

REPORT ON OIL ENGINE MACHINERY.

No 10,540
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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 11-6-40 Last Survey 22-5-41
Reg. Book. Single on the Twin Screw vessel m/s "Empire Isle" Number of Visits 15
Built at Heston, Hull By whom built Henry Scott Ltd. Yard No. 416 When built 1941
Engines made at Manchester By whom made Crossley Bros. Engine No. 27905 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 engine 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 7 No. of cranks 7
Mean Indicated Pressure 76 lbs/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 dia. of journals as per Rule APPROVED 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 dia. of journals as fitted 7 1/2" Mid. length thickness 3 23/32" shrunk Thickness around eyehole
Flywheel Shaft, diameter as per Rule FLYWHEEL MOUNTED ON CRANKSHAFT COUPLING Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as per Rule APPROVED as fitted 5 1/4"
Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted Is the tube shaft fitted with a continuous 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 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 detached 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 non-conducting material WATER COOLED of 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 BILGE & COOLING WATER PUMPS INTERCHANGEABLE 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 ENGINES 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 as fitted Position
Have the Auxiliary Engines been constructed under special survey Is a report sent herewith

AIR RECEIVERS:— Have they been made under survey

State No. of Report or Certificate

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

Injection Air Receivers, No.

Cubic capacity of each

Internal diameter

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure

Starting Air Receivers, No.

Total cubic capacity

Internal diameter

thickness

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure

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--
During erection on board vessel--
Total No. of visits

Dates of Examination of principal parts—Cylinders 19-3-41 Covers 10-3-41, 19-3-41 Pistons 5-5-41 Rods Connecting rods 11-6-40, 17-7-40, 11-9-40
Crank shaft 7-2-41 Flywheel shaft Thrust shaft 5-5-41 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 2-5-41.
Crank shaft, Material O.H. Ingot St. Identification Mark 1323 W.T.M. 9-1-41 Flywheel shaft, Material Identification Mark
Thrust shaft, Material O.H. Ingot St. Identification Mark 1341 W.J.P. 5-5-41 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 :
1/3 Special + 25.2 ... £ 28 : 2 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ 18/-

When applied for,

31st May 1941

When received,

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Committee's Minute

Assigned

W. J. Ferguson
Engineer Surveyor to Lloyd's Register of Shipping.



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Lloyd's Register
Foundation