

REPORT ON OIL ENGINE MACHINERY.

No. 1619 ^A

Received at London Office

Writing Report 3rd May 1934 When handed in at Local Office 10 Port of Bremen and Vienna
Augsburg 15th June 1933 Vienna 8th July 1933 Augsburg 11th Feb. 1933
Survey held at Augsburg and Budapest Date, First Survey Vienna 8th July 1933 Last Survey Vienna 28th Apr. 1934
Number of Visits 77

on the Single Twin Triple Quadruple Screw vessel motor-tanker, named "Danube Shell II" Tons ^{Gross} _{Net}

at Budapest (Hungary) By whom built Ganz & Co., Ltd. Yard No. 1430 When built 1933/34

Engines made at Augsburg By whom made Maschinenfabr. Augsburg-Kirchlag Engine No. 280390 When made 1933

Boilers made at By whom made Boiler No. When made

Horse Power 2 x 600 Owners International Inland Waterway Co., London Port belonging to London

Horse Power as per Rule 241 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted yes

for which vessel is intended River Danube 14 3/8 19 1/6

ENGINES, &c.—Type of Engines 2 x G6 Vu 50 2 or 4 stroke cycle 4 Single or double acting single

Working pressure in cylinders 4.8 atm Diameter of cylinders 365 mm Length of stroke 500 mm No. of cylinders 6/motor No. of cranks 6/motor

Indicated Pressure 6.7 atm bearings, adjacent to the Crank, measured from inner edge to inner edge 456 mm Is there a bearing between each crank yes

Revolutions per minute 305 Flywheel dia. 1300 mm Weight 2080 kg Means of ignition airless inj. Kind of fuel used gas oil

Shaft, dia. of journals ^{as per Rule} 220 mm _{as fitted} 220 mm Crank pin dia. 220 mm Crank Webs ^{Mid. length breadth} 360 mm ^{Thickness parallel to axis} 115 mm

Propeller Shaft, diameter ^{as per Rule} 220 mm _{as fitted} 220 mm Intermediate Shafts, diameter ^{as per Rule} 140 mm _{as fitted} 140 mm Thrust Shaft, diameter at collars ^{as per Rule} 145 mm _{as fitted} 145 mm

Shaft, diameter ^{as per Rule} _{as fitted} Screw Shaft, diameter ^{as per Rule} 156/160 mm _{as fitted} 156/160 mm Is the tube screw shaft fitted with a continuous liner 3 single liners

Liners, thickness in way of bushes ^{as per Rule} 10 mm _{as fitted} 10 mm Thickness between bushes ^{as per rule} _{as fitted} Is the after end of the liner made watertight in the stern boss no

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

When 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 grease

When 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 stuffing-box, drawing No 660-0668 Length of Bearing in Stern Bush next to and supporting propeller 656 mm

Propeller, dia. 1950 Pitch 1300 No. of blades 4 Material bronze whether Moveable no Total Developed Surface 20.1 sq. feet

Method of reversing Engines directly, by compr. air Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication

Thickness of cylinder liners 27 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with insulating material lagged

If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine

Sea Water Pumps, No. 2 worked from engines 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 on each Diameter 130 mm Stroke 210 mm Can one be overhauled while the other is at work yes

Pumps connected to the Main Bilge Line ^{No. and Size} 1 for the fore & 1 for the aft bilge-line, each of 42 m³/hour capacity

^{How driven} centrifugal pumps, electrically driven

Is 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

Oil Pumps, No. and size 2 centrif. 60 m³/h each ^{Main motor} Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 doubl. pumps, 3.3 m³/h each

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 2 of 64 mm φ (aux. bilge pump) 2 of 80 mm φ (main pump) In Pump Room

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 electrically driven centrif. pump cap. 42 m³/h

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Spaces

Are they from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges yes (accessible by removable covers of floor)

Are all Sea Connections fitted direct on the skin of the ship yes Are they fitted with Valves or Cocks valves

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 above

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel not Are the Blow Off Cocks fitted with a spigot and brass covering plate

Do all pipes pass through the bunkers How are they protected

Do all pipes pass through the deep tanks Have they been tested as per Rule

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 Is it fitted with a watertight door worked from

When on a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

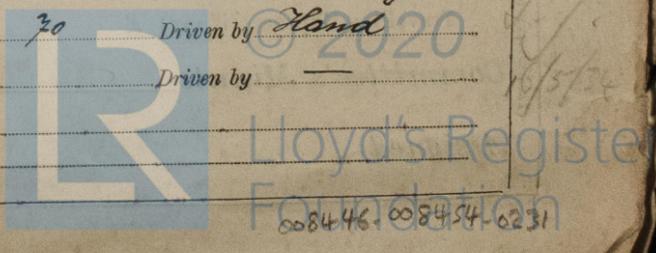
Main Air Compressors, No. 1 No. of stages 2 Diameters 170/160 mm Stroke 160 mm Driven by Auxiliary Diesel

Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 145/45 mm Stroke 150 mm Driven by Main engines

Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 65/58 Stroke 70 Driven by Hand

Scavenging Air Pumps, No. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter ^{as per Rule} 105 mm _{as fitted} 105 mm



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*

Starting High Pressure Air Receivers, No. *2* Cubic capacity of each *1100 liter* Internal diameter *800 mm* thickness *17 mm*

Seamless, lap welded or riveted longitudinal joint *riveted* Material *S.M. steel* Range of tensile strength *41-47 kg/mm²* Working pressure by Rules *30 atm*

Starting Air Receivers, No. *1* Total cubic capacity *55 liter* Internal diameter *249 mm* thickness *9 mm*

for auxiliary engine Seamless, lap welded or riveted longitudinal joint *seamless* Material *S.M. steel* Range of tensile strength *45-52 kg/mm²* Working pressure by Rules *30 atm*

IS A DONKEY BOILER FITTED? *not* If so, is a report now forwarded? *—*

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

PLANS. Are approved plans forwarded herewith for Shafting *yes* Receivers *29.6.33; 14.6.32* Separate Tanks *—*

Donkey Boilers *—* General Pumping Arrangements *yes* Oil Fuel Burning Arrangements *—*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *yes*

State the principal additional spare gear supplied *Pistons, Cylinder cover, Liners, Bearings, Valves, Bolts, Fuel pumps with accessories, Torches, Springs, Piston-Rings, Connecting-rod, Fuel pipes, Piston & valves for water pumps, etc. etc. One pair of propellers, 1 screw-shaft.*

The foregoing is a correct description, *
GANZ & Co. Ltd,
 Electrical & Mechanical Engineers, Manufacturer.

* Relating details not mentioned in the report of Survey of Augsburg.

13. 21. 29. June, 3. 4. 6. 14. 18. 24. 28. July, 7. 9. 14. 16. 17. 18. 19. 21. 22. 24. 25. 29. 30. 31.

1. 2. 4. 5. 6. 7. 8. 12. 13. 14. 15. 18. 19. 20. 21. 25. 26. 28. 29. 30. September, 3. 4. 9. 11. 12. 13.

18. 23. 27. 28. 31. October, 2. 3. 6. 7. 8. 11. November 1933.

Dates of Survey while building: During progress of work in shops - - -
 During erection on board vessel - - -
 Total No. of visits *20*

Dates of Examination of principal parts—Cylinders *21. 8. 33* Covers *6. 7. 33; 13. 10. 33; 8. 11. 33* Pistons *7. 8. 33* Rods *25-31. 8.* Connecting rods *25-31. 8.*

Crank shaft *16-17. 8. 33* Piston shaft *18. 9. 33; 8. 11. 33* Thrust shaft *10. 11. 8. 12. 33; 1. 3. 34* Intermediate shafts *10. 11. 8. 12. 33; 1. 3. 34* Tube shaft *—*

Screw shaft *10. 8. 33; 1. 3. 34* Propeller *1. 3. 34* Stern tube *1. 3. 34* Engine seatings *2. 3. 34* Engines holding down bolts *2. 3. 34*

Completion of fitting sea connections *1. 3. 34* Completion of pumping arrangements *20. 4. 34* Engines tried under working conditions *6. 7. 8. 31. 3. 34*

Crank shaft, Material *S. H. Steel* Identification Mark *VS 15 77, 17. 8. 33* Flywheel shaft, Material *S. H. Steel* Identification Mark *2756 H. 7. 1. 3.*

Thrust shaft, Material *S. H. Steel* Identification Mark *H. 7. 4756. 1. 3. 34* Intermediate shafts, Material *S. H. Steel* Identification Marks *4756 H. 7. 1. 3. 3.*

Tube shaft, Material *—* Identification Mark *—* Screw shaft, Material *S. H. Steel* Identification Mark *4750 H. 7. 9. 1.*

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 *—* 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 *yes*

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.)

These heavy oil engines have been constructed under special Survey accordance with the Soc. Rules and Regulations as well as with the approved plans and instructions thereto. The materials used in the construction are good and the workmanship satisfactory. The engines have been tested on the makers test bed during about 9 normal load and 2 hours at 10% and 20% overload in the presence of Mr. V. Larowok of Augsburg and were found to work satisfactorily. The crankshaft of the starboard engine has been tested by the Germ. Lloyd's surveyor, see London letter 11. 9. 33.

In my opinion the vessel in which these engines are fitted will be eligible for notation of LMC April 1934. The whole machinery has been fitted satisfactorily on board and tried under full working conditions on the 28th April.

The amount of Entry Fee .. £ :
 Special *Inclusive* :
 Donkey Boiler Fee *7.00 £* :
 Travelling Expenses (if any) £ :
 Hull Rpt. : 19.

When applied for, *29/5/34*
 When received, *—*

H. S. Seem
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *PUBL 8 JUN 1934*

Assigned *+ Lmc, 4.34 oil Eng. O.G.*



Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.