

RECEIVED

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IN 22

REPORT ON OIL ENGINE MACHINERY.

No. 13590.

27 SEP 1943

Received at London Office

Date of writing Report 19 When handed in at Local Office 24/9/43 Port of Belfast

No. in Survey held at Reg. Book. Date, First Survey 22nd Sept, 1942 Last Survey 16th Sept. 1943 Number of Visits 142

Single on the Screw vessel MV. EMPIRE INDUSTRY Tons Gross 3203 Net 4774.9

Built at Belfast By whom built Harland & Wolff Ltd Yard No. 1159 When built 1943

Engines made at Belfast By whom made Harland & Wolff Ltd Engine No. 1159 When made 1943

Boilers made at Belfast By whom made Harland & Wolff Ltd Boiler No. 1159 When made 1943

Indicated Horse Power 3850 Owners Ministry of War Transport Port belonging to Belfast

Net Horse Power as per Rule 502 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Use for which vessel is intended Ocean going Carrying Petroleum in bulk

MAIN ENGINES, &c. —Type of Engines Harland & Wolff B&W Diesel Injection 2 or 4 stroke cycle 4 Single or double acting Single

Maximum pressure in cylinders 700 lbs/sq. in Diameter of cylinders 650 in Length of stroke 1400 in No. of cylinders 8 No. of cranks 8

Mean Indicated Pressure 135 lbs/sq. in Span of bearings, adjacent to the crank, measured from inner edge to inner edge 84 in Is there a bearing between each crank Yes

Revolutions per minute 120 Flywheel dia. 2218.5 in Weight 2150 Kgs. Means of ignition Compression Kind of fuel used Diesel oil

Crankshaft, dia. of journals 460 in Crank pin dia. 460 in Crank webs Mid. length breadth 800 in Thickness parallel to axis 290 in

Intermediate Shafts, diameter 19 in Thrust Shaft, diameter at collars 18 in

Screw Shaft, diameter 18 in Is the shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes 7/8 in Thickness between bushes 3/4 in 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 5'-0"

Propeller, dia. 15'-6" Pitch 12' No. of blades 4 Material Bronze whether moveable fixed Total developed surface 75 sq. feet

Method of reversing Engines 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 1/8 in Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled

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AIR RECEIVERS:—Have they been made under survey yes. State No. of report or certificate yes.
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 ✓
Starting Air Receivers, No. 2 Total cubic capacity 2x400 cu ft Internal diameter 5 1 23/32 thickness 55/64
Seamless, lap welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength 26/30 lbs Working pressure as appd

IS A DONKEY BOILER FITTED 2 yes. If so, is a report now forwarded ✓
Is the donkey boiler intended to be used for domestic purposes only Steam Auxiliaries Fire Extinguishing & Heating coils
PLANS. Are approved plans forwarded herewith for shafting 12.4.41, 22.9.42 Receivers 9.10.41 Separate fuel tanks ✓
(If not, state date of approval)
Donkey boilers 31.7.41 General pumping arrangements 18.7.42 Pumping arrangements in machinery space 22.4.42
Oil fuel burning arrangements 1.4.42

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 & WOLFE, LONDON
The foregoing is a correct description,
Secretary
Manufacturer.

Dates of Survey while building
During progress of work in shops - 1941 Sept 22, Oct 9, Nov 2, 3, 4, 6, 9, 18 Dec 2, 7, 14, 15, 19, 22, 29, 30
During erection on board vessel - 10.11.12.17.18.19.20.22.24.26 Mar 1.2.4.5.6.8.10.11.13.15.16.18.19.24.25.26.27.31 Apr 1.2.3.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.22.23.24.25.26.27.28.29.30 May 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.22.23.24.25.26.27.28.29.30 Jun 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.22.23.24.25.26.27.28.29.30 Jul 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.22.23.24.25.26.27.28.29.30 Aug 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.22.23.24.25.26.27.28.29.30 Sep 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.22.23.24.25.26.27.28.29.30 Oct 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.22.23.24.25.26.27.28.29.30 Nov 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.22.23.24.25.26.27.28.29.30 Dec 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.22.23.24.25.26.27.28.29.30
Total No. of visits 142

Dates of examination of principal parts—Cylinders 18.5.43 Covers 31.3.43 Pistons 15.5.43 Rods 28.5.43 Connecting rods 21.5.43
Crank shaft 2.4.43 Flywheel shaft ✓ Thrust shaft 19.3.43 Intermediate shafts 26.3.43 Tube shaft ✓
Screw shaft 26.3.43 Propeller 3.4.43 Stern tube 31.3.43 Engine seatings 9.3.43 Engine holding down bolts 17.8.43
Completion of fitting sea connections 4.5.43 Completion of pumping arrangements 14.9.43 Engines tried under working conditions 16.9.43
Crank shaft, material Steel Identification mark LLOYD'S No 1060 K.L.A. Flywheel shaft, material ✓ Identification mark ✓
Thrust shaft, material Steel Identification mark LLOYD'S No 1060 K.L.A. Intermediate shafts, material Steel Identification marks LLOYD'S No 1060 K.L.A.
Tube shaft, material ✓ Identification mark ✓ Screw shaft, material Steel Identification mark LLOYD'S No 1060 K.L.A.
Identification marks on air receivers No 245 No 246

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 and Chemical Extinguishers
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 EMPIRE BOMBARDIER (yard 1158) 1345

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 the approved plans. The materials and workmanship are good. The machinery has been efficiently installed on board the vessel and tried under full working conditions with satisfactory results and is eligible in our opinion to have notation in the Register Book of + LMC 9.43 2DB 150/1650 T.S.C.L. oil engine.

The amount of Entry Fee ... £ 6 : -
Special ... £ 100 : 2
Donkey Boiler Fee ... £ 25 : 10
AIA RECEIVERS 8 : 8
Travelling Expenses (if any) £ 33 : 10
Specification 25%
Committee's Minute
Assigned + LMC 9.43
2DB-150/1650
When applied for 24/9/1943
When received 19
Engine Surveyors L. Shaw & R. Lee-Turner
Lloyd's Register Foundation