

# REPORT ON OIL ENGINE MACHINERY.

No. 10713

Date of writing Report 12<sup>th</sup> Feb 1953 When handed in at Local Office 19 Port of Amsterdam  
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 Reg. Book. M.V. BIDURI Indonesian Republic Number of Visits 11

Single on the Twin Triple Quadruple Screw vessel for  
 Built at Waterhuizen By whom built Geheymeyer Patzig  
 Engines made at Amsterdam By whom made Werkspoor N.V. Yard No. 216 When built 1952  
 Donkey Boilers made at Maximum Service 500 Owners Engine No. 1473 When made 1952  
 Brake Horse Power 100 Is Refrigerating Machinery fitted for cargo purposes. Port belonging to  
 M.N. as per Rule Trade for which vessel is intended Open Sea Service Is Electric Light fitted

OIL ENGINES, &c. —Type of Engines T.M.A.S. 278  
 Maximum pressure in cylinders 50 kg/cm<sup>2</sup> Diameter of cylinders 270 mm Length of stroke 500 mm No. of cylinders 8 No. of cranks 8  
 Mean Indicated Pressure 7.56 kg/cm<sup>2</sup> A.F.O. 1-4-7-6-8-5-2-3 Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 318 mm Is there a bearing between each crank Yes Revolutions per minute { Maximum Service 325  
 Flywheel dia. 1120 mm Weight 1250 kg Moment of inertia of flywheel (lb.in<sup>2</sup> or Kg.cm<sup>2</sup>) 1030 Means of ignition Pump Kind of fuel used Diesel  
 Crank Shaft, { Solid forged Semi built All built } dia. of journals as per Rule as fitted 200 mm Crank pin dia. 200 mm Crank webs Mid. length breadth 240 mm Mid. length thickness 82 mm Thickness parallel to axis Thickness around eye-hole

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted 205 mm Thrust Shaft, diameter at collars as per Rule as fitted 212 mm  
 Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted 250 mm Is the { tube screw } shaft fitted with a continuous liner { no }  
 Bronze Liners, thickness in way of bushes as per Rule as fitted Thickness between bushes as per Rule 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 fitted at the after end of stern tube. If so, state type.

Propeller, dia. 1840 mm Pitch No. of blades 4 Material bronze Length of bearing in Stern Bush next to and supporting propeller whether moveable. Total developed surface sq. feet  
 Moment of inertia of propeller including entrained water (lb.in<sup>2</sup> or Kg.cm<sup>2</sup>) 259 Kind of damper, if fitted  
 Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine. Yes Means of lubrication Grease Thickness of cylinder liners 21 mm Are the cylinders fitted with safety valves. Yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material. Pooled 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. and how driven 1 Man Type 150 x 75 Cap 26 T/h Working H.W. by Man Eng

S.W. Spare F.W. S.W. Is the sea suction provided with an efficient strainer which can be cleared within the vessel.  
 Bilge Pumps worked from the Main Engines, No. and capacity 1 Man Type 150 x 75 Cap 26 T/h Can one be overhauled while the other is at work  
 Pumps connected to the Main Bilge Line { No. and capacity of each 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 capacity ME Driven Lubricating Oil Pumps, including spare pump, No. and size 1 Tot. Cap. 4.5 T/h

Are two independent means arranged for circulating water through the Oil Cooler Branch Bilge Suctions  
 No. and size:—In machinery spaces In pump room  
 In holds, &c.  
 Direct Bilge 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. 1 No. of stages 2 diameters 100/120 mm stroke 90 mm driven by Man Eng  
 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 or Blowers, No. How driven  
 Auxiliary Engines Have they been made under survey. Engine Nos. Position of each in engine room. Report No.



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AIR RECEIVERS:—Have they been made under survey... *yes* State No. of report or certificate... 3248/1445  
 State full details of safety devices... *Safety valves fitted*  
 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... *2* Total cubic capacity... *1240 h* Internal diameter... *490 mm* thickness... *11.5 mm*  
 Seamless, welded or riveted longitudinal joint... *Seamless* Material... *S.M. Steel* Range of tensile strength... *34.0-48.1 kg/cm<sup>2</sup>* Working pressure... *30 atm*  
*56.5-53.0 kg/cm<sup>2</sup>*

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... *29-12-52* Receivers... *29-12-52* Separate fuel tanks...  
 (If not, state date of approval)  
 Donkey boilers... General pumping arrangements... Pumping arrangements in machinery space...  
 Oil fuel burning arrangements...  
 Have Torsional Vibration characteristics been approved... *yes* Date and particulars of approval... *5-1-53*  
*8-1-53*

SPARE GEAR.

Has the spare gear required by the Rules been supplied... State if for "short voyages" only...  
 State the principal additional spare gear supplied...

The foregoing is a correct description,

WERKSPOR N.V.

Manufacturer.

Dates of Survey while building...  
 During progress of work in shops... *1952. 10/5 - 12/5 - 13/5 - 23/5 - 4/6 - 9/6 - 13/6 - 1/7 - 9/8 - 13/12 - 24/12*  
 During erection on board vessel...  
 Total No. of visits... *11*  
 Dates of examination of principal parts—Cylinders... *4/6/52* Covers... *1/7/52* Pistons... *9/8/52* Rods... Connecting rods... *7/11/52*  
 Crank shaft... *13/6/52* Flywheel shaft... *Block 5/52* Thrust shaft... *20/5/52* Intermediate shafts... *11/2/53* Tube shaft...  
 Screw shaft... *5/2/53* Propeller... Stern tube... Engine seatings... Engine holding down bolts... *13/12/52*  
 Completion of fitting sea connections... Completion of pumping arrangements... Engines tried under working conditions...  
 Crank shaft, material... *S.M. Steel* Identification mark... *Lloyds No. 16944 K.H. 9-6-52* Flywheel shaft, material... Identification mark...  
 Thrust shaft, material... *S.M. Steel* Identification mark... *Lloyds No. 16674 K.K. 20-5-52* Intermediate shafts, material... *S.M. Steel* Identification marks... *Lloyds No. 907 H.A. 11-2-53*  
 Tube shaft, material... Identification mark... Screw shaft, material... *S.M. Steel* Identification mark... *Lloyds No. 839 H.A. 15-2-53*  
 Identification marks on air receivers... *No 3/1 Lloyds Test: T.P. 60 atm. W.P. 30 atm. M.S.A. 10-4-52*  
*No 2/2 Lloyds Test: T.P. 60 atm. W.P. 30 atm. K.H. 8-6-51*

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...  
 Full description of fire extinguishing apparatus fitted in machinery spaces...  
 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...  
 What is the special notation desired...  
 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 engine has been built under Special Survey in accordance with approved plans Society Rules and Secretarial letters. All materials have been tested as required and the workmanship found good. The engine has been tried on makers testbed under full load conditions and found working satisfactorily. In my opinion the vessel for which this engine is intended will be eligible for the notation L.M.C. with date when fitted and examined on board. Copy certificates of crankshaft, Thrustshaft, screwshaft, intermediate shaft and airreceivers attached.*

The amount of Entry Fee ... *£ 374* :  
 Special ... *£* :  
 Donkey Boiler Fee... *£* :  
 Travelling Expenses (if any) *£ 10* :  
 Committee's Minute... *FRIDAY 14 AUG 1953*  
 Assigned... *S. F. E. Welch. opt.*  
 When applied for... *16-2 19 53*  
 When received... *19*  
 Engineer Surveyor to Lloyd's Register of Shipping.  
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