

REPORT ON OIL ENGINE MACHINERY.

No. 18844
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. Number of Visits 94

on the Single Twin Triple Quadruple Screw vessel 801/r "Athelmonarch" Tons ^{Gross} 9031 _{Net} 5285
Built at Greenock By whom built W. Hamilton & Co. Ltd. Yard No. 400 When built 1928
Engines made at Greenock By whom made John & Richard C. Ltd. Engine No. 172 When made 1928
Boilers made at Greenock By whom made John & Richard C. Ltd. Boiler No. 172 When made 1928
Brake Horse Power 3200 Owners United Malcoms C. 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 Burrmeister & Co. (2 sets) 4 stroke cycle 4 Single ~~double~~ acting Single
Maximum pressure in cylinders 500 Diameter of cylinders 630 mm. Length of stroke 1300 mm. No. of cylinders 12 No. of cranks 12
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 892 mm. Is there a bearing between each crank Yes
Revolutions per minute 110 Flywheel dia. 2620 mm. Weight 13750 kgs. Means of ignition Coupons Kind of fuel used Diesel
Crank Shaft, dia. of journals ^{as per Rule} 403.3 mm. ^{as fitted} 415 mm. Crank pin dia. 415 mm. Crank Webs ^{Mid. length breadth} shrunk ^{Thickness parallel to axis} 240 mm. ^{Mid. length thickness} shrunk ^{Thickness around eye-hole} 184.5 mm.
Flywheel Shaft, diameter ^{as per Rule} as approved ^{as fitted} 163/8 Intermediate Shafts, diameter ^{as per Rule} 11.26 ^{as fitted} 11 3/4 Thrust Shaft, diameter at collars ^{as per Rule} 11.8 ^{as fitted} 12 3/8
Tube Shaft, diameter ^{as per Rule} as fitted ^{as fitted} 12.38 12 Is the made shaft fitted with a continuous liner Yes
Screw Shaft, diameter ^{as per Rule} as fitted 12.38 12 Is the made shaft fitted with a continuous liner Yes
Bronze Liners, thickness in way of bushes ^{as per Rule} as fitted .65 3/4 Thickness between bushes ^{as per rule} as fitted .56 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 Length of Bearing in Stern Bush next to and supporting propeller 52 inches

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 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 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 8+9+10 Stroke 7+4+12+9 Can one be overhauled while the other is at work Yes
Pumps connected to the Main Bilge Line ^{No. and Size} (2) 8+9+10 + 7+4+12+9 ^{How driven} Steam

Ballast Pumps, No. and size one 8+9+10 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" 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 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 Now 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 Yes

Main Air Compressors, No. 2 No. of stages 3 Diameters 600-540-120 mm. Stroke 480 mm. Driven by Main Engines
Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 400-350 mm. Stroke 260 mm. Driven by Steam
Small Auxiliary Air Compressors, No. 1 No. of stages 3 Diameters 2 1/8 + 1 1/4 - 9 Stroke 4 Driven by Steam
Scavenging Air Pumps, No. 1 Diameter 1 1/2 Stroke 1 1/2 Driven by Steam
Auxiliary Engines crank shafts, diameter ^{as per Rule} as fitted 1 1/2

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 litres Internal diameter 12 inches thickness 1/2 inch
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 inches thickness 1/16-1/32 inch
Seamless, lap welded or riveted longitudinal joint Riveted Material S Range of tensile strength 28/32 Working pressure by Rules 356 lbs

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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. Threlkeld



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see Machinery is eligible in my opinion for the record
✠ LMC, 14-28, (Notation of Douket Boiler 180)

IS A DONKEY BOILERS 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.

DIRECTIONS	
Dates of Survey while building	(1924) Feb 15, Mar 3, 9, May 13, 18, 23, June 3, 6, 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, 11, 18, 24, 28
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
Completion of fitting sea connections	31-1, 28	Completion of pumping arrangements	11-4, 28	Engines tried under working conditions	18-4				
Crank shaft, Material	S	Identification Mark	LR 1122 WGM	Flywheel shaft, Material	S	Identification Mark	LR 4548, 614		
Thrust shaft, Material	S	Identification Mark	LR 2442, 616 WGM	Intermediate shafts, Material	S	Identification Marks	LR 2442, 616		
Tube shaft, Material	✓	Identification Mark	✓	Screw shaft, Material	S	Identification Mark	LR 2448, 2429 WGM		

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 *(M) "Athelqueen" Ark Regd 1918*

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 assembled fitted on board, tried under working conditions of full satisfactory.*

The machinery is eligible in my opinion for the record of LMC, 14-28. (Notation of Donkey Boiler 180lb)

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,	19 th APRIL 1928.
Special ...	£ 110 : 9	When received,	21 st APRIL 1928.
Donkey Boiler Fee ...	£ 25 : 3		
Air Reservoir			
Travelling Expenses (if any) £	8 : 8		

Committee's Minute **GLASGOW 24 APR 1928**

Assigned *+ LMC 4, 28.*

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



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