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No. 83331

REPORT ON OIL ENGINE MACHINERY.

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of writing Report... When handed in at Local Office 29.9.28 Port of Newcastle-on-Tyne.
in Survey held at St. Peter's, Newcastle Date, First Survey 27 Feb. Last Survey 21 Sept 1928.
Book. Number of Visits 41.

on the ^{Single} ~~Triple~~ ~~Quadruple~~ Screw vessel **SIGRID** Tons ^{Gross} _{Net}
built at Ardrossan By whom built Ardrossan D.D. & B. 340 No. 340 When built 1928
Engines made at Newcastle By whom made R.H. Hawthorn & Co. Engine No. 3425 When made 1928
Boilers made at do By whom made do Boiler No. 3425 When made 1928
Horse Power 400 Owners A/B Oljetransport O/Y Port belonging to Helsingfors
Horse Power as per Rule 189 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
made for which vessel is intended Foreign.

ENGINES, &c. Type of Engines Hawthorn & Co. 2 or 4 stroke cycle 4 Single or double acting Single
Maximum pressure in cylinders 500 lbs per sq. in. Diameter of cylinders 460 m.m. Length of stroke 900 m.m. No. of cylinders 6 No. of cranks 6
Position of bearings, adjacent to the Crank, measured from inner edge to inner edge 640 m.m. Is there a bearing between each crank Yes.
Revolutions per minute 150 Flywheel dia. 5-11 1/2 Weight 4.5 tons Means of ignition Compression Kind of fuel used Diesel oil.

Crank Shaft, dia. of journals as per Rule 292 m.m. as fitted 300 m.m. Crank pin dia. 300 m.m. Crank Webs Mid. length breadth 600 m.m. Thickness parallel to axis 250 m.m.
Flywheel Shaft, diameter as per Rule 292 m.m. as fitted 300 m.m. Intermediate Shafts, diameter as per Rule 204 m.m. as fitted 215 m.m. Thrust Shaft, diameter at collars as per Rule 214 m.m. as fitted 215 m.m.

Shaft, diameter as per Rule 400 m.m. as fitted 400 m.m. Screw Shaft, diameter as per Rule 224 m.m. as fitted 254 m.m. Is the screw shaft fitted with a continuous liner Yes.
Liners, thickness in way of bushes as per Rule 14.4 m.m. as fitted 20.5 m.m. Thickness between bushes as per Rule 10.8 m.m. as fitted 12.5 m.m. Is the after end of the liner made watertight in the stern boss.

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner One length.
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 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 shaft Yes. Vickers Patent. Length of Bearing in Stern Bush next to and supporting propeller 1016 m.m.

Propeller, dia. 9-6" Pitch 4'-9" No. of blades 4 Material Steel whether Movable No Total Developed Surface 32 sq. feet
Method of reversing Engines Compression Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes. Means of lubrication
Oil. Thickness of cylinder liners 32.5 m.m. Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled or lagged with insulating material Both. If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine Exhaust up funnel.

Discharging Water Pumps, No. One Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes.
Sewage Pumps worked from the Main Engines, No. 2 Diameter 90 m.m. Stroke 230 m.m. Can one be overhauled while the other is at work Yes.
Pumps connected to the Main Bilge Line No. and Size 2 Bilge pumps } one Ball pump } one 4" pump, 12 Ton cap }
How driven above, main engine } under, Main Diesel } Hand crank under }

Oil Pumps, No. and size One 6" x 8" x 4" Lubricating Oil Pumps, including Spare Pump, No. and size 1-6" x 6" x 6" Steam
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 Four suction each 2 1/2" + one 3" dia on main Diesel line.

Holds, &c. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1-3"
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-bones. 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.

Are all Sea Connections fitted direct on the skin of the ship. Are they fitted with Valves or Cocks.
Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates. Are the Overboard Discharges above or below the deep water line.
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel. Are the Blow Off Cocks fitted with a spigot and brass covering plate.

What pipes pass through the bunkers. How are they protected.
What 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.

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.
Is the Shaft Tunnel watertight. Is it fitted with a watertight door. Is it worked from
If 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. One No. of stages 3 Diameters 90, 380, 440, Stroke 230 m.m. Driven by Main engines.
Auxiliary Air Compressors, No. One No. of stages 3 Diameters Russell type Stroke 4.5" Driven by Hand crank motor.
Small Auxiliary Air Compressors, No. One No. of stages 3 Diameters Russell type Stroke 4.5" Driven by Hand crank motor.
Scavenging Air Pumps, No. One Diameter — Stroke — Driven by Main engine.

