

REPORT ON OIL ENGINE MACHINERY

No. 118060

Received at London Office

26 JUL 1942

Date of writing Report **2.7.42** in **Northwich** When handed in at Local Office **Northwich** Port of **LIVERPOOL**
No. in Survey held at **Northwich** Date, First Survey **Oct 15th** Last Survey **June 25th 1942**
Reg. Book. **Single** on the **Triple** Screw vessel n.v. **EMPIRE LILY** Number of Visits **23** Tons ^{Gross} **327** _{Net}

Built at **Northwich** By whom built **I. Pimblott + Sons Ltd** Yard No. **642** When built **1942**
Engines made at **Keighley** By whom made **H. Widdop + Co Ltd** Engine No. **4141** When made **1942**
Donkey Boilers made at **Keighley** By whom made **Keighley** Boiler No. **11** When made **1942**
Brake Horse Power **300** Owners **Ministry of Shipping (N^o 259.)** Port belonging to **Northwich**
Nom. Horse Power as per Rule **140** Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **Yes**
Trade for which vessel is intended **Coasting**

MAIN ENGINES, &c.—Type of Engines **Heavy oil airless injection** 2 or 4 stroke cycle **Single or double acting**
Maximum pressure in cylinders **See Leeds report N^o 13.** Diameter of cylinders **See Leeds report N^o 13.** Length of stroke **See Leeds report N^o 13.** No. of cylinders **See Leeds report N^o 13.** No. of cranks **See Leeds report N^o 13.**
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge **See Leeds report N^o 13.** Is there a bearing between each crank **See Leeds report N^o 13.**
Revolutions per minute **See Leeds report N^o 13.** Flywheel dia. **See Leeds report N^o 13.** Weight **See Leeds report N^o 13.** Means of ignition **See Leeds report N^o 13.** Kind of fuel used **See Leeds report N^o 13.**
Crank Shaft, **Solid forged** dia. of journals **See Leeds report N^o 13.** Crank pin dia. **See Leeds report N^o 13.** Crank Webs **See Leeds report N^o 13.** Mid. length breadth **See Leeds report N^o 13.** Mid. length thickness **See Leeds report N^o 13.** Thickness parallel to axis **See Leeds report N^o 13.** Thickness around eyehole **See Leeds report N^o 13.**
Flywheel Shaft, diameter **See Leeds report N^o 13.** Intermediate Shafts, diameter **See Leeds report N^o 13.** Thrust Shaft, diameter at collars **See Leeds report N^o 13.**
Stern Tube Shaft, diameter **See Leeds report N^o 13.** Screw Shaft, diameter **See Leeds report N^o 13.** Is the tube **See Leeds report N^o 13.** Is the shaft fitted with a continuous liner **See Leeds report N^o 13.**
Bronze Liners, thickness in way of bushes **See Leeds report N^o 13.** Thickness between bushes **See Leeds report N^o 13.** Is the after end of the liner made watertight in the stern tube **See Leeds report N^o 13.**
Propeller boss **See Leeds report N^o 13.** If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner **See Leeds report N^o 13.**
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 **See Leeds report N^o 13.**
If two liners are fitted, is the shaft lapped or protected between the liners **See Leeds report N^o 13.** Is an approved Oil Gland or other appliance fitted at the after end of the tube **See Leeds report N^o 13.**
If so, state type **Rotating rubber sleeve** Length of Bearing in Stern Bush next to and supporting propeller **19.5"**

Propeller, dia. **59"** Pitch **43"** No. of blades **4** Material **C.I** whether Moveable **No** Total Developed Surface **9.6** sq. feet
Method of reversing Engines **See Leeds report N^o 13.** Is a governor or other arrangement fitted to prevent racing of the engine when declutched **See Leeds report N^o 13.** Means of lubrication **See Leeds report N^o 13.**
Thickness of cylinder liners **See Leeds report N^o 13.** Are the cylinders fitted with safety valves **See Leeds report N^o 13.** Are the exhaust pipes and silencers water cooled or lagged with non-conducting material **See Leeds report N^o 13.**
If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine **See Leeds report N^o 13.**

Bilge Pumps, No. **One on Main Eng; + One on Aux** 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. **One** Diameter **4 1/4"** Stroke **3"** Can one be overhauled while the other is at work **Yes**
Pumps connected to the Main Bilge Line **No** How driven **Main eng** **1 - 4 1/4 x 3.** **1 centrifugal. Capacity 2 1/2 tons/hr.** **Aux. engine. Rule requirement 20 tons/hr.**
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 **See Leeds report N^o 13.**

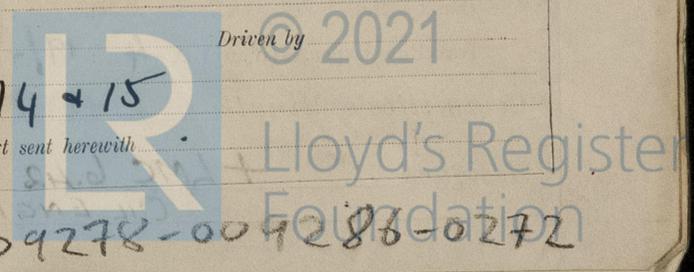
Ballast Pumps, No. and size **1 - 2 1/2 tons/hr** Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size **2 - 13/4 x 3. Also elec. driven**
Are two independent means arranged for circulating water through the Oil Cooler **None** Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces **3 - 2 1/2"** In Pump Room **2 - 600 gals/hr each.**
Holds, &c. **2 - 2 1/2"** Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size **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 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, on Kingston Boxes** Are they fitted with Valves or Cocks **Valves + cocks**
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 **Above**
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**
Do all pipes pass through the bunkers **Yes** How are they protected **See Leeds report N^o 13.**
Do all 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 **Yes** Is it fitted with a watertight door **Yes** worked from **Yes**
If the vessel is a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork **See Leeds report N^o 13.**

