

REPORT ON OIL ENGINE MACHINERY.

Received at London Office 29 JUL 1936

Date of writing Report 20.4.36 When handed in at Local Office 14th July 1936 Port of Greenock

No. in Survey held at Reg. Book. Greenock Date, First Survey 4th October 1935 Last Survey 14th July 1936 Number of Visits 90

on the ^{Single} ~~Triple~~ Screw vessel M/S "Arinia" Tons { Gross 3024.50 Net 1444.26

Built at Glasgow By whom built Lithgow & Co. Yard No. 860 When built 1936

Engines made at Greenock By whom made John & Nicaudie & Co. Engine No. 1192 When made 1936

Donkey Boilers made at ditto By whom made ditto Boiler No. 1192 When made 1936

Brake Horse Power 2800 Owners Anglo-Saxon Petroleum Co. Ltd. Port belonging to London

Nom. Horse Power as per Rule 503 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended Foreign 25 9/16" 55 1/8"

OIL ENGINES, &c.—Type of Engines Diesel Solid Injection under Piston Supercharge 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

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 844 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 Mid. length thickness Thickness parallel to axis 267 mm Thickness around eye-hole 205 mm

Flywheel Shaft, diameter as per Rule 436 mm as fitted 18 1/4" Intermediate Shafts, diameter as per Rule 12.18 as fitted 24" Thrust Shaft, diameter at collars as per Rule 12.5 as fitted 18 1/4"

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule 13.5 as fitted 18" Is the shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per Rule 7/8" as fitted 7/8" Thickness between bushes as per rule 5/4 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 No

If two liners are fitted, is the shaft lapped or protected between the liners No Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft No

Propeller, dia. 15.9" Pitch 11.3" No. of blades 4 Material Iron 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 disengaged Yes Means of lubrication Forced

Thickness of cylinder liners 40 & 48 mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water-cooled or lagged with non-conducting material Lagged

Cooling Water Pumps, No. 2 (1-2000) (1-2500) 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 Stroke Rotary Can one be overhauled while the other is at work Yes

Pumps connected to the Main Bilge Line { No. and Size } 2. 35 tons } 1. 8x8x10 } How driven { Main Engine } Steam

Ballast Pumps, No. and size 9000 Lubricating Oil Pumps, including Spare Pump, No. and size 2 (one 40 tons) one 8x8x10

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 Holds, &c. 2. 2" Tanks (Wing) 2. 6" Centre 1. 8" Deck Tanks 2. 4"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Yes 2-6"

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces ed 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 Have they been tested as per Rule

What pipes pass through the deep tanks None

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 Diesel

Small Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

Scavenging Air Pumps, No. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule as fitted

R RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes

Are the internal surfaces of the receivers be examined Yes What means are provided for cleaning their inner surfaces Manholes

Is there a drain arrangement 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

Low Pressure Air Receivers, No. 2 Total cubic capacity 800 cu. ft. Internal diameter 5-10 1/4" thickness 15/16" Working pressure by Rules 37.5

Small Air Receivers, No. 2 Total cubic capacity 800 cu. ft. Internal diameter 5-10 1/4" thickness 15/16" Working pressure by Rules 35.7

Are the receivers, lap-welded or riveted longitudinal joint Riveted Material S Range of tensile strength 29-23 Working pressure by Rules 35.7

W335-5072

IS A DONKEY BOILER FITTED?

Yes ✓

If so, is a report now forwarded?

Yes ✓

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

Receivers

Yes

Separate Tanks

Yes

Donkey Boilers

Yes

General Pumping Arrangements

Yes

Oil Fuel Burning Arrangements

Yes

SPARE GEAR

Propeller shaft complete (Stamped L.R. 5888 W.G.M. 7.4.36)

Handwritten notes and signatures in the spare gear section.

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

W. G. Kincaid Director

Manufacturer.

Table with columns for Dates of Survey while building and Total No. of visits. Includes dates from Dec 1935 to Feb 1936.

Dates of Examination of principal parts - Cylinders, Covers, Pistons, Rods, Connecting rods, Crank shaft, Flywheel shaft, Thrust shaft, Intermediate shafts, Tube shaft, Screw shaft, Propeller, Stern tube, Engine seatings, Engines holding down bolts.

Completion of fitting sea connections, Completion of pumping arrangements, Engines tried under working conditions. Material identification marks for Crank shaft, Thrust shaft, Tube shaft, and Screw shaft.

Is the flash point of the oil to be used over 150° F. Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with. Is the vessel fitted for carrying oil as cargo.

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

These Engines-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. Tried under working conditions and found satisfactory.

The Machinery is eligible in my opinion for the record of L.M.E. 4-36 (Notation of Donkey Boiler W.P. 180lb)

Damage stated to have been caused by the breaking of 9 1/2" main engine piston July 9th 1936, on completion of official trials

Found 9 1/2" piston broken, piston rod, connecting rods bent. Found 9 1/2" crank pin web bolt plate in way of same. Found 9 1/2" piston (Pulley iron) connecting, piston rods, top & bottom end bearings, all bolts, removed. 9 1/2, 2, 3, 4, 6 pistons removed, examined & tested, found satisfactory. These pistons have been replaced by ones of Pulley iron. All completion Machinery tried under power & found satisfactory.

Table of fees: The amount of Entry Fee (£6), Special (£100.3), Donkey Boiler Fee (£16.12), and Committee's substitute (£8.8).

W. G. Kincaid Engineer Surveyor to Lloyd's Register of Shipping

Assigned + L.M.E. 7.36 DB-180lb

