

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No 66680

- 3 AUG 1943

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Date of writing Report 19 When handed in at Local Office 15.2.1943 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 6th Oct 1941 Last Survey 9th Feb. 1943

Reg. Book. on the Single Twin Triple Quadruple Screw vessel M.V. "EMPIRE ALLIANCE"

Built at Sunderland. By whom built Sir James Laing & Sons, Ltd. Yard No. 747 When built 1943.

Engines made at Glasgow By whom made Harland & Wolff, Ltd. Engine No. 8459/5 When made 1943

Donkey Boilers made at By whom made Boiler No. When made

Brake Horse Power 3300 Owners Ministry of War Transport. Port belonging to

Nom. Horse Power as per Rule 490 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Trade for which vessel is intended

OIL ENGINES, &c. — Type of Engines Heavy oil. Airless injection 2 or 4 stroke cycle 4 Single or double acting S.A

Maximum pressure in cylinders 700 lb Diameter of cylinders 298 740 mm. Length of stroke 598 1500 mm. No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure 128

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 972 mm. Is there a bearing between each crank yes

Revolutions per minute 110 Flywheel dia. 2489 mm. Weight 2590 Kgs. Means of ignition Compression Kind of fuel used Diesel oil.

Crank Shaft, { Solid forged dia. of journals as per Rule App. 505 mm. Crank pin dia. 505 mm. Crank Webs Mid. length breadth 980 mm. Thickness parallel to axis 310 mm. Semi built as fitted 505 mm. BORED 230 mm. Mid. length thickness 310 mm. shrunk Thickness around eye-hole 292.5 mm. All built BORED 115 mm.

Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule 13.82 Thrust Shaft, diameter at collars as per Rule App. 454 mm. as fitted 18"

Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule 15.15 Is the tube shaft fitted with a continuous liner { as fitted 16"

Bronze Liners, thickness in way of bushes as per Rule 13.32 Thickness between bushes as per Rule 183/32 Is the after end of the liner made watertight in the propeller boss If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

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

If two liners are fitted, is the shaft lapped or protected between the liners Is an approved Oil Gland or other appliance fitted at the after end of the tube

shaft If so, state type Length of Bearing in Stern Bush next to and supporting propeller

Propeller, dia. 16-0 Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when detached yes Means of lubrication

Thickness of cylinder liners 41 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

Cooling Water Pumps, No. Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from the Main Engines, No. none Diameter Stroke Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line { No. and Size How driven

Is the cooling water led to the bilges If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements

Ballast Pumps, No. and size Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size engine driven 100 tons/hour

Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces In Pump Room

In Holds, &c.

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

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes 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

Are all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Are the Overboard Discharges above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate

What pipes pass through the bunkers How are they protected

What pipes pass through the deep tanks Have they been tested as per Rule

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

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 Is the Shaft Tunnel watertight 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

Main Air Compressors, No. No. of stages Diameters Stroke Driven by

Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

Small Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

What provision is made for first Charging the Air Receivers

Scavenging Air Pumps, No. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule No. Position

Have the Auxiliary Engines been constructed under special survey Is a report sent herewith

AIR RECEIVERS: — Have they been made under survey

State No. of Report or Certificate

Is each receiver, which can be isolated, fitted with a safety valve as per Rule

Can the internal surfaces of the receivers be examined and cleaned

Is a drain fitted at the lowest part of each receiver

Injection Air Receivers, No.

Cubic capacity of each

Internal diameter

thickness

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure by Rules Actual

Starting Air Receivers, No.

Total cubic capacity

Internal diameter

thickness

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure by Rules Actual

IS A DONKEY BOILER FITTED?

If so, is a report note forwarded?

Is the donkey boiler intended to be used for domestic purposes only

PLANS.

Are approved plans forwarded herewith for Shafting Thrust

Separate Fuel Tanks

Donkey Boilers

General Pumping Arrangements

Pumping Arrangements in Machinery Space

Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

The foregoing is a correct description.

For HARLAND AND WOLFE, LIMITED.

Wm. J. Wright.

Manufacturer.

Dates of Survey while building

During progress of work in shops --
During erection on board vessel --
Total No. of visits

1941 Oct 6 Nov 13 Dec 29 1942 Feb 13 Mar 9 Apr 21 May 1 Jun 8.18 Jul 10 Aug 14 Sep 7.17 Oct 7.14 22 28 Nov 5.13/18
20 23 30 Dec 4 7.11.25 1943 Jan 15.21 22 Feb 9
See Newcastle Report 101434

Dates of Examination of principal parts—Cylinders

18-11-42 5

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13-11-42 6

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Crank shaft 8-6-42

Flywheel shaft

Thrust shaft 8-6-42

Intermediate shafts

Tube shaft

Screw shaft

Propeller

Stern tube

Engine seatings

Engines holding down bolts

Completion of fitting sea connections

Completion of pumping arrangements

Engines tried under working conditions

Crank shaft, Material

Steel

Identification Mark

8459/3.P.9

Flywheel shaft, Material

Identification Mark

Thrust shaft, Material

Steel

Identification Mark

5.3326 P.9

Intermediate shafts, Material

Identification Marks

Tube shaft, Material

Identification Mark

Screw shaft, Material

Identification Mark

Identification Marks on Air Receivers

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

Description of fire extinguishing apparatus fitted

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo

If so, have the requirements of the Rules been complied with

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with

Is this machinery duplicate of a previous case

yes

If so, state name of vessel

A/78 MSM. Glasgow Rpt No. 66106

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

This machinery has been built under Special Survey & in accordance with the Rules of this Society, the approved plans, & the Ministry of War Transport specification.

The materials and workmanship are good.

Shop trials have been satisfactorily carried out.

The machinery has been despatched to the Yard of Messrs Sir James Laing & Sons, Ltd to be installed on board their Yard No 747. It will be eligible in my opinion to be classed in the Register Book with the notation T-LMC. C.L. with date when efficiently installed on board the vessel & tried under working conditions

The amount of Entry Fee

£ 5

When applied for,

Special

£ 65

When received,

Donkey Boiler Fee

£ 16

Travelling Expenses (if any)

£

Committee's Minute

GLASGOW

16 FEB 1943

Assigned

Deferred for

Completion

P. Fitzgould.

Engineer Surveyor to Lloyd's Register of Shipping.

FEB 13 AUG 1943

See minute

on Glasgow Rpt

33738