Auxiliary Engines crank shafts, diameter as per Rule as fitted 0 0 0 6
AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes. 2 1-8" x 16"
Can the internal surfaces of the receivers be examined Yes. What means are provided for cleaning their inner surfaces Access through manholes.
Is there a drain arrangement fitted at the lowest part of each receiver Yes.

High Pressure Air Receivers, No. 2 Cubic capacity of each 10 cu ft. Internal diameter 16" thickness 1/8"
Seamless, lap welded or riveted longitudinal joint Seamless. Material Steel Range of tensile strength 32/36 Tons Working pressure by Rules 2000 lbs sq.
Starting Air Receivers, No. 2 Total cubic capacity 500 cu ft. Internal diameter 4-0 5/8" thickness 3/4"
Seamless, lap welded or riveted longitudinal joint Riveted. Material Steel Range of tensile strength 28/32 Tons Working pressure by Rules 350 lbs sq.

IS A DONKEY BOILER FITTED? Yes. If so, is a report now forwarded? Yes.
 PLANS. Are approved plans forwarded herewith for Shafting same as per M.V. Augustina. Receivers do Separate Tanks do.
 (If not, state date of approval)
 Donkey Boilers Yes. General Pumping Arrangements Yes. Oil Fuel Burning Arrangements Yes.

SPARE GEAR as per attached list.

The foregoing is a correct description,

Manufacturer.



Dates of Survey while building
 During progress of work in shops-- 1928 Feb. 27. 29. Mar. 2. 8. 13. 26. 31. Apr. 10. 12. 16. 23. 28. May 3. 5. 7. 11. 14. 15. 24. 25. 30. June 5. 6. 12. 1
 During erection on board vessel-- July 3. 4. 19. 24. 27. Aug. 2. 7. 13. 22. 27. 30. Sep. 7. 11. 17. 21. 2
 Total No. of visits 41.

Dates of Examination of principal parts—Cylinders: Feb. 27-29. Mar. 2-8. 13-26. 31. Apr. 10-12. 16-23. 28. May 3-5. 7-11. 14-15. 24. 25. 30. June 5-6. 12-1
 Covers 27. 6. 28 Pistons 13. 6. 28 Rods 13. 6. 28 Connecting rods 13. 6. 28
 Crank shaft 13. 6. 28 Flywheel shaft 13. 6. 28 Thrust shaft 13. 6. 28 Intermediate shafts 13. 6. 28 Tube shaft NONE.
 Screw shaft 13. 6. 28 Propeller 13. 6. 28 Stern tube 13. 6. 28 Engine seatings 13. 6. 28 Engines holding down bolts 13. 6. 28
 Completion of fitting sea connections 13. 6. 28 Completion of pumping arrangements 13. 6. 28 Engines tried under working conditions 13. 6. 28
 Crank shaft, Material Steel Identification Mark M. R. 5461.A Flywheel shaft, Material Steel Identification Mark 13. 6. 28. A
 Thrust shaft, Material Steel Identification Mark A. M. 13. 6. 28 Intermediate shafts, Material Steel Identification Marks 13. 6. 28. A
 Tube shaft, Material Iron Identification Mark - Screw shaft, Material - Identification Mark 13. 6. 28. A

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 Yes. If so, have the requirements of the Rules been complied with Yes.
 Is this machinery duplicate of a previous case Yes. If so, state name of vessel M.V. Augustina.

General Remarks (State quality of workmanship, opinions as to class, &c.)
The Machinery has been built under special survey. The workmanship & materials are of good quality throughout. The plans have been forwarded to Ardrossan, will be fitted on board the vessel at that Port.

The machinery has been securely fitted on board the vessel and tried under full power with satisfactory results. D.C.B

The amount of Entry Fee ... £ 3 : 0 : 0 When applied for.
 Special T.L.M.C. £ 34-16-00 29 SEP 1928
 Donkey Boiler Fee £ 6 : 6 : 0 When received.
 Travelling Expenses (if any) £ 4 : 4 : 0
 Committee's Minute
 Assigned See Glasgow Report No. 48540
 Glasgow 20 NOV 1928
 Geo. A. Ferguson for George Murdoch
 Engineer, Surveyor to Lloyd's Register of Shipping.

Newcastle-on-Tyne

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

