

REPORT ON OIL ENGINE MACHINERY.

No. 440984

Date of writing Report 27th Aug 1927 When handed in at Local Office 31st Aug 1927 Port of Glasgow
No. in Survey held at Glasgow Date, First Survey 20th May 1926 Last Survey 24th Aug 1927
Reg. Book. SUPPT. 40508 on the Single Triple Quadruple Screw vessel "DUNKWA"
Received at London by

Built at DUMBARTON By whom built MESSRS Mc MALLAN LTD. Yard No. 735 When built 1927
Engines made at GLASGOW By whom made MESSRS. HARLAND AND WOLFF LTD Engine No. 735 When made 1927
Donkey Boilers made at ANNAN By whom made COCHRAN & CO. Boiler No. 9675 When made 1925
Brake Horse Power 1800 Owners MESSRS THE AFRICAN STEAM NAVIGATION Co. Port belonging to LIVERPOOL
Nom. Horse Power as per Rule 489 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted YES.
Trade for which vessel is intended WEST COAST OF AFRICA.

OIL ENGINES, &c.—Type of Engines VERTICAL RECIPROCATING Oil Eng. 2 or 4 stroke cycle 4 Single or double acting SINGLE
Maximum pressure in cylinders 500 lb/sq. in Diameter of cylinders 74.0 in Length of stroke 15.00 in No. of cylinders SIX No. of cranks SIX
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 100.4 in Is there a bearing between each crank YES
Revolutions per minute 85 Flywheel dia. 98.5 in Weight 16000 lb Means of ignition COMPRESSION Kind of fuel used DIESEL
Crank Shaft, dia. of journals as per Rule 470 in as fitted 485 in Crank pin dia. 48.5 in Mid. length breadth 790 in Thickness parallel to axis 310 in
Flywheel Shaft, diameter as per Rule 470 in as fitted 485 in Intermediate Shafts, diameter as per Rule 13 13 1/2 in as fitted 13 1/2 in Thrust Shaft, diameter at collars as per Rule 73 7/8 in as fitted 14 1/4 in
Tube Shaft, diameter as per Rule as fitted 15 in Is the shaft fitted with a continuous liner YES
Bronze Liners, thickness in way of bushes as per Rule 3/4 in as fitted 13/16 in Thickness between bushes as per Rule 9/16 in as fitted 21/32 in 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
Length of Bearing in Stern Bush next to and supporting propeller 5'-6"
Propeller, dia. 16'-0" Pitch 13'-6" No. of blades 4 Material M. BRONZE whether Moveable NO Total Developed Surface 70 sq. feet
Method of reversing Engines COMPRESSED AIR Is a governor or other arrangement fitted to prevent racing of the engine when declutched YES Means of lubrication GRAVITY
Thickness of cylinder liners 53-32 in Are the cylinders fitted with safety valves YES Are the exhaust pipes and silencers water-cooled or lagged with non-conducting material YES 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. 2 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 1-100 tons & 1-65 tons Can one be overhauled while the other is at work YES
Pumps connected to the Main Bilge Line No. and Size 2 CENTRIFUGAL How driven ELECTRIC MOTOR
Ballast Pumps, No. and size One CENTRIFUGAL 100 TONS Lubricating Oil Pumps, including Spare Pump, No. and size 2 H.V.W. 100 TONS (TWIN)
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 of 4 1/2" 3 of 3" 5 of 2 1/2" In Holds, &c. 6 of 3"
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One 5"
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 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 ON W.L.
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 YES
What pipes pass through the deep tanks NONE 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 TOP PLATFORM
If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork YES
Main Air Compressors, No. One No. of stages THREE Diameters 750-675-150 Stroke 460 Driven by MAIN ENGINE
Auxiliary Air Compressors, No. THREE No. of stages THREE Diameters 320-280-82 1/2 Stroke 220 Driven by DIESEL ENGINE
Small Auxiliary Air Compressors, No. ONE No. of stages TWO Diameters 106-34 Stroke 80 Driven by STEAM
Scavenging Air Pumps, No. Diameter Stroke Driven by
Auxiliary Engines crank shafts, diameter as per Rule 167 7/8 in as fitted 180 in
IR 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, LOOSE ENDS
Is there a drain arrangement fitted at the lowest part of each receiver YES
High Pressure Air Receivers, No. 6 Cubic capacity of each 301.50 LITRES Internal diameter 29.57 in thickness .60 in
Seamless, lap welded or riveted longitudinal joint SEAMLESS Material STEEL Range of tensile strength 28-32 tons Working pressure by Rules 1420 lb/sq. in
Starting Air Receivers, No. TWO Total cubic capacity 1076 C.F.T. Internal diameter 6'-0 3/8 in thickness ENDS 1 5/32" 1 9/32"
Seamless, lap welded or riveted longitudinal joint RIVETTED Material STEEL Range of tensile strength 26-32 tons Working pressure by Rules 360 lb/sq. in

