

Rpt. 4b.
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REPORT ON OIL ENGINE MACHINERY.

No. 172.

MAY 28 1938

Received at London Office

Date of writing Report 19.5.1937. When handed in at Local Office 21.5.1937. Port of Dusseldorf.

No. in Survey held at Cologne Date, First Survey 13.1.1937. Last Survey 14.5.1937. Number of Visits 12

16950 on the Single Motor "A. A. bowan" Tons Gross 295 Net 133

Built at Leith By whom built Hy. Robb (Ld.) (Incorporating Ramage & Ferguson (Ld.) Yard No. 242 419570/75 When built 1937

Engines made at By whom made Humboldt-Deutzmotoren AG. Engine No. 419576/81 and When made 1937

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

Brake Horse Power 2 x 180 BHP Owners United Africa Co Ld Port belonging to London

Nom. Horse Power as per Rule 2 x 52 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted yes

Trade for which vessel is intended

OIL ENGINES, &c.—Type of Engines Heavy oil engines R.V.6 M 436 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 50 kgs/cm² Diameter of cylinders 240 mm Length of stroke 360 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 257 mm Is there a bearing between each crank yes

Revolutions per minute 300 Flywheel dia. 1000 mm Weight 1050 kgs. Means of ignition sol. inject Kind of fuel used on test bed gas oil

Crank Shaft, dia. of journals as per Rule 150 mm Crank pin dia. 145 mm Crank Webs Mid. length breadth 260 mm Mid. length thickness 64 mm Thickness parallel to axis shrunk Thickness around eyehole

Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as per Rule

Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule Is the tube screw shaft fitted with a continuous liner

Bronze Liners, thickness in way of bushes as per Rule Thickness between bushes as per rule 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 18 mm Are the cylinders fitted with safety valves at present Are the exhaust pipes and silencers water cooled or lagged with non-conducting material 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 100 mm Stroke 60 mm Can 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 Main engine Driven Lubricating Oil Pumps, including Spare Pump, No. and size Capacity 36 lts/min. at 840 rev. per min. 1 tooth wheel pump & 1 spare of same type

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 145/60 mm Stroke 60 mm Driven by main engine

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

Scavenging Air Pumps, No. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule Position

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

Starting Air Receivers, No. three Total cubic capacity 3 x 500 lts. Internal diameter 450 mm thickness 12 mm

Seamless, lap welded or riveted longitudinal joint welded Material S.M. Steel Range of tensile strength 38-44 kg/cm² Working pressure Actual 30 kgs/cm²

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 Shifting 219409 7.2.36. Receivers G.O.244 21.7.32 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

The foregoing is a correct description.

Humboldt-Deutzmotoren

Aktiengesellschaft

Manufacturer.

Dates of Survey while building 13.1., 25.1., 22.3., 10.4., 14.4., 16.4., 19.4., 22.4., 23.4., 10.5., 13.5., and 14.5.1937

Dates of Examination of principal parts—Cylinders 10.4., 22.3.37 Covers 14.4., 12.5.37 Pistons 13.5.37 Rods Connecting rods 13.4., 25.1., 13.5.37

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 Hy. Robb (Id.) (Incorporating Ramage & Ferguson (Id.) Yard No. 242 Düsseldorf Report No. 168

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

These heavy oil engines have been constructed under special survey in accordance with

the Society's Rules and Regulations as well as in accordance with the approved plans and instructions thereto. The material used in the construction is good and the workmanship is satisfactory.

The engines have been tested on the Maker's test bed in the presence of the undersigned during 10 hours consecutively 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 engines have been opened out for inspection and were found in good condition. In my opinion the vessel for

which these engines are intended will be eligible for the notation of + L.M.E. (with date)

when the whole machinery has been fitted satisfactorily on board and tried under full working

conditions. It has been recommended that safety valves are to be fitted to the cylinder heads.

A copy of this report has been transmitted to the Leith Surveyors.

The amount of Entry Fee .. RM 30.- When applied for, Dismissed
Special ... RM 520.- 3.6.1937 % 12.10.10
Donkey Boiler Fee ... £ : When received, 16.7.37
Travelling Expenses (if any) RM 60.- 16.7.37

Committee's Minute

FRI. 8 JUN 1937

Assigned

See lth. 26. 19587

Rpt. 4c.

REPORT ON OIL ENGINE ELECTRIC GENERATOR SETS

No. 169

Date of writing Report 3.5.37 When handed in at Local Office 5.5.37 Port of Düsseldorf.

No. in Survey held at Oberursel Date, First Survey 26.2.1937. Last Survey 22.4.1937.

Reg. Book. Single on the Twin Triple Quadruple Screw vessel "A. A. bowan" Tons Gross 242 Net

Built at Leith By whom built Hy. Robb, (Id.) (Incorporating Ramage & Ferguson (Id.) Yard No. 242 When built 1937

Owners United Africa Co. Ltd. Port belonging to 432574/75 for 242

Oil Engines made at Oberursel By whom made Humboldt-Deutzmotoren AG Contract No. 438985/86 When made 1937

Generators made at By whom made Contract No. 438985/86 When made 1937

No. of Sets Engine Brake Horse Power 2 x 30 Nom. Horse Power as per Rule 2 x 8.6 Total Capacity of Generators Kilowatts.

OIL ENGINES, &c.—Type of Engines Heavy Oil Engines A 2 M 317 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 50 kgs/cm² Diameter of cylinders 120 mm Length of stroke 170 mm No. of cylinders 2 No. of cranks 2

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 412 mm, from centre to centre of ball bearing Is there a bearing between each crank no

Revolutions per minute 1350 Flywheel dia. 550 mm Weight 210 kgs. Means of ignition dir. inject Kind of fuel used gas oil on test

Crank Shaft, dia. of journals as per Rule 75 mm Crank pin dia. 85 mm Crank Webs Mid. length breadth 120 mm Thickness parallel to axis 61 mm shrunk Thickness around eye hole

Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule Thickness of cylinder liners 22 mm

Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication forced

Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material

Cooling Water Pumps, No. 1, cog wheel type Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Lubricating Oil Pumps, No. and size 1, 220 lts/h.

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

Scavenging Air Pumps, No. Diameter Stroke Driven by

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 What means are provided for cleaning their inner surfaces

*Is there a drain arrangement 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

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

ELECTRIC GENERATORS:—Type

Pressure of supply volts. Full Load Current Amperes. Direct or Alternating Current

If alternating current system, state the periodicity Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on and off

Generators, are they compounded as per rule is an adjustable regulating resistance fitted in series with each

shunt field Are all terminals accessible, clearly marked, and furnished with sockets

are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched Are the lubricating arrangements of the generators as per Rule

If the generators are under 100 kw. full load rating, have the makers supplied certificates of test and do the results comply with the requirements

If the generators are 100 kw. or over have they been built and tested under survey

PLANS. Are approved plans forwarded herewith for Shifting yes, 217 005 A Receivers Separate Tanks

SPARE GEAR as required by the Rules

The foregoing is a correct description.

Humboldt-Deutzmotoren

Manufacturer.



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