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# REPORT ON OIL ENGINE MACHINERY.

No. 13038

Received at London Office 11 MAR 1947

Date of writing Report 10.2.47 When handed in at Local Office 11.2.47 Port of Trieste  
No. in Survey held at Trieste Date, First Survey 29.7.1941 Last Survey 28.1.1947  
Reg. Book. 7908 on the <sup>Single</sup> ~~Double~~ <sup>Triple</sup> ~~Quadruple~~ Screw vessel M/T LIBURNIA Number of Visits 60  
Tons Gross 8194 Net 4868

Built at Trieste By whom built C.R.D.A. cantiere San Marco Yard No. 1253 When built 1947  
Engines made at Turin By whom made F.I.A.T. S.G.M. Engine No. 2807 When made  
Donkey Boilers made at Trieste By whom made C.R.D.A. Fab. Mach. S. Andrea Boiler No. 1270-71 When made  
Brake Horse Power 4800 Owners "SIDARMA" Soc. Ital. d'Armamento Port belonging to Roma  
Nom. Horse Power as per Rule 1328 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
Trade for which vessel is intended Carrying Petroleum

L ENGINES, &c. Type of Engines F.I.A.T. DL 646 2 or 4 stroke cycle 2 Single or double acting Double  
Maximum pressure in cylinder 50 kg/cm<sup>2</sup> Diameter of cylinders 640 mm Length of stroke 1160 mm No. of cylinders 6 No. of cranks 6  
Mean Indicated Pressure 5.4 kg/cm<sup>2</sup> 15 3/16 Flywheel dia. 2 x 933 mm Weight 43100 kg Means of ignition compres. Kind of fuel used Boiler Oil  
No. of bearings, adjacent to the Crank, measured from inner edge to inner edge 115 Is there a bearing between each crank yes  
Revolutions per minute 115 Flywheel dia. 2 x 933 mm Weight 43100 kg Means of ignition compres. Kind of fuel used Boiler Oil  
Crank Shaft, dia. of journals as per Rule 433 mm as fitted 450 mm Crank pin dia. 450 mm Crank Webs Mid. length breadth 710 mm Mid. length thickness 290 mm Thickness parallel to axis 290 mm Thickness around eye hole 212 mm  
Main Shaft, diameter as per Rule 360 mm as fitted 364 mm Thrust Shaft, diameter at collars as per Rule 378 mm as fitted 450 mm  
Intermediate Shafts, diameter as per Rule 360 mm as fitted 364 mm Thrust Shaft, diameter at collars as per Rule 378 mm as fitted 450 mm  
Screw Shaft, diameter as per Rule 393 mm as fitted 417 mm Is the tube screw shaft fitted with a continuous liner yes  
Liners, thickness in way of bushes as per Rule 19.6 mm as fitted 20.5 mm Thickness between bushes as per rule 14.7 mm as fitted 17.5 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 yes  
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 so, state type  
If 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  
If so, state type Length of Bearing in Stern Bush next to and supporting propeller 1670 mm  
Propeller, dia. 4900 mm Pitch 3900 mm No. of blades 4 Material Bronze whether Moveable no Total Developed Surface 7.72 m<sup>2</sup>  
Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication  
Thickness of cylinder liners 41 to 48 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with  
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  
Suction Water Pumps, No. 1 Steam independent 240 T/h Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes  
Pumps worked from the Main Engines, No. 1 Diameter 60 T/h Stroke Can one be overhauled while the other is at work  
Pumps connected to the Main Bilge Line No. and Size one 60 T/h one 40 T/h one 100 T/h How driven 60 T by M.E - 40 T & 60 T Steam independent  
cooling water led to the bilges overboard If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping  
arrangements  
Oil Pumps, No. and size one 100 T/h M.E Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size Two 75 T. each. One Indip. 150 T/h  
Independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
No. and size:—In Machinery Spaces 4 x 3 1/8" & 3 x 3 1/8" in Cofferdam In Pump Room  
In each Main pump space 2 cargo P. 210 T/h & 1 bilge P. 27 T/h In Forward Pump space 1 Bilge P. 100 T/h & 1 Fire P. 27 T/h  
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 x 5" & 1 x 7 3/8" 8 3/4" on "ILLIRIA"

Are the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Spaces  
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 steel plate suet. casing Are they fitted with Valves or Cocks valves & cocks  
They sized 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 above  
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  
Pipes pass through the bunkers cofferdam suction How are they protected - O.F. Tank - no protection  
Pipes pass through the deep tanks 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  
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  
partment to another yes Is the Shaft Tunnel watertight no tunnel Is it fitted with a watertight door worked from  
wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork  
Independent Air Compressors, No. 2 No. of stages 2 Diameters 310 x 278 mm Stroke 350 mm Driven by Steam Eng  
Auxiliary Air Compressors, No. — No. of stages — Diameters — Stroke — Driven by  
All Auxiliary Air Compressors, No. see above No. of stages — Diameters — Stroke — Driven by  
Suctioning Air Pumps, No. 2 800 mm Diameter 3 Cy. Tandem Stroke 850 mm Driven by Main Eng  
Auxiliary Engines crank shafts, diameter as per Rule approved as fitted 110 mm No. 1 Diesel 40 kw 1 Steam 40 kw Position ER Platform Port side



