

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 1813.

Received at London Office 17 AUG 1936

Date of writing Report 11th August 1936 When handed in at Local Office 11th August 1936 Port of Bremen

No. in Survey held at Mannheim Reg. Book. Date, First Survey 12th March 1936 Last Survey 1st August 1936 Number of Visits 16

Single }
Twin }
Triple }
Quadruple }
Screw vessel

M.S. Arthurstown

Tons }
Gross }
Net }

Built at Beest, Holland By whom built Messrs. Scheepswaaf Geb. van de Werf N.V. Yard No. 201 When built 1936

Engines made at Mannheim By whom made Motorenwerke Mannheim P.G. Engine No. 35960 When made 1936

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

Brake Horse Power 400 Owners Messrs. Arthur Simpson of London Port belonging to

Nom. Horse Power as per Rule 87 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Trade for which vessel is intended

OIL ENGINES, &c.—Type of Engines R/H 145 Sc 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 4.5 atm Mean Indicated Pressure 6.9 atm Diameter of cylinders 310 mm Length of stroke 450 mm No. of cylinders 6 No. of cranks 6

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 375 mm Is there a bearing between each crank yes

Revolutions per minute 710 Flywheel dia. 1100 mm Weight 1950 kg Means of ignition auto-chamber Kind of fuel used Gas oil on test bed

Crank Shaft, dia. of journals as per Rule as fitted 190 mm Crank pin dia. 190 mm Crank Webs Mid. length breadth 245 mm Mid. length thickness 90 mm Thickness parallel to axis 64.3 mm Thickness around eye hole

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 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

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 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 10 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers 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. 1, worked from main 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 Diameter 125 mm Stroke 60 mm Can one be overhauled while the other 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 engine Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size suction pump 95 lb/min pressure pump 79 lb/min

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. 12 B.H.P. oil driven Air Compressor fitted 1.4 Sea Lion Bkt. 17939 Driven by

Small Auxiliary Air Compressors, No. 1, 13 m³/h No. of stages 2 Diameters 125/110 mm Stroke 90 mm Driven by main engine

Scavenging Air Pumps, No. Diameter Stroke Driven by

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

W1176-0220



AIR RECEIVERS:—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

High Pressure 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. Total cubic capacity Internal diameter thickness

Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules Actual

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 yes, plan FI 1506 Receivers yes, by Special Office Separate Fuel Tanks
(If not, state date of approval) March E 6.3.36.

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,

H. W. J. J. J. Manufacturer.
 Dates of Survey while building: During progress of work in shops - March 1936: 17, April: 9.22.23.24, May: 22.23, June: 4.17.18.19, July: 2.10.21.30
 During erection on board vessel - August 1.

Total No. of visits Lines: 9.4.36. 1.8.36.

Dates of Examination of principal parts—Cylinders 10.7.36 Covers 22.5.36 Pistons 17.6.36. 1.8.36 Rods Connecting rods 17.6.36.
 Crank shaft 17.6.36 2.7.36. Flywheel shaft Thrust shaft Intermediate shafts Tube shaft
 Screw shaft Propeller Stern tube Engine seatings Engines holding down bolts

Completion of fitting sea connections Completion of pumping arrangements Engines tried under working conditions 21.7.36
 Crank shaft, Material S. M. Steel Identification Mark LLOYD'S 15.1975 2.7.36 Flywheel shaft, Material Identification Mark
 Thrust shaft, Material Identification Mark Intermediate shafts, Material Identification Marks
 Tube shaft, Material Identification Mark Screw shaft, Material Identification Mark

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 NV Rotterdamse Brogdoek by Rotterdam

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 Soc. Rules and Regulations as well as with the approved plans and instructions thereto.

The material used in the construction is good and the workmanship is satisfactory.

The engine has been tested on the makers test bed during 11 hours under full load, overload and partial loads in the presence of the undersigned and was found to be in safe working condition during these trials. After the trials the engine has been opened out and inspected and all parts were found in order.

In our opinion the vessel for which this engine is intended will be eligible for the notation of *LMC [with date] when the whole machinery has been fitted satisfactorily on board and tried under full working conditions. The tensile strength of the material of the crankshaft was in the average 64.3 kg/cm² of test specimens taken from both ends and the 5th crankthrow of the crankshaft. See letter E 6.3.36.

A copy of this report has been sent to the Rotterdam Surveyors

The amount of Entry Fee ..	<u>2 M. 32.00</u>	When applied for,
<u>1/2</u> Special	<u>348.00</u>	<u>15.2.1936</u>
Test bed trials	<u>84.00</u>	When received,
Donkey Boiler Fee	<u>176.00</u>	<u>17.9.1936</u>
Travelling Expenses (if any) #		

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

Committee's Minute FRI 9 APR 1937

Assigned See minute on F.E. 11-



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