

REPORT ON OIL ENGINE MACHINERY.

No 10,541.

6 JUN 1941

Received at London Office

Date of writing Report 22nd May 1941 When handed in at Local Office 31st May 1941 Port of Manchester
 No. in Survey held at Manchester Date, First Survey 10-9-40 Last Survey 22nd May 1941
 Reg. Book. Single on the Twin Triple Quadruple Screw vessel MS. Empire Bank Tons Gross Net
 Built at Manchester By whom built Henry Scar Ltd. Yard No. 416-7 When built 1941
 Engines made at Manchester By whom made Crosley Bros. Engine No. 127909 When made 1941
 Donkey Boilers made at ✓ By whom made ✓ Boiler No. ✓ When made ✓
 Brake Horse Power 385 Owners ✓ Port belonging to ✓
 Nom. Horse Power as per Rule 135 Is Refrigerating Machinery fitted for cargo purposes ✓ Is Electric Light fitted ✓
 Trade for which vessel is intended ✓

OIL ENGINES, &c.—Type of Engines Direct injection heavy oil engines 2 or 4 stroke cycle 2 Single or double acting single
 Maximum pressure in cylinders 800 lb/sq. in. Diameter of cylinders 10 1/2" Length of stroke 13 1/2" No. of cylinders 7 No. of cranks 7
 Mean Indicated Pressure 76 lb/sq. in. Span of 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 lbs Means of ignition Compression Kind of fuel used heavy oil
 Crank Shaft, { Solid forged as per Rule APPROVED dia. of journals as fitted 7 1/2" Crank pin dia. 7 1/4" Crank Webs Mid. length breadth 9 1/4" Thickness parallel to axis ✓
 { Semi built as fitted 7 1/2" Mid. length thickness 3 23/32" shrunk Thickness around eyehole ✓
 { All built FLYWHEEL MOUNTED as per Rule ON Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as per Rule APPROVED
 Flywheel Shaft, diameter as fitted CRANKSHAFT COUPLING fitted ✓ as fitted 5 1/4"
 Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule Is the { tube { shaft fitted with a continuous liner { ✓
 { as fitted ✓ { as fitted ✓ { ✓
 Bronze Liners, 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
 { as fitted ✓ { as fitted ✓ { ✓
 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 ✓ No. of blades ✓ Material ✓ whether Moveable ✓ Total Developed Surface ✓ sq. feet
 Method of reversing Engines direct Is a governor or other arrangement fitted to prevent racing of the engine when decoupled yes Means of lubrication
forced 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
 EXHAUST MANIFOLD WATER COOLED non-conducting material ✓ 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. 5" dia 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 5" 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 MAIN ENGINE 2 3/16 & 1 3/4" dia. x 2" stroke
 Are 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 ✓
 In Holds, &c. ✓
 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
 led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges ✓
 Are all Sea Connections fitted direct on the skin of the ship ✓ Are they fitted 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 ✓
 What pipes pass through the bunkers ✓ How are they protected ✓
 What pipes pass through the deep tanks ✓ 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 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 ✓ Is the Shaft Tunnel watertight ✓ Is it fitted with a watertight door ✓ worked from ✓
 If 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 ✓
 What provision is made for first Charging the Air Receivers ✓
 Scavenging Air Pumps, No. 3 (in line vertically) Diameter 20 1/2" Stroke 7 1/4" Driven by Main Engine
 Auxiliary Engines crank shafts, diameter as per Rule No. ✓
 { as fitted ✓ Position ✓
 Have the Auxiliary Engines been constructed under special survey ✓ Is a report sent herewith ✓

RECEIVERS: — Have they been made under survey

State No. of Report or Certificate

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

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?

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

PLANS. Are approved plans forwarded herewith for Shafting

(If not, state date of approval)

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

State the principal additional spare gear supplied

The foregoing is a correct description

CROSSLEY BROTHERS LIMITED,

Manufacturer.

Dates of Survey while building: During progress of work in shops - 10-9-40, 22-1-41, 17-2-41, 1-3-41, 5-3-41, 23-4-41, 24-4-41, 1-5-41, 22-5-41; During erection on board vessel - ; Total No. of visits

Dates of Examination of principal parts—Cylinders 1-3-41 Covers 17-2-41, 1-3-41 Pistons 24-4-41 Rods Connecting rods 22-1-41

Crank shaft -22-1-41 Flywheel shaft Thrust shaft 24-4-41 Intermediate shafts Tube shaft

Screw shaft Propeller Stern tube Engine seatings Engines holding down bolts

Completion of fitting sea connections Completion of pumping arrangements Engines tried under working conditions 23-4-41

Crank shaft, Material O.N. Ingot St. Identification Mark 1188 ELK 10-9-40 Flywheel shaft, Material Identification Mark

Thrust shaft, Material O.N. Ingot St. Identification Mark 1341 W.J.F. 24-4-41 Intermediate shafts, Material Identification Marks

Tube shaft, Material Identification Mark Screw shaft, Material Identification Mark

Identification Marks on Air Receivers

Is the flash point of the oil to be used over 150° F.

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 and in accordance with the Secretary's letters approved plans and the requirements of the Rules. The materials and workmanship are good and the engine was found to be satisfactory when tested in the shop under full load conditions. This engine is suitable in my opinion for its intended service and when satisfactorily installed on board and reported will be eligible to receive the notation L.M.C. (with date).

The amount of Entry Fee .. £ 3 : 0 : When applied for, 1/3 Special + 25.2 ... £ 28 : 2 : 31st May 1941 Donkey Boiler Fee ... £ : : When received, Travelling Expenses (if any) £ : 18/-

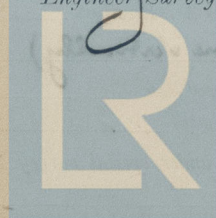
Committee's Minute

Assigned

See Hul & Co. 51292

W. J. Ferguson

Engineer Surveyor to Lloyd's Register of Shipping.



Lloyd's Register Foundation