

REPORT ON OIL ENGINE MACHINERY.

No. 110,702

Received at London Office 11th OCT 1942

of writing Report... 19... When handed in at Local Office 9-10-1942 Port of Ipswich
in ^{Sup} Survey held at Lewisstoft Date, First Survey 2 June 1942 Last Survey 6-10-1942
Book. Number of Visits 13

262 on the Single Triple Quadruple Screw vessel m.v. "EMPIRE REYNARD" Tons ^{Gross} 321 _{Net}

built at Lewisstoft By whom built Richards Ironworks Ltd. Yard No. 301 When built 1942
Machines made at Manchester By whom made Crosby Bros. Ltd. Engine No. 129/34 When made 1942
Boilers made at ✓ By whom made ✓ Boiler No. ✓ When made ✓
Horse Power 330 Owners Ministry of War Transport Port belonging to Lewisstoft
Horse Power as per Rule 116 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no
Trade for which vessel is intended Coasting

ENGINES, &c.—Type of Engines 2 or 4 stroke cycle Single or double acting ✓
Maximum pressure in cylinders ✓ Diameter of cylinders ✓ Length of stroke ✓ No. of cylinders ✓ No. of cranks ✓
Indicated Pressure ✓ Flywheel dia. ✓ Weight ✓ Means of ignition ✓ Kind of fuel used ✓
of bearings, adjacent to the Crank, measured from inner edge to inner edge ✓ Is there a bearing between each crank ✓
Revolutions per minute ✓ Crank pin dia. ✓ Crank Webs ✓ Mid. length breadth ✓ Thickness parallel to axis ✓
Crank Shaft, dia. of journals as per Rule ✓ as fitted ✓ Mid. length thickness ✓ Thickness around eyehole ✓
Flywheel Shaft, diameter as per Rule ✓ Intermediate Shafts, diameter as per Rule ✓ Thrust Shaft, diameter at collars as per Rule ✓
as fitted ✓ as fitted ✓ as fitted ✓

Screw Shaft, diameter as per Rule ✓ as fitted ✓ Is the tube screw shaft fitted with a continuous liner no
Liner thickness in way of bushes as per Rule ✓ Thickness between bushes as per rule ✓ Is the after end of the liner made watertight in the
stern 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 no 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 ✓
If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller 20"
Propeller, dia. 6.5" Pitch 46" No. of blades 4 Material Brass whether Moveable no Total Developed Surface 10.98 sq. feet
Method of reversing Engines ✓ Is a governor or other arrangement fitted to prevent racing of the engine when declutched ✓ Means of lubrication ✓
Thickness of cylinder liners ✓ Are the cylinders fitted with safety valves ✓ Are the exhaust pipes and silencers water cooled or lagged with
insulating material no If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine ✓
Suctioning Water Pumps, No. ✓ Is the sea suction provided with an efficient strainer which can be cleared within the vessel no
Suction Pumps worked from the Main Engines, No. ✓ Diameter ✓ Stroke ✓ Can one be overhauled while the other is at work ✓
Pumps connected to the Main Bilge Line ✓ No. and Size One main Engine 4 1/4" x 3" One 2" S.P. Cent. pump
How driven One main Engine One Aux. Engine
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 ✓

Oil Pumps, No. and size One 2" S.P. Cent. pump Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size ✓
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 3 in. 2-2" One - 2 1/2" In Pump Room ✓
Holds, &c. 3 - 2"
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One - 2 1/2"
All the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes no 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 no
All Sea Connections fitted direct on the skin of the ship no Are they fitted with Valves or Cocks Both
They are sized sufficiently high on the ship's side to be seen without lifting the platform plates no Are the Overboard Discharges above or below the deep water line Both
They are each fitted with a Discharge Valve always accessible on the plating of the vessel no Are the Blow Off Cocks fitted with a spigot and brass covering plate ✓
How are they protected no
Pipes pass through the bunkers no Have they been tested as per Rule ✓
Pipes pass through the deep tanks no

All Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times no
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
department to another no Is the Shaft Tunnel watertight ✓ Is it fitted with a watertight door ✓ worked from ✓
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 ✓
Main Air Compressors, No. ✓ No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓
Auxiliary Air Compressors, No. ✓ No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓
All Auxiliary Air Compressors, No. One No. of stages One Diameters 3 1/4" Stroke 3 1/4" Driven by Aux. Engine
Ventilating Air Pumps, No. ✓ Diameter ✓ Stroke ✓ Driven by ✓

