

REPORT ON OIL ENGINE MACHINERY.

No. 2083.
DEC 31 1938

Received at London Office

Date of writing Report <u>23.12.38</u>		When handed in at Local Office <u>27.12.1938</u>		Port of <u>Bremen</u>	
No. in Survey held at <u>Pyssburg</u>		Date, First Survey <u>21st Jan 1938</u>		Last Survey <u>22 Dec. 1938</u>	
Reg. Book.				Number of Visits <u>124</u>	
✓ on the	Single Twin Triple Quadruple	Screw vessel	✓	<u>Germania</u>	Tons { Gross ✓ Net ✓
Built at	<u>Hamburg</u>	By whom built	<u>Messrs. Deutsche Werft</u>	Yard No. <u>216</u>	When built <u>1874/30/440</u>
Engines made at	<u>Pyssburg</u>	By whom made	<u>Messrs. M. F. U.</u>	Engine No.	(When made <u>1938</u>)
Donkey Boilers made at	✓	By whom made	-	Boiler No.	When made -
Brake Horse Power	<u>2 x 2550</u>	Owners	<u>Texas Oil Comp.</u>	Port belonging to	✓
Nom. Horse Power as per Rule	<u>2 x 585</u>	Is Refrigerating Machinery fitted for cargo purposes	✓	Is Electric Light fitted	✓
Trade for which vessel is intended		✓ <u>20 1/2</u> <u>35-76"</u>			

—Type of Engine

OIL ENGINES, &c.—Type of Engines 2 x 8 2 1/2 52/80 2 or 4 stroke cycle 2 Single or double acting single

Maximum pressure in cylinders 45 kg/cm² Diameter of cylinders 520 mm Length of stroke 900 mm No. of cylinders 2 x 8 No. of cranks 2 x 8

Mean Indicated Pressure 5.5 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 680 mm Is there a bearing between each crank yes

Revolutions per minute 166 Flywheel dia. 1932 mm Weight 980 kg Means of ignition die ign. Kind of fuel used Sas oil on test bed

Crank Shaft, { Solid forged as per Rule ✓
Semi built dia. of journals as fitted 350 mm ✓
All built Crank pin dia. 350 mm Crank Webs Mid. length breadth 520 mm shrunk Thickness parallel to axis ✓
Mid. length thickness 160 mm 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 Moveable ✓ Total Developed Surface ✓ sq. feet

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

Cooling Water Pumps, No. ✓ Is the sea suction provided with an efficient strainer which can be cleared within the vessel ✓

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

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 ✓ **Power Driven Lubricating Oil Pumps,** including Spare Pump, No. and size one each engine 90 m³/h at n = 445

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 ✓

What provision is made for first Charging the Air Receivers ✓

Scavenging Air Pumps, No. one each engine, of rotary type Diameter n = 707 **auxiliary** Stroke 434 m³/h Driven by main engine

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

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

AIR RECEIVERS:—Have they been made under survey

State No. of Report or Certificate

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

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 by Rules

Starting Air Receivers, No.

Total cubic capacity

Internal diameter

thickness

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure by Rules

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 *17th March 1932*

Receivers

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 *yes*

State the principal additional spare gear supplied *2 pistons, 2 cyl. covers, 2 upper + 2 lower cylinder liners, and 6 starting + 6 safety valves.*

The foregoing is a correct description,

Maschinenfabrik Augsburg-Nürnberg A.-G.

Manufacturer.

Dates of Survey while building
During progress of work in shops - *1932: Jan: 24, 26, 28. Febr. 1. March 30, 31. April 6, 9, 11, 28, 30. May 2, 5, 17, 31. June 2, 9, 10, 11, 14, 29.*
During erection on board vessel - *July: 4, 9. August 2, 5, 8, 9, 10, 15, 16, 19, 20, 22, 23, 24, 25, 26, 27, 31. Sept. 1, 2, 3, 5, 6, 8, 9, 10, 12, 13, 14, 16, 17, 19, 20, 22, 23, 24, 26, 27, 28, 29, 30. Oct. 1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29. Nov. 3, 4, 5, 7, 8, 9, 11, 12, 14, 15, 17, 18, 19, 21, 22, 23, 24, 25, 26, 28, 29. Dec. 1, 3, 5, 6, 7, 8, 10, 12, 13, 14, 15, 16, 20, 22.*
Total No. of visits *124.*

Dates of Examination of principal parts—Cylinders *Oct. 12, 15/32* Flywheel shaft *Sept. 6, 14/32* Thrust shaft *Sept. 24/32* Pistons *26.8.38* Rods *12.9.38* Connecting rods *Various dates*
Crank shaft *22.8.38* Flywheel shaft *Sept. 6, 14/32* Thrust shaft *Sept. 24/32* Intermediate shafts *12.9.38* Tube shaft *Various dates*
Screw shaft *Various dates* Propeller *Various dates* Stern tube *Various dates* Engine seatings *Various dates* Engines holding down bolts *Various dates*
Completion of fitting sea connections *Various dates* Completion of pumping arrangements *Various dates* Engines tried under working conditions *Various dates*
Crank shaft, Material *S.M. Spec?* Identification Mark *44045 N° 011 H.S. 15.7.38* Flywheel shaft, Material *Various dates* Identification Mark *Various dates*
Thrust shaft, Material *Various dates* Identification Mark *44045 N° 13858 M.B. 24.5.38* Intermediate shafts, Material *Various dates* Identification Marks *Various dates*
Tube shaft, Material *Various dates* Identification Mark *Various dates* Screw shaft, Material *Various dates* Identification Mark *Various dates*
Identification Marks on Air Receivers *Various dates*

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

If so, state name of vessel

General Remarks

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

These heavy oil main engines have been constantly under special survey in accordance with the Society's Rules and Regulations, as well as with the approved plans of the Secretary's letter and instructions thereto. The material used in the construction is good and the workmanship satisfactory. Both engines have been tested on the maker's test bed during 24 hours running under full load and 10% overload and also under partial loads in the presence of the undersigned and found working satisfactorily during these trials. After the trials the engines have been opened up for inspection and an inspection the engine parts were found to be in order.

In our opinion the vessel for which these two engines are intended will be eligible for the notation +L.M.C. (with date) when the whole machinery has been fitted satisfactorily on board and tried under full working conditions.

The amount of Entry Fee *4/5 Rem. 96.00*

Special *4/5 2068.00*

2 x Test bed fee *168.00*

Donkey Boiler Fee *68.00*

Travelling Expenses (if any) *68.00*

When applied for,

29.12.1932.

When received,

3.2.1939.

McMinnion, W. Petersen.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 24 FEB 1939

Assigned

See F.E. machy rpt



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