

Rpt. 4b.
005 NOV 1950

REPORT ON OIL ENGINE MACHINERY.

No. **42**
32 NOV 1950

Received at London Office.

Date of writing Report **24 Nov 50** When handed in at Local Office 19 **Port of** **Angelm.**
No. in Survey held at **Angelm.** Date, First Survey **22nd March 50** Last Survey **12th Oct 50**
Reg. Book. Number of Visits **25.**

Single
on the Twin
Triple
Quadruple
Screw vessel. **M.V. POLLUX** Tons Gross **141** Net **114**

Built at **Fox 402** By whom built **Schiffswerft Müller** Yard No. **1** When built **1950**
Engines made at **Angelm.** By whom made **Maschinenfabrik Augsburg-Nürnberg A.G.** Engine No. **430 141** When made **1950**

Donkey Boilers made at **1** By whom made **1** Boiler No. **1** When made **1**
Brake Horse Power **298** Owners **1** Port belonging to **1**

M.N. Power as per Rule **80 M.N.** Is Refrigerating Machinery fitted for cargo purposes **1** Is Electric Light fitted **1**
Trade for which vessel is intended **1**

OIL ENGINES, &c. —Type of Engines **M. 17-N. Standard Type 86/42** or 4 stroke cycle **4** Single or double acting **Single**
Maximum pressure in cylinders **51.5 atm** Diameter of cylinders **285 mm** Length of stroke **420 mm** No. of cylinders **6** No. of cranks **6**

Mean Indicated Pressure **6.9 atm** Ahead Firing Order in Cylinders **1-3-5-6-4-2** Span of bearings, adjacent to the crank, measured from inner edge to inner edge **358 mm** Is there a bearing between each crank **yes** Revolutions per minute **300**

Flywheel dia. **1200 mm** Weight **1100 kg** Moment of inertia of flywheel (lbs. in² or Kg. cm.²) **1000 kg cm²** Means of ignition **fore chambers** Kind of fuel used **state oil**

Crank Shaft, **Solid forged** dia. of journals as per Rule **170 mm** Crank pin dia. **170 mm** Crank webs Mid. length breadth **280 mm** Thickness parallel to axis **1**
Sept built as fitted **170 mm** Mid. length thickness **89.5 mm** Thickness around cyclole **1**
All built as fitted **1**

Flywheel Shaft, diameter as per Rule **1** Intermediate Shafts, diameter as per Rule **1** Thrust Shaft, diameter at collars as per Rule **1**
Tube Shaft, diameter as per Rule **1** Screw Shaft, diameter as per Rule **1** Is the **tube** shaft fitted with a continuous liner **1**

Bronze Liners, thickness in way of bushes as per Rule **1** Thickness between bushes as per Rule **1** Is the after end of the liner made watertight in the propeller boss **1**

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 **1** If two liners are fitted, is the shaft lapped or protected between the liners **1** Is an approved Oil Gland or other appliance fitted at the after end of tube shaft **1** If so, state type **1** Length of bearing in Stern Bush next to and supporting propeller **1**

Propeller, dia. **1** Pitch **1** No. of blades **1** Material **1** whether moveable **1** Total developed surface **1** sq. feet
Moment of inertia of propeller (lbs. in² or Kg. cm.²) **1** Kind of damper, if fitted **1**

Method of reversing Engines **comp air** Is a governor or other arrangement fitted to prevent racing of the engine when declutched **yes** Means of lubrication **forced** Thickness of cylinder liners **22.5 mm** Are the cylinders fitted with safety valves **yes** Are the exhaust pipes and silencers water cooled

or lagged with non-conducting material **emulated** If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine **1** Cooling Water Pumps, No. **1** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **1**

Cooking + bilge Bilge Pumps worked from the Main Engines, No. **2** **output each 14.5 m³/h** Can one be overhauled while the other is at work **1**

Pumps connected to the Main Bilge Line (No. and size **1** How driven **1**)
Is the cooling water led to the bilges **1** If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements **1**

