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# REPORT ON OIL ENGINE MACHINERY.

No. 2707

JUL 1949

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Survey held at Malmö Date, First Survey 2<sup>nd</sup> June, 1948 Last Survey 22<sup>nd</sup> June, 1949

Book single on the single Screw vessel M/T "SOYA-MARIA" Number of Visits 83

By whom built Kockums Mekan. V. A. Ö. Yard No. 305 When built 1949

By whom made Kockums Mekan. V. A. Ö. Engine No. 489 When made 1949

Boilers made at Motherwell By whom made Osborne & Boyd Co. Ltd. Boiler No. 2145/3/4 When made 1948

Indicated Horse Power 5500 Owners Rederi A. Ö. Soyar Port belonging to Stockholm

Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c. — Type of Engines MAN. D82 60/110 2 or 4 stroke cycle 2 Single or double acting Double

Maximum pressure in cylinders 50 kg. cm<sup>2</sup> Diameter of cylinders 23 5/8" 600 mm Length of stroke 43 5/16" 1100 mm No. of cylinders 8 No. of cranks 8

Indicated Pressure 5.5 kg. cm<sup>2</sup> Flywheel dia. 2093 mm Weight 4250 kgs Means of ignition Diesel system Kind of fuel used Heavy oil

Distance between 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 dia. of journals as per 440 mm Crank pin dia. 440 mm Crank webs Mid. length breadth 220 mm Thickness parallel to axis 275 mm

Wheel Shaft, diameter as per 440-385 mm Intermediate Shafts, diameter as per 367 mm Thrust Shaft, diameter at collars as per 385 mm

Shaft, diameter as per 410 mm Is the screw shaft fitted with a continuous liner Yes

Size Liners, thickness in way of bushes as per 20 mm Thickness between bushes as per 15 mm Is the after end of the liner made watertight in the after boss Yes

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner Yes

If two liners are fitted, is the shaft lapped or protected between the liners Yes Is an approved Oil Gland or other appliance fitted at the after end of tube shaft No

Length of bearing in Stern Bush next to and supporting propeller 1750 mm 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 declutching Forced

Thickness of cylinder liners 41.5 mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled Yes

Exhaust pipes are arranged to prevent water from being syphoned to the engine Yes 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 1 of 100 mi<sup>3</sup>/H. 1 of 40 mi<sup>3</sup>/H. 1 of 30 mi<sup>3</sup>/H. Stroke 1 of cargo pump room: 2-90 mm. In fwd. bilge: 1 of 50 mi<sup>3</sup>/H. 1 of 50 mi<sup>3</sup>/H.

Pumps connected to the Main Bilge Line (No. and size) 1 of 100 mi<sup>3</sup>/H. 1 of 40 mi<sup>3</sup>/H. 1 of 30 mi<sup>3</sup>/H. Can one be overhauled while the other is at work Yes

How driven 1 steam & 2 elec. driven. Steam driven. Steam driven. Steam driven. Are special arrangements made to deal with this water in addition to the ordinary bilge pumping Yes

Number of 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 coffered 2-90 mm. In fwd. coffered 2-90 mm. In pump room fwd. 1-90 mm.

Independent Power Pump Direct Suctions to the engine room bilges, No. and size 2-125 mm

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes 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 Yes

Are 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 Are the blow off cocks fitted with a spigot and brass covering plate Yes

Are the pipes each fitted with a discharge valve always accessible on the plating of the vessel Yes How are they protected Yes

Are the pipes pass through the deep tank Suction pipes from aft coffered. Have they been tested as per Rule Yes

Are all pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times Yes

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 Yes Is the shaft tunnel watertight No tunnel. Is it fitted with a watertight door Yes worked from Yes

Are good vessels, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Yes

Air Compressors, No. none No. of stages 2 diameters 300-110 mm stroke 220 mm driven by aux. oil engines

Auxiliary Air Compressors, No. 1 Williams & James No. B. 1855, 4.1 mi<sup>3</sup> atm. air/H. driven by charbon generator

**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*:  
 Seamless, lap welded or riveted longitudinal joint *Welded* Material *S.M. Steel* Range of tensile strength *46.6-47.4 kg. mm<sup>2</sup>* by Rules *42.0*  
**Starting Air Receivers,** No. *Two* ✓ Total cubic capacity *12 m<sup>3</sup>* Internal diameter *1450 mm*: thickness *2.5 mm*:  
 Seamless, lap welded or riveted longitudinal joint *Riveted* Material *S.M. Steel* Range of tensile strength *44.6-47.9 kg. mm<sup>2</sup>* by Rules *31.8*  
**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 *31.1.1949*  
 (If not, state date of approval)  
 Donkey boilers *Made at Mohammedi* 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,

*Shukri bin Sulaiman* Manufacturer.

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

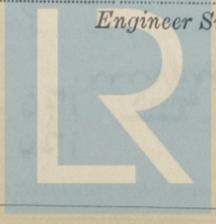
Dates of examination of principal parts—Cylinders *11/10.48-1/3.49* Covers *(5 visits) 16/3-29/3.1949* Pistons *28/2.1949* Rods *12/2.1949* Connecting rods *2/2.1949*  
 Crank shaft *4/5.1949* Flywheel shaft *29/1.1949* Thrust shaft *23/4.1949* Intermediate shafts *23/4.1949* Tube shaft *✓*  
 Screw 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 23.4.49*  
 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. cm<sup>2</sup>. W.P. 30 kg. cm<sup>2</sup>. 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 stems. 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 *✓*

Surveyors' Office Mahomed

**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 f.  
 Est. & insp. of forgings *Rs. 80.-*  
 Est. & insp. of pumps, etc. *Rs. 640.-*  
 The amount of Entry Fee *Rs. 5950.-* When applied for *30<sup>th</sup> June 1949.*  
 Special *Rs. 220.-* When received *19*  
 P.F. of 2 start. air recs. *Rs. 120.-*  
 P.F. of 2 air compressors  
 Travelling Expenses (if any)

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

Committee's Minute  
 Assigned *+ LMC 649 Oil Eng. Subject*  
*C.L. 203 1706*

Certificate (if required) to be sent to Surveyors' Office Mahomed