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pt. 4b.

MAR 1947

D.O.

REPORT ON OIL ENGINE MACHINERY.

No. 14332

28 FEB 1947

Received at London Office

Date of writing Report 25/2/1947 When handed in at Local Office 27/2/1947 Port of BELFAST

No. in Survey held at BELFAST Date, First Survey 25th April, 1946 Last Survey 6th February 1947
Reg. Book. Number of Visits 112

Single on the Twin Triple Quadruple Screw vessel LEPTON Tons Gross 6446 Net 3619

Built at BELFAST By whom built HARLAND & WOLFF LTD. Yard No. 1346 When built 1947

Engines made at BELFAST By whom made HARLAND & WOLFF LTD. Engine No. 1346 When made 1947

Donkey Boilers made at BELFAST By whom made HARLAND & WOLFF LTD. Boiler No. 1359 When made 1947

Brake Horse Power 2700 Owners ANGLO SAXON PETROLEUM CO. LTD Port belonging to LONDON

Nom. Horse Power as per Rule 536 = MN Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted YES

Trade for which vessel is intended CARRYING PETROLEUM IN BULK

ENGINES, &c. — Type of Engines DIESEL (WITH UNDER PISTON SUPERCHARGE) or 4 stroke cycle 4 Single or double acting SINGLE

Maximum pressure in cylinders 700 lbs./sq.in. Diameter of cylinders 25 9/16 650 mm Length of stroke 5 5/8 140 mm No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure 128 lbs./sq.in. Span of bearings, adjacent to the crank, measured from inner edge to inner edge 844 mm Is there a bearing between each crank YES

Revolutions per minute 120 Flywheel dia. 2218 mm Weight 7500 Kgs. Means of ignition COMPRESSION Kind of fuel used HEAVY OIL

Crank shaft, dia. of journals as per Rule AS APPROVED Crank pin dia. 460 mm Crank webs Mid. length breadth 750 mm Thickness parallel to axis 267 mm PIN 267 mm 290 mm 282 mm

Intermediate Shafts, diameter as per Rule AS APPROVED Thrust Shaft, diameter at collars as per Rule AS APPROVED

Stern Tube Shaft, diameter as per Rule AS APPROVED Screw Shaft, diameter as per Rule AS APPROVED Is the tube shaft fitted with a continuous liner YES

Bronze Liners, thickness in way of bushes as per Rule AS APPROVED Thickness between bushes as per Rule AS APPROVED Is the after end of the liner made watertight in the propeller boss YES

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner YES

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 YES

If two liners are fitted, is the shaft lapped or protected between the liners YES Is an approved Oil Gland or other appliance fitted at the after end of tube shaft NO

Length of bearing in Stern Bush next to and supporting propeller 4'-10" Propeller, dia 14'-9" Pitch 11'-0" No. of blades 4 Material MAN BRONZE whether moveable SOLID Total developed surface 75 sq. feet

Method of reversing Engines COMP 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 4.8 mm Are the cylinders fitted with safety valves YES Are the exhaust pipes and silencers water cooled

Lagged with non-conducting material LAGGED 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. 4 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. 1 Diameter ROTARY Stroke — Can one be overhauled while the other is at work YES

Pumps connected to the Main Bilge Line No. and size 1 @ 28 T/HR. 1 @ 40 T/HR. 1 @ 100 T/HR. How driven MAIN ENGINE STEAM G.S. + Bilge STEAM

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 YES

Ballast Pumps, No. and size 1 @ 6" x 6" x 6" FORD Power Driven Lubricating Oil Pumps, including spare pump, No. and size 1 INDI SPARE 100 T/HR

Are two independent means arranged for circulating water through the Oil Cooler YES Suctions, connected to both main bilge pumps and auxiliary bilge pumps, No. and size: — In machinery spaces 3 @ 3 1/2" In pump room 1 @ 2 1/2"

In holds, &c. 2 @ 2 1/2" (Suctions in pump room and holds not connected to main & auxy bilge pumps)

Independent Power Pump Direct Suctions to the engine room bilges, No. and size 1 @ 6" 1 @ 4" 1 @ 6" EMERGENCY

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes YES Are the bilge suction pipes 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 Are they fitted with valves or cocks YES 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 YES

What pipes pass through the bunkers NONE How are they protected

What pipes pass through the deep tanks NONE 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 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. 1 No. of stages 2 diameters 120 cu.ft. FREE AIR / MIN. stroke driven by STEAM

Auxiliary Air Compressors, No. 1 No. of stages 2 diameters 90 cu.ft. FREE AIR / MIN. stroke driven by AUX DIESEL ENG

Small Auxiliary Air Compressors, No. — No. of stages — diameters — stroke driven by

What provision is made for first charging the air receivers STEAM DRIVEN AIR COMPRESSOR

Scavenging Air Pumps, No. UNDER PISTON SUPERCHARGE diameter stroke driven by

Auxiliary Engines crank shafts, diameter as per Rule AS APPROVED No. as fitted 4 3/16" JOURNAL 3 1/4" PIN Position ENGINE ROOM STARBOARD