Main Air Compressors, No. **See Leeds Rpts** No. of stages **See Leeds Rpts** Diameters **See Leeds Rpts** Stroke **See Leeds Rpts** Driven by **See Leeds Rpts**
Auxiliary Air Compressors, No. **See Leeds Rpts** No. of stages **See Leeds Rpts** Diameters **See Leeds Rpts** Stroke **See Leeds Rpts** Driven by **See Leeds Rpts**
Small Auxiliary Air Compressors, No. **See Leeds Rpts** No. of stages **See Leeds Rpts** Diameters **See Leeds Rpts** Stroke **See Leeds Rpts** Driven by **See Leeds Rpts**
What provision is made for first charging the Air Receivers **See Leeds Rpts**
Safeguarding Air Pumps, No. **See Leeds Rpts** Diameter **See Leeds Rpts** Stroke **See Leeds Rpts** Driven by **See Leeds Rpts**

Auxiliary Engines crank shafts, diameter **See Leeds Rpts** as per Rule **See Leeds Rpts** as fitted **See Leeds Rpts**
Have the Auxiliary Engines been constructed under special survey **Yes** Is a report sent herewith **Yes**



009278-009283-02172

AIR RECEIVERS: - Have they been made under survey Yes State No. of Report or Certificate Leeds Rpt No. 13.

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. 2 Cubic capacity of each 100 Internal diameter 12" thickness 1/2"
Seamless, lap welded or riveted longitudinal joint Seamless Material Steel Range of tensile strength 40,000 Working pressure 100 by Rules 100 Actual 100

Starting Air Receivers, No. 2 Total cubic capacity 200 Internal diameter 12" thickness 1/2"
Seamless, lap welded or riveted longitudinal joint Seamless Material Steel Range of tensile strength 40,000 Working pressure 100 by Rules 100 Actual 100

IS A DONKEY BOILER FITTED? No If so, is a report now forwarded? No

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

PLANS. Are approved plans forwarded herewith for Shafting 22-4-40 Receivers 22-4-40 26-2-42 Separate Fuel Tanks Yes
(If not, state date of approval)

Donkey Boilers Yes General Pumping Arrangements Yes Pumping Arrangements in Machinery Space Yes
Oil Fuel Burning Arrangements Yes

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.

J. MacLeod & Co. Ltd. Manufacturer.

Dates of Survey while building: During progress of work in shops - 1941
During erection on board vessel - Oct 15, Nov 12, Dec 5, 19, Jan 2, 15, 26, Feb 12, 24, Mar 26, 26, Apr 2, 8, 15, 22, 29, May 6, 20, June 12, 19, 23, 25.
Total No. of visits 23.

Dates of Examination of principal parts - Cylinders Yes Covers Yes Pistons Yes Rods Yes Connecting rods Yes
Crank shaft Yes Flywheel shaft Yes Thrust shaft Yes Intermediate shafts Yes Tube shaft Yes

Screw shaft 5-12-41 Propeller 19-12-41 Stern tube 19-12-41 Engine seatings 12-11-41 Engines holding down bolts 22-4-42
Completion of fitting sea connections 2-1-42 Completion of pumping arrangements 12-6-42 Engines tried under working conditions 23-6-42

Crank shaft, Material Yes Identification Mark Yes Flywheel shaft, Material Yes Identification Mark Yes
Thrust shaft, Material Yes Identification Mark Yes Intermediate shafts, Material Yes Identification Marks Yes
Tube shaft, Material Yes Identification Mark Yes Screw shaft, Material M. Steel Identification Mark 184

Identification Marks on Air Receivers 54592. 54595. D.84 46/81/167. 26-11-41 SWL.

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 fillings been complied with Yes

Description of fire extinguishing apparatus fitted Portable extinguishers, + water-hose pipes.

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo No If so, have the requirements of the Rules been complied with Yes

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with No

Is this machinery duplicate of a previous case Yes If so, state name of vessel "Empire Kyle" + "Empire Grove"

General Remarks (State quality of workmanship, opinions as to class, &c.) The Machinery of this vessel has been satisfactorily installed on board under special survey, in accordance with the Rules, and approved specification.

The Machinery has been examined under full working conditions during a dock trial and afterwards in the river with satisfactory results and is eligible in my opinion to be classed in the Register Book, with a notation of + LMC 6.42

TS. 09. - Oil Engines.

140 NHP = £35
+25% 8.15-0
43-15-0
32-0-0
11-15-0

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 .. £ : : When applied for, 14 JUL 1942
Balance Special ... £ 11 : 15/-
Donkey Boiler Fee ... £ : : When received, 19
Travelling Expenses (if any) £ 4 : 19/-

Committee's Minute LIVERPOOL 14 JUL 1942
Assigned + LMC 6.42 O.G. OIL ENGINES

C. Reed
Engineer Surveyor to Lloyd's Register of Shipping.

