

REPORT ON OIL ENGINE MACHINERY.

No. 18970

Date of writing Report 20 July 1953 When handed in at Local Office 19 Port of Amsterdam Received at London Office 30 JUL 1953

No. in Survey held at Amsterdam Date, First Survey 28th January Last Survey 11 July 1953

Reg. Book. Amsterdam Number of Visits 1

Single on the Twin Triple Quadruple Screw vessel "BARAD" Tons Gross Net

Built at Martinshoek By whom built Mun. Bodwes Yard No. 401 When built 1953

Engines made at Amsterdam By whom made Werkspoor N.V. Engine No. 1601 When made 1953

Donkey Boilers made at By whom made Boiler No. When made

Brake Horse Power { Maximum Service 430 Owners Indonesian Republic Port belonging to

M.N. as per Rule 86 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Trade for which vessel is intended Open Sea

OIL ENGINES, &c. — Type of Engines T.M.A.S. 276 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 50 kg/cm² Diameter of cylinders 270 mm Length of stroke 500 mm No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure 7.4 kg/cm² A.F.O. 1-3-5-6-4-2 Span of bearings (i.e., distance between inner edges of bearings in way of a crank) 218 mm Is there a bearing between each crank yes Revolutions per minute { Maximum Service 375

Flywheel dia. 1120 mm Weight 1250 kg Moment of inertia of flywheel (lbs. in² or Kg. cm.²) Means of ignition Compa Kind of fuel used Diesel

" " " " balance wts. (" " " ")

Crank Shaft, { Solid forged Semi-built All built dis. of journals as per Rule as fitted 200 mm Crank pin dia. 200 mm Crank webs Mid. length breadth 210 mm Mid. length thickness 82 mm Thickness parallel to axis Thickness around eyehole

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted 190 mm Thrust Shaft, diameter at collars as per Rule as fitted 145 mm

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted 177.5 mm Is the { tube screw shaft fitted with a continuous liner {

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 Length of bearing in Stern Bush next to and supporting propeller

Propeller, dia. 1515 mm Pitch No. of blades 4 Material brass whether moveable fixed Total developed surface sq. feet

Moment of inertia of propeller including entrained water (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 Means of lubrication forced Thickness of cylinder liners 25 mm Are the cylinders fitted with safety valves ? Are the exhaust pipes and silencers water cooled or lagged with non-conducting material water cooled 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 - M.E. driven Working F.W.

S.W. Cap. 1ST/h 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 - Cap. 1ST/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 Power Driven Lubricating Oil Pumps, including spare pump, No. and size 1 - Cap. 4.8T/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 Main 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

Leaving Air Pumps or Blowers, No. How driven

Auxiliary Engines Have they been made under survey Engine Nos. Makers name Position of each in engine room



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AIR RECEIVERS:—Have they been made under survey... yes State No. of report or certificate DPC 4041/4059
 State full details of safety devices Spring loaded 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 1240h Internal diameter 502 mm thickness 9.5 mm
 Seamless, welded or riveted longitudinal joint Seamless Material S.M. Steel Range of tensile strength 37.4 - 48.7 kg/mm²
33.1 - 49.1 kg/mm² Working pressure 30 atm

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 13-3-53 Receivers 13-3-53 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 5-3-53

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 - 1953: 28/1 - 3/2 - 5/2 - 2/4 - 19/6 - 1/7
 During erection on board vessel - ✓
 Total No. of visits 6

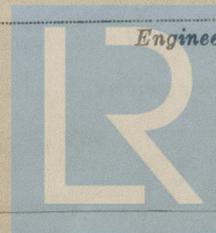
Dates of examination of principal parts
 Cylinders 28-1-53 Covers 5-2-53 Pistons 10-6-53 Rods ✓ Connecting rods 10-6-53
 Crank shaft 30-3-53 Flywheel shaft ✓ Thrust shaft 13-7-48 Intermediate shafts ✓ Tube shaft ✓
 Screw shaft ✓ Propeller ✓ Stern tube ✓ Engine seatings ✓ Engine holding down bolts ✓
 Completion of fitting sea connections ✓ Completion of pumping arrangements ✓ Engines tried under working conditions ✓
 Crank shaft, material S.M. Steel Identification mark Lloyds No. 1534 Flywheel shaft, material ✓ Identification mark ✓
 Thrust shaft, material S.M. Steel Identification mark Lloyds No. 6294 Intermediate shafts, material ✓ Identification marks ✓
 Tube shaft, material ✓ Identification mark ✓ Screw shaft, material ✓ Identification mark ✓
 Identification marks on air receivers NO 51/3. Lloyds Test T.P. 60atm. W.P. 30atm. H.S.A 2-7-52. NO 46/3. Lloyds Test T.P. 60atm. W.P. 30atm. H.S. 9-7-52.

Welded receivers, state Makers' Name Mess Rhinische Röhrenwerke A.G. of Düsseldorf. Hierrefeld.
 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 plan Society Rules and Secretary's letters. All materials have been tested as required and the workmanship found good. The engine has been tried on mahoe tested 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 the machinery has been fitted and tried on board. The engine has been shipped to Martenshoek (Groningen district). Copy certificates of crankshaft, thrustshaft and starting air receivers attached hereto.

The amount of Entry Fee ... fl. 341-
 Special ... £ :
 Donkey Boiler Fee... £ :
 Travelling Expenses (if any) fl. 5-
 Committee's Minute See Ref. 46.
 Assigned See Ref. 46.

When applied for 27-7 1953
 When received 19

[Signature]
 Engineer Surveyor to Lloyd's Register of Shipping.

 Lloyd's Register Foundation

THURSDAY 11 NOV 1953

The Surveyors are requested not to write on or below the space for Committee's Minute.