

REPORT ON OIL ENGINE MACHINERY.

No. 488

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Date of writing Report 19th Dec. 1951 When handed in at Local Office 19th Dec. 1951 Port of K I E L
 No. in Survey held at K I E L Date, First Survey 14th August 1951 Last Survey 9th November 1951
 Reg. Book. Number of Visits 9
 Single on the Twin Triple Quadruple Screw vessel Yard No. 546 M.V. HENRIK DANICA Tons Gross Net
 Built at Rendsburg By whom built ~~Rends~~ Werft Nobiskrug G.m.b.H. Yard No. 546 When built
 Engines made at Kiel By whom made Maschinenbau Kiel Aktiengesellschaft Engine No. 10520 When made 1951
 Donkey Boilers made at - By whom made - Boiler No. - When made -
 Brake Horse Power 750 Owners H.H. Andersen & Co. Port belonging to
 M.N. Power as per Rule 143 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 (Type MSu 581) 2 or 4 stroke cycle 4 Single or double acting S.A.
 Maximum pressure in cylinders 48 kg/cm² Diameter of cylinders 385 mm Length of stroke 580 mm No. of cylinders 6 No. of cranks 6
 Mean Indicated Pressure 6.75 kg/cm² Ahead Firing Order in Cylinders 1-5-3-6-2-4 Span of bearings, adjacent to the crank, measured
 from inner edge to inner edge 477 mm Is there a bearing between each crank yes Revolutions per minute 300
 Flywheel dia. 1500 mm Weight 2650 kg Moment of inertia of flywheel (lbs. in² or Kg. cm²) 3780 Means of ignition comp. Kind of fuel used Diesel
 Crank Shaft, ~~Sank forged~~ dia. of journals as per Rule 245 mm Crank pin dia. 240 mm Crank webs Mid. length breadth 360 mm Thickness parallel to axis -
 All built as fitted 124 mm shrunk Thickness around eyehole -
 Flywheel Shaft, diameter as per Rule - Intermediate Shafts, diameter as per Rule 179 mm Thrust Shaft, diameter at collars approved 180 mm
 as fitted - approved 220 mm Is the tube shaft fitted with a continuous liner -
 Tube Shaft, diameter as per Rule - Screw Shaft, diameter as fitted -
 Bronze Liners, thickness in way of bushes as per Rule - Thickness between bushes 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 tube shaft. If so, state type - Length of bearing in Stern Bush next to and supporting propeller -
 Propeller, dia. 2120 mm Pitch - No. of blades - Material - whether moveable - Total developed surface - sq. feet
 Moment of inertia of propeller (lbs. in² or Kg. cm²) - Kind of damper, if fitted friction
 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 - Are the cylinders fitted with safety valves yes Are the exhaust manifolds water cooled
~~hopper 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 140 mm Stroke 90 mm Can one be overhauled while the other is at work -
 Pumps connected to the Main Bilge Line { No. and size - How driven -
 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 one at 9 m³/hr.

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
 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.
 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
 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 120 (120-108) stroke 70 mm driven by M.E.
 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.
 Sucking Air Pumps, No. - diameter - stroke - driven by -
 Auxiliary Engines crank shafts, diameter as per Rule - No. - Position -
 Have the auxiliary engines been constructed under special survey. Is a report sent herewith.

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AIR RECEIVERS:—Have they been made under survey yes State No. of report or certificate cert.
 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. - by Rules. -
 Seamless, welded or riveted longitudinal joint. - Material. - Range of tensile strength. - Working pressure Actual. -
Starting Air Receivers, No. - Total cubic capacity. - Internal diameter. - thickness. - by Rules. -
 Seamless, welded or riveted longitudinal joint. - Material. - Range of tensile strength. - Working pressure 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. crankshaft 5/91950 and 3/11/51
 (If not, state date of approval) intern. sh. 3/11/51 Receivers - Separate fuel tanks. -
 Donkey boilers. - General pumping arrangements. - Pumping arrangements in machinery space. -
 Oil fuel burning arrangements. -
 Have Torsional Vibration characteristics been approved yes, 3/11/51 Date of approval 3/11/51

SPARE GEAR.

Has the spare gear required by the Rules been supplied. To be checked on board.
 State the principal additional spare gear supplied. -

The foregoing is a correct description, and the particulars of the installation as fitted are as approved for torsional vibration characteristics. Manufacturer. **MAK**

Maschinenbau Kiel
Aktiengesellschaft 23.10., 9.11.51
per Hagen
 Dates of Survey while building: During progress of work in shops - 14.8., 5.9., 14.9., 26.9., 3.10., 8.10., 15.10.
 During erection on board vessel - 9
 Total No. of visits. 9
 Dates of examination of principal parts—Cylinders 14.8., 5.9., 15.9. Covers 14.9. Pistons 26.9. Rods -- Connecting rods 26.9.
 Crank shaft 14.9.51 Flywheel shaft -- Thrust shaft -- Intermediate shafts -- Tube shaft --
 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 9.11.51
 Crank shaft, material SM steel Identification mark 20.6.51 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 --
 Identification marks on ~~the cylinder~~ CYLINDER BLOCK LLOYD'S TEST
10 kg
No. 274 9.51
JB
 Welded receivers, state Makers' Name --
 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. -- If so, state name of vessel --

General Remarks (State quality of workmanship, opinions as to class, Speed restrictions, &c.)
 This main engine has been constructed under Special Survey, in accordance with the Rules, the Secretary's letters, and approved plans. The materials and the workmanship are good. The engine has been examined during construction and under working conditions and found satisfactory and is eligible, in my opinion, for classification with the notation * LMC when satisfactorily installed in a classed vessel.

The amount of Entry Fee ... DM. & 763,00
 Special ... £ -
 Donkey Boiler Fee... £ -
 Travelling Expenses (if any) DM 70,00

When applied for 19
 When received 19

Engineer Surveyor to Lloyd's Register of Shipping.



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Committee's Minute

Assigned

Sir F. E. Mch. rph. Kiel 691

TUES. 18 NOV 1952