

REPORT ON OIL ENGINE MACHINERY.

No 13198

Received at London Office 51 NOV 1948

Date of writing Report 20.10.48 When handed in at Local Office 25.10.48 Port of TRIESTE
 No. in Survey held at Trieste - Monfalcone Date, First Survey 14.10.1946 Last Survey 11.10.1948
 No. of Visits 97

7723 on the ^{Single} ~~Triple~~ Screw vessel M/V. "Tomar" Tons Gross 6410 Net 3869

built at Monfalcone By whom built Cant. Riv. dell' Adriatico Yard No. 1737 When built 1948
 Engines made at Trieste By whom made " " " " Engine No. 5467 When made 1948
 Donkey Boilers made at Trieste By whom made " " " " Boiler No. 1912 When made 1948
 Brake Horse Power 7500 Owners Wilh. Wilhelmsen Port belonging to Tönsberg
 Nom. Horse Power as per Rule 1992 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes
 Trade for which vessel is intended general cargo - refrigerated cargo

MAIN ENGINES, &c. Type of Engines Diesel - FIAT DL 649 2 or 4 stroke cycle 2 Single or double acting D.A.
 Maximum pressure in cylinders 60 kg/cm² 25 3/16 640 mm. Length of stroke 45 1/16 1160 No. of cylinders 9 No. of cranks 9
 Mean Indicated Pressure 5.6 kg/cm² Diameter of cylinders 950 mm. Is there a bearing between each crank yes
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 950 mm. Kind of fuel used heavy oil
 revolutions per minute 125 Flywheel dia. 2457 mm Weight 1400 kgs. Means of ignition comp. Kind of fuel used heavy oil
 Crank Shaft, ^{Solid forged} ~~Semi built~~ dia. of journals as per Rule 500 mm Crank pin dia. 500 mm Crank Webs Mid. length breadth 850 mm Thickness parallel to axis 310 mm shrunk Thickness around eye hole 223 mm
 Flywheel Shaft, diameter as per Rule 500 mm Intermediate Shafts, diameter as per Rule 400 mm Thrust Shaft, diameter at collars as per Rule 420 mm
 Tube Shaft, diameter as per Rule 455 mm Is the ~~tube~~ shaft fitted with a continuous liner yes

Bronze Liners, thickness in way of bushes as per Rule 22.5 mm Thickness between bushes as per Rule 17 mm Is the after end of the liner made watertight in the propeller boss yes 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 or other appliance fitted at the after end of the tube
 Length of Bearing in Stern Bush next to and supporting propeller 2000 mm
 Propeller, dia. 4500 mm Pitch 3480 mm No. of blades 4 Material bronze whether Moveable no Total Developed Surface 11.8 sq. ft. m.

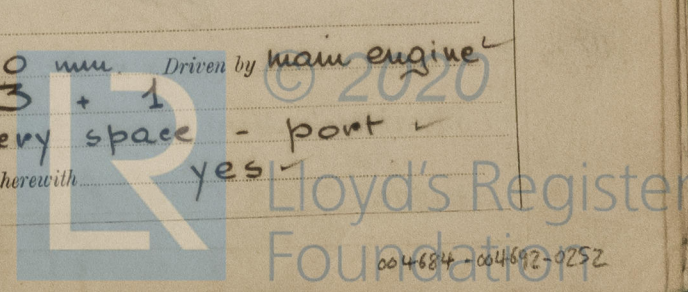
Method of reversing Engines direct Is a governor or other arrangement fitted to prevent racing of the engine ~~check detection~~ yes Means of lubrication forced Thickness of cylinder liners 48 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers ~~water cooled~~ lagged with non-conducting material yes 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. 1 SW - 1 FW - 1 SW FW Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes
 Bilge Pumps worked from the Main Engines, No. 2 of 120 Tons/h - 1 of 200 Tons/h Can one be overhauled while the other is at work
 Pumps connected to the Main Bilge Line No. and Size 2 of 120 Tons/h How driven electric motors electric motor
 Is the cooling water led to the bilges no 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 size 1 of 200 Tons/h. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 of 220 Tons/h.
 Are two independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces 3 at 80 mm. - 4 gutterways at 50 mm. - 1 at 80 mm. in tunnel In Pump Room
 In Holds, &c. N° 1-2 at 80 mm. - N° 2-2 at 100 mm. - N° 3 or Op. Tk. 2 at 80 mm. - N° 4-2 at 80 mm. and 2 gut. at 50 mm. - N° 5-2 at 80 mm.
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 at 125 mm. P. - 1 at 125 mm. S. - 1 at 150 mm. S.

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions 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 yes
 Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates yes Are the Overboard Discharges above or below the deep water line below
 Are they 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
 What pipes pass through the bunkers none How are they protected
 What pipes pass through the deep tanks 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 yes Is it fitted with a watertight door yes worked from deck
 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. 2 No. of stages 2 Diameters 300 m³/h. Stroke cap each Driven by electric motor
 Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 25 m³/h. Stroke Driven by hand
 Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 25 m³/h. Stroke Driven by hand
 What provision is made for first Charging the Air Receivers hand compressor
 Scavenging Air Pumps, No. 2 x 3 tandem Diameter 1040/1030/1020 mm. Stroke 950 mm. Driven by main engine

Auxiliary Engines crank shafts, diameter as per Rule 165 mm. - 110 mm. Position machinery space - port
 Have 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 1066
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 -
3 Air Btles. (standing). Seamless, lap welded or riveted longitudinal joint - Material - Range of tensile strength - Working pressure by Rules - Actual -
Starting Air Receivers, No. 3 ✓ Total cubic capacity 30000 liters Internal diameter 1300/1250 mm thickness 26/25 mm
Seamless, lap welded or riveted longitudinal joint welded Material steel Range of tensile strength 41-55 kg/cm² Working pressure by Rules - Actual 30 kg/cm²
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. yes ✓ Receivers yes Separate Fuel Tanks yes
(If not, state date of approval)
Donkey Boilers yes ✓ General Pumping Arrangements yes Pumping Arrangements in Machinery Space yes
Oil Fuel Burning Arrangements yes
SPARE GEAR.
Has the spare gear required by the Rules been supplied yes ✓
State the principal additional spare gear supplied
1 screw shaft - 1 cylinder liner complete - 2 cylinder covers - miscellaneous small items

Torsional vibration characteristics approved letter E 19.12.46 see attached copy of torsiograph records. - (To FOLLOW LATER) TVCs approved Sec. 2/5/49
Screw speed 125 RPM PROVIDED (see below)

The foregoing is a correct description.

Manufacturer. Cantieri Riuniti Dell' Adriatico
CANTIERE MONFALCONE
Dates of Survey while building
During progress of work in shops - 1946 Dec 17 1947 Mar 5, Apr. 24, June 6, Sep. 2
During erection on board vessel - 1946 Oct. 14, Dec. 14 1947 Jan 15, Mar 10, 12, Apr. 10, 18, 30, May 7, 12, July 23, 28, Aug. 9, 30, Sep. 10, 18, Oct. 2
Total No. of visits 99 17, July 9, 17, 19, 24, 26, Aug. 3, 6, 7, 13, 14, 7, 9, 10, 13, 14, 15, 16, 16, 24, 25, 27, 30, Oct. 2, 4, 9, 11.
Dates of Examination of principal parts - Cylinders 21.2.47 - 8.2.48 Covers 18.4/23.5.47 Pistons 11.7.47 - 13.3.48 Rods 5.12.46 - 1.3.48 Connecting rods 29.3.40 - 26.9.
Crank shaft 4.8.47 Flywheel shaft 4.8.47 Thrust shaft 17.4.48 Intermediate shafts 28/10 - 25/11/47 Tube shaft -
Screw shaft 23.5.47 Propeller 28.10.47 Stern tube 22.3.48 Engine seatings 31.3.48 Engines holding down bolts 11.9.48
Completion of fitting sea connections 22.3.48 Completion of pumping arrangements 2.10.48 Engines tried under working conditions 2.10.48
Crank shaft, Material S.M.S. Identification Mark R 526 Lloyd's Flywheel shaft, Material - Identification Mark -
Thrust shaft, Material S.M.S. Identification Mark 2216 JMA - Lloyd's Intermediate shafts, Material S.M.S. Identification Marks F 127-293 Lloyd's
Tube shaft, Material - Identification Mark - Screw shaft, Material S.M.S. Identification Mark F 126-269 Lloyd's
Identification Marks on Air Receivers No 730 ✓ Lloyd's Test TP 48.5 kg/cm² WP 30 JMA 4.6.48 No 731 ✓ Lloyd's Test TP 48.5 kg/cm² WP 30 JMA 9.6.48 No 732 ✓ Lloyd's Test TP 48.5 kg/cm² WP 30 JMA 12.6.48

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 CO₂ system led to engine room - steam with remote control under boiler
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo yes (veg. oil) 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 - If so, state name of vessel -

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery of this vessel has been constructed in accordance with the Society's Rules, approved plans and Secretary's letters. - The materials and workmanship are good. -
The machinery was installed on board in an efficient manner and subsequently found satisfactory when tested under full working condition. -

In my opinion the machinery is eligible to be classed:

⊕ L.M.C. 10-48 Oil Engine - Screw shaft C.L.
D.B. 100 lbs.

(See above TVCs) Provided a Notice board be fitted at the Control Station stating that the engine is NOT to be operated continuously between 85 + 95 R.P.M. and the engine tachometer be marked accordingly.

The amount of Entry Fee .. £ 374.6.0 : When applied for, 19.
Special ...
Donkey Boiler Fee ... £ 20.0.0 : When received, 19.
Travelling Expenses (if any) £ 20.0.0 : 19.

Committee's Minute FRI. 20 MAY 1949

Assigned + LMC 10-48 Oil Eng C.L.
D.B. 100 lbs.

John McAfee
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation