

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 19308.

18 MAR 1931

Date of writing Report 20. 1. 31 When handed in at Local Office 14th MARCH. 1931. Port of Greenock
No. in Survey held at Greenock Date, First Survey 4th MAY. 1930 Last Survey 13. 3 1931
Reg. Book. Single on the Twin Triple Screw vessel S/S "Macdhui"
Built at Glasgow By whom built Barclay Curle & Co. Ltd. Yard No. 644 When built 1931
Engines made at Greenock By whom made John & Macdonald & Co. Ltd. Engine No. 1765 When made 1931
Donkey Boilers made at Annan By whom made Galloway (Annan) & Co. Ltd. Boiler No. 11738 When made 1931
Brake Horse Power 3820 Owners Burns, Philip & Co. Ltd. Port belonging to Sydney
Nom. Horse Power as per Rule 653 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes
Trade for which vessel is intended Foreign 278 59 1/2

OIL ENGINES, &c.—Type of Engines 2 or 4 stroke cycle H. Single or double acting Single
Maximum pressure in cylinders 540 Diameter of cylinders 740 mm Length of stroke 1500 mm No. of cylinders 8 No. of cranks 8
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1004 mm Is there a bearing between each crank Yes
Revolutions per minute 106 Flywheel dia. 8' 16" Weight 2.50 tons Means of ignition Compression Kind of fuel used Diesel
Crank Shaft, dia. of journals as per Rule 525 mm as fitted 525 mm Crank pin dia. 525 mm Crank Webs Mid. length breadth shrunk Thickness parallel to axis 320 mm
Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted 13 7/8" Thrust Shaft, diameter at collars as per Rule as fitted 14 5/8"
Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted 15 3/4" Is the tube screw shaft fitted with a continuous liner Yes
Bronze Liners, thickness in way of bushes as per Rule as fitted 13 1/16" Thickness between bushes as per rule as fitted 5/8" 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 shaft No If so, state type Length of Bearing in Stern Bush next to and supporting propeller 5' 3"
Propeller, dia. 16' 6" Pitch 14' 6" No. of blades 4 Material Bronze whether Moveable No Total Developed Surface 88 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 53/32 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. Two 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. Four Diameter Stroke Can one be overhauled while the other is at work Yes
Pumps connected to the Main Bilge Line No. and Size Four (one 6") (two 5") (one 4 1/2") How driven motor
Ballast Pumps, No. and size one 6" Lubricating Oil Pumps, including Spare Pump, No. and size 2 - 68 & 102 tons per hour
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 2 - 2 1/2" 4 - 3" one 2 1/2" Flume Room Tunnel Well. 1 - 2 1/2"
In Holds, &c. 2 - 2 1/2" in each
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 3 at 4 1/2"
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 No
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 Below
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 Yes
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 Yes Is it fitted with a watertight door Yes worked from U.E.R. Platform
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. one No. of stages 3 Diameters 450-675-1500 mm Stroke 610 mm Driven by Main Engine
Auxiliary Air Compressors, No. 4 No. of stages 3 Diameters 260-226-56 mm Stroke 225 mm Driven by Diesel Engine
Small Auxiliary Air Compressors, No. one No. of stages 2 Diameters 34-100 mm Stroke 80 mm Driven by Steam Engine
Scavenging Air Pumps, No. — Diameter — Stroke — Driven by —
Auxiliary Engines crank shafts, diameter as per Rule as fitted see London Rpt. No. 95443 attached

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 Yes What means are provided for cleaning their inner surfaces Manhole
Is there a drain arrangement fitted at the lowest part of each receiver Yes
High Pressure Air Receivers, No. 3 Cubic capacity of each 200 Cubic Feet Internal diameter 14" thickness 1/2"
Seamless, lap welded or riveted longitudinal joint Seams Material S Range of tensile strength 29.33 Working pressure by Rules 1000 lbs
Starting Air Receivers, No. 3 Total cubic capacity 1440 CF Internal diameter 6' 6" thickness 1/16" Working pressure by Rules 350
Seamless, lap welded or riveted longitudinal joint TRIPLES Material S Range of tensile strength 28.32 Working pressure by Rules 350

1030-0301

IS A DONKEY BOILER **REFITTED?**

If so, is a report now forwarded?

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

Receivers

Separate Tanks

Donkey Boilers

General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR

required by Rules **ten supplied**

Additional Spare Gear supplied

Propeller, Propeller Shaft, Cylinder Liner, Cylinder

Head.

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

Director. Manufacturer.

Dates of Survey while building

During progress of work in shops - -	(1930) May 4 July 15 29 Aug 4 8 12 13 14 15 18 19 21 22 25 Sept 6 9 10 11 14 26 29 30 Oct 1 6 7 10 13 14 15 17 21 22 24 29 30 31 Nov 3 4 5 10 13 14 18 20 21 24 Dec 13 14 19
During erection on board vessel - -	22 29 30 (1931) Jan 4 8 12 13 15 16 21 27 30 Feb 3 5 9 19 20 26 Mar 6 7 8 9 10 13
Total No. of visits	43

Dates of Examination of principal parts

Cylinders 17. 9. 30 Covers 15. 9. 30 Pistons 14. 10. 30 Rods 14. 10. 30 Connecting rods 22. 12. 30

Crank shaft 22. 12. 30 Flywheel shaft 17. 12. 30 Thrust shaft 22. 12. 30 Intermediate shafts 17. 12. 30 Tube shaft 17. 12. 30

Screw shaft 13. 10. 30 Propeller 13. 10. 30 Stern tube 30. 9. 30 Engine seatings see 4th Rpt Engines holding down bolts 30. 1. 31

Completion of fitting sea connections see 4th Rpt Completion of pumping arrangements 7. 3. 31 Engines tried under working conditions 13. 3. 31

Crank shaft, Material S Identification Mark LR 1165 W.G.M Flywheel shaft, Material S Identification Mark 484 W.G.M

Thrust shaft, Material S Identification Mark LR 1931 W.G.M Intermediate shafts, Material S Identification Marks LR 488(2) 504 554

Tube shaft, Material S Identification Mark S Screw shaft, Material S Identification Mark LR 505 W.G.M

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 No If so, have the requirements of the Rules been complied with -

Is this machinery duplicate of a previous case No If so, state name of vessel -

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

built under special survey in accordance with the

Approved plans, & the workmanship & material are of good

quality. They are now securely fitted on board, tried

under working conditions & found satisfactory.

The Machinery is eligible in my opinion for the record of

✱ L M C 3-31 (Notation of Donkey Boilers 100th)

GREEN LOCK

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

The amount of Entry Fee ... £ 6 : - : When applied for,

Special ... £ 107 : 13 : 14th March 1931

Damage Fee ... £ 3 : 3 : When received,

Donkey Boiler Fee ... £ 12 : 12 : 17. 3. 31

Airi Reservation ... £ 12 : 12 : 17. 3. 31

Travelling Expenses (if any) ... £ 12 : 12 : 17. 3. 31

Committee's Minute GLASGOW 17 MAR 1931

Assigned + L.M.C. 3.31.

2 A.B. - 100 lb.

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

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Foundation