

# REPORT ON OIL ENGINE MACHINERY.

No 11304

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No. in Survey held at Reg. Book. MANCHESTER. Date, First Survey 20/7/42 Last Survey 16/11/42 19 Number of Visits 7

on the <sup>Single</sup> ~~Twin~~ ~~Triple~~ ~~Quadruple~~ Screw vessel "EMPIRE RANCHER" Tons Gross Net

Built at KNOTTINGLEY. By whom built J. HARKER, LTD. Yard No. 147 When built 1943

Engines made at MANCHESTER. By whom made CROSSLEY BROS. LTD. Engine No. 124215 When made 1942.

Donkey Boilers made at ✓ By whom made ✓ Boiler No. ✓ When made ✓

Brake 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

Trade for which vessel is intended

ALL ENGINES, &c. Type of Engines VERTICAL SOLID INJECTION 2 or 4 stroke cycle 2 Single or double acting SINGLE

Maximum pressure in cylinders 800 LBS/SQ IN Diameter of cylinders 10 1/2" Length of stroke 13 1/2" No. of cylinders 5 No. of cranks 5

Mean Indicated Pressure 76 LBS/SQ IN Flywheel dia. 37 1/2" Weight 2166 LBS. Means of ignition COMPRESSION Kind of fuel used DIESEL OIL.

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 14 1/8" Is there a bearing between each crank

Revolutions per minute 300 Crank pin dia. 7 1/2" Crank pin dia. 7 1/4" Crank Webs Mid. length breadth 9 1/2" Thickness parallel to axis

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

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

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

shaft If so, state type Length of Bearing in Stern Bush next to and supporting propeller

Propeller, dia. Pitch DIRECT No. of blades Material whether Moveable Total Developed Surface sq. feet

Method of reversing Engines COMPRESSED AIR Is a governor or other arrangement fitted to prevent racing of the engine when declutched YES Means of lubrication

FORCED EXH: MANIFOLD WATER COOLED Thickness of cylinder liners 3/8" Are the cylinders fitted with safety valves YES Are the exhaust pipes and silencers water cooled or lagged with

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

Cooling Water Pumps, No. ONE ON M.E. 4 1/2" x 3" STROKE 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 4 1/2" Stroke 3" Can one be overhauled while the other is at work YES

Pumps connected to the Main Bilge Line No. and Size How driven

Is the cooling water led to the bilges 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 Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size TWO IN SERIES ON M.E. 1 3/4" x 1 3/8" x 2" STROKE.

Are there 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 In Pump Room

Are there independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Are the Bilge Suctions in the Machinery Spaces

Are they fitted with Valves or Cocks

Are they fitted direct on the skin of the ship Are they filled with Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Are the Overboard Discharges above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate

How are they protected

Are the Blow Off Cocks fitted with a spigot and brass covering plate

How are they protected

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

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 5 3/4" & 2 1/2" Stroke 4" Driven by MAIN ENGINE

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

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

Is there provision is made for first Charging the Air Receivers

Recharging Air Pumps, No. TWO (TANDEM) Diameter 20 1/2" Stroke 7 3/4" Driven by MAIN ENGINE

Auxiliary Engines crank shafts, diameter as per Rule as fitted See Separate Reports. No. Position

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



AIR RECEIVERS: - Have they been made under survey Yes State No. of Report or Certificate Nottingham. C. 878.

Is each receiver, which can be isolated, fitted with a safety valve as per Rule ✓  
Can the internal surfaces of the receivers be examined and cleaned ✓ Is a drain fitted at the lowest part of each receiver ✓  
Injection Air Receivers, No. ✓ 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. ✓ Total cubic capacity Internal diameter thickness  
Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules Actual

IS A DONKEY BOILER FITTED? ✓ If so, is a report now forwarded?

PLANS. Are approved plans forwarded herewith for Shafting Receivers ✓ Separate Fuel Tanks ✓  
Donkey Boilers General Pumping Arrangements Pumping Arrangements in Machinery Space  
Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied As per Rule Requirements.  
State the principal additional spare gear supplied

The foregoing is a correct description.  
**CROSSLEY BROTHERS LIMITED,**  
*S. O. G. S.* Manufacturer.

Dates of Survey while building 1942.  
During progress of work in shops - - 20/7, 14/8, 4/9, 25/9, 14/10, 2/11, 16/11.  
During erection on board vessel - - -  
Total No. of visits

Dates of Examination of principal parts - Cylinders 25/9/42 Covers 25/9/42 Pistons 25/9/42 Rods ✓ Connecting rods 14/8/42  
Crank shaft 25/9/42 Flywheel shaft ✓ Thrust shaft 25/9/42 Intermediate shafts 16/11/42 Tube shaft ✓  
Screw shaft 2/11/42 Propeller ✓ Stern tube 2/11/42 Engine seatings ✓ Engines holding down bolts ✓  
Completion of fitting sea connections ✓ Completion of pumping arrangements ✓ Engines tried under working conditions ✓  
Crank shaft, Material O.H. Steel Identification Mark LLOYDS 1314 Flywheel shaft, Material ✓ Identification Mark ✓  
Thrust shaft, Material O.H. Steel Identification Mark 26/8/42 E.G. Intermediate shafts, Material O.H. Steel Identification Marks LLOYDS 878  
Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material O.H. Steel Identification Mark 16/11/42 F.H.  
Identification Marks on Air Receivers E. 2471. SCAVENGE CRANK LLOYDS 1277  
LLOYDS TEST. 700 lbs. 25/2/41 W.J.F.  
W.P. 350 lbs.  
J.N.B. 8/6/42.

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 ✓  
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 ✓ If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.)  
This engine has been constructed under Special Survey, of tested materials, & in accordance with the Secretary's letters, approved plans & the requirements of the Rules. The materials & workmanship are good, & the engine was found satisfactory when tested in the shop under full load conditions. This engine is suitable, in our opinion, for its intended service & when satisfactorily installed & reported upon, will be eligible to receive the notation of +LNC (incl)

(See separate Report 4(b) for the installing of the above engine on the "Empire Rancher" at Knottingley & Goole to S Shields 16/7/43

The amount of Entry Fee .. £ 2 : 0 :  
2/3 + 25% Special ... .. £ 22 : 5 :  
Donkey Boiler Fee ... .. £ : :  
Travelling Expenses (if any) £ 1 : 5 :  
When applied for, 31/12/42 19. S.H.  
When received, 19.

S. Shields for self W.T. Mathison & F. Hully.  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 17 AUG 1943  
Assigned See minute on which L.S. Rpt.

