

Order No.: 754605/06

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 103

27/5/35

Date of writing Report *29th July 1935* When handed in at Local Office *Bologne* Port of *Düsseldorf* Received at London Office *31 JUL 1935*
No. in Survey held at *2* Reg. Book. *1* Date, First Survey *4th June 1935* Last Survey *18th July 1935* Number of Visits *5*

on the *Single* *Twin* Screw vessel *Twin*
Built at *Kiel* By whom built *Messrs. Howaldtswerke A.G.* Yard No. *741* When built *1935*
Engines made at *Bologne* By whom made *Messrs. Howaldtswerke A.G.* Engine No. *3436 741 75* When made *1935*
Donkey Boilers made at By whom made Boiler No. When made
Brake Horse Power *2 x 250* Owners Port belonging to
Nom. Horse Power as per Rule *140* Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
Trade for which vessel is intended

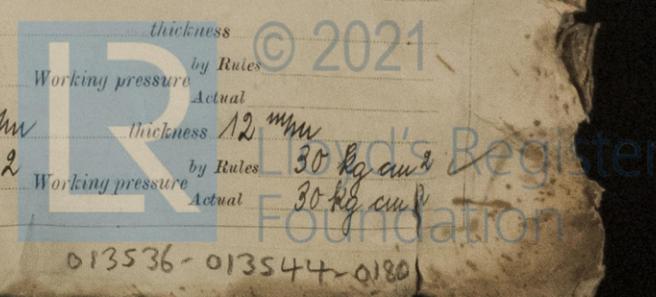
OIL ENGINES, &c.—Type of Engines *heavy oil engine R.F.6 No. 345* 2 or 4 stroke cycle *four* Single or double acting *single*
Maximum pressure in cylinders *50 kg/cm²* Diameter of cylinders *280 mm* Length of stroke *450 mm* No. of cylinders *2 x Six* No. of cranks *2 x Six*
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge *307.5 mm* Is there a bearing between each crank *Yes*
Revolutions per minute *250* Flywheel dia. *1250 mm* Weight *2600 kg* Means of ignition *sol injection* Kind of fuel used
Crank Shaft, dia. of journals *190 mm* as per Rule *190 mm* as fitted *190 mm* Crank pin dia. *170 mm* Crank Webs Mid. length breadth *32.5 mm* Thickness parallel to axis *70 mm*
Flywheel Shaft, diameter *190 mm* as per Rule *190 mm* as fitted *190 mm* Intermediate Shafts, diameter *190 mm* as per Rule *190 mm* as fitted *190 mm* Thrust Shaft, diameter at collars *140 mm* as per Rule *140 mm* as fitted *140 mm*
Tube Shaft, diameter *140 mm* as per Rule *140 mm* as fitted *140 mm* Screw Shaft, diameter *140 mm* as per Rule *140 mm* as fitted *140 mm* 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 *direct reversible* Is a governor or other arrangement fitted to prevent racing of the engine when declutched Means of lubrication *by pressure*
Thickness of cylinder liners *25 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* 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
What special arrangements are made for dealing with cooling water if discharged into bilges
Bilge Pumps worked from the Main Engines, No. *one* Diameter *100 mm* Stroke *85 mm* 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 Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size *Tooth wheel pump in Space*
Are two independent means arranged for circulating water through the Oil Cooler *Yes* 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. *one* No. of stages *Two* Diameters *145 mm 360 mm* Stroke *85 mm* Driven by *Main engine*
Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by
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* No. — *as fitted* 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 Actual
Starting Air Receivers, No. *Four* Total cubic capacity *2000 litres* Internal diameter *450 mm* thickness *12 mm* Working pressure by Rules *30 kg/cm²* Actual *30 kg/cm²*
Seamless, lap welded or riveted longitudinal joint *lap welded* Material *S.B. Steel* Range of tensile strength *39 kg/mm²* Working pressure by Rules *30 kg/cm²* Actual *30 kg/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 Shafting ^{13/2.35 and 19/3.35} Receivers ^{25/7.1932} Separate Tanks
 (If not, state date of approval)

Donkey Boilers _____ General Pumping Arrangements _____ Oil Fuel Burning Arrangements _____

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied 1 complete fuel pump, 1 top set of fuel pump, 1 cylinder cover, 2 cylinder line 2 complete fuel valves, 2 sets of suction and delivery valves of the fuel pump, 6 cones for fuel pumps and assortment of springs, fuel needles etc. as ordered by the owners.

The foregoing is a correct description.

Humboldt-Deutz Motoren
 Aktiengesellschaft
Klatz Manufacturer.

Dates of Survey while building
 During progress of work in shops - 4th June, 3rd July, 5th July, 15th July and 18th July 1935.
 During erection on board vessel - - -
 Total No. of visits Five.

Dates of Examination of principal parts - Cylinders 4th June Covers 4th June Pistons 4th June Rods 4th June Connecting rods 4th June
 Crank shaft 4th and 21st 6.35. Flywheel shaft Thrust shaft 23rd May Intermediate shafts 4th June 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
 Crank shaft, Material S. No. 44 Identification Mark 9774 4.6.35 Flywheel shaft, Material Identification Mark
 Thrust shaft, Material Identification Mark Intermediate shafts, Material S. No. 44 Identification Marks 15882 14.36. 15883 4.6.35.
 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 Messrs Goole Shipbuilding Co. Yard No. 310.

General Remarks (State quality of workmanship, opinions as to class, &c.) The engines are built in accordance with the approved plans and the requirements embodied in the Secretary's letters of the 13/2.35, 19/3.35. and 25/7.1932. and otherwise in accordance with the requirements of the Rules. Materials and workmanship are of best quality, the outfit is ample. Both sets of engines have been tested under full working and manoeuvring conditions for six hours on the trial stage in machine shop, further half an hour with 10% overload and have given full satisfaction. After trial all working parts have been opened up and were found on examination in good condition. This machinery has been built under special survey and will be fitted on board the vessel No. 741 in construction at Messrs. Howaldtswerke A.G. of the
In my opinion these engines are illegible for notation of ~~NE~~ 8.35.

The amount of Entry Fee No 60.00 : When applied for, Art. No. 8192.
 Special ... No 700.00 : July 23 1935.
 Donkey Boiler Fee ... £ : When received, 8.8.35
 Travelling Expenses (if any) No 80.00 : 8/8

Committee's Minute FRI, 4 OCT 1935
 Assigned see Stan J.E. Machy 21627

Paul Haupt
 Engineer Supervisor to Lloyd's Register of Shipping.

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