Have the auxiliary engines been constructed under special survey Is a report sent herewith

003572-003580-0175



AIR RECEIVERS:—Have they been made under survey... YES ✓ State No. of report or certificate Z. 1736

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. 1 ✓ Total cubic capacity 500 cu. ft. ✓ Internal diameter 6'-0 5/16" ✓ thickness 1" ✓

Seamless, lap welded or riveted longitudinal joint RIVETED ✓ Material STEEL ✓ Range of tensile strength 28/327/9" ✓ Working pressure by Rules R.S. R.P.P. Actual 356 lbs./sq

IS A DONKEY BOILER FITTED YES ✓ If so, is a report now forwarded YES ✓

Is the donkey boiler intended to be used for domestic purposes only NO ✓

PLANS. Are approved plans forwarded herewith for shafting (10/4/46) 19/2/45 ✓ Receivers (25/3/46) Separate fuel tanks 17/10/46

Donkey boilers 11/4/46 ✓ General pumping arrangements 5/1/46 ✓ Pumping arrangements in machinery space 17/10/46 ✓

Oil fuel burning arrangements 17/10/46 ✓

SPARE GEAR.

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

State the principal additional spare gear supplied SEE ATTACHED LIST.

For HARLAND AND WOLFE ENGINEERS

The foregoing is a correct description, and the particulars of the installation as fitted are as approved for torsional vibration characteristics Manufacturer.

Dates of Survey while building: During progress of work in shops - 1946 Apr 29, May 20, 24, Jun 3, 10, 12, 16, 17, 18, 19, 20, 21, 24, 25, July 1, 29, Aug 5, 7, 12, 13, 15, 16, 19, 20, 21, 22, 23, 24, 29, 30, Sep 3, 4, 5, 6, 7, 9, 10, 11, 13, 14, 16, 17, 18, 19, 20, 24, 26, 27, 30, Oct 3, 4, 8, 10, 11, 14, 16, 17, 18, 21, 23, 24, 25, 29, 30, 31, Nov 4, 5, 8, 11, 12, 13, 15, 19, 19, 20, 21, 22, 26, 27, 29, Dec 3, 4, 6, 9, 10, 13, 14, 15, 17, 19, 20, 21, 31, 1946 10, 13, 14, 21, 22, 23, 24, 28, 29, Feb. 3, 5, 6. Total No. of visits 113 5.9.46

Dates of examination of principal parts—Cylinders 18/9.9.46 Covers 13.9.46 Pistons 20/22.8.46 Rods 9.9.46 Connecting rods 5.9.46

Crank shaft 7.10.46 Flywheel shaft - Thrust shaft 6.8.46 Intermediate shafts 11.9.46 Tube shaft -

Screw shaft 11.9.46 Propeller 24.9.46 Stern tube 20.9.46 Engine seatings 19.11.46 Engine holding down bolts 19.11.46

Completion of fitting sea connections 25.9.46 Completion of pumping arrangements 6.2.47 Engines tried under working conditions 6.2.47

Crank shaft, material STEEL Identification mark G.J.T. 13.8.46 Flywheel shaft, material - Identification mark -

Thrust shaft, material STEEL Identification mark G.J.T. 17.6.46 Intermediate shafts, material STEEL Identification marks S.3/13. J.M.A. 11

Tube shaft, material - Identification mark - Screw shaft, material STEEL Identification mark S.2938. J.M.A. 11.9

Identification marks on air receivers NO. 360 LLOYDS TEST 556 lbs./sq

W.P. 356 lbs./sq J.M.A. 10.1.46

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 ✓

Description of fire extinguishing apparatus fitted STEAM, WITH REMOTE CONTROL, ALSO PORTABLE CHEMICAL

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo YES ✓ If so, have the requirements of the Rules been complied with YES ✓

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with YES ✓

Is this machinery duplicate of a previous case YES ✓ If so, state name of vessel M.V. LINGA BELFAST REPORT No. 14.254

General Remarks (State quality of workmanship, opinions as to class, &c. This machinery has been constructed under special survey in accordance with the Society's Rules and Regulations and the Secretary's letters. The scantlings and arrangement are in accordance with the approved plans.

The materials and workmanship are good. The machinery has been efficiently installed on board the vessel and tested under full working conditions at sea, with satisfactory results. Torsional vibration characteristics of main engines approved 24/4/46.

In our opinion this machinery is eligible to receive the notation:—

* LMC 2.47, OIL ENGINE C.L. D.B. 180 lbs.

The amount of Entry Fee ... £128 : 12 : Special AIR RECEIVER ... £ 5 : 0 : Donkey Boiler Fee... ... £ 35 : 8 : Travelling Expenses (if any) £ :

When applied for 27/2/1947 When received 19 Edwin Griener, R. O. Thorne, Engineer Surveyor to Lloyd's Register of Shipping.

Assigned + LMC 2.47 Oil Eng. C.L. D.B. 180 lbs. FEB. 21 MAR 1947



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MLD

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