

REPORT ON OIL ENGINE MACHINERY.

No. 2003.

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Date of writing Report 23rd March 1938 When handed in at Local Office 23.3.1938 Port of BREMEN
No. in Survey held at VEGESACK Date, First Survey 14th Aug. 1937 Last Survey 5th March 1938
Reg. Book. Number of Visits 61

on the Single Twin Triple Quadruple Screw vessel TANKER INVERLEE Tons { Gross 9158
Net 5496
Built at VEGESACK By whom built BREMER VULKAN Yard No. 748 When built 1938
Engines made at VEGESACK By whom made BREMER VULKAN Engine No. 464 When made 1938
Donkey Boilers made at VEGESACK By whom made BREMER VULKAN Boiler No. 819 When made 1938
Brake Horse Power 4100 Owners THE INVER TANKERS LTD. Port belonging to DUBLIN
Nom. Horse Power as per Rule 1001 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes
Trade for which vessel is intended OPEN SEA SERVICE

OIL ENGINES, &c.—Type of Engines BREMER VULKAN-MAN. K8ZU 68/120 2 or 4 stroke cycle 2 Single or double acting SINGLE

Maximum pressure in cylinders 45 kg/cm² Diameter of cylinders 680 mm Length of stroke 1200 mm No. of cylinders 8 No. of cranks 8
Mean Indicated Pressure 5.6

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 925 mm Is there a bearing between each crank yes

Revolutions per minute 115 Flywheel dia. 2100 mm Weight 3400 kg. Means of ignition Dielectric Kind of fuel used Trine oil

Crank Shaft, { Solid forged as per Rule 400 mm Crank pin dia. 460 mm Crank Webs Mid. length breadth shrunk Thickness parallel to axis 185 mm
Semi built as fitted 460 mm Mid. length thickness shrunk Thickness around eyehole 105 mm

Flywheel Shaft, diameter as per Rule 336 mm Thrust Shaft, diameter at collars as per Rule 353 mm
as fitted 400 mm as fitted 355 mm as fitted 390 mm

Tube Shaft, diameter as per Rule 369 mm Is the { tube } shaft fitted with a continuous liner { yes
as fitted 388 mm as fitted 388 mm as fitted 388 mm

Bronze Liners, thickness in way of bushes as per Rule 18 mm Thickness between bushes as per Rule 14 mm Is the after end of the liner made watertight in the
as fitted 22 mm as fitted 16 mm

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 no

If two liners are fitted, is the shaft lapped or protected between the liners no 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 1685 mm

Propeller, dia. 4800 mm Pitch 3400 mm No. of blades 4 Material brass whether Movable solid Total Developed Surface 75.65 sq. feet

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

forced Thickness of cylinder liners 42 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 to funnel

Cooling Water Pumps, No. 1 for sea water 150 m³/h 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. none Diameter — Stroke — Can one be overhauled while the other is at work no

Pumps connected to the Main Bilge Line { No. and Size one vert. diaph. 160x195 75 m³/h, one vert. diaph. 160x305 450 m³/h
How driven steam steam

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 no

Ballast Pumps, No. and size one vert. diaph. 160x305 250 m³/h Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size one vert. diaph. 160x260 40 m³/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 4 of 90 mm (1060 mm in each of 90 mm) In Pump Room 2 of 80 mm

In Holds, &c. one vert. diaph. 160x195 75 m³/h, one vert. diaph. 160x305 450 m³/h

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size one vert. diaph. 160x195 75 m³/h, one vert. diaph. 160x305 450 m³/h

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes 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 yes

Are all Sea Connections fitted direct on the skin of the ship fitted on steel chocks 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

What pipes pass through the bunkers none How are they protected no

What pipes pass through the deep tanks none Have they been tested as per Rule no

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes

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 yes Is the Shaft Tunnel watertight no Is it fitted with a watertight door no worked from no

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork no

Main Air Compressors, No. none No. of stages — Diameters — Stroke — Driven by —

Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 250/210 mm Stroke 220 mm Driven by Steam Engine

Small Auxiliary Air Compressors, No. none No. of stages — Diameters — Stroke — Driven by —

What provision is made for first Charging the Air Receivers Steam driven compressors

Scavenging Air Pumps, No. 1 tandem pump Diameter 1380 mm Stroke 850 mm Driven by Steam Engine

Auxiliary Engines crank shafts, diameter as per Rule 90 mm Position Port side

Have the Auxiliary Engines been constructed under special survey yes Is a report sent herewith yes Aug 1937 Rpt.

