Rpt. 4b.

Rot. Rpt. No. 27832 c London

REPORT ON OIL ENGINE MACHINERY.

No. 294

Rom. No. 684740

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Date of writing Report 1.12. 1938 When handed in at Local Office 7.12. 1938 Port of Düsseldorf

No. in Survey held at Cologne Date, First Survey 7.6.1938. Last Survey 30.11. 1938.
Reg. Book. Number of Visits 19

on the Single ~~Twin~~ ~~Triple~~ ~~Quadruple~~ Screw vessel for M.V. "Citrine" Tons Gross / Net

Built at Hardinxveld By whom built "De Merwede" v/h van Vliet & Co., N.V. Scheepsbouwwerf Yard No. 386 When built

Engines made at Cologne By whom made Humboldt-Deutzmotoren A.G. Engine No. 503647/52 When made 1938

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

Brake Horse Power 825 Owners Port belonging to

Nom. Horse Power as per Rule 144 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Trade for which vessel is intended

OIL ENGINES, &c.—Type of Engines Heavy Oil engine RV 6 M 266 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 50 kgs/cm² Diameter of cylinders 15 3/4" 400 mm Length of stroke 26" 660 mm No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure 6.6 kgs/cm²

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 456.5 mm Is there a bearing between each crank yes

Revolutions per minute 273 Flywheel dia. 1380 mm Weight 5560 kgs Means of ignition sol.inject. Kind of fuel used on test bed gas oil

Crank Shaft, Solid forged / Semi built / All built dia. of journals as per Rule / as fitted 260 mm Crank pin dia. 240 mm Crank Webs Mid. length breadth 435 mm / Mid. length thickness 110 mm shrunk Thickness parallel to axis / Thickness around eyehole

Flywheel Shaft, diameter as per Rule / as fitted Intermediate Shafts, diameter as per Rule / as fitted 200 mm 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 directly by hand Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication forced Thickness of cylinder liners 34 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes ~~XXXXXXX~~ water cooled or lagged with non-conducting material water cooled 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. one Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from the Main Engines, No. one Diameter 200 mm Stroke 120 mm Can ~~X~~ be overhauled while ~~XXXXX~~ 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 ~~Power~~ Driven Lubricating Oil Pumps, ~~including Spare Pump~~, No. and size 1 tooth wheel pump capacity 115 lts./min. at 770 rev.per min. (2 stages)

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. one No. of stages two Diameters 180/65 mm Stroke 120 mm Driven by main engine

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. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule / as fitted No. Position

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

002038-002050-0059

AIR RECEIVERS:—*Have they been made under survey* yes *State No. of Report or Certificate* attached to the copy Rpt. this report being fo to the Rotterdam Off Comm

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 yes *Is a drain fitted at the lowest part of each receiver* yes

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* *Actual*

Starting Air Receivers, *No.* four *Total cubic capacity* 4 x 500 lts. *Internal diameter* 450 mm *thickness* 12 mm

Seamless, lap welded or riveted longitudinal joint lap welded *Material* S.M.Steel *Range of tensile strength* 38-44kg/mm^2 *Working pressure* *by Rules* 30 *Actual* 30 kg/cm^2

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* 219393 22.12.36. *Receivers* G.O.S. 244/ 20.7.32. *Separate Fuel Tanks*
(If not, state date of approval)

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,

Humboldt-Deutzmotoren Aktiengesellschaft ppa.

Manufacturer.

Dates of Survey while building — *During progress of work in shops*: 7.6., 19.7., 22.7., 29.7., 30.9., 1.10., 10.10., 15.10., 17.10., 31.10., 3.11., 9.11., 12.11., 21.11., 23.11., 25.11., 28.11., 29.11., 30.11. 1938.

During erection on board vessel:

Total No. of visits

Dates of Examination of principal parts—*Cylinders* Liners 1/10,15/10,25/11 *Covers* 30/9,15/10 1/10,31/10 25/11 *Pistons* 25.11. *Rods* *Connecting rods* 19/7,22/ 25/11

Crank shaft 10/10,3/11, 25/11 *Flywheel shaft* *Thrust shaft* *Intermediate shafts* 29/7,28/11. *Tube shaft*

Screw shaft *Propeller* *Stern tube* *Engine seatings* *Engines holding down bolts*

Completion of fitting sea connections *Completion of running arrangements* *Engines tried under working conditions* 21/11 & 23/ on test bed

Crank shaft, Material S.M.Steel *Identification Mark* LLOYD'S 13602 J.L. 10.10.38. *Flywheel shaft, Material* *Identification Mark*

Thrust shaft, Material *Identification Mark* *Intermediate shafts, Material* S.M.Steel *Identification Marks* LLOYD'S 14064 M.B. 29.7.38.

Tube shaft, Material *Identification Mark* *Screw shaft, Material* *Identification Mark*

Identification Marks on Air Receivers No. 2310 2311 2312 2313

LLOYD'S TEST
60 atm.
W.P. 30 atm.
L.S. 7. 6. 38.

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* J.Koster Hzn., Yard No. 157 (Düsseldorf Report No. 177)

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

This heavy oil engine has been constructed under special survey in accordance with the Society' Rules and Regulations as well as in accordance with the approved plan and instructions thereto. The material used in the construction is good and the workmanship satisfactory. The engine has been tested on the Makers' test bed in the presence of the undersigned during 10 hours consecut vely running under full load and 10 % overload and was found to be in safe working condition during these trials. After the trials all working parts of the engine have been opened out for inspection and were found in good condition. In my opinion the vessel for which this engine is 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 condition.

A copy of this report has been forwarded to the Rotterdam Office.

The amount of Entry Fee ..	£ RM : 60.— :	When applied for,	Düsseldorf 4/0 Nr 12006
Special	£ RM : 720.— :	8.12. 1938	
Donkey Boiler Fee ...	£ : :	When received,	
Travelling Expenses (if any)	£ RM : 70.— :	Hon 24/1 1939 [6d]	1/3 of fee credited to Rotterdam 4/0

TUE 28 FEB 1939

Committee's Minute

Assigned See Rot J.E. 27832

Engineer Surveyor to Lloyd's Register of Shipping.

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

Certificate (if required) to be sent to