

REPORT ON OIL ENGINE MACHINERY.

No. 15

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Date of writing Report 10.3. 19 51 When handed in at Local Office 19 Port of Dusseldorf
IN D.O. Survey held at Köln-Deutz Date, First Survey 16.9.50 Last Survey 13.3. 19 51
Reg. Book. Number of Visits 8

Single on the Twin Triple Quadruple Screw vessel "PETO"
Built at Meppel By whom built Worst u. Duttmer Yard No. 101 When built 1275905-10
Engines made at Köln-Deutz By whom made Klöckner-Humboldt-Deutz Engines No. When made 3.51
Donkey Boilers made at - - - By whom made - - - Boiler No. - - When made - -
Brake Horse Power 295 Owners. Port belonging to
M.N. Power as per Rule (65.6) 71.5 Is Refrigerating Machinery fitted for cargo purposes. Is Electric Light fitted
Trade for which vessel is intended.

OIL ENGINES, &c. - Type of Engines Airless Injection Heavy Oil RV6M⁵³⁶ 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 55 ✓ Diameter of cylinders 270 ✓ Length of stroke 360 ✓ No. of cylinders 6 ✓ No. of cranks 6 ✓
Mean Indicated Pressure 6.9 Kg Ahead Firing Order in Cylinders 1-2-3-6-5-4 Span of bearings, adjacent to the crank, measured from inner edge to inner edge 278 mm Is there a bearing between each crank yes Revolutions per minute 393 ✓

Flywheel dia. 1200mm Weight 1000kg Moment of inertia of flywheel (lbs. in² or Kg.cm.²) Means of ignition Compr. Kind of fuel used Diesel
Crank Shaft, (Solid forged Approved dia. of journals as per Rule 25.5.50 Crank pin dia. 165 mm Crank webs Mid. length breadth 300 mm Thickness parallel to axis
Semi built dia. of journals as fitted 165 mm Crank webs Mid. length thickness 64.5 mm Thickness around eyehole
All built as fitted 165 mm Crank webs Mid. length thickness 64.5 mm Thickness around eyehole

Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule 29.11.50 Thrust Shaft, diameter at collars as fitted 165 mm
as fitted Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule 160 as fitted 25.5.50

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 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
Moment of inertia of propeller (lbs. in² or Kg.cm.²) Kind of damper, if fitted

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication forced Thickness of cylinder liners 1.8 mm Are the cylinders fitted with safety valves yes ✓ Are the exhaust manifolds water cooled or lagged with non-conducting material yes 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 Stroke 75 Can one be overhauled while the other is at work - -
Pumps connected to the Main Bilge Line (No. and size. No other information than above. 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 Power Driven Lubricating Oil Pumps, including spare pump, No. and size Capacity 105 ltrs.p.min.
One driven by Main Engine

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 suction 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

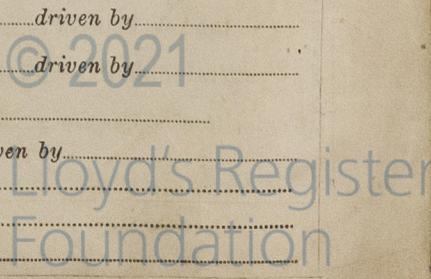
If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

Main Air Compressors, No. One on Main No. of stages Two diameters 60/145mm stroke 75mm driven by Main Eng. Engine
Auxiliary Air Compressors, No. No. of stages diameters stroke driven by

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 No. Position
as fitted Have the auxiliary engines been constructed under special survey Is a report sent herewith



4B No. 15.

AIR RECEIVERS:—Have they been made under survey..... State No. of report or certificate Nos. 541 & 1084

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.....

Injection Air Receivers, No..... Cubic capacity of each..... Internal diameter..... thickness.....
Seamless, welded or riveted longitudinal joint..... Material..... Range of tensile strength..... Working pressure.....

Starting Air Receivers, No. 1x250 ltr. Total cubic capacity 750 ltrs. Internal diameter 460 mm thickness 10 mm
Seamless, welded or riveted longitudinal joint welded Material S.M. Steel Range of tensile strength 47-53 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..... Receivers..... Separate fuel tanks.....
Donkey boilers..... General pumping arrangements..... Pumping arrangements in machinery space.....

Oil fuel burning arrangements.....
Have Torsional Vibration characteristics been approved At London Date of approval 12/12/50

SPARE GEAR.

Has the spare gear required by the Rules been supplied.....
State the principal additional spare gear supplied.....

The foregoing is a correct description,

Klöckner-Humboldt-Deutz

Manufacturer Aktiengesellschaft *Mr. Franke* *Mr. Thummes*

Dates of Survey while building { During progress of work in shops - - 16.9.50, 9.1., 26.1., 30.1., 2.2., 24.2., 26.6., 13.3.51
During erection on board vessel - -
Total No. of visits.....

Dates of examination of principal parts—Cylinders 26.1.51, 30.1., 30.1.51 Covers 26.2.51 Pistons 26.2.51 Rods..... Connecting rods 17.11.51
Crank shaft 2.2. 26.2.51 Flywheel shaft..... Thrust shaft 2.2. 26.2.51 Intermediate shafts 16.9.50 Tube shaft 9.1.51
Screw shaft..... Propeller..... Stern tube..... Engine seatings..... Engine holding down bolts.....

Completion of fitting sea connections..... Completion of pumping arrangements..... Engines tried under working conditions 24.2.51
Crank shaft, material S.M. Steel Identification mark Lloyds F.S.65 Flywheel shaft, material..... Identification mark.....
Thrust shaft, material..... Identification mark..... Intermediate shafts, material 58.6 kg/mm² Identification marks Lloyds H.B.20
Tube shaft, material..... Identification mark..... Screw shaft, material..... Identification mark.....

Identification marks on air receivers Lloyds Test Klöckner-Humboldt-Deutz No. H 1704 & 1162
T.P.60 Atm. W.P.30 Atm. H.B.22.12.50 & H.B. 11.8.50

Welded receivers, state Makers' Name Klöckner-Humboldt-Deutz, Köln-Deutz
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.....
Description of fire extinguishing apparatus fitted.....

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 No. If so, state name of vessel.....

General Remarks (State quality of workmanship, opinions as to class, &c.....)
This engine has been constructed under special survey of tested materials and is in accordance with the Secretary's letters, approved plans and Rule Requirements. The materials and workmanship are good and the engine, when tested in the shops under full and overload conditions, was found to function satisfactorily. The governor tests were also satisfactory. This engine is suitable in my opinion for main propelling purpose and when satisfactorily installed and reported will be eligible to receive the notation  LMC (with date).

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 ... £ : :
Special ... £ : : When applied for 19
Donkey Boiler Fee... £ : : When received 19
Travelling Expenses (if any) £ : :

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

Committee's Minute 13th July 1951
Assigned *See F.E. entry opt*

