

# REPORT ON OIL ENGINE MACHINERY.

4 MAY 1943

Received at London Office

5 MAY 1943

of writing Report 12. 3. 1943 When handed in at Local Office 19 Port of **HULL**

in Survey held at **Knottlingly Gool** Date, First Survey 12. 10. 42. Last Survey 5<sup>th</sup> APRIL 1943. Number of Visits 12.

on the **Single** Screw vessel (MOTOR COLLIER) **EMPIRE REAPER** Tons Gross 332 Net 158

built at **Knottlingly Gool** By whom built **John Harker Ltd.** Yard No. 146 When built 1943

engines made at **Manchester** By whom made **Crossley Bros Ltd.** Engine No. 242144 When made 3

monkey Boilers made at **—** By whom made **—** Boiler No. **—** When made **—**

Indicated Horse Power 275 Owners **Ministry of War Transport.** Port belonging to **—**

nom. Horse Power as per Rule 97 Is Refrigerating Machinery fitted for cargo purposes **no** Is Electric Light fitted **yes**

made for which vessel is intended **Motor Collier**

ENGINES, &c.—Type of Engines **Vertical Airless Injection** 2 or 4 stroke cycle 2 Single or double acting **SA**

max pressure in cylinders **800 lb** Diameter of cylinders **10 1/2"** Length of stroke **13 1/2"** No. of cylinders **5** No. of cranks **5**

indicated Pressure **76 lb** bearings, adjacent to the Crank, measured from inner edge to inner edge **14 1/16"** Is there a bearing between each crank **YES**

Revolutions per minute **300** Flywheel dia. **37 1/2"** Weight **2166 lb.** Means of ignition **COMPRESSION** Kind of fuel used **DIESEL OIL**

Material, **Solid forged** dia. of journals **as per Rule** Crank pin dia. **7 1/4"** Crank Webs **Mid. length breadth 9 1/4"** Thickness parallel to axis **shrunk**

Intermediate Shafts, diameter **as per Rule** as fitted **4 1/2"** Thrust Shaft, diameter at collars **as per Rule** as fitted **4 3/4"**

Shaft, diameter **as per Rule** as fitted **5"** Is the tube screw shaft fitted with a continuous liner **NO**

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 stern 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**

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**

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 **YES**

If so, state type **NEWARK** Length of Bearing in Stern Bush next to and supporting propeller **24"**

Propeller, dia. **5'-2"** Pitch **3'-10"** No. of blades **4** Material **C.I.** whether Moveable **NO** Total Developed Surface **9 1/2** sq. feet

Method of reversing Engines **By air (direct)** Is a governor or other arrangement fitted to prevent racing of the engine when declutched **YES** Means of lubrication **—**

Thickness of cylinder liners **7/8"** Are the cylinders fitted with safety valves **YES** Are the exhaust pipes and silencers water cooled or lagged with **EX. LEO TO**

conducting material **EX. PIPE 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**

Number of Water Pumps, No. **ONE M.E. 4 1/4" x 3"** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **YES**

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. and Size **ONE 4 1/4" x 3"** How driven **M.E.** FOR EMERGENCY USE ONLY. **ONE 2" HANWORTHY CENTRIFUGAL SELF PRIMING IND. DIESEL** HANDPUMP.

Is 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. **—**

Number of Suction Pumps, No. and size **1 M.E. 4 1/4" x 3"** As Above Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size **SEE MCHT. RPT. 11305.**

Are two independent means arranged for circulating water through the Oil Cooler **PUMP CAN BE USED.** Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces **2 - 2 1/2"** In Pump Room **—**

Direct Suctions, &c. **3 - 2" IN HOLD, 1 - 2" IN FP, 1 - 2" IN A.P.** Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size **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, OR E.W. STL. BOXES.** 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 **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 **NONE** How are they protected **—**

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 **ENG. ROOM.** 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 **—**

Number of Air Compressors, No. **ONE** No. of stages **2** Diameters **5 3/4" & 2 1/2"** Stroke **4"** Driven by **MAIN ENG.**

Auxiliary Air Compressors, No. **ONE** No. of stages **2** Diameters **3 1/4" & 1 1/8"** Stroke **3 1/4"** Driven by **AUX. ENG.**

Small Auxiliary Air Compressors, No. **NONE** No. of stages **—** Diameters **—** Stroke **—** Driven by **—**

Is any provision made for first Charging the Air Receivers **AUX. ENG. ABOVE — HAND STARTING**

Number of Charging Air Pumps, No. **2 (TANDEM)** Diameter **20 1/2"** Stroke **7 3/4"** Driven by **MAIN ENG.**

Are the Auxiliary Engines crank shafts, diameter **as per Rule** as fitted **SEE MANCHESTER RPTS 11293/4/0.** Position **—**

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



**"EMPIRE REAPER"**

**AIR RECEIVERS:**—Have they been made under survey **YES** State No. of Report or Certificate **NOTTINGHAM C 877.**  
 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. 2** Total cubic capacity **30 CUB FT.** Internal diameter **2'-0 1/8"** thickness **3/8" & 1 5/32"**  
 Seamless, lap welded or riveted longitudinal joint **WELDED.** Material \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Working pressure by Rules **APP.** Actual **350 lb.**

**IS A DONKEY BOILER FITTED?** **no** If so, is a report now forwarded? **✓**  
 Is the donkey boiler intended to be used for domestic purposes only **✓**

**PLANS.** Are approved plans forwarded herewith for Shafting **7-7-42.** **8-8-42** Receivers **25-6-42.** Separate Fuel Tanks **9-7-42 & 28**  
 (If not, state date of approval)  
 Donkey Boilers **✓** General Pumping Arrangements **8-10-42.** Pumping Arrangements in Machinery Space **8-10-42**  
 Oil Fuel Burning Arrangements **✓**

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied **YES.**  
 State the principal additional spare gear supplied \_\_\_\_\_

The foregoing is a correct description,

Manufacturer.

**See Manchester Report No 11305**

Dates of Survey while building  
 During progress of work in shops--  
 During erection on board vessel--  
 Total No. of visits **12**  
**1942. Oct. 12, 13, 16, DEC/21, 28. JAN 29. FEB. 1, 8, 15, 22. AP. 5.**

Dates of Examination of principal parts—Cylinders **See Manchester Report No 11305.** Covers \_\_\_\_\_ Pistons \_\_\_\_\_ Rods \_\_\_\_\_ Connecting rods \_\_\_\_\_  
 Crank shaft **15-3-43.** Flywheel shaft **✓** Thrust shaft **15-3-43.** Intermediate shafts **15-3-43** Tube shaft \_\_\_\_\_  
 Screw shaft **12-10-42.** Propeller **13-10-42.** Stern tube **13-10-42** Engine seatings **16-10-42.** Engines holding down bolts **29-1-43**  
 Completion of fitting sea connections **16-10-42.** Completion of pumping arrangements **1-3-43** Engines tried under working conditions **1-3-43, 15-3-43.**  
 Crank shaft, Material \_\_\_\_\_ Identification Mark \_\_\_\_\_ Flywheel shaft, Material \_\_\_\_\_ Identification Mark \_\_\_\_\_  
 Thrust shaft, Material **See** Identification Mark **Manchester** Intermediate shafts, Material \_\_\_\_\_ Identification Marks \_\_\_\_\_  
 Tube shaft, Material \_\_\_\_\_ Identification Mark \_\_\_\_\_ Screw shaft, Material \_\_\_\_\_ Identification Mark \_\_\_\_\_  
 Identification Marks on Air Receivers **See Manchester Report No 11305.**

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 **✓**  
 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 **No** If so, state name of vessel **✓**

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
 The machinery of this vessel has been constructed as per approved plans, Secretary's letter and to the Specification, of good material and workmanship.  
 The whole installation has been tried out under working conditions and found satisfactory in every respect.

Eligible to be classed, in our opinion, with record of **\* LMC 443. TS CG.**  
 Oil Engines **25. SA. 5 CYL. 10 1/2" - 13 1/2" 97 NHP.**

The amount of Entry Fee	£	:	:	When applied for,
Special	8	11	-	19
Donkey Boiler Fee	£	:	:	When received,
Travelling Expenses (if any)	£	:	:	19

**W.S. Shields**  
 Engineer Surveyor to Lloyd's Register of Shipping.

FRI. 21 MAY 1943

Committee's Minute

Assigned **+ LMC 443**  
**Oil Eng O.E.**



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