

REPORT ON OIL ENGINE MACHINERY.

No 10720.

15 OCT 1941

Received at London Office

Date of writing Report 8th Oct. 1941 When handed in at Local Office 14th Oct. 1941 Port of Manchester

No. in Survey held at Manchester Date, First Survey 3rd April, 1941 Last Survey 5th October, 1941
Reg. Book. of Manchester Number of Visits 13

on the Single Twin Triple Quadruple Screw vessel M.S.C. NEPTUNE.

Tons: Gross
Net

Built at Manchester By whom built Henry Robb Ltd Yard No. 319 When built 1941
Engines made at Manchester By whom made Crosley Bros. Ltd Engines No. 127906 When made 1941
Donkey Boilers made at ✓ By whom made ✓ Boiler No. ✓ When made ✓
Brake Horse Power 770 Owners Manchester Ship Canal Co. Port belonging to Manchester
Nom. Horse Power as per Rule 270 271 Is Refrigerating Machinery fitted for cargo purposes ✓ Is Electric Light fitted ✓
Trade for which vessel is intended Towing purposes on the Manchester Ship Canal.

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 lbs/sq in Diameter of cylinders 10 1/2" Length of stroke 13 1/2" No. of cylinders 7 each engine No. of cranks 7 each engine

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 & Crank pin dia. 7 1/4" Crank Webs Mid. length breadth 9 1/4" Thickness parallel to axis ✓
4th hand as fitted 7 1/2" Mid. length thickness 3 23/32" shrunk Thickness around eye-hole ✓

Flywheel Shaft, diameter as per Rule FLYWHEEL MOUNTED ON Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as per Rule APPROVED &
as fitted CRANKSHAFT COUPLING as 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 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
EXHAUST MANIFOLD WATER COOLED 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. 5" Dia. x 3" Stk. 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 per engine 5" Diameter Stroke 3" BILGE & COOLING WATER PUMPS INTERCHANGEABLE
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 EACH M.E. 2 3/16" & 1 1/4" & 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 (per eng.) No. of stages 2 Diameters 5 3/4" 2 1/2" Stroke 4" Driven by Main Engine
Auxiliary Air Compressors, No. Two (total) No. of stages 2 Diameters 4 1/2" & 1 7/8" Stroke 3 1/4" Driven by Aux. Engines
Small Auxiliary Air Compressors, No. ✓ No. of stages ✓ Diameters ✓ Stroke ✓ Driven by No 129931-32.

What provision is made for first Charging the Air Receivers ✓
Scavenging Air Pumps, No. Each engine 3 (in vertical line) Diameter 20 1/2" Stroke 7 1/4" Driven by Main Engine
Auxiliary Engines crank shafts, diameter as per Rule APPROVED & No. 2
as fitted Journals 3 1/2" Pins 3 1/4" with 2" hole Position ✓

Have the Auxiliary Engines been constructed under special survey yes Is a report sent herewith ✓ Please see Manchester
Reports No 10674-75.

2210-284900-296900

18/10/41



AIR RECEIVERS: - Have they been made under survey *yes* State No. of Report or Certificate Signed *advice note attached*
 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. *✓* Cubic capacity of each *✓* Internal diameter *✓* thickness *✓*
 Seamless, lap welded or riveted longitudinal joint *✓* Material *✓* Range of tensile strength *✓* Working pressure *by Rules* *✓*
Starting Air Receivers, No. *4* Total cubic capacity *60 cu ft* Internal diameter *18 1/4"* thickness *3/8"*
 Seamless, lap welded or riveted longitudinal joint *seamless* Material *S.M. steel* Range of tensile strength *30-36 tons* Working pressure *by Rules 565 lbs"*
Actual 350 lbs"

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 *26-7-40* Receivers *26-7-40* Separate Fuel Tanks *✓*
 (If not, state date of approval)
 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 *1 Piston complete, 1 Cylinder head complete, bolts for cyl. head, main bearings & bottom end bearings.*

The foregoing is a correct description.
CROSSLEY BROTHERS LIMITED,
 Manufacturer.

Dates of Survey while building
 During progress of work in shops - - *3-4-41, 7-4-41, 10-4-41, 18-4-41, 1-5-41, 20-5-41, 30-5-41, 11-8-41, 16-8-41, 25-9-41, 2-10-41, 3-10-41 & 5-10-41.*
 During erection on board vessel - - *✓*
 Total No. of visits *✓*
 Dates of Examination of principal parts - Cylinders *8-4-41, 1-5-41* Covers *18-4-41, 1-5-41* Pistons *2-10-41, 5-10-41* Rods *✓* Connecting rods *7-4-41, 10-4-41*
 Crank shaft *3-4-41* Flywheel shaft *✓* Thrust shaft *7-4-41, 2-10-41* 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 *Benl tests 25-9-41, 3-10-41*
 Crank shaft, Material *S.M. Ingot Ste.* Identification Mark *LLOYD'S 274 J.H. 21-9-39* Flywheel shaft, Material *✓* Identification Mark *✓*
 Thrust shaft, Material *- do -* Identification Mark *LLOYD'S 1370 W.J.F. 2-10-41* Intermediate shafts, Material *✓* Identification Marks *✓*
 Tube shaft, Material *✓* Identification Mark *1339 W.J.F. 7-4-41* Screw shaft, Material *✓* Identification Mark *✓*
 Identification Marks on Air Receivers *56496, 56498, 56500 & 56501, LLOYD'S TEST 1000 LBS", W.P. 500 LBS", ANLD. 5-9-40, TESTED 3-12-40 L.T.*

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. These engines have been constructed under Special Survey, of tested materials, and in accordance with the Secretary's letter approved plans and the Requirements of the Rules. The materials and workmanship are good and the engines were found to be satisfactory when tested in the shop under full load conditions. These engines are suitable in my opinion for their intended service and when satisfactorily installed and reported will be eligible to receive the notation * L.M.C. (with date.)

The amount of Entry Fee .. £ *4* : 0 : *When applied for,*
14th Oct 1941
 2/3 x Special £ *43* : 13 : *W.S.P.*
 Donkey Boiler Fee £ : : *When received,*
 Travelling Expenses (if any) £ *1* : 0 : *19*

Committee's Minute *WED. 4 FEB 1942*
 Assigned *See Lth J.E 20601*

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



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