

REPORT ON OIL ENGINE MACHINERY.

No. 13856

Received at London Office

Date of writing Report

19

When handed in at Local Office

9/11/44

19

Port of

BELFAST

o. in Survey held at

BELFAST

eg. Book.

Date, First Survey

16th July 1943

Last Survey

2nd Nov. 1944

19

Number of Visits

226

31510 on the Twin
Single
Triple
Quadruple

Screw vessel M.V. "WAIWERA"

Tons Gross 12028
Net 7032

Built at BELFAST

By whom built HARLAND & WOLFF LD.

Yard No. 1161

When built 1944

Engines made at BELFAST

By whom made HARLAND & WOLFF LD.

Engine No. 1161

When made 1944

Monkey Boilers made at BELFAST

By whom made HARLAND & WOLFF LD.

Boiler No. 1161

When made 1944

Indicated Horse Power 12,000

Owners SHAW, SAVILL & ALBION, CO. LD.

Port belonging to LONDON

Indicated Horse Power as per Rule 2550 2552

Refrigerating Machinery fitted for cargo purposes YES

Is Electric Light fitted YES

Made for which vessel is intended REFRIGERATED & GENERAL CARGO

L ENGINES, &c. — Type of Engines HARLAND-B. & W. AIRLESS INJECTION or 4 stroke cycle 2 Single or double acting D.A. ✓

Maximum pressure in cylinders 700 LB./sq. in. COVERLESS TYPE 21 5/8 1200 M-MAIN PISTON = 47 1/4"

Mean Indicated Pressure 100 LB./sq. in. MAX. Diameter of cylinders 550 M-M Length of stroke 400 M-M-EXHAUST PISTONS = 15 3/4"

Span of bearings, adjacent to the crank, measured from inner edge to inner edge 1156 M-M Is there a bearing between each crank YES ✓

Revolutions per minute 120 ✓ Flywheel dia. 2489 M-M Weight 2540 KGS. 50% of balance weight 3974 KGS/m²

Crank shaft, Solid forged dia. of journals as per Rule 115 M-M HOLE Crank pin dia. 115 M-M HOLE Crank webs Mid. length breadth 1050 M-M ✓ Thickness parallel to axis 235 M-M ✓

Semi-built dia. of journals as fitted 115 M-M HOLE Crank webs Mid. length thickness 235 M-M ✓ Thickness around eye-hole 245 M-M ✓

All built dia. of journals as fitted 115 M-M HOLE Crank webs Mid. length thickness 235 M-M ✓ Thickness around eye-hole 245 M-M ✓

Flywheel Shaft, diameter as per Rule FLYWHEEL MOUNTED ON THRUST Intermediate Shafts, diameter as fitted 15 1/2" Thrust Shaft, diameter at collars as fitted 4.30 M-M ✓

Coupling as per Rule as fitted 15 1/2" Thrust Shaft, diameter at collars as fitted 4.30 M-M ✓

Screw Shaft, diameter as per Rule as fitted 19 1/4" Is the tube shaft fitted with a continuous liner YES ✓

as fitted 19 1/4" Is the tube shaft fitted with a continuous liner YES ✓

Bronze Liners, thickness in way of bushes as per Rule 1" ✓ Thickness between bushes as fitted 27/32" 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 —

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 tube shaft No ✓ If so, state type — Length of bearing in Stern Bush next to and supporting propeller 6'-9" ✓

Propeller, dia. 16'-6" Pitch 16'-9" No. of blades 3 Material BLADES - MANF. BRONZE whether moveable YES Total developed surface 76 sq. feet

Method of reversing Engines HAND GEAR Is a governor or other arrangement fitted to prevent racing of the engine when disengaged YES Means of

lubrication FORCED Thickness of cylinder liners 3B M-M 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. 3 S.W. 2 F.W. 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. — Diameter — Stroke — Can one be overhauled while the other is at work —

Pumps connected to the Main Bilge Line No. and size 2 @ 120 T/HR. 1 @ 200 T/HR. ✓ How driven ELECTRIC MOTOR

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 1 @ 200 T/HR. Power Driven Lubricating Oil Pumps, including spare pump, No. and size 3 @ 340 T/HR. ✓

Are there 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 4 @ 3 1/2", 2 @ 2 1/2", 2 @ 2" In pump room —

