

REPORT ON OIL ENGINE MACHINERY.

No. 19687

25 APR 1936
29 JUL 1936

Received at London Office

Date of writing Report 24th April 1936 When handed in at Local Office 24th April 1936 Port of Grimby

No. in Survey held at Lincoln Date, First Survey 3rd Oct 1935 Last Survey 23rd April 1936
Reg. Book. Number of Visits 29

Single
Twin
Triple
Quadruple
Screw vessel

M/S Arinia

Tons { Gross
Net

Built at P. Glasgow By whom built Lithgows & Co Yard No. 880 When built 1936

Engines made at Lincoln By whom made Ruston & Hornsby, L.L. Engine No. 177574 When made 1935

Donkey Boilers made at Lincoln By whom made Lincoln Boiler No. 1 When made 1935

Brake Horse Power 60 Owners Anglo Saxon Petroleum Co Port belonging to London

Nom. Horse Power as per Rule 18.6 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Trade for which vessel is intended [One engine - Type 3.V.C.R.2]

OIL ENGINES, &c. — Type of Engines Diesels injection, cold starting 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 700 lbs Diameter of cylinders 8" Length of stroke 10 3/4" No. of cylinders 3 No. of cranks 3
Mean Indicated Pressure 81.5 lbs

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 9 1/2" Is there a bearing between each crank yes

Revolutions per minute 450 Flywheel dia. 3' 4" Weight 19 cwt Means of ignition Compression Kind of fuel used crude oil

Crank Shaft, dia. of journals as approved Crank pin dia. 4 3/4" Crank Webs Mid. length breadth 8" Thickness parallel to axis
as fitted 6" Mid. length thickness 2 1/2" shrunk Thickness around eye hole

Flywheel Shaft, diameter as approved Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as per Rule
as fitted 6" as fitted as fitted

Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule Is the tube screw shaft fitted with a continuous liner
as fitted as fitted

Bronze Liners, thickness in way of bushes as per Rule Thickness between bushes as per rule Is the after end of the liner made watertight in the
as fitted as fitted

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

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 two 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 If so, state type Length of Bearing in Stern Bush next to and supporting propeller

Propeller, dia. Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet

Method of reversing Engines Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication forced

Thickness of cylinder liners 3/4" Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material water

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

Cooling Water Pumps, No. one Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from the Main Engines, No. Diameter Stroke Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line { No. and Size
How driven

Is the cooling water led to the bilges If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements

Ballast Pumps, No. and size Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size one geared

Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Machinery Spaces In Pump Room

In Holds, &c.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size

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

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 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. No. of stages Diameters Stroke Driven by

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

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



W335-0075

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

Can the internal surfaces of the receivers be examined and cleaned ✓ Is a drain fitted at the lowest part of each receiver ✓

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. *None* Total cubic capacity ✓ Internal diameter ✓ thickness ✓

Seamless, lap welded or riveted longitudinal joint ✓ Material ✓ Range of tensile strength ✓ Working pressure by Rules ✓ Actual ✓

IS A DONKEY BOILER FITTED? *No.* 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 *7-9-31* Receivers ✓ Separate Tanks ✓

Donkey Boilers ✓ General Pumping Arrangements ✓ Oil Fuel Burning Arrangements ✓

SPARE GEAR.

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

State the principal additional spare gear supplied ✓

Request form attached

Ruston & Hornsby, Limited,

The foregoing is a correct description,

R. O'Neil 7/1/36 Manufacturer.

Oil & Gas Engine Dept

Dates of Survey while building { During progress of work in shops - - } *931 Oct 3, 17, 22, 24, 28, 31 Nov 7, 28 Dec 9, 12, 16, 23, 30 1936 Jan 2, 6, 9, 27 Feb 27 Mar 2, 12, 16, 19, 23, 26, 30 Apr 2, 6, 9, 23*
 { During erection on board vessel - - - }
 Total No. of visits *29*

Dates of Examination of principal parts—Cylinders *9-12-35* Covers *9-12-35* Pistons *7-11-35* Rods ✓ Connecting rods *28-10-35*

Crank shaft *7-11-35* Flywheel shaft *7-11-35* 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 *2-1-36*

Crank shaft, Material *Sm. steel* Identification Mark *3229A* Flywheel shaft, Material *Sm. steel* Identification Mark *3229A*

Thrust shaft, Material ✓ Identification Mark ✓ Intermediate shafts, Material ✓ Identification Marks ✓

Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material ✓ Identification Mark ✓

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 (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 *Primary report No. 18653 Mr Inokanga same type. Now 3 instead of 5 cylinders*

Is this machinery duplicate of a previous case *yes*. If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. *The workmanship & materials are good.*)

The engine has been built under Special Survey in accordance with the Rules & approved plan. Running trials were carried out at the maker's works under brake load with satisfactory results.

The engine was built to the order of Messrs Peter Brotherhood & Co., & is being despatched to Messrs J. G. Kincaid & Co., Greenock.

*Not securely fitted on board
 W. J. Gordon
 Greenock*

Ref 0/2270/P/V. 5649

The amount of Entry Fee .. £	When applied for,
Special ...	19
Donkey Boiler Fee ...	When received,
Travelling Expenses (if any) £	19

Committee's Minute **GLASGOW 28 JUL 1936**

Assigned *See Gen. Rpt. No. 20189*

W. L. Pilditch
 Engineer Surveyor to Lloyd's Register of Shipping.



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