

REPORT ON OIL ENGINE MACHINERY.

No 69670.

Received at London Office

Date of writing Report

19

When handed in at Local Office

20.7

1943 Port of

Glasgow

No. in Survey held at
Reg. Book.

Glasgow.

Date, First Survey 24.8.43

Last Survey 19.6.1945

Number of Visits 39.

Single
on the Twin
Triple
Quadruple

Screw vessel

M.V. EMPIRE BELGRAVETons Gross 890
Net 382

Built at Glasgow

By whom built A. J. Inglis Ltd

Yard No. 1299. When built 1945.

Engines made at Glasgow

By whom made British Auxiliaries Ltd. Engine No. 478 When made 1943.

Donkey Boilers made at Barfin

By whom made Alex Anderson & Son Ltd. Boiler No. 3867-8 When made 1945.

Brake Horse Power 640

Owners Ministry of War Transport. Port belonging to Glasgow.

Nom. Horse Power as per Rule 125. Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

Trade for which vessel is intended

L ENGINES, &c.—Type of Engines Heavy Oil M.H.M. Type. 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 782 lb/sq. in. Diameter of cylinders 340 7/8 Length of stroke 570 7/8 No. of cylinders 4 No. of cranks 4

Mean Indicated Pressure 96

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 484 7/8 Is there a bearing between each crank Yes

Revolutions per minute 250 Flywheel dia. 1550 7/8 Weight 4400 lb. Means of ignition Compression Kind of fuel used Diesel

Crank Shaft, Solid forged dia. of journals as per Rule 211 7/8 as fitted 220 7/8 Crank pin dia. 220 7/8 Crank Webs Mid. length breadth 308 7/8 Mid. length thickness 122 7/8 Thickness parallel to axis Yes

Flywheel Shaft, diameter as per Rule 211 7/8 as fitted 260 7/8 Intermediate Shafts, diameter as per Rule 137 7/8 as fitted 228 7/8 Thrust Shaft, diameter at collar as per Rule 144 7/8 as fitted 260 7/8

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule 8 3/4 Is the tube screw shaft fitted with a continuous liner No

Bronze Liners, thickness in way of bushes as per Rule as fitted Thickness between bushes as per Rule as fitted 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

Yes. If so, state type Newark Length of Bearing in Stern Bush next to and supporting propeller 2'-9"

Propeller, dia. 7'6" Pitch 4'4 3/4 No. of blades 4 Material MnBr. whether Moveable No Total Developed Surface 20.2 sq. feet

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

Forced Thickness of cylinder liners 25.5 7/8 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

Cooling Water Pumps, No. One 90 7/8 x 140 7/8 Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from the Main Engines, No. One Diameter 90 7/8 Stroke 140 7/8 Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line No. and Size 1- 90 7/8 x 140. 1- 6.5. 22 T/hr. 1- Ballast. 40 T/hr.

How driven M.E. P. aux engine Electric

Is the cooling water led to the bilges No 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 1- 40 T/hr. 1- 20 T/hr. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 off 3100 gallons 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 3- 2 1/2 In Pump Room 1- 3"

Holds, &c. 1 3/4 x 1-2" apiece

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1- 3" 1- 2 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

1 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 None 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 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 Is it fitted with a watertight door worked from

On 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 2 Diameters 175 7/8 70 7/8 Stroke 350 7/8 Driven by Main engines

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

Small Auxiliary Air Compressors, No. 1 No. of stages Diameters 26 cu ft/min Stroke Driven by St. Aux.

What provision is made for first Charging the Air Receivers

Savenging Air Pumps, No. One Diameter 770 7/8 Stroke 350 7/8 Driven by Main engine

Auxiliary Engines crank shafts, diameter as per Rule as fitted R.N. - 2 1/2 No. 1- 2 cyl R.N. 1- 4 cyl R.N. 1- 4 cyl Paxman

Position St. For Port St. Aft

Are the Auxiliary Engines been constructed under special survey Yes Is a report sent herewith Yes except report on

generator No. 4812 not to hand

WASB 0974

AIR RECEIVERS: — Have they been made under survey

Yes.