Holds, &c. Nos. 1, 2, 3, 4 & 5 - 2 @ 3 1/2" IN EACH No. 6 - 2 @ 3" TUNNEL - 1 @ 3 1/2" ✓

Independent Power Pump Direct Suctions to the engine room bilges, No. and size 2 @ 5" 1 @ 6" ✓

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

efficiently 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 BELOW

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 No. 5 Hold BILGE SUCTIONS Have they been tested as per Rule YES ✓

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 YES Is it fitted with a watertight door No ✓ 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 —

STARTING Main Air Compressors, No. 2 No. of stages 2 diameters 400 M-M x 350 M-M stroke 260 M-M driven by ELECT. MOTOR

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

Small Auxiliary Air Compressors, No. 1 No. of stages 2 diameters 100 M-M x 88 M-M stroke 80 M-M driven by STEAM ENG. ✓

What provision is made for first charging the air receivers. AUXILIARY COMP. STEAM DRIVEN

BLOWERS scavenging Air Pumps, No. 2 ON EACH MAIN ENG. diameter 297 M-M stroke — driven by MAIN ENGINE

Auxiliary Engines crank shafts, diameter as per Rule 160 M-M No. 4 Position 2 PORT 2 STARBD. ✓

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

004653 004661 0055

AIR RECEIVERS:—Have they been made under survey YES ✓ State No. of report or certificate 1
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 ✓
MAIN STARTING
Injection Air Receivers, No. 2 ✓ Cubic capacity of each 800 FT³ Internal diameter 6' 4 1/8" thickness 1 1/16"
Seamless, lap welded or riveted longitudinal joint RIVETED ✓ Material M.S. ✓ Range of tensile strength 28/32 T/10" Working pressure 356 LBS by Rules
AUXILIARY
Starting Air Receivers, No. 2 ✓ Total cubic capacity 360 LITRES Internal diameter 15 3/4" thickness 1/2" Actual 356 LBS
Seamless, lap welded or riveted longitudinal joint YES ✓ Material STEEL ✓ Range of tensile strength 24-28 Tons/10" Working pressure 356 LBS by Rules

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 YES ✓ (If not, state date of approval) Receivers (MAIN) YES ✓ Separate fuel tanks YES ✓
Donkey boilers YES ✓ General pumping arrangements YES ✓ Pumping arrangements in machinery space YES ✓
Oil fuel burning arrangements YES ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied YES ✓
State the principal additional spare gear supplied SEE ATTACHED LIST

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building
During progress of work in shops - - - 1943
During erection on board vessel - - -
Total No. of visits
Dates of examination of principal parts—Cylinders. 22/9/43 - Covers. 22/9/43 - Pistons. 19/5/44 - Rods. 18/2/44 - Connecting rods. 29/1/44
Crank shaft. 22/1/44 - Flywheel shaft. - - - Thrust shaft. 22/1/44 - Intermediate shafts. 27/11/43 - Tube shaft. -
Screw shaft. 21/9/43 - Propeller. 25/9/43 - Stern tube. 21/9/43 - Engine seatings. 22/7/43 - Engine holding down bolts. 12/10/44
Completion of fitting sea connections. 28/9/43 - Completion of pumping arrangements. 26/10/44 - Engines tried under working conditions. 26-27-28/29/44
Crank shaft, material. STEEL Identification mark. No. 1069 R.L.A. Flywheel shaft, material. - Identification mark. -
Thrust shaft, material. M.S. Identification mark. No. 1069 S6776 Intermediate shafts, material. M.S. Identification marks. No. 431 T.D.S. & 9.5.
Tube shaft, material. - Identification mark. - Screw shaft, material. M.S. Identification mark. No. 431 R.B.
Identification marks on air receivers. No. 257 No. 258 No. E 2878 No. E 2879
LLOYD'S TEST 556 LBS. LLOYD'S TEST 556 LBS. LLOYD'S TEST 900 LBS. LLOYD'S TEST 900
W.P. 356 LBS. W.P. 356 LBS. W.P. 450 LBS. W.P. 450 LBS.
R.S. 13/8/43 E.G. 19/8/43 J.N.B. 25/6/43 J.N.B. 25/6/43

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. IN ENG. ROOM = 1-34 GAL. & 6-2 GAL. PORTABLE FOAM
IN BOILER SPACE = 