

# REPORT ON OIL ENGINE MACHINERY.

No. 19920

Received at London Office

6 MAR 1935

Date of writing Report 4-2-35 When handed in at Local Office 2<sup>nd</sup> MARCH 1935. Port of Greenock

Date, First Survey 28<sup>th</sup> DECEMBER 1933. Last Survey 1<sup>st</sup> MARCH 1935. Number of Visits 106.

Name of vessel Greenock M/S "AMASTRA" Tons Gross 8030.44 Net 4442.3

Builder Greenock By whom built Lithgous & Co Yard No. 840 When built 1935  
Engines made at Greenock By whom made J. & W. Caird & Co Engine No. 174 When made 1935  
Boilers made at ditto By whom made ditto Boiler No. 174 When made 1935  
Horse Power 2800 Owners Anglo-Saxon Petroleum Co Ltd Port belonging to London  
Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
Trade for which vessel is intended Foreign 25<sup>th</sup> 16 55<sup>th</sup> 8

**MAIN ENGINES, &c.** Type of Engines Diesel Solid Injection under Piston 2 or 4 stroke cycle 4 Single or double acting Single  
Maximum pressure in cylinders 600 Diameter of cylinders 650 mm Length of stroke 1400 mm No. of cylinders 8 No. of cranks 8  
Distance between bearings, adjacent to the Crank, measured from inner edge to inner edge 344 mm Is there a bearing between each crank Yes  
Revolutions per minute 112 Flywheel dia. 2218 mm Weight 2.19 tons Means of ignition Compression Kind of fuel used Diesel  
Crank Shaft, dia. of journals as per Rule 436 mm as fitted 460 mm Crank pin dia. 460 mm Crank Webs Mid. length breadth shrunk Thickness parallel to axis 267 mm  
Flywheel Shaft, diameter as per Rule 436 mm as fitted 18 1/4" Intermediate Shafts, diameter as per Rule 218" as fitted 24" Thrust Shaft, diameter at collars as per Rule 12.8" as fitted 18 1/4"  
Stern Tube Shaft, diameter as per Rule 13.5" as fitted 18" Is the tube screw shaft fitted with a continuous liner Yes  
Bronze Liners, thickness in way of bushes as per Rule 54 as fitted 11/16" 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 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 Yes  
If two liners are fitted, is the shaft lapped or protected between the liners Yes Is an approved Oil Gland or other appliance fitted at the after end of the tube Yes  
Length of Bearing in Stern Bush next to and supporting propeller 5-0"

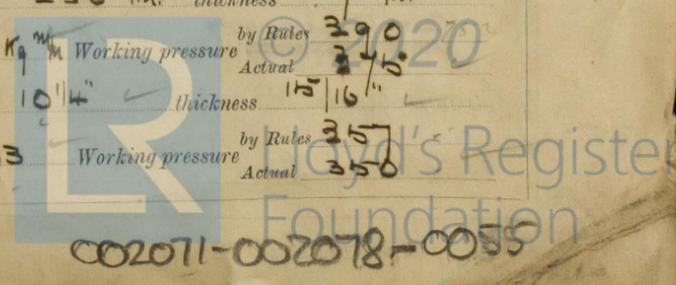
Propeller, dia. 15-9" Pitch 11-3" No. of blades 4 Material Bronze whether Moveable No Total Developed Surface 80 sq. feet  
Method of reversing Engines Air Is a governor or other arrangement fitted to prevent racing of the engine when detached Yes Means of lubrication Forced  
Thickness of cylinder liners 48 to 40 mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting 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 Yes  
Cooling Water Pumps, No. 2 (one 450 tons) (one 250 tons) 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 Diameter 35 tons each Stroke Rotary Can one be overhauled while the other is at work Yes  
Pumps connected to the Main Bilge Line { No. and Size } 2 at 35 tons one 8" x 8" x 10"  
{ How driven } Main Engines Steam

Ballast Pumps, No. and size None Lubricating Oil Pumps, including Spare Pump, No. and size 2 (one 40 tons Rotary) one 8" x 8" x 10"  
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 3 1/2" In Pump Room MAIN 1-3" FORE 1-2"  
In Holds, &c. 2, 2" Tantalum (Waug) 2.6" Centre 1-8" Deep Tank 2.4"  
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Yes 2.6" (205 in plan)

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 Both  
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 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 —

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 None Is it fitted with a watertight door — worked from —  
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. None No. of stages — Diameters — Stroke — Driven by —  
Auxiliary Air Compressors, No. Two No. of stages 2 Diameters 4 1/8" 8 7/8" Stroke 6" Driven by Steam  
Small Auxiliary Air Compressors, No. None No. of stages — Diameters — Stroke — Driven by —  
Scavenging Air Pumps, No. — Diameter — Stroke — Driven by —

