

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 Greencock
 No. in Survey held at Greencock Date, First Survey 4th MAR. 1930 Last Survey 13. 3 1931
 Reg. Book. S/S "Macdhui" Number of Visits 42
 on the Single Screw vessel 515 "Macdhui" Tons { Gross 4561 Net 2626
 Built at Lisagow By whom built Barclay Curle & Co. L^{td} Yard No. 644 When built 1931
 Engines made at Greencock By whom made John & McCand L^{td} Engine No. 1765 When made 1931
 Donkey Boilers made at Aunan By whom made Boylan (Aunan) L^{td} Boiler No. 11738 When made 1931
 Brake Horse Power 3820 Owners Burros, Philip, & Co. L^{td} 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 5976

OIL ENGINES, &c.—Type of Engines Burmeister & Wain 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 ton Means of ignition Compression Kind of fuel used Diesel
 Crank Shaft, dia. of journals as per Rule 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 Intermediate Shafts, diameter as per Rule 1378 Thrust Shaft, diameter at collars as per Rule 1452
 Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule 152 Is the tube shaft fitted with a continuous liner yes
 Bronze Liners, thickness in way of bushes as per Rule 46 Thickness between bushes as per rule 54 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 yes 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 ton 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" Flood 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 450-675-150 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 see London Regl. No. 95443 attached as fitted

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 litres Internal diameter 14" thickness 1/2"
 Seamless, lap welded or riveted longitudinal joint Seamless 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"
 Seamless, lap welded or riveted longitudinal joint TRIPLES Material S Range of tensile strength 28.32 Working pressure by Rules 350



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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) *yes*

Receivers *yes*

Separate Tanks *yes*

Donkey Boilers *-*

General Pumping Arrangements *-*

Oil Fuel Burning Arrangements *-*

SPARE GEAR *required by Rules ten supplied yes*

Additional Spare Gear supplied

Propeller, Propeller Shaft, Cylinder Liner, Cylinder Head

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

M. Cairn 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. 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 *✓*, Thrust shaft 22, 12-30, Intermediate shafts 17, 12-30, Tube shaft *✓*

Screw shaft 13, 10-30, Propeller 13, 10-30, Stern tube 30, 9-30, Engine seatings *see Gt. Rpt.*, Engines holding down bolts 30, 1-31

Completion of fitting sea connections *see Gt. Rpt.*, Completion of pumping arrangements *7 5 30*, Engines tried under working conditions 13, 5-31

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

Thrust shaft, Material *S*, Identification Mark *LR 1931 W.G.M.*, Intermediate shafts, Material *S*, Identification Marks *LR 458(2) 504, 554*

Tube shaft, Material *✓*, Identification Mark *✓*, 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 Benquin 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 100lb²)*

(These Engines are fitted with the Buchi System of Supercharging) *Damage* stated to have been caused by No 5 main engine liner striking some object when being placed on board. Liner found cracked on official trial 8.3.31. New liner fitted, Engines tested under full working conditions on completion for further particulars see *Damage Rpt.* attached

The amount of Entry Fee ... £ 6 : - : When applied for, *14th March 1931*
Special ... £ 107 : 13 : *When received, 17.3.31*
Damage Fee ... £ 3 : 3 :
Avi Reservoir ... £ 12 : 12 :
Travelling Expenses (if any)

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

Committee's Minute *GLASGOW 17 MAR 1931*
Assigned *+ L.M.C. 3.31.*
2 A.B. - 100 lb.



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