RECEIVED
1 AUG 1943
IN O.O.

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 52094.

Date of writing Report ——— 19— When handed in at Local Office 9 AUG 1943 19 Port of HULL — Received at London Office 10 AUG 1943

No. in Reg. Book. Survey held at Thorne Date, First Survey 14. 12. 42. Last Survey 29. 4. 1943 Number of Visits 10

on the Single ~~Twin~~ Triple ~~Quadruple~~ Screw vessel COLLIER "EMPIRE LAIRD" Tons Gross 313 Net 143

Built at Thorne By whom built Richard Dunston Ltd. Yard No. T393 When built 1943

Engines made at Manchester By whom made Crossley Bros. Ltd. Engine No. 124216 When made "

Donkey Boilers made at none By whom made ✓ Boiler No. ✓ When made ✓

Brake Horse Power 275 Owners Ministry of War Transport Port belonging to Goole

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 Motor Collier.

SEE MANCHESTER REPORT No 11419

OIL ENGINES, &c.—Type of Engines Vertical Airless Injection 2 or 4 stroke cycle 2 Single or double acting SA

Maximum pressure in cylinders 800 lb Mean Indicated Pressure 76 lb Diameter of cylinders 10½ Length of stroke 13½ No. of cylinders 5 No. of cranks 5

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 14 11/16" Is there a bearing between each crank YES

Revolutions per minute 300 Flywheel dia. 37½" Weight 2166 lbs. Means of ignition COMPRESSION Kind of fuel used DIESEL OIL

Crank Shaft, Solid forged ~~Semi-built~~ ~~All built~~ dia. of journals as per Rule — as fitted 7½" Crank pin dia. 7¼" Crank Webs Mid. length breadth 9¼" Mid. length thickness 3 23/32" shrunk Thickness parallel to axis Thickness around eyehole ✓

Flywheel Shaft, diameter as per Rule as fitted ✓ Intermediate Shafts, diameter as per Rule APPROVED as fitted 4½" Thrust Shaft, diameter at collars as per Rule as fitted 4¾"

Tube Shaft, diameter as per Rule as fitted ✓ Screw Shaft, diameter as per Rule APPROVED as fitted 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 YES If so, state type NEWARK Length of Bearing in Stern Bush next to and supporting propeller 24"

Propeller, dia. 5'-2" Pitch 3'-10" No. of blades 4 Material C.I. whether Moveable NO Total Developed Surface 9½ sq. feet

Method of reversing Engines DIRECT - COMPRESSED AIR. Is a governor or other arrangement fitted to prevent racing of the engine when declutched 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 EXH. 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 EX. LED TO FUNNEL.

Cooling Water Pumps, No. ONE ON ME 4¼" ϕ × 3" STROKE Is the sea suction provided with an efficient strainer which can be cleared within the vessel YES

Bilge Pumps worked from the Main Engines, No. ONE Diameter 4¼" Stroke 3" Can one be overhauled while the other is at work BILGE & COOLING PUMPS INTERCHANGEABLE YES.

Pumps connected to the Main Bilge Line No. and Size ONE 4¼" × 3" How driven M.E. — ME CYL. COOLING PUMP SIMILAR FOR EMERGENCY USE ONLY. — ONE 2" HAMWORTHY CENTL. SELF PRIMING. IND. DIESEL — HANDPUMP

Is the cooling water led to the bilges NO 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 ONE M.E. 4¼" ONE IND. 2" Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size TWO IN SERIES ON M.E. 1¾" & 1⅜" - 2" STROKE

Are two independent means arranged for circulating water through the Oil Cooler Both M.E. & Aux. Eng. pumps can be used. Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces Two 2½". In Pump Room ✓

In Holds, &c. Three 2" in hold. One 2" in F.P. One 2" in A.P.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One 2"

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes YES. 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 YES.

Are all Sea Connections fitted direct on the skin of the ship YES, OR E.W. STEEL BOXES. Are they fitted with Valves or Cocks BOTH.

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

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

What pipes pass through the bunkers NONE 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 YES.