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AIR RECEIVERS:—Have they been made under survey *yes* Are reports or certificates now forwarded *made at Bremer Vulkan*
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*
Injection Air Receivers, No. *none* Cubic capacity of each *—* Internal diameter *—* thickness *—*
Seamless, lap welded or riveted longitudinal joint *—* Material *—* Range of tensile strength *—* Working pressure *by Rules*
Starting Air Receivers, No. *2* Total cubic capacity *20 m³* Internal diameter *1900 mm* thickness *25 mm*
Seamless, lap welded or riveted longitudinal joint *riveted* Material *P.M. Steel* Range of tensile strength *47-53 kg/cm²* Working pressure *Actual 25.5 kg/cm²*
25 kg/cm²

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 *17/6.36* *17/12.36* Receivers *17/12.36* Separate Fuel Tanks *15.10.37*
(If not, state date of approval) *✓*
Donkey Boilers *4.12.36* *Machinery* General Pumping Arrangements *30.9.37* Pumping Arrangements in Machinery Space *30.9.37*
Oil Fuel Burning Arrangements *30/9.37* *The plans have been retained for dealing with sister vessels*
SPARE GEAR.

Has the spare gear required by the Rules been supplied *yes*
State the principal additional spare gear supplied *4 fuel injection valves; 1 fuel pump complete.*
1 piston with rod for scavenging pump.

The foregoing is a correct description,

Bremer Vulkan

Schiffbau und Maschinenfabrik

Manufacturer.

1937
Dates of Survey while building { During progress of work in shops-- *Aug. 12.17.20.27.31. Sept. 6.8.20.28.30. Oct. 5.6.8.12.15.19.21.26.28.30. Nov. 2.4.9.11.16.19.22.24.29.*
During erection on board vessel-- *Dec. 2.6.9.13.16.20.22.27.29. 1937 Jan. 3.7.11.14.17.20.24.*
Jan. 27. Feb. 1.4.8.10.12.15.16.17.21.23.24.28. March 3.4.5.
Total No. of visits *61*
Dates of Examination of principal parts—Cylinders *16.19.11.37* Covers *16.12.37* Pistons *16.12.37* Rods *16.12.37* Connecting rods *29.11.37*
Crank shaft *30.9.37* Flywheel shaft *6.9.37* Thrust shaft *6.9.37* Intermediate shafts *20.12.37* Tube shaft *—*
Screw shaft *20.12.37* Propeller *14.1.38* Stern tube *26.10.37* Engine seatings *1.2.38* Engines holding down bolts *12.2.15.2.38*
Completion of fitting sea connections *27.1.38* Completion of pumping arrangements *3.3.38* Engines tried under working conditions *5.3.38*
Crank shaft, Material *P.M. Steel* Identification Mark *2.8.5427.31.5.37* Flywheel shaft, Material *—* Identification Mark *—*
Thrust shaft, Material *P.M. Steel* Identification Mark *2.8.5440/10.6.37* Intermediate shafts, Material *P.M. Steel* Identification Marks *AC. 20.12.37*
Tube shaft, Material *—* Identification Mark *—* Screw shaft, Material *P.M. Steel* Identification Mark *AC. 20.12.37*
CCORD'S H.K. 106.8.5.37
CCORD'S H.S. 620/21.23.6.37
CCORD'S H.S. 357.28.4.37
CCORD'S H.B. 2356.23.4.37 (S)
AC. 20.12.37

Is the flash point of the oil to be used over 150° F. *yes* ✓
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 *oil 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 *no* If so, state name of vessel *—*

General Remarks (State quality of workmanship, opinions as to class, &c. *This Machinery has been built under Special Survey in accordance with the approved plans, the Bureau's letters, and in conformity with the requirements of the Rules. The materials used in the construction are made at works recognised by the Committee and tested as required by the Rules. Materials and workmanship are of good quality. During a 10 hour trial trip all the machinery has been tested under full working and manoeuvring condition and found satisfactory in all respects.*

*This Machinery is eligible in my opinion to be classed in the 1st. Reg. Book with records of * LMC. 3.38. OIL ENGINE. TAIL SHAFT (L.*

The amount of Entry Fee .. RM *120.00* When applied for, *19.3.1938*
Special £ *2500.50*
2 STARTING AIR RECEIVERS .. £ *168.00* When received, *4.4.1938*
Donkey Boiler Fee £ *305.50*
Travelling Expenses (if any) £ *—*

Committee's Minute

Assigned

TUE 5 APR 1938

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



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Foundation