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REPORT ON OIL ENGINE MACHINERY.

No. 2707.

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IN D.O. 28th June, 1949. When handed in at Local Office 30th June, 1949. Port of Maharrö.
 Date, First Survey 2nd June, 1948 Last Survey 22nd June, 1949.
 Number of Visits 83.
 Tons Gross 10.614 Net 6.214.
 Survey held at Maharrö.
 Book Single.
 on the Triple Screw vessel M/T "SOYA-MARIA".
 By whom built Hockmms Mels. V. A. O. Yard No. 305 When built 1949.
 By whom made Hockmms Mels. V. A. O. Engine No. 489 When made 1949.
 By whom made Motherwell Boiler No. 2145/3/4 When made 1948.
 Owners Buduri A. O. Sogva.
 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.
 Is Horse Power 5500.
 Is Horse Power as per Rule 1556.
 Is made for which vessel is intended ✓.

ENGINES, &c. — Type of Engines MAN. D82 60/110.
 Maximum pressure in cylinders 50 kg. cm².
 Indicated Pressure 5.5 kg. cm². Diameter of cylinders 23 5/8" 600 mm. Length of stroke 43 5/16" 1100 mm. No. of cylinders 8. No. of cranks 8.
 of bearings, adjacent to the crank, measured from inner edge to inner edge 860 mm. Is there a bearing between each crank Yes.
 Revolutions per minute 120. Flywheel dia. 2093 mm. Weight 4250 kgs. Means of ignition Diesel system. Kind of fuel used Heavy oil.
 dia. of journals as fitted 440 mm. Crank pin dia. 440 mm. Crank webs Mid. length breadth 220 mm. Thickness parallel to axis 275 mm.
 as fitted 440 mm. Crank pin dia. 440 mm. Crank webs Mid. length thickness 275 mm. Thickness around eye hole 202.5 mm.
 Wheel Shaft, diameter as fitted 440-385 mm. Intermediate Shafts, diameter as fitted 367 mm. Thrust Shaft, diameter at collars as fitted 385 mm.
 as per Rule ✓. Screw Shaft, diameter as fitted 410 mm. Is the tube shaft fitted with a continuous liner Yes.
 as fitted ✓. Size Liners, thickness in way of bushes as fitted 20 mm. Thickness between bushes as fitted 15 mm. Is the after end of the liner made watertight in the
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner ✓.
 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
 of tube shaft No. If so, state type ✓. Length of bearing in Stern Bush next to and supporting propeller 1750 mm.
 Pitch 4010 mm. No. of blades 4. Material Brass. whether moveable No. Total developed surface 8.53 sq. m.
 Method 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 41.5 mm. Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled
 Lagged Yes. If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned
 Cooling Water Pumps, No. 2. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes.
 Pumps worked from the Main Engines, No. None. Diameter ✓. Stroke ✓. Can one be overhauled while the other is at work Yes.
 ps connected to the Main Bilge Line No. and size 1 of 100 m³/H. 1 of 40 m³/H. 1 of 30 m³/H. 1 of 50 m³/H. 1 of 50 m³/H. 1 of 50 m³/H.
 How driven Steam & 2 elec. driven. Steam driven. Steam driven. Steam driven.
 led overboard ✓. If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping
 arrangements ✓.
 st Pumps, No. and size 1-100 m³/H. Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2, each of 160 m³/H.
 two independent means arranged for circulating water through the Oil Cooler Yes. Suctions, connected to both main bilge pumps and auxiliary
 pumps, No. and size: — In machinery spaces 4-90 mm. In aft cofferd. 2-90 mm. In aft cargo pump room 2-90 mm. In fwd. pump room fwd. 1-90 mm.
 In dry cargo hold: 2-90 mm. In fwd. cofferdam: 2-90 mm.
 Independent Power Pump Direct Suctions to the engine room bilges, No. and size 2-125 mm.
 All the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes. 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 Yes.
 All Sea Connections fitted direct on the skin of the Ship Yes. Are they fitted with valves or cocks Both. Are they fixed
 entirely high on the ship's side to be seen without lifting the platform plates Yes, or by lifting special covers. Are the overboard discharges above or below the deep water line Above.
 Key each fitted with a discharge valve always accessible on the plating of the vessel Yes. Are the blow off cocks fitted with a spigot and brass covering plate Yes.
 pipes pass through the bunkers ✓. How are they protected ✓.
 pipes pass through the deep tank Suction pipes from aft cofferd. Have they been tested as per Rule Yes.
 All pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times Yes.
 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 Yes. Is the shaft tunnel watertight No tunnel. Is it fitted with a watertight door ✓. worked from ✓.
 Good vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork ✓.
 Air Compressors, No. None. No. of stages ✓. diameters ✓. stroke ✓. driven by ✓.
 Auxiliary Air Compressors, No. 2. No. of stages 2. diameters 300-110 mm. stroke 220 mm. driven by aux. oil.
 Auxiliary Air Compressors, No. 1. Williams & James No. B. 1855, 4.1 m³. atm. air/H. driven by engines.
 Is provision is made for first charging the air receivers Small aux. air compressors. driven by Charbonnier generator set.
 Enging Air Pumps, No. 2. diameter 1380 mm. stroke 1110 mm. driven by Main engine.
 Auxiliary Engines crank shafts, diameter as fitted 170 mm. No. 2. Position 1 on port & 1 on starboard side in eng. room.
 Are the auxiliary engines been constructed under special survey Yes. Is a report sent herewith Yes.