State No. of Report or Certificate

C. 51182. & C. 51183.

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 and cleaned

Yes

Is a drain fitted at the lowest part of each receiver

Yes.

Injection Air Receivers, No. none

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. Two.

Total cubic capacity

1600 litres

Internal diameter

650 mm

thickness

14 mm

Seamless, lap welded or riveted longitudinal joint

riveted

Material

Steel

Range of tensile strength

Shell 28/32 tons

Working pressure by Rules

Actual

35.5 lb

IS A DONKEY BOILER FITTED?

Yes

If so, is a report now forwarded?

Yes

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

No

PLANS. Are approved plans forwarded herewith for Shifting

(If not, state date of approval)

Thrust 12.2.37
Crank 2.12.35

Receivers

25.6.34

Separate Fuel Tanks

22.6.45

Donkey Boilers app. 5-8-44

General Pumping Arrangements app. 31-10-45

Pumping Arrangements in Machinery Space

app. 22-6-45

Oil Fuel Burning Arrangements app. 22-6-45

SPARE GEAR.

Has the spare gear required by the Rules been supplied

Yes

State the principal additional spare gear supplied

as per attached list

The foregoing is a correct description,



Manufacturer.

Dates of Survey while building
During progress of work in shops - 1943 Aug 24, Sep 10, 20, 30 Nov 4, 8, 15, 19 Dec 13, 14, 1944 Jan 14, 18, 24 May 10, Jun 16, 1945 Jan 9, Mar 6, 12, 14, 19, 29 Apr
During erection on board vessel - 18 May 3, 10, 16, 23, 28, 31 Jun 3, 4, 6, 8, 11, 13, 15, 18, 19
Total No. of visits 39

Dates of Examination of principal parts—Cylinders 15.11.43, Covers 30.9.43, Pistons 8.11.43, Rods 20.9.43, Connecting rods 20.9.43

Crank shaft 20.9.43, Flywheel shaft 20.9.43, Thrust shaft 24.8.43, Intermediate shafts 12.3.45, Tube shaft

Screw shaft 12.3.45, Propeller 12.3.45, Stern tube 12.3.45, Engine seatings 14.3.45, Engines holding down bolts 10.5.45

Completion of fitting sea connections 14.3.45, Completion of pumping arrangements 18.6.45, Engines tried under working conditions 18.6.45

Crank shaft, Material Steel, Identification Mark LR. No. 1456 F.H. 10.12.42, Identification Mark

Thrust shaft, Material Steel, Identification Mark 3089 T.T., Identification Mark LR 9304

Tube shaft, Material Steel, Identification Mark, Identification Mark LR 9303

Identification Marks on Air Receivers No. 51182, No. 51183, LLOYDS TEST, 555 LBS, W.P. 355, J.S. 28.12.43, J.S. 28.12.43

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

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 M/V. Kopara, Lgs. No. 59834

General Remarks (State quality of workmanship, opinions as to class, &c.) These engines have been built under Special Survey in accordance with the Rules and approved plans. The materials and workmanship are good. On completion they have been tried on the bench at full power with satisfactory results.

The machinery has been securely fitted on board the vessel and tried under working conditions. Owing to the arrangement of pipes it was not possible to fit a torsionograph for the full power trial. It is recommended that the vessel is eligible to have a record + LMC 6-45, with notation T.S. 0.5 fitted for oil fuel 6-45, F.P. above 150° F. subject to the torsional vibration characteristics of the machinery of the sister vessel proving satisfactory.

The amount of Entry Fee £ 3 : - : When applied for, 24 JUL 1945

Special Spec. Fee £ 31-5-0 : When received, 5 JUL 1945

Donkey Boiler Fee £ 7-16-3 : Travelling Expenses (if any) £ : 19

Committee's Minute Glasgow 24 JUL 1945

Assigned -1- LMC 6.45 subject 2 NB 180 lb.