Ballast Pumps, No. and size **1** Main engine Power Driven Lubricating Oil Pumps, including spare pump, No. and size **1 x 3.75 m³/h**
Are two independent means arranged for circulating water through the Oil Cooler **1** Suctions, connected to both main bilge pumps and auxiliary bilge pumps, No. and size:—In machinery spaces **1** In pump room **1**

In holds, &c. **1**

Independent Power Pump Direct Suctions to the engine room bilges, No. and size **1**
Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes **1** Are the bilge suction pipes 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 **1**

Are all Sea Connections fitted direct on the skin of the Ship **1** Are they fitted with valves or cocks **1** Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates **1** Are the overboard discharges above or below the deep water line **1**

Are they each fitted with a discharge valve always accessible on the plating of the vessel **1** Are the blow off cocks fitted with a spigot and brass covering plate **1**
What pipes pass through the bunks **1** How are they protected **1**

What pipes pass through the deep tanks **1** Have they been tested as per Rule **1**
Are all pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times **1**

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 **1** Is the shaft tunnel watertight **1** Is it fitted with a watertight door **1** worked from **1**

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork **1**

Main Air Compressors, No. **1** No. of stages **1** diameters **1** stroke **1** driven by **1**
Auxiliary Air Compressors, No. **1** No. of stages **1** diameters **1** stroke **1** driven by **1**
Small Auxiliary Air Compressors, No. **1** No. of stages **1** diameters **1** stroke **1** driven by **1**

What provision is made for first charging the air receivers **1**
Scavenging Air Pumps, No. **1** diameter **1** stroke **1** driven by **1**

Auxiliary Engines crank shafts, diameter as per Rule **1** No. **1** Position **1**
Have the auxiliary engines been constructed under special survey **1** Is a report sent herewith **1**

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

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.....by Rules.....Actual.....

Starting Air Receivers, No.....Total cubic capacity.....Internal diameter.....thickness.....

Seamless, 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.....Receivers.....Separate fuel tanks.....

Donkey boilers.....General pumping arrangements.....Pumping arrangements in machinery space.....

Oil fuel burning arrangements.....(attached)

Have Torsional Vibration characteristics been approved.....Date of approval.....

SPARE GEAR.

Has the spare gear required by the Rules been supplied.....

State the principal additional spare gear supplied.....
1 cyl. cover, 1 cyl. lining, 1 piston, 1 compl. Prod. work,
5 fuel oil pressure pipes, 1 safety valve, 1 complete set of
valves for cam shaft drive, 1 inlet - + 1 exhaust valve

Maschinenfabrik Augsburg-Kürnberg A. G.

Manufacturer.

Dates of Survey while building.....During progress of work in shops - - - - -
1950: March 22. April 12. May 4. 8. June: 12. 15. 23. 29. July: 4. 6. 20. 27. Aug. 1. 7. 17.
Sept. 8. 13. 14. 15. 25. Oct. 3. 5. 9. 11. 12.

During erection on board vessel - - - - -

Total No. of visits.....25.

Dates of examination of principal parts—Cylinders.....Covers.....Pistons.....Rods.....Connecting rods.....

Crank shaft.....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.....

Crank shaft, material.....Identification mark.....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 air receivers.....

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.....Standard Type.....If so, state name of vessel.....

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

this heavy oil main engine has been constructed under special survey in accordance with the approved plans and instruction hereto. The material used in the construction is good and the workmanship was found to be satisfactory.

Subject heavy oil engine has been tested running on makers test bed under full-over- and partial loads with satisfactory results.

In my opinion, the vessel for which this heavy oil engine is intended will be eligible for the notation of L.M.C. (with date) when the whole machinery has been satisfactorily fitted aboard and tried under full working conditions with satisfactory results.

The amount of Entry Fee.....
Special Survey.....
Donkey Boiler Fee.....
Travelling Expenses (if any).....
When applied for.....
When received.....

Committee's Minute.....
Assigned.....