IS A DONKEY BOILER FITTED? YES

PLANS. Are approved plans forwarded with for Shifting (If not, state date of approval) YES

Donkey Boilers YES

General Pumping Arrangements YES

Oil Fuel Burning Arrangements YES

SPARE GEAR As per attached list

The foregoing is a correct description,
For HARLAND & WOLFF, LTD.

J. C. Green

Manufacturer.

MANAGER FINNIESTON WORKS

Dates of Survey while building
During progress of work in shops - 1926 May 20 July 16 Aug 3 13 17 Sep 3 7 Oct 8 11 12 20 26 Nov 2 9 12 Dec 17 20 21 22 23 (1927) Jan 2
During erection on board vessel - 13 17 18 20 31 Feb 3 8 18 22 28 Mar 2 7 13 14 18 21 27 30 Apr 27 29 May 2 5 9 12 13 17 18 Jun 10 17 24
Total No. of visits 60

Dates of Examination of principal parts - Cylinders 11-10-26 Covers 8-10-26 Pistons 28-2-27 Rods 28-2-27 Connecting rods 5-5-27

Crank shaft 18-3-27 Flywheel shaft 18-3-27 Thrust shaft 9-5-27 Intermediate shafts 9-5-27 Tube shaft 9-5-27

Screw shaft 9-5-27 Propeller 9-5-27 Stern tube 9-5-27 Engine seatings 9-5-27 Engines holding down bolts 4-8-27

Completion of fitting sea connections 9-5-27 Completion of pumping arrangements 18-8-27 Engines tried under working conditions 24-8-27

Crank shaft, Material STEEL Identification Mark 928 18-3-27 Flywheel shaft, Material STEEL Identification Mark 928 18-3-27

Thrust shaft, Material STEEL Identification Mark 928 9-5-27 Intermediate shafts, Material STEEL Identification Marks 928 9-5-27

Tube shaft, Material STEEL Identification Mark 928 9-5-27 Screw shaft, Material STEEL Identification Mark 928 9-5-27

Is the flash point of the oil to be used over 150° F. YES

Is this machinery duplicate of a previous case YES If so, state name of vessel KING MALCOLM

General Remarks (State quality of workmanship, opinions as to class, etc.) These engines have been built under

special survey in accordance with the rules and the approved plans.

The material and workmanship are good. They have been properly fitted on board and tried under full power at sea with satisfactory results.

Donkey boiler report. Please see Glasgow report no. 44882.

Air receivers. Please see Belfast report no. 9606.

The machinery is eligible in my opinion to be closed in the register book with the notation +LMC 8-27. T.S. CL.

The amount of Entry Fee ... £ 5:0: 0

Special ... £ 98:7: 0

Donkey Boiler Fee ... £ - : -

Travelling Expenses (if any) £ - : -

When applied for,

579/19-27

When received,

8-10-27

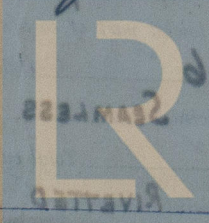
Committee's Minute GLASGOW 6-SEP-1927

Assigned

+LMC 8-27

CERTIFICATE WRITTEN

Engineer Surveyor to Lloyd's Register of Shipping.



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