

REPORT ON OIL ENGINE MACHINERY.

No. 18847
25 APR 1928

Date of writing Report 24.3.28 When handed in at Local Office 20th April 1928 Port of Greenock
 No. in Survey held at Greenock Date, First Survey 15th February 1927 Last Survey 18th April 1928
 Reg. Book. 881/r "Athelmonarch" Number of Visits 94
 on the Twin Screw vessel Tons Gross 9031
Quadruple Built at Greenock By whom built Wm. Hamilton & Co. Ltd. Yard No. 400 When built 1928
 Engines made at Greenock By whom made John E. Rucand & Co. Ltd. Engine No. 1722 When made 1928
Boilers made at Greenock By whom made John E. Rucand & Co. Ltd. Boiler No. 1722 When made 1928
 Brake Horse Power 3200 Owners United M. & C. Co. Ltd. Port belonging to London
 Nom. Horse Power as per Rule 409 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
 Trade for which vessel is intended Foreign

OIL ENGINES, &c.—Type of Engines Burner Main (2 Stk) 4 stroke cycle 4 Single double acting Single
 Maximum pressure in cylinders 500 Diameter of cylinders 630 m/m. Length of stroke 1300 m/m. No. of cylinders 12 No. of cranks 12
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 892 m/m. Is there a bearing between each crank Yes
 Revolutions per minute 110 Flywheel dia. 2620 m/m. Weight 13750 kgs Means of ignition Compression Kind of fuel used Oil
 Crank Shaft, dia. of journals as per Rule 403.3 m/m. Crank pin dia. 415 m/m. Crank Webs Mid. length breadth Thickness parallel to axis 240 m/m.
as fitted 415 m/m. Mid. length thickness Thickness around eye hole 184.5 m/m.
 Flywheel Shaft, diameter as per Rule 163.8" Intermediate Shafts, diameter as per Rule 11.26" Thrust Shaft, diameter at collars as per Rule 11.8"
as fitted 163.8" as fitted 11.3/4" as fitted 12.3/8"
 Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule 12.38" Is the shaft fitted with a continuous liner Yes
as fitted as fitted 12" as fitted 12"
 Bronze Liners, thickness in way of bushes as per Rule .65" Thickness between bushes as per Rule .56" Is the after end of the liner made watertight in the
as fitted 3/4" as fitted 5/8" 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 52"

Propeller, dia. 13.3" Pitch 11.0" No. of blades 4 Material Brass whether Moveable No Total Developed Surface 52 sq. feet

Method of reversing Engines air Is a governor or other arrangement fitted to prevent racing of the engine when disengaged Yes Means of lubrication Forced

Thickness of cylinder liners 36/46 m/m. 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 Funnel

Cooling Water Pumps, No. one Cent. 6 dia (2.7x8") 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 8x9x10" Stroke 7x4x12x9" Can one be overhauled while the other is at work Yes

Pumps connected to the Main Bilge Line No. and Size (2) 8x9x10" How driven Steam

Ballast Pumps, No. and size one 8x9x10" Lubricating Oil Pumps, including Spare Pump, No. and size 2. 60 lbs per hour (each)

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 3. 3 1/2"

TANKS 2. 10" m each

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2. 5 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

ed 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 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 Yes How are they protected Yes

What pipes pass through the deep tanks Yes 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 How Is it fitted with a watertight door Yes worked from Yes

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. 2 No. of stages 3 Diameters 600-540-120 m/m Stroke 480 m/m Driven by Main Engines

Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 400-350 m/m Stroke 260 m/m Driven by Steam

Small Auxiliary Air Compressors, No. 1 No. of stages 3 Diameters 2 1/8 x 1 1/4 - 9" Stroke 4" Driven by Steam

Scavenging Air Pumps, No. 1 Diameter 1 1/2" Stroke 4" Driven by Steam

Auxiliary Engines crank shafts, diameter as per Rule 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. 4 Cubic capacity of each 150 lbs Internal diameter 12" thickness 1 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. 2 Total cubic capacity 1360 CF Internal diameter 6-4 1/16" thickness 1 1/2-1 3/4"

Seamless, lap welded or riveted longitudinal joint Riveted Material S Range of tensile strength 28/32 Working pressure by Rules 356

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W1176-00592

see list attached,

S P A R E G E A R.

