

Rpt. 4b.

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

Number of Visits 29

Single
on the Twin
Triple
Quadruple
Screw vesselM/S AriniaTons { Gross
Net

Built at Glasgow

By whom built Liffegore L^a

Yard No. 880 When built 1936

Engines made at Lincoln

By whom made Ruston & Hornsby, L^a

Engine No. 177574 When made 1935

Donkey Boilers made at

By whom made

Boiler No. When made

Brake Horse Power 60

Owners Anglo Saxon Petroleum L^a

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 Diesel injection, cold starting 2 or 4 stroke cycle 4 Single or double acting singleMaximum pressure in cylinders 700 lb.Diameter of cylinders 8"Length of stroke 10 3/4"No. of cylinders 3No. of cranks 3Mean Indicated Pressure 81.5 lb.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 450Flywheel dia. 3' 4"Weight 19 cwt.Means of ignition Compression Kind of fuel used crude oil.Crank Shaft, dia. of journals as approved
as fitted 6"Crank pin dia. 4 3/4"

Crank Webs

Mid. length breadth 8"Thickness parallel to axis shrunkMid. length thickness 2 1/2"Thickness around eyehole shrunkFlywheel Shaft, diameter as approved
as fitted 6"Intermediate Shafts, diameter as per Rule
as fitted as fittedThrust Shaft, diameter at collars as per Rule
as fitted as fittedTube Shaft, diameter as per Rule
as fitted as fittedScrew Shaft, diameter as per Rule
as fitted as fitted

Is the { tube } shaft fitted with a continuous liner { screw }

Bronze Liners, thickness in way of bushes as per Rule
as fitted as fittedThickness between bushes as per rule
as fitted as fitted

Is the after end of the liner made watertight in the

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. feetMethod of reversing Engines ✓ Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes. Means of lubricationforced. Thickness of cylinder liners 3/4" Are the cylinders fitted with safety valves yes. Are the exhaust pipes and silencers water cooled or lagged withnon-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 BilgePumps, 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 Spacesled 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 as fitted

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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.*

(If not, state date of approval)

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 *Primarily report No. 18653. Mr. Inokanga.*

Is this machinery duplicate of a previous case *yes.* If so, state name of vessel *Same type. Now 3 instead of 5 cylinders*

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. S. Kincaid & Co., Greenock.

*Now securely fitted on board
H.M.S. Gordon Duncan
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*

H. L. Filditch.
Engineer Surveyor to Lloyd's Register of Shipping.



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