AIR RECEIVERS:—Have they been made under survey. *Yes* ✓ 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. *Yes* ✓ Is a drain fitted at the lowest part of each receiver. *Yes* ✓

SPARE
Injection Air Receivers, No. *One* ✓ Cubic capacity of each. *200 litres* Internal diameter. *474 mm* thickness. *13 mm* *42.0*
Seamless, lap welded or riveted longitudinal joint. *Welded* Material. *S.M. Steel* Range of tensile strength. *46.6-47.4 kg. mm²* Working pressure. *30.0*
Starting Air Receivers, No. *Two* ✓ Total cubic capacity. *12 m³* Internal diameter. *1450 mm* thickness. *2.5 mm* *31.8*
Seamless, lap welded or riveted longitudinal joint. *Riveted* Material. *S.M. Steel* Range of tensile strength. *44.6-47.4 kg. mm²* Working pressure. *30.0*

IS A DONKEY BOILER FITTED *Yes* ✓ If so, is a report now forwarded. *Yes* ✓
Is the donkey boiler intended to be used for domestic purposes only. *No*

PLANS. Are approved plans forwarded herewith for shafting. *6.3.1947* Receivers. *18.5.1946* Separate fuel tanks. *31*
(If not, state date of approval)
Donkey boilers. *Made at Mohammell* General pumping arrangements. *17.5.1949* Pumping arrangements in machinery space. *3.3.1949*
Oil fuel burning arrangements. *15.12.1947*

SPARE GEAR.

Has the spare gear required by the Rules been supplied. *Yes* ✓
State the principal additional spare gear supplied. *1 top and 1 bottom cylinder cover.
1 complete piston with piston rod. 1 connecting rod. 1 complete fuel pump.
1 propeller shaft. 7 sets of piston rod packings.*

The foregoing is a correct description.

Shankar Bhatnagar Manufacturer.
Dates of Survey while building
During progress of work in shops - *From 2nd June, 1948 to 4th May, 1949.*
During erection on board vessel - *" 4th May, 1949 " 22nd June, 1949.*
Total No. of visits. *83.*

Dates of examination of principal parts—Cylinders. *11/10.48-1/3.49* Covers. *16/3-29/3.1949* Pistons. *28/2.1949* Rods. *12/2.1949* Connecting rods. *2/2.1949*
Crank shaft. *29/4.1949* Flywheel shaft. *29/1.1949* Thrust shaft. *23/4.1949* Intermediate shafts. *23/4.1949* Tube shaft. *✓*
Screw shaft. *29/4.1948* Propeller. *1/4.1949* Stern tube. *7/4.1949* Engine seatings. *23/4.1949* Engine holding down bolts. *30/5.1949*
Completion of fitting sea connections. *23/4.1949* Completion of pumping arrangements. *17/6.1949* Engines tried under working conditions. *24/6.1949*
Crank shaft, material. *S.M. Steel* Identification mark. *LLOYD'S 12.11-12.13* Flywheel shaft, material. *S.M. Steel* Identification mark. *LLOYD'S 318 AB.29.1.1949*
Thrust shaft, material. *S.M. Steel* Identification mark. *LLOYD'S 1138 AB.23.4.49* Intermediate shafts, material. *S.M. Steel* Identification mark. *LLOYD'S 344 AB.23.4*
Spare screw shaft, material. *S.M. Steel* Identification mark. *LLOYD'S 2305 GA.29.4.48* Screw shaft, material. *S.M. Steel* Identification mark. *LLOYD'S 2306 GA.29.4.48*
Identification marks on air receivers. *Lloyd's Test 44 kg. cm². W.P. 30 kg. cm². AB. 31.3.49. Nos. 176 & 177.*

Is the flash point of the oil to be used over 150°F. *Yes* ✓
Have the requirements of the Rules for oil fuel pipes and tank/fittings been complied with. *Yes* ✓
Description of fire extinguishing apparatus fitted. *Steam and 4 steam. Tnggg, capacity 10 lit.*
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo. *Oil Tanker* If so, have the requirements of the Rules been complied with. *Yes* ✓
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. *No* If so, state name of vessel. *✓*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The main and auxiliary oil engines, auxiliary air compressors, pumps etc. of this vessel have been built under special survey in accordance with the Rules and approved plans. The material fulfil the Rule requirements and the workmanship is good. The shafting as per forging reports enclosed. The machinery of this vessel is eligible, in my opinion, to be classed in the Register Book of this Society with record of L.M.C. 649. Working pressure of donkey boilers 170 lbs/□".*

T.V.C. approved 7/3/47 for 120 ft.
Est. & insp. of forgings. *Mr. 80.-*
Est. & insp. of pumps, etc. *Mr. 640.-*
The amount of Entry Fee. *Mr. 5950.-* When applied for. *30th June 1949.*
Special. *Mr. 220.-* When received. *19*
P. & I. of 2 start. air recs. *Mr. 120.-*
P. & I. of 2 air compressors. *Mr. 120.-*
Travelling Expenses (if any). *Mr. 120.-*
Committee's Minute. *FRI. 22 JUL 1949*

Assigned. *+ LMC 649 Oil Eng. Subject
C.L. 203 170 lb*

A. Baring
Engineer Surveyor to Lloyd's Register of Shipping.
Lloyd's Register Foundation