

REPORT ON OIL ENGINE MACHINERY.

No. 18563

Received at London Office

19 NOV 1952

Writing Report 10-11 1952 When handed in at Local Office 19 Port of Amsterdam
 Survey held at Amsterdam Date, First Survey 28-2-1951 Last Survey 27-9 1952
 Number of Visits 17
 Single on the Twin Triple Quadruple Screw vessel M.S. MANGKARA
 By whom built Messrs G. & J. P. J. Yard No. 927 When built 1952
 By whom made Messrs. Werkspoor N.V. Engine No. 51440 When made 1952
 By whom made — Boiler No. — When made —
 Owners Republik Indonesia Port belonging to Batavia
 Horse Power 2 x 580 Owners Republik Indonesia Port belonging to Batavia
 Power as per Rule 2 x 116 = 232 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
 for which vessel is intended Leasing

Engines, &c. — Type of Engines T.M.A.S. 278 2 or 4 stroke cycle 4 Single or double acting Single
 Mean pressure in cylinders 50 kg/cm² Diameter of cylinders 270 mm Length of stroke 500 mm No. of cylinders 2 No. of cranks 2
 Indicated Pressure 7.5 kg/cm² Ahead Firing Order in Cylinders 1-4-7-6-8-5-2-3 Span of bearings, adjacent to the crank, measured
 inner edge to inner edge 320 mm Is there a bearing between each crank Yes Revolutions per minute 275
 Crank pin dia. 1120 mm Weight 1250 kg Moment of inertia of flywheel (lbs. in² or Kg. cm.²) 25,750 Means of ignition Comp. Kind of fuel used Diesel
 Solid forged dia. of journals as per Rule 222 mm Crank pin dia. 220 mm Crank webs Mid. length breadth 340 mm Thickness parallel to axis
 as fitted as fitted Mid. length thickness 82 mm shrunk Thickness around eye-hole
 Intermediate Shafts, diameter as per Rule 120 mm Thrust Shaft, diameter at collars as fitted 112 mm
 as fitted as fitted as fitted as fitted
 Shaft, diameter as per Rule 135 mm Is the tube screw shaft fitted with a continuous liner Yes
 as fitted as fitted as fitted as fitted
 Liners, thickness in way of bushes as per Rule 12.5 mm Thickness between bushes as per Rule 10 mm Is the after end of the liner made watertight in the
 as fitted as fitted as fitted as fitted
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner Yes
 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-
 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
 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
 Kind of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of
 Thickness of cylinder liners 22 mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled
 with non-conducting material No If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned
 the engine — Cooling Water Pumps, No. 1 each Is the sea suction provided with an efficient strainer which can be cleared within the vessel
 Pumps worked from the Main Engines, No. 1 each Diameter 130 Stroke 75 Can one be overhauled while the other is at work Yes
 connected to the Main Bilge Line No. and size How driven
 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

Pumps, No. and size Power Driven Lubricating Oil Pumps, including spare pump, No. and size Rotating, 4, 200 l/h
 Independent means arranged for circulating water through the Oil Cooler Suctions, connected to both main bilge pumps and auxiliary
 Pumps, No. and size:—In machinery spaces In pump room
 Pumps, &c.

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

Sea Connections fitted direct on the skin of the Ship Are they fitted with valves or cocks Are they fixed
 Are they 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
 Are the pipes pass through the bunks How are they protected
 Are the pipes pass through the deep tanks Have they been tested as per Rule

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
 or from one compartment to another Is the shaft tunnel watertight Is it fitted with a watertight door worked from
 On board vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

Air Compressors, No. 1 each No. of stages 2 diameters 100/125 mm stroke 90 mm driven by main engine
 Auxiliary Air Compressors, No. No. of stages diameters stroke driven by
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Provision is made for first charging the air receivers
 Charging Air Pumps, No. diameter stroke driven by
 Auxiliary Engines crank shafts, diameter as per Rule as fitted Position
 Have the auxiliary engines been constructed under special survey Is a report sent herewith

4B 18563.
AIR RECEIVERS:—Have they been made under survey. *Yes* State No. of report or certificate *18563*
Is each receiver, which can be isolated, fitted with a safety valve as per Rule. *Yes*
Can the internal surfaces of the receivers be examined and cleaned. *Yes* Is a drain fitted at the lowest part of each receiver. *Yes*
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. *Three* Total cubic capacity. *1800* Internal diameter. *496* mm. thickness. *9.5* mm.
Seamless, welded or riveted longitudinal joint. Material. *Steel* Range of tensile strength. *61.8-62* 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. *✓* (If not, state date of approval) Receivers. *✓* Separate fuel tank. *✓*
Donkey boilers. *✓* General pumping arrangements. *✓* Pumping arrangements in machinery space. *✓*
Oil fuel burning arrangements. *✓*
Have Torsional Vibration characteristics been approved. *Yes* Date of approval. *18-7-52*

SPARE GEAR.

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

WORKSPOOR N.V.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building
During progress of work in shops - *1951 28/5 24/3 19/6 4/7 28/9 15/10 1952 17/1 15/4 22/5 6/6 24/6 25/6 27/6 16/8 27/9*
During erection on board vessel -
Total No. of visits. *17*

Dates of examination of principal parts—Cylinders. *19/6 4/7 1952* Covers. *24/3 6/5 1952* Pistons. *15/10 17/52* Rods. *✓* Connecting rods. *✓*
Crank shaft. *5/3 51 26/51* Flywheel shaft. *✓* Thrust shaft. *15/2 27/6 52* 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. *21/4*
Crank shaft, material. *SM Steel* Identification mark. *220473 N° 3080 KK 5-4-51* Flywheel shaft, material. *✓* Identification mark. *✓*
Thrust shaft, material. *SM Steel* Identification mark. *220473 N° 3500 KK 7-5-51* Intermediate shafts, material. *SM Steel* Identification marks. *✓*
Tube shaft, material. *✓* Identification mark. *220473 N° 3751 KK 15-6-51* Screw shaft, material. *SM Steel* Identification mark. *220473 N° 3751 KK 15-6-51*
Identification marks on air receivers. *See Cert.*

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. *Yes* If so, state name of vessel. *de Waal "Pauze" 185.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *These engines have been built in accordance with approved plans, Society's Rules and Secretarial letters. All materials have been tested as required and the workmanship found good.*
The engines have been tested under full load condition on motor testbeds and found working satisfactorily.
In my opinion the vessel for which these engines are intended will be eligible for a notation + LMC with date when fitted and examined on board.
Copy certificates of crankshaft, thrust, tail- and intermediate shafts and starting air vessels attached.

The amount of the fee. *12X 2/3X 116X 5.60 = 520.-*
Special ... £ ... When applied for *14-11* 1952

Donkey Boiler Fee... £ ... When received 19

Travelling Expenses (if any) *36.50*

Committee's Minute *FRI. 19 JUN 1953*

Assigned *See F.E. Mundy. 4pt.*



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