Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 7143

Received at London Office 13 OCT 1930

Date of writing Report 8-10-1930 When handed in at Local Office 10-10-1930 Port of MANCHESTER

No. in Reg. Book. Survey held at MANCHESTER Keighley Date, First Survey 29-11-29 Last Survey 7-10-1930. Number of Visits 8

on the Single ~~Twin~~ ~~Triple~~ ~~Quadruple~~ Screw vessel Tons Gross Net

Built at Knottingley By whom built Messrs John Harker Ltd. Yard No. 38 When built

Engines made at Keighley By whom made Messrs H. Widdop & Co. Ltd. Engine No. 2954 When made 1930

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

Brake Horse Power 150 Owners Port belonging to

Nom. Horse Power as per Rule 43. Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Trade for which vessel is intended

OIL ENGINES, &c.—Type of Engines Vertical, Solid Injection, Reversing, Air Starting 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 600 lbs/a" Diameter of cylinders 11½" Length of stroke 13½" No. of cylinders 3 No. of cranks 3

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 16¾" Is there a bearing between each crank Yes.

Revolutions per minute 330 Flywheel dia. 40" Weight 19½ cwts Means of ignition Heat of Compression Kind of fuel used Heavy Oil

Crank Shaft, dia. of journals as per Rule Approved as fitted 6¾" Crank pin dia. 6¾" Crank Webs Mid. length breadth 9" Mid. length thickness 3¾" shrunk Thickness parallel to axis Thickness around eyehole Solid

Flywheel Shaft, diameter as per Rule ✓ as fitted ✓ **Intermediate Shafts,** diameter as per Rule ✓ as fitted 4½" **Thrust Shaft,** diameter at collars as per Rule Approved as fitted 5" & 4¾"

Tube Shaft, diameter as per Rule ✓ as fitted ✓ **Screw Shaft,** diameter as per Rule Approved as fitted 4½" Is the {tube screw} shaft fitted with a continuous liner None

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 22¾".

Propeller, dia. 52" Pitch 34" No. of blades 3 Material Cast Iron whether Moveable Solid Total Developed Surface 6 sq. feet

Method of reversing Engines camshaft ahead & astern Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes. Means of lubrication FORCED TO MAIN BEARINGS. FORCED SIGHT FEED TO REMAINDER.

Thickness of cylinder liners SOLID WITH CYL. Are the cylinders fitted with safety valves Yes. Are the exhaust ~~pipes and silencers~~ MANIFOLDS 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 on engine. Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from the **Main Engines,** No. 1 on Engine Diameter 3½" Stroke 3" Can one be overhauled while the other is at work

Pumps connected to the **Main Bilge Line** {No. and Size How driven

Ballast Pumps, No. and size **Lubricating Oil Pumps,** including Spare Pump, No. and size ONE TWIN PLUNGER PUMP 1¾" x 3" Stroke ONE SIGHT FEED LUBRICATOR PUMP.

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 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. One on engine No. of stages 2 Diameters 2¾" & 6" Stroke 3" Driven by crankshaft extension

Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

Small Auxiliary Air Compressors, No. One No. of stages 2 Diameters 2¾" & 6" Stroke 3" Driven by Widdop V8 Engine.

Scavenging Air Pumps, No. Crankcase compression. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule as fitted 2¾" Approved.

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Safety valve fitted on compressor.

Can the internal surfaces of the receivers be examined Yes. What means are provided for cleaning their inner surfaces Plug in ends.

Is there a drain arrangement fitted at the lowest part of each receiver Yes.

High Pressure Air Receivers, No. Not fitted 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. 3 (224089. 224090 & 224091) Total cubic capacity 21·66 CUB. FT. Internal diameter 12½" thickness 4" sides. 1" centre of base.

Seamless, lap welded or riveted longitudinal joint SEAMLESS. CHESTERFIELD TYPE Material Mild Steel Range of tensile strength 28-32 Tons. Working pressure by Rules 460 lbs/a".

009170-009181-0103

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

PLANS. *Are approved plans forwarded herewith for Shafting* (If not, state date of approval) Yes. *Receivers* Yes. *Separate Tanks* ✓

Donkey Boilers ..... *General Pumping Arrangements* ..... *Oil Fuel Burning Arrangements* .....

SPARE GEAR complete set of Springs.
3 Piston rings. 3 compressor rings.
Set of rubber and fibre joints.
Two bilge pump valves.
Two circulating pump valves.
Three steel Sprayer pipes.

The foregoing is a correct description,

For H. WIDDOP & COMPANY

J. Murchead
DIRECTOR

Manufacturer.

Dates of Survey while building — *During progress of work in shops*: 29/11/29, 6/1/30, 14/3/30, 22/5/30, 15/5/30, 9/9/30, 25/9/30, 7/10/30.

During erection on board vessel: .....

Total No. of visits: 8.

Dates of Examination of principal parts—*Cylinders* 15-5-30 *Covers* 15-5-30 *Pistons* 15-5-30 *Rods* ✓ *Connecting rods* 22-5-30.
Crank shaft 29-11-29 / 6-1-30 *Flywheel shaft* ✓ *Thrust shaft* 14-3-30 / 15-5-30 *Intermediate shafts* 9-9-30 *Tube shaft* ✓
Screw shaft 9-9-30 *Propeller* 9-9-30 *Stern tube* 9-9-30 *Engine seatings* ..... *Engines holding down bolts* .....
Completion of fitting sea connections ..... *Completion of pumping arrangements* ..... *Engines tried under working conditions* IN SHOP. 25-9-30. 7-10-30

Crank shaft, Material Mild Steel *Identification Mark* N° 1626 CE. *Flywheel shaft, Material* ✓ *Identification Mark* ✓
Thrust shaft, Material Mild Steel *Identification Mark* N° 434 CE *Intermediate shafts, Material* Mild Steel *Identification Marks* N° 2 CE.
Tube shaft, Material ✓ *Identification Mark* ✓ *Screw shaft, Material* Mild Steel. *Identification Mark* N° 2 CE.

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* .....

Is this machinery duplicate of a previous case Yes. *If so, state name of vessel* Messrs J. Harker Yard N° 34. Mch. Rpt. N° 7054.

General Remarks (State quality of workmanship, opinions as to class, &c. The above main engine of Widdop's Type ZH3, and one auxiliary Widdop VB1 Type single cylinder solid injection vertical engine N° 2962, direct coupled to an electric construction Co's dynamo N° 77744 of 100 volts, 60 amps, 6K.W. at 800 R.P.M., a 2" centrifugal pump bolted on top of dynamo driven by means of a chain off main shaft and a two stage air compressor clutch coupled to the opposite ends of the engine crank shaft have been built under Special Survey, and the materials tested in accordance with the Rules of this Society. The materials so far as can be seen are sound and the workmanship is good. The engines proved satisfactory under Shop test on full load, the main engine manoeuvred well. These engines are in my opinion eligible for the notation of ✠ LMC with date when fitted on board the vessel in accordance with the Rule requirements.

Certificate (if required) to be sent to .....

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

The amount of Entry Fee ... £ : : When applied for, 10-10-1930
Special ... ... 4/5 £13 : 12 :
Donkey Boiler Fee ... £ : : When received, 15-10-1930
Travelling Expenses (if any) £1 : 16 :

ASM

Committee's Minute FRI. 19 DEC 1930

Assigned See Genl 3E 411445

J. J. Campbell
Engineer Surveyor to Lloyd's Register of Shipping.