M. V. "ATHELMONARCH".

- 1 Cylinder Cover complete for the main Engines, with all valves, valve seats, springs, etc., fitted to it.
- In addition, one complete set of valves, valve seats, springs, etc., for one cylinder of the main and of the auxiliary Diesel Engines, and fuel needle valves for half the number of cylinders of each engine.
- 1 Piston complete, with all piston rings, studs, and nuts for the main engines.
- In addition, one set of piston rings for one piston of the main and of the auxiliary Diesel Engines.
- 2 Connecting rod, or piston rod, top-end bolts and nuts, both for the main and for the auxiliary Diesel Engines.
- 2 Connecting rod bottom end bolts and nuts, both for the main and for two auxiliary Diesel Engines.
- 2 Main bearing bolts and nuts, both for the main and for the Auxiliary Diesel Engines.
- 1 Set of coupling bolts for the crank shaft.
- 1 Set of coupling bolts for the intermediate shaft.
- 1 Complete set of piston rings for each piston of the main and of the auxiliary compressors.
- 1 Half set of valves for the main and for the auxiliary compressors.
- Fuel Pump - complete set of all the working parts.
- Fuel Pump for the Auxiliary Diesel Engine - complete set of all the working parts.
- Daily Fuel supply pump. Valveless (duplicate pump) fitted.
- 1 Set of valves for the water circulating pumps.
- 1 Set of valves for the bilge pump.
- 1 Lubricating Oil Pump. Valveless (Duplicate) pump fitted.
- 1 Lubricating Oil Pump. Valveless (Duplicate) pump fitted.
- A quantity of assorted bolts and nuts, including one set of cylinder studs and nuts.
- Length of pipes suitable for the fuel delivery and the blast pipes to cylinders, and the air delivery from the compressors to the receiver, with unions and flanges suitable for each.
- 6 Links of Chain for Valve Gear.

W. Gordon. Macleini



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see Machinery is eligible in my opinion for the record
✠ LMC 14.28. (Notation of Doukha Boilon 1804)

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)

Receivers

Separate Tanks

Donkey Boilers

General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR

see list attached

SPARE GEAR.

M. V. "ATHELMONARCH".

- 1 Cylinder Cover complete for the main Engines, with all valves, valve seats, springs, etc., fitted to it.

The foregoing is a correct description,
FOR JOHN G. KINCAID & COY, LIMITED

John G. Kincaid

Manufacturer.

Dates of Survey while building
During progress of work in shops - (1924) Feb 15 Mar 3 9 May 13 18 23 June 3 6 14 14 23 24 28 July 12 18 25 26 28 Aug 1 3 11 12 14 18 22 24 25 29 Sept 5 6 13 14 20 30 Oct 3 4 5 6 12 14 19 25 26 24 31 Nov 2 3 4 11 13 14 18
During erection on board vessel - Dec 5 8 9 15 20 22 24 (1928) Jan 9 11 12 19 20 23 24 30 31 Feb 1 2 3 6 10 13 14 15 14 18 20 21 28 Mar 2 8 9 13 23 24 30 Apr 2 5 7 9 11 13 14 18
Total No. of visits *94*

Dates of Examination of principal parts - Cylinders 24-6 24 Covers 4-10 24 Pistons 15-12 24 Rods 15-12 24 Connecting rods 22-11-
Crank shaft 5-9 24 Flywheel shaft 5-9 24 Thrust shaft 10-2-28 Intermediate shafts 10-2-28 Tube shaft ✓
Screw shaft 30-1-28 Propeller 19-1-28 Stern tube 24-1-28 Engine seatings 31-1-28 Engines holding down bolts 30-3-28
Completion of fitting sea connections 31-1-28 Completion of pumping arrangements 11-4-28 Engines tried under working conditions 18-4-28
Crank shaft, Material S Identification Mark LR 122 WG M Flywheel shaft, Material S Identification Mark LR 7548 614 W
Thrust shaft, Material S Identification Mark LR 2442 616 WG M Intermediate shafts, Material S Identification Marks LR 2442 616
Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material S Identification Mark LR 2448 2429 W

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

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, materials are of good quality. They are now securely fitted on board, tried under working conditions of full power. The machinery is eligible in my opinion for the record of LMC, 14-28. (Notation of Donkey Boilers 18th)

The amount of Entry Fee ... £ 6 : - : When applied for,
Special ... £ 110 : 9 : 19th APRIL 1928.
Donkey Boiler Fee ... £ 25 : 3 : When received,
Air Reservoir ... £ 8 : 8 : 21st APRIL 1928.
Travelling Expenses (if any) £ 8 : 8 : 21st APRIL 1928.

Committee's Minute GLASGOW 24 APR 1928

Assigned + LMC 4, 28.

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



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