightly

If two liners are fitted, is the shaft lapped or protected between the liners yes Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft no If so, state type no Length of Bearing in Stern Bush next to and supporting propeller 1630 mm

Propeller, dia. 4575 mm Pitch 3660 mm No. of blades 4 Material bronze whether Moveable solid Total Developed Surface 6.416 sq. feet

Method of reversing Engines diesel Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication forced

Thickness of cylinder liners 45 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material lagged

Is the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine to funnel
Cooling Water Pumps, No. 2 Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes

Bilge Pumps worked from the Main Engines, No. 2 Diameter rotary Stroke 35 mm Can one be overhauled while the other is at work yes, the valves

Pumps connected to the Main Bilge Line { No. and Size One general service pump 8" x 8" x 10", 75 l/h How driven by steam (2 of 35 l/h driven by main engine)

Is the cooling water led to the bilges no If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements one rotary driven by Main Eng.

Ballast Pumps, No. and size one above general service pump Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size two 8" x 8" x 10", 75 l/h

Are two independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge pumps, No. and size:—In Machinery Spaces 3 of 90 mm dia. In Pump Room 1 of 80 mm

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size one of 180 mm dia., one of 150 mm dia.

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Spaces fitted from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges yes

Are all Sea Connections fitted direct on the skin of the ship fitted on steel casing Are they fitted with Valves or Cocks valves & cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates yes Are the Overboard Discharges above or below the deep water line above

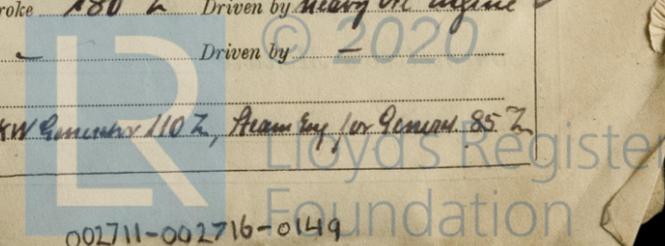
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel yes Are the Blow Off Cocks fitted with a spigot and brass covering plate yes

How are they protected oil cross 2 scupper pipes strong steel pipes, lined with 10 kg/cm² Have they been tested as per Rule yes

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes
Is the Shaft Tunnel watertight no Is it fitted with a watertight door yes worked from no
In a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork no

Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 210/85 mm Stroke 180 mm Driven by Steam Engine
Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 210/85 mm Stroke 180 mm Driven by heavy oil Engine
Scavenging Air Pumps, No. 1 Diameter — Stroke — Driven by —

Auxiliary Engines crank shafts, diameter as per Rule — as fitted Hindley driving Pump of 100 mm, Hind Eng driving 16 kW Generator 110 mm, Steam Eng for General 85 mm



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AIR RECEIVERS:—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 and cleaned *yes* Is a drain fitted at the lowest part of each receiver *yes*

STARTING High-Pressure Air Receivers, No. *2* Cubic capacity of each *100 lbs.* Internal diameter *—* thickness *—*

Seamless, lap welded or riveted longitudinal joint *seamless* Material *P.M. Steel* Range of tensile strength *Tested by H.B. 24.1.36* Working pressure *by Rules* Actual *30 kg/cm*

Starting Air Receivers, No. *2* Total cubic capacity *23 m³* Internal diameter *1550/1500* thickness *21 mm*

Seamless, lap welded or riveted longitudinal joint *seamless* Material *P.M. Steel* Range of tensile strength *47-53 kg/cm²* Working pressure *by Rules* Actual *25 kg/cm*

IS A DONKEY BOILER FITTED? *yes* If so, is a report now forwarded? *yes*

Is the donkey boiler intended to be used for domestic purposes only *no*

PLANS. Are approved plans forwarded herewith for Shafting *yes* 10.11.34 Receivers 19.6.35 Separate Tanks 16.1.36

Donkey Boilers 19.6.35 General Pumping Arrangements 8.11.35 Oil Fuel Burning Arrangements 23.11.35

SPARE GEAR.

Has the spare gear required by the Rules been supplied *yes*

State the principal additional spare gear supplied *2 cylinder covers, 2 pistons, 1 connecting rod, 1 crankhead, 1 guide shoe, 4 cylinder liners, 7 exhaust valves, 1 inlet valve, 1 starting valve, 2 fuel pumps compl., 4 fuel valves, 2 telescopic cooling pipes.*

The foregoing is a correct description, Bremer Vulkan

Schiffbau und Maschinenfabrik Manufacturer.

Dates of Survey while building: During progress of work in shops - 1935 Aug 16, Sept 10, Oct 1, 11, 18, 22, 25, 30, Nov 11, Dec 11; 1936 Feb 24, March 14, 17, 21, April 4, 9, 16, 21, 27, May 11, 18, 25, 29, June 9, 12, 18, 22, 25, 29, July 2, 8, 13, 21, Aug 13, 23, 28, 30, Aug 3, 6, 11, 13, 17, 19, 21, 26, 28, Sept 1, 3. Total No. of visits 47

Dates of Examination of principal parts—Cylinders 25.5.36 22.6.36 Covers 9.6.36 Pistons 21.7.36 Rods 18.6.36 Connecting rods 29.6.36

Crank shaft 21.4.36 Flywheel shaft 9.4.36 Thrust shaft 9.4.36 Intermediate shafts 9.4.36 Tube shaft 29.5.36

Screw shaft 2.7.36 Propeller 13.7.36 Stern tube 12.6.36 Engine seatings 13.7.36 Engines holding down bolts 30.7.36

Completion of fitting sea connections 13.7.36 Completion of pumping arrangements 1.9.36 Engines tried under working conditions 3.9.36

Crank shaft, Material P.M. Steel Identification Mark Lloyd's J.B. 4935/6 Flywheel shaft, Material P.M. Steel Identification Mark A.C. 9.4.36

Thrust shaft, Material P.M. Steel Identification Mark Lloyd's H.B. 6.30.11.35 Intermediate shafts, Material P.M. Steel Identification Marks A.C. 9.4.36

Tube shaft, Material Identification Mark Screw shaft, Material P.M. Steel Identification Mark Lloyd's H.B. 1.22.11.35

Is the flash point of the oil to be used over 150° F. *yes* SPARE A.C. 2.7.36

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *yes*

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *tanker* 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 *no ice strengthening*

Is this machinery duplicate of a previous case *yes* If so, state name of vessel *ALEXIA, GENOTA, GADILA, TARON*

General Remarks (State quality of workmanship, opinions as to class, &c. *This Machinery has been built under*

Special Survey in accordance with the appr. plans, the Secretary's letters, and with the requirements of the Rules. The materials used in the construction are made

at works recognized by the Committee and tested by the Port Surveyor.

Materials & workmanship are of good quality. During a 8 hours trial

trip all the machinery has been tried under full working & manoeuvring

condition and found satisfactory in all respects.

This machinery is eligible in my opinion to be classed in the Port

*Reg. Book with record of: * LMC 9.36, OIL ENGINE, TAIL SHAFT CL.*

Table with columns for Fee Type, Amount, and Date. Includes Entry Fee (120), Special Fee (2002), Donkey Boiler Fee (334), Travelling Expenses (168/188), and dates 9.9.1936 and 5.10.1936.

A. Carstensen Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 2 OCT 1936 Assigned + Lmc 9.36 D.B. Ball. C.L. oil engine.

