

REPORT ON OIL ENGINE MACHINERY.

No 10998

Received at London Office

18 MAY 1942

Date of writing Report 11-5-42 When handed in at Local Office
 Port of Manchester
 No. in Survey held at Openshaw, Manchester Date, First Survey 4-2-42 Last Survey 13-4-1942.
 Reg. Book. 6262 on the Single Triple Screw vessel m/v "EMPIRE REYNARD"
 Built at Lowestoft By whom built Richards Ironworks Yard No. 301 When built 1942
 Engines made at Openshaw, Manchester By whom made Crossley Bros. Engine No. 129734 When made 1942
 Donkey Boilers made at By whom made Boiler No. - When made -
 Brake Horse Power 330 Owners Ministry of War Transport Port belonging to Lowestoft
 Nom. Horse Power as per Rule 116 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
 Trade for which vessel is intended

L 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 lb/sq. inch Diameter of cylinders 10 1/2" Length of stroke 13 1/2" No. of cylinders 6 No. of cranks 6
 Mean Indicated Pressure 76 lb/sq. inch
 Position 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 lb Means of ignition Compression Kind of fuel used heavy oil
 Crank Shaft, { Solid forged dia. of journals as approved 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 as per Rule
 Flywheel Shaft, diameter as fitted Intermediate Shafts, diameter as per Rule fitted Thrust Shaft, diameter at collars as per Rule approved
 as fitted 4 3/4" as fitted
 Main Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted Is the tube shaft fitted with a continuous liner
 as fitted
 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
 as fitted
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner
 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
 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 disengaged 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
 conducting manifold water cooled. If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine

Bilge Water Pumps, No. One on M.E. 4 1/4" 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 1/4" Stroke 3" Can one be overhauled while the other is at work
 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

Blast Pumps, No. and size Two in series on M.E. 1 3/4" x 1 3/8" dia x 2" stroke
 Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size
 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

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
 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
 Do pipes pass through the bunkers How are they protected
 Do 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

On wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork
 Air Compressors, No. One No. of stages 2 Diameters 5 3/4" x 2 1/2" Stroke 4" Driven by Main engine
 Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by
 All Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

Is provision made for first Charging the Air Receivers
 Ventilating Air Pumps, No. Two (tender) Diameter 20 1/2" Stroke 9 1/4" Driven by Main engine
 Auxiliary Engines crank shafts, diameter as per Rule as fitted 3 1/2" No. One Position
 Are the Auxiliary Engines constructed under special survey Yes Is a report sent herewith Refert follows

AIR RECEIVERS: — Have they been made under survey

State No. of Report or Certificate

Nottingham C 191 + C 121

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

by Rules

Actual

End sections seam less. Centre stroke butt welded with

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 Shafing

(If not, state date of approval)

15-1-42

Receivers

15-1-42

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

4-2-42, 2-3-42, 24-2-42, 7-3-42, 1-4-42, 10-4-42, 13-4-42.

Dates of Examination of principal parts—Cylinders

13-4-42

Covers

13-4-42

Pistons

13-4-42

Rods

✓

Connecting rods

24-2-42

Crank shaft

4-2-42

Flywheel shaft

✓

Thrust shaft

13-4-42

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

Bench trials 10-4-42

Crank shaft, Material

✓

Identification Mark

Nº 1398 WTM 2-1-42

Flywheel shaft, Material

✓

Identification Mark

✓

Thrust shaft, Material

✓

Identification Mark

Nº 1134 WTM 13-4-42

Intermediate shafts, Material

✓

Identification Marks

✓

Tube shaft, Material

✓

Identification Mark

✓

Screw shaft, Material

✓

Identification Mark

✓

Identification Marks on Air Receivers

E 1982

LLOYD'S TEST

700 LBS.

W.P. 350 LBS.

J.N.B. 26-12-40

E 2048

LLOYD'S TEST

700 LBS.

W.P. 350 LBS.

J.N.B. 13-2-41.

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

Yes.

If so, state name of vessel

Richard's Ironwork MOS 292.

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 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 and reported upon will be eligible to receive the notation + LMC (with date).

The amount of Entry Fee

£ 3

: -

When applied for,

1/2 + 25% Special

£ 26

: 12

: 15-5-1942

Donkey Boiler Fee

£

: -

When received,

Travelling Expenses (if any)

£ 1

: 5

: 19

Committee's Minute

FRI. 23 OCT 1942

Assigned

W. J. Mathew

Engineer Surveyor to Lloyd's Register of Shipping.



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