Auxiliary Engines crank shafts, diameter as per Rule (as approved London 1-5.34) 110 mm as fitted 110 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  
High Pressure Air Receivers, No. one Cubic capacity of each 45 litres Internal diameter 250 mm thickness 7 mm  
Seamless, lap welded or riveted longitudinal joint Seamless Material S Range of tensile strength 5056 kg/mm<sup>2</sup> Working pressure by Rules 390 Actual 245  
Starting Air Receivers, No. 2 Total cubic capacity 800 Cub ft Internal diameter 5-10 1/4" thickness 15/16" Working pressure by Rules 257 Actual 350  
Seamless lap welded or riveted longitudinal joint Riveted Material S Range of tensile strength 29.33 Working pressure Actual 350



IS A DONKEY BOILER FITTED?

yes ✓  
no

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

yes ✓

Receivers

yes ✓

Separate Tanks

yes ✓

Donkey Boilers

yes ✓

General Pumping Arrangements

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

Exhausting Rod.

Propeller - Propeller Shaft - Steam Jacket R. 4991 WGM 1935

The foregoing is a correct description.  
For JOHN G. KINCAID & CO. LIMITED.

*W. Carter*

DIRECTOR Manufacturer.

Dates of Survey while building  
During progress of work in shops - (1933) DEC. 28 (1934) FEB. 9 22 26 28 MAR. 6 9 12 14 16 20 23 29 APR. 3 4 5 6 13 16 19 23 24 MAY 1 3 10 14 15 21 25 29 JUNE 1 5 22 26 28 JULY 5 11 24 31  
During erection on board vessel - - - AUG. 6 7 13 14 17 21 23 24 SEPT. 7 18 21 25 OCT. 4 10 11 13 26 30 NOV. 5 6 12 14 16 19 20 21 22 23 26 28 29 30 DEC. 3 4 5 6 10 13 14 17 21 24 26 (1935) JAN. 2 4 8 9 10 11 15 22 27 31 FEB. 4 7 11 13 16 18 25 28 MAR. 1  
Total No. of visits 105.

Dates of Examination of principal parts - Cylinders 16. 11. 34 Covers 19. 11. 34 Pistons 5. 12. 34 Rods 9. 7. 34 Connecting rods 11. 7. 34  
Crank shaft 21. 8. 34 Flywheel shaft ✓ Thrust shaft 4. 1. 35 Intermediate shafts 7. 1. 35 Tube shaft -  
Screw shaft 30. 11. 34 Propeller 30. 11. 34 Stern tube 30. 11. 34 Engine seatings 26. 11. 34 Engines holding down bolts 11. 2. 35  
Completion of fitting sea connections 26. 11. 34 Completion of pumping arrangements 11. 2. 35 Engines tried under working conditions 1. 3. 35  
Crank shaft, Material S Identification Mark LR 2204 Flywheel shaft, Material ✓ Identification Mark ✓  
Thrust shaft, Material S Identification Mark LR 4991 WGM Intermediate shafts, Material S Identification Marks LR 4991 WGM  
Tube shaft, Material ✓ Identification Mark - Screw shaft, Material S Identification Mark LR 4991 WGM

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 -  
Is this machinery duplicate of a previous case yes ✓ If so, state name of vessel M/S "Sau Alberto" 4270 19910

General Remarks (State quality of workmanship, opinions as to class, &c.) These engine & boiler have been built under special survey in accordance with the approved plans. The workmanship & material are of good quality. They have been securely fitted on board and tried under working conditions. Found satisfactory. The machinery is eligible in my opinion for the record of L.M.C. 3.35 (Notation of Donkey Boiler W.P. 180 lbs)

On the official trials on the cycle on 28/2/35 & 1/3/35 a maximum horse developed in the propeller at 47 revolutions continued to 1585 when it disappeared entirely. It was agreed that an opportunity would be given to examine this propeller at the Royal Dry Docking (Propeller made by the South Metal Co. Glasgow)

The amount of Entry Fee ... £ 6 : - : When applied for,  
Special ... £ 100 : 3 : 25<sup>th</sup> March 1935  
Donkey Boiler Fee ... £ 16 : 12 :  
Ave Reserve (if any) £ 8 : 8 : 5/3/35

*W. Gordon-Mitchell*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 5 - MAR 1935

Assigned + L.M.C. 3,35

DR-180lb.