Auxiliary Engines crank shafts, diameter as per Rule approved 3 1/2" journals 3 1/4" pin No. 130891 Position Port side Engine Room



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 and cleaned *Yes* Is a drain fitted at the lowest part of each receiver *Yes*

High Pressure Air Receivers, No. *1* Cubic capacity of each *100* Internal diameter *18* thickness *1/4*

Seamless, lap welded or riveted longitudinal joint *Yes* Material *Steel* Range of tensile strength *40,000* Working pressure *100* by Rules *100* Actual *100*

Starting Air Receivers, No. *1* Total cubic capacity *100* Internal diameter *18* thickness *1/4*

Seamless, lap welded or riveted longitudinal joint *Yes* 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? *Yes*

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

PLANS. Are approved plans forwarded herewith for Shafting *15-1-42* Receivers *15-1-42* Separate Fuel Tanks *6-10-42*

Donkey Boilers *Yes* General Pumping Arrangements *8-4-41* Pumping Arrangements in Machinery Space *10-3-41*

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

One fuel pump, Cylinder head & studs, 1 set coupling bolts, 1 set valves for scum pump, bilge, air, compressor pumps.

1 - Cylinder cover, 1 - gudgeon pin, 1 complete bottom end brass, 1 set bottom end bolts, 4 piston rings, Assorted bolts & iron.

The foregoing is a correct description,

FOR RICHARDS IRONWORKS LIMITED

L. G. Richards

Manufacturer.

Dates of Survey while building

During progress of work in shops --

During erection on board vessel -- *1942: June 2, 15, 25, July 11, 24, Aug 5, 21, Sept 2, 24, 25, Oct 1, 5, 6*

Total No. of visits *13 (during installation)*

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 *25-6-42* Tube shaft *Yes*

Screw shaft *25-6-42* Propeller *18-6-42* Stern tube *25-6-42* Engine seatings *15-6-42* Engines holding down bolts *3-9-42*

Completion of fitting sea connections *29-6-42* Completion of pumping arrangements *1-10-42* Engines tried under working conditions *6-10-42*

Crank shaft, Material *Yes* Identification Mark *Yes* Flywheel shaft, Material *Yes* Identification Mark *Yes*

Thrust shaft, Material *Yes* Identification Mark *Yes* Intermediate shafts, Material *Steel* Identification Marks *4°628 27.3.42*

Tube shaft, Material *Yes* Identification Mark *Yes* Screw shaft, Material *Steel* Identification Mark *4°629 27.3.42*

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*

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 *Yes*

Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *"Empire Sound" "Empire Lark" "Empire Punch"*

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

The machinery (Manchester Rpts. 10998 and 11129) has been installed on board this vessel in accordance with the approved plans and Rule requirements. The materials & workmanship are sound & of good description. The machinery has been examined under working conditions & is eligible, in my opinion, to be classed & to have notation + L.M.C. 10-42.

Aux. Engine - Simulator Set: *Engine. The exhaust pipe is lagged. The sea suction is provided with an efficient strainer which can be changed within the vessel.*

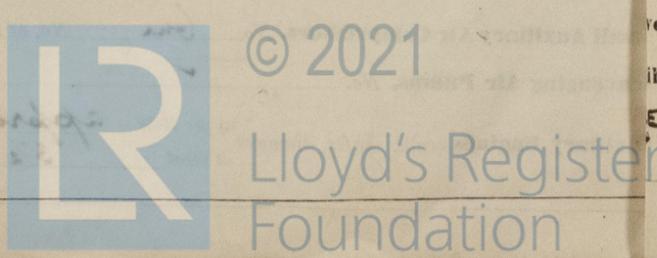
Simulator. An adjustable regulating resistance is fitted in series with each shaft & all terminals are made, fitted with sockets & efficiently protected.

The amount of Entry Fee .. £	:	:	When applied for,
<i>1/3 Special</i> £	<i>9</i>	<i>13 4</i>	<i>19</i>
Donkey Boiler Fee £	:	:	When received,
Travelling Expenses (if any) £	:	:	<i>19</i>

J. Russell
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI 23 OCT 1942*

Assigned *+ L.M.C. 10.42*
Oil Eng



Certificate (if required) to be sent to
(The Surveyors are requested not to write on or below the space for Committee's Minute.)