

# REPORT ON OIL ENGINE MACHINERY.

No. 1040.

Received at London Office 16 FEB 1928

pt. 4b

Port of BRAMIN  
Date, First Survey 24th Nov. 1925 Last Survey 1st Febr. 1928  
Number of Visits 75

Survey held at Hegwack and Bramin  
When handed in at Local Office 5th Febr. 1928

on the Twin Screw vessel "TWIN SC" C.O. STILLMAN Tons 16486 Gross 9649 Net  
By whom built Kramer Vulkan Yard No. 646 When built 1925-28  
By whom made Kramer Vulkan Engine No. 66-71 When made 1925-28  
By whom made Friedr. Schupp, Germania Works Boiler No. 1926 When made 1926  
Owners International Petroleum Co. Ltd. Port belonging to Toronto

Indicated Horse Power 4300  
Net Horse Power as per Rule 1595  
Is Refrigerating Machinery fitted for cargo purposes NO Is Electric Light fitted YES  
Trade for which vessel is intended Ocean going carrying Petroleum in bulk

ENGINES, &c. Type of Engines Pil Engine, Type: Kramer Vulkan - M.F.S. 2 or 4 stroke cycle 2 Single or double acting single  
Minimum pressure in cylinders 35 kg/cm<sup>2</sup> Diameter of cylinders 700 mm Length of stroke 1200 mm No. of cylinders 2 x 6 = 12 No. of cranks 2 x 6 = 12  
Distance of bearings, adjacent to the Crank, measured from inner edge to inner edge 279/16" 1060 mm. Is there a bearing between each crank YES  
Revolutions per minute 90 Flywheel dia. 2500 mm Weight 9820 kg. Means of ignition air-injection Kind of fuel used gas-oil  
Crank Shaft, dia. of journals as per Rule 452 mm as fitted 460 mm Crank pin dia. 460 mm Crank Webs Mid. length breadth 275 mm Thickness parallel to axis 295 mm  
Intermediate Shafts, diameter as per Rule 345 mm as fitted 366 mm Thrust Shaft, diameter at collars as per Rule 352 mm as fitted 455 mm  
Screw Shaft, diameter as per Rule 381 mm as fitted 381 mm Is the tube screw shaft fitted with a continuous liner YES

Cylinder Liners, thickness in way of bushes as per Rule 20 mm. as fitted 22 mm. Thickness between bushes as per Rule 1.5 mm. as fitted 1.5 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 YES  
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 YES  
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  
Length of Bearing in Stern Bush next to and supporting propeller 1520 mm  
Propeller, dia. 5170 mm Pitch 4350 mm No. of blades 3 Material bronze whether Moveable YES Total Developed Surface 7.06 sq. ft.

Method of reversing Engines direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched YES Means of lubrication oil  
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 YES  
Exhaust pipes water cooled YES If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine YES  
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 250 mm Stroke 150 mm Can one be overhauled while the other is at work YES  
Pumps connected to the Main Bilge Line No. and Size 2 fly wheel 86 m<sup>3</sup> per hour each, 1 fly wheel 46 m<sup>3</sup> per hour  
How driven by electric motor  
Ballast Pumps, No. and size 1 steam driven 250 x 80 x 450 mm Lubricating Oil Pumps, including Spare Pump, No. and size 2-25 m<sup>3</sup> and 1-40 m<sup>3</sup> per hour  
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 6 of 90 mm. dia. 4 (with) of 90 x 100 mm. dia.  
in each hold: 1 of 260 mm. dia. x 1 of 100 mm. dia. in each main hold and 1 of 150 mm. dia. 1 in after peak 90 mm. dia. 1 in fore peak 140 mm. dia.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2-150 mm. dia. each  
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 they fitted with Valves or Cocks both  
Are all Sea Connections fitted direct on the skin of the ship YES Are the Overboard Discharges above or below the deep water line above  
Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates YES Are the Blow Off Cocks fitted with a spigot and brass covering plate YES  
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel YES How are they protected YES  
That pipes pass through the bunkers YES Have they been tested as per Rule YES  
That pipes pass through the deep tanks YES

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 YES Is it fitted with a watertight door YES worked from YES  
If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork YES  
Main Air Compressors, No. 2 No. of stages three Diameters 250/750/160 mm. Stroke 650 mm. Driven by main engine  
Auxiliary Air Compressors, No. 2 No. of stages three Diameters 200/340/80 mm. Stroke 250 mm. Driven by aux. diesel engine  
Small Auxiliary Air Compressors, No. 1 No. of stages two Diameters 120/45 mm. Stroke 60 mm. Driven by elec. motor  
Scavenging Air Pumps, No. 2 x 2 double acting Diameter 1050 mm. Stroke 1800 mm. Driven by main engine  
Auxiliary Engines crank shafts, diameter as per Rule 187 mm. as fitted 200 mm.