AIR RECEIVERS:—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

High Pressure Air Receivers, No. none

Cubic capacity of each —

Internal diameter —

thickness —

Seamless, lap welded or riveted longitudinal joint —

Material —

Range of tensile strength —

Working pressure by Rules —

Actual —

Starting Air Receivers, No. 2

Total cubic capacity 12+10=22 m<sup>3</sup>

Internal diameter 1594 & 1256

thickness —

Seamless, lap welded or riveted longitudinal joint riveted

Material SMS

Range of tensile strength 44 & 48 kg/cm<sup>2</sup>

Working pressure by Rules Approved

Actual 30 kg/cm<sup>2</sup>

IS A DONKEY BOILER FITTED? yes 2

If so, is a report now forwarded? yes

Is the donkey boiler intended to be used for domestic purposes only —

PLANS. Are approved plans forwarded herewith for Shafting 11.9.46  
(If not, state date of approval)

Receivers 11.9.46 & 19.12.46 Separate Fuel Tanks none

Donkey Boilers 11.9.46 & 16

General Pumping Arrangements 10.9.46

Pumping Arrangements in Machinery Space 10.9.46

Oil Fuel Burning Arrangements 10.9.46

#### SPARE GEAR.

Has the spare gear required by the Rules been supplied yes with exception of the following parts:

State the principal additional spare gear supplied A Cylinder Liner complete. Complete Crank pin bearing. Complete top end bearing. Set of pads of each hand for one face of Thrust block and with addition of:

1 Screw Shaft. Set of spare pieces for each pump on board, for Electric Generator for all electric Motors and for Boiler mountings

The foregoing is a correct description,

#### Manufacturer.

Dates of Survey while building  
During progress of work in shops -- Fiat Turin 1941 July 29, Sept. 11, Dec 12, 1942 Mar. 18, Apr. 10, CRDA - T.A. 1946 Mar. 6, 14, Jun 4, July 13, 15, 20, Aug 13, 20, Sept 9, 13, Nov. 11, 16, 22, Dec. 2, 14, 1947 Jan 10  
During erection on board vessel -- 1945 Nov 6, 1946 Jan. 8, 24, Apr. 26, May 7, 10, 17, July 30, Aug 3, 22, 28, Sept 23, Oct. 2, 3, 9, 11, 19, 31, Nov 7, 14, 16, 21, 22, 25, 30, Dec 6, 17, 18, 1947 Jan. 3, 4, 9, 10, 13, 14, 17, 18, 24, 25, 28  
Total No. of visits 60

Dates of Examination of principal parts—Cylinders 6.12.46 Covers 6.12.46 Pistons 6.12.46 Rods 30.11.46 Connecting rods 30.11.46

Crank shaft 23.9.46 Flywheel shaft — Thrust shaft 8.8.46 Intermediate shafts 7.11.46 Tube shaft —

Screw shaft 10.5.46 Propeller 19.10.46 Stern tube 10.5.46 Engine seatings 11.10.46 Engines holding down bolts 3.1.47

Completion of fitting sea connections 19.10.46 Completion of pumping arrangements 9.1.47 Engines tried under working conditions 27.1.47

Crank shaft, Material SMS Identification Mark — Flywheel shaft, Material See Thrust Identification Mark —

Thrust shaft, Material SMS Identification Mark — Intermediate shafts, Material SMS Identification Marks LLOYD'S 3407VS27

Tube shaft, Material — Identification Mark — Screw shaft, Material SMS Identification Mark LLOYD'S 3412VS27

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

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 —

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with no

Is this machinery duplicate of a previous case yes If so, state name of vessel M/T ILLIRIA

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

This engine has been constructed at Turin in 1943 in accordance with approved plans and under special survey of the Surveyors Mr. Grasselli and Stupari. Owing to war circumstances only part of the material have been tested by them. When in Trieste the Crank shaft has been damaged by bombs and it has now completely disconnected and rebuilt with new journals. (Please see correspondence) One 12m<sup>3</sup> Airvessel was also damaged at one of the head plate and it has been replaced by another of 10m<sup>3</sup> of approved design. All Engine pieces have been opened out overhauled and examined and no other damage or defect were found. The Engine and Auxiliaries have been tested in working condition satisfactorily and in our opinion the same is worthy to have the notation of LMC 1.47 subject to the spare gear being completed. Records of torsional vibrations are enclosed herewith.

The amount of Entry Fee .. £

Special ... £

Donkey Boiler Fee ... £

Travelling Expenses (if any) £

When applied for,

21/2/47

When received,

19

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned L.M.C 1.47 (with endorsement) Oil Eng. C.L. 28B. 185ch