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 YES Is the Shaft Tunnel watertight PART OF ENG. ROOM. 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 5¾" & 2½" Stroke 4" Driven by MAIN ENGINE

Auxiliary Air Compressors, No. ONE No. of stages ~~2~~ One Diameters 3¼ ~~3⅜ & 1⅜~~ Stroke 3¼" Driven by AUX. ENGINE

Small Auxiliary Air Compressors, No. NONE No. of stages — Diameters — Stroke — Driven by —

What provision is made for first Charging the Air Receivers AUX. ENG. ABOVE - HAND STARTING.

Scavenging Air Pumps, No. TWO (TANDEM) Diameter 20½" Stroke 7¾" Driven by MAIN ENGINE.

Auxiliary Engines crank shafts, diameter as per Rule as fitted SEE NOTT. CERT C 1216. No. One 4SCSA 2 Cy. 4"-4" driving a 3KW dynamo Position also a single stage compressor through a clutch

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

004727-004735-0175

© 2020 Lloyd's Register Foundation

"E. LAIRD"

AIR RECEIVERS:—Have they been made under survey YES ✓ State No. of Report or Certificate NOTT. CERTS. N°C 1904 373

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. NONE 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. 2 Total cubic capacity 30 CU. FT. Internal diameter 2'-0"/8 thickness 3/8" & 15/32"

Seamless, lap welded or riveted longitudinal joint RIVETED & WELDED Material STEEL Range of tensile strength 26/30 Working pressure by Rules APPROD Actual 350 ℔.

IS A DONKEY BOILER FITTED? NO 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 25·6·42. (If not, state date of approval) Receivers 25·6·42. Separate Fuel Tanks 24·6·42

Donkey Boilers ✓ General Pumping Arrangements 6·5·42. Pumping Arrangements in Machinery Space 6·5·42

Oil Fuel Burning Arrangements ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied YES.

State the principal additional spare gear supplied ✓

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building — During progress of work in shops: See Manchester Rpt. N° 11411.

During erection on board vessel: 1942 DEC 14, 18, 29. 1943 JAN 19, FEB 11, MAR 10, 25, AP 15. JLY 26, 29,

Total No. of visits 10.

Dates of Examination of principal parts—Cylinders See above report. Covers Pistons Rods Connecting rods

Crank shaft Flywheel shaft Thrust shaft Intermediate shafts Tube shaft —

Screw shaft 18·12·42. Propeller 29·12·42. Stern tube 18·12·42 Engine seatings 29.12.42. Engines holding down bolts 19.1.43.

Completion of fitting sea connections 29.12.42 Completion of pumping arrangements 10/3/43. Engines tried under working conditions 10.3.43 29/7/43

Crank shaft, Material See Man. Identification Mark Rpt. 11411 } Flywheel shaft, Material — Identification Mark —

Thrust shaft, Material Identification Mark } Intermediate shafts, Material F.I. STL. Identification Marks LLOYDS N° 912. CAB. 29.10.42, 795, CS, 792,

Tube shaft, Material — Identification Mark — Screw shaft, Material F.I. STL. Identification Mark AF, 14-12-42.

Identification Marks on Air Receivers See Note. C 190 & 373.

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 YES

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo NO 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 NO If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery of this vessel has been constructed as per approved plans, Secretary's letters and to the Specification, of good material + workmanship.

The whole installation has been tried out under working conditions and found satisfactory in every respect.

Eligible to be classed, in my opinion, with record of ✠ LMC 7, 43. TS. OG.

Oil Engines 25. SA. 5 CYL. 10½" – 13½". 97 NHP.

Forging certificates retained for later similar ships.

Certificate (if required) to be sent to

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee .. £ : :

Special (Part)... £ 8 : 1 :

Donkey Boiler Fee ... £ : :

Travelling Expenses (if any) £ : :

When applied for, 9 AUG 1943 19

When received, 19

W. S. Shields.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 24 AUG 1943

Assigned +LMC 7.43 OG.

© 2020 Lloyd's Register Foundation