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule YES  
What means are provided for cleaning their inner surfaces manhole and flange  
Can the internal surfaces of the receivers be examined YES  
Is there a drain arrangement fitted at the lowest part of each receiver YES  
High Pressure Air Receivers, No. 2 (3 used) Cubic capacity of each 200 (20) liter Internal diameter 417 (152) mm thickness 18 (6.5) mm  
Material 1.1. steel Range of tensile strength 55-61.38 p Working pressure by Rules 106 (87) kg/cm<sup>2</sup>  
Seamless, lap welded or riveted longitudinal joint YES  
Starting Air Receivers, No. 6 Total cubic capacity 16330 m<sup>3</sup> Internal diameter 1000 mm. thickness 35 mm.  
Material 1.1. steel Range of tensile strength 45-53 kg. Working pressure by Rules 6.5 kg/cm<sup>2</sup>  
Seamless, lap welded or riveted longitudinal joint YES

Removed 4 x 8 + 1 hole eye + fitted  
Clean dim fitted 870  
Near dim fitted 870

Lloyds Register Foundation

IS A DONKEY BOILER FITTED? *Yes* 2 WT. DB. If so, is a report now forwarded? *Yes*  
 PLANS. Are approved plans forwarded herewith for Shafting *16/10/26, 5/11/26, 18/2/26* Receivers *3/1/3, 13/4, 11/6, 19/7/36* Separate Tanks *14/6/27*  
 Donkey Boilers *26/1/26, 9/5/27* General Pumping Arrangements *20/5/27* Oil Fuel Burning Arrangements *2/8/27, 20/5/27*  
 SPARE GEAR *As per Rules.*

The foregoing is a correct description,

**BREMER VULKAN**  
Schiffbau und Maschinenbau

Manufacturer.

*Meyer & Partner*

Dates of Survey while building  
 During progress of work in shops -- *1926: 24/11, 15/12, 1926: Jan. 7, 9, 28, Feb. 10, 27, March 24, 25, April 20, May 1, 18, June 25, 28, July 1, 7, 13, 21, 28, 29, 30, 31, Aug. 14, 19, 24, 29, Oct. 13, 26, Nov. 23, 1927: Feb. 14, May 17, 21, Aug 13, Sept. 10, 14, 15, 16, 19, 21, 22, 24, 26, 27, 28, Oct. 3, 4, 5, 9, 10, 11, 13, 14, 18, 19, 20, 28, Nov. 4, 5, 21.*  
 During erection on board vessel -- *1927: Dec 13, 15, 1928: Jan. 6, 10, 12, 13, 16, 17, 19, 20, 21, 23, 24, 26, 27, 28, 30 Feb. 1.*  
 Total No. of visits *76*

Dates of Examination of principal parts—Cylinders *1926: 7/1, 24/1, 1/5, 25/6, 1926: 24/11, 1926: 7/1, 25/6, 1926: 7/1, 25/6* Covers *1926: 24/11, 1926: 7/1, 25/6* Pistons *13/7* Rods *1/5/26* Connecting rods *10/5/26*

Crank shaft *20/4/26* Flywheel shaft Thrust shaft *5/8/26* Intermediate shafts *5/8/26* Tube shaft  
 Screw shaft *5/8/26* Propeller *10/9 & 5/10/27* Stern tube *10/9 & 5/10/27* Engine seatings *5/10, 13/2, 27* Engines holding down bolts *13/12/27*

Completion of fitting sea connections *21/11/27* Completion of pumping arrangements *21/11/27* Engines tried under working conditions *1/2/28*

Crank shafts Material *J. M. Steel* Identification Mark *17.8.6.4.26* Flywheel shaft, Material Identification Mark *17.8.6.4.26*  
 Thrust shaft, Material *J. M. Steel* Identification Mark *26.76. 27.4. 26* Intermediate shafts, Material *J. M. Steel* Identification Marks *17.8.6.4.26*  
 Tube shaft, Material Identification Mark Screw shafts, Material *J. M. Steel* Identification Marks *17.8.6.4.26*

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 *Yes* If so, have the requirements of the Rules been complied with *Yes*

Is this machinery duplicate of a previous case *No* If so, state name of vessel *Yes*

General Remarks (State quality of workmanship, opinions as to class, &c.)

*Three Diesel Engines and their accessories have been constructed under Special Survey in accordance with the approved plans and instructions and in conformity with the Rules. The materials used in the construction and the workmanship are good. The main engine and the auxiliaries have been tried under working conditions and were found to work well.*

*In my opinion these Diesel Engines and their accessories are eligible to be classed in the Register Book with the notation of + L.M.C. 2.28, C.L., Oil Engines.*

The amount of Entry Fee ... £ *6.00* When applied for, ... £ *139.17/6* 14/2 1928  
 Special Air Pollution Fee ... £ *17.12*  
 Travelling Expenses (if any) ... £ *24.8* When received, ... £ *5.3.28*

*G. H. C. F. & Mr. W. Meyer*  
 Engineer Surveyors to Lloyd's Register of Shipping

Committee's Minute *TUES. 6 MAR 1928*  
 Assigned *+ L.M.C. 2.28 C.L. Oil Engines 2 wt. DB 250 lbs*



No. in Reg. Bk. *40275*  
 Master  
 Engines  
 Boilers  
 Register

WATTS  
 (Letter of Boiler)  
 No. of Boilers  
 Is forced  
 Main axis  
 each boiler  
 Are they  
 Smallest  
 Steam

Range  
 Cir. sea  
 Lap of  
 Diameter  
 If Dr  
 (if fitted  
 by rule  
 Size of  
 Material  
 or flange  
 long. s  
 Percen  
 Percen  
 Radiu  
 Mater  
 Dia.

Thick  
 Perce  
 Descri  
 by Ru  
 SUPE  
 Date  
 Diam  
 Is a  
 Spa

De  
 of S  
 wh  
 buil  
 GE  
 No  
 The  
 wa  
 H

Co  
 AS

Co  
 AS

Co  
 AS

Co  
 AS