

# REPORT ON OIL ENGINE MACHINERY.

No 13198

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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 M/V. "Tomar"  
Screw vessel 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/cm<sup>2</sup> Diameter of cylinders 25 3/16 640 mm Length of stroke 45 1/16 1160 mm No. of cylinders 9 No. of cranks 9  
Mean Indicated Pressure 5.6 kg/cm<sup>2</sup>

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 950 mm. Is there a bearing between each crank yes  
Revolutions per minute 125 Flywheel dia. 2457 mm Weight 1400 kgs. Means of ignition comp. Kind of fuel used heavy oil  
Crank Shaft, dia. of journals as per Rule 500 mm Crank pin dia. 500 mm Crank Webs Mid. length breadth 850 mm Thickness parallel to axis  
as fitted 500 mm Mid. length thickness 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  
as fitted 500 mm as fitted 400 mm as fitted 420 mm  
Screw Shaft, diameter as per Rule 455 mm Is the screw shaft fitted with a continuous liner yes  
as fitted 455 mm

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  
as fitted 22.5 mm as fitted 17 mm  
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 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 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. Diameter Stroke 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 - 1 of 200 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 Dp. 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

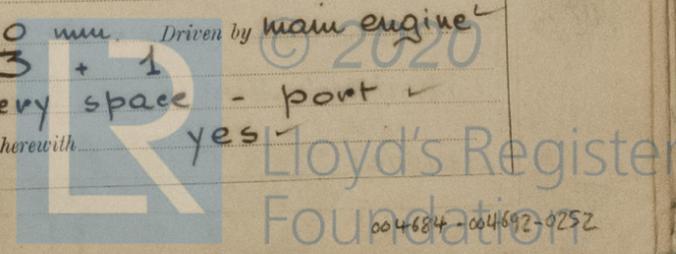
Are all Sea Connections fitted direct on the skin of the ship yes Are they fitted with Valves or Cocks yes  
Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates yes Are the Overboard Discharges above or below the deep water line below  
Are they each fitted 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 none 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 m<sup>3</sup>/h. Stroke cap each Driven by electric motor  
Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 25 m<sup>3</sup>/h. Stroke Driven by hand  
Small Auxiliary Air Compressors, No. 1 No. of stages 2 hand compressor

What provision is made for first Charging the Air Receivers  
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  
as fitted 165 mm - 110 mm Is a report sent herewith yes

Have the Auxiliary Engines been constructed under special survey yes



AIR RECEIVERS: - Have they been made under survey. yes State No. of ~~Report~~ 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. (stacking), 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 thickness 26/25 mm  
Seamless, lap welded or riveted longitudinal joint welded Material steel Range of tensile strength 41-55 kg/cm<sup>2</sup> Working pressure by Rules — Actual 30 kg/cm<sup>2</sup>

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) TV.Cs approved Sec. 2/5/49  
Same speed 125 RPM PROVIDED (see below)

The foregoing is a correct description.

Alvostany Manufacturer.  
Cantieri Riuniti Dell' Adriatico

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. 22  
Total No. of visits 99 Nov. 7, 12, 22, 25, 1948 Feb. 2, 4, 6, 27, Mar 1, 5, 10, 18, 20, 22, 26, 31, Apr. 7, 8, 14, 27, May 4, June 4, 19

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 - 26.9.48  
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 504 A.G. 442 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 (127-293 Lloyd's 268-269 A.G. 294-295)  
Tube shaft, Material — Identification Mark — Screw shaft, Material S.M.S. Identification Mark F 110 AGR Lloyd's

Identification Marks on Air Receivers  
No 730 ✓ Lloyd's Test TP 48.5 kg/cm<sup>2</sup> WP 30 JMA 4.6.48  
No 731 ✓ Lloyd's Test TP 48.5 kg/cm<sup>2</sup> WP 30 JMA 9.6.48  
No 732 ✓ Lloyd's Test TP 48.5 kg/cm<sup>2</sup> 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 CO<sub>2</sub> 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 TV.Cs) 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.

Table with columns for fee type (Entry Fee, Special, Donkey Boiler Fee, Travelling Expenses) and amount (£).

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

Committee's Minute FRI. 20 MAY 1949  
Assigned + LMC 10-48 Oil Eng C.L.  
D.B. 100 lbs.

