

Rpt. 4b.

# REPORT ON OIL ENGINE MACHINERY.

No. 52089.

8 AUG 1943

5 AUG 1943

Received at London Office

Date of writing Report

When handed in at Local Office

Port of **HULL**

No. in Survey held at **Knottlingy Gool**

Date, First Survey **16. 12. 43.**

Last Survey **5. 4. 1943.**

Number of Visits **15.**

Reg. Book.

Single  
on the Twin  
Triple  
Quadruple

Screw vessel

Motor Collier

**EMPIRE RANCHER**

Tons { Gross **332**  
Net **158**

Built at **Knottlingy Gool**

By whom built **John Harker Ltd.**

Yard No. **147** When built **1943**

Engines made at **Manchester**

By whom made **Crosby Bros. Ltd.**

Engine No. **124215** When made

Donkey Boilers made at

By whom made

Boiler No. When made

Indicated Horse Power **275**

Owners **Ministry of War Transport**

Port belonging to

Net Horse Power as per Rule **97**

Is Refrigerating Machinery fitted for cargo purposes **no**

Is Electric Light fitted **YES**

Trade for which vessel is intended

**Motor Collier**

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

Maximum 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**

Mean Indicated Pressure **76 lb** Is there a bearing between each crank **YES**

Distance of bearings, adjacent to the Crank, measured from inner edge to inner edge **14 1/16"**

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

Crank Shaft, { Solid forged  
Semi built  
All built } dia. of journals as per Rule as fitted **7 1/2"** Crank pin dia. **7 1/4"** Crank Webs Mid. length breadth **9 1/4"** Mid. length thickness **3 23/32"** Thickness parallel to axis shrunk Thickness around eyehole

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

Propeller Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted **5"** Is the tube shaft fitted with a continuous liner **No.**

Brass 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 **YES**

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner **YES**

Does 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 **YES**

If two 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**

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 **COMP. 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. LED TO FUNNEL**

Non-conducting material & If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine **EX. PIPE LAGGED**

Boiling Water Pumps, No. **ONE ME 4 1/4" x 3"** 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, AS**

ME BILGE & COOLING PUMPS INTERCHANGEABLE. No. and Size **ONE 4 1/4" x 3"** ME CYL. COOLING PUMP SIMILAR } **ONE 2" HAWORTHY CENTRIFUGAL SELF PRIMING HANDPUMP** } **IND. DIESEL.**

How driven **ME.** FOR EMERGENCY USE ONLY

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 **YES**

Ballast Pumps, No. and size **ME 4 1/4" x 3" AS ABOVE** Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size **2 PUMPS FORM ONE UNIT, IN SERIES SEE MCHT REP. 11304**

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

Holdings, &c. **Three 2" in hold, One 2" in F.P., One 2" in A.P.**

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

How are they protected **YES**

Do that pipes pass through the bunkers **NONE** Have they been tested as per Rule **YES**

Do that pipes pass through the deep tanks **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 **YES** worked from **YES**

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork **YES**

Main Air Compressors, No. **ONE** No. of stages **2** Diameters **5 3/4" & 2 1/2"** Stroke **4"** Driven by **M.E.**

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

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

What provision is made for first Charging the Air Receivers **AUX. ENG. ABOVE - HAND STARTING**

Scavenging Air Pumps, No. **2 (TANDEM)** Diameter **20 1/2"** Stroke **7 3/4"** Driven by **M.E.**

Auxiliary Engines crank shafts, diameter as per Rule as fitted **SEE MANCHESTER RPTS 11291/2/5** No. Position

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



004387-004393-0016

**"E. RANCHER"**

**AIR RECEIVERS:**—Have they been made under survey  **YES** State No. of Report or Certificate **NOTT. C 878**

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 \_\_\_\_\_

**Starting Air Receivers, No.** **Two** Total cubic capacity **30 cub. ft.** Internal diameter **2' 0 1/8"** thickness **3/8" & 15/32"**  
 Seamless, lap welded or riveted longitudinal joint **RIVETED & WELDED** Material **Stl.** Range of tensile strength **26/30** Working pressure **APP? 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 & 28.10**

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 **As per Specification.**

*The foregoing is a correct description,*

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } **Su Manchester Report No 11304**  
 { During erection on board vessel -- } **1942 Dec 16, 28. 1943 Feb 19 Mar 1, 4, 25 May 6, 13, 21 Jun 1, 17, 21, 23, 24. July 5.**  
 Total No. of visits **15**

**Su Manchester Report No 11304**  
 Dates of Examination of principal parts—Cylinders \_\_\_\_\_ Covers \_\_\_\_\_ Pistons \_\_\_\_\_ Rods \_\_\_\_\_ Connecting rods \_\_\_\_\_  
 Crank shaft **24.6.43** Flywheel shaft  Thrust shaft **25.3.43** Intermediate shafts **25.3.43** Tube shaft   
 Screw shaft **28.12.42** Propeller **28.12.42** Stern tube **28.12.42** Engine seatings **4.3.43** Engines holding down bolts **25.3.43**  
 Completion of fitting sea connections **28.12.42** Completion of pumping arrangements **24.6.43** Engines tried under working conditions **24.6.43**  
 Crank shaft, Material \_\_\_\_\_ Identification Mark \_\_\_\_\_ Flywheel shaft, Material \_\_\_\_\_ Identification Mark \_\_\_\_\_  
 Thrust shaft, Material **Su** Identification Mark **Manchester** Intermediate shafts, Material **Report No.** Identification Marks **11304**  
 Tube shaft, Material \_\_\_\_\_ Identification Mark \_\_\_\_\_ Screw shaft, Material \_\_\_\_\_ Identification Mark \_\_\_\_\_  
 Identification Marks on Air Receivers **Su Manchester Report No 11304.**

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 & workmanship.*

*The whole installation has been tried out under working conditions and found satisfactory in every respect.*

*Eligible to be classed, in my opinion, with record of  $\frac{1}{2}$  LMC 7, 43 TS.06.*  
*Oil engines 25. SA. 5 cyl. 10 1/2" - 13 1/2". 97 NHP.*

The amount of Entry Fee .. £ : : When applied for,  
 Special (Part) ... £ 8 : 1 : **5 AUG 1943**  
 Donkey Boiler Fee ... £ : : When received,  
 Travelling Expenses (if any) £ : : 19.

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

Committee's Minute **TUES. 17 AUG 1943**  
 Assigned **+ LMC 7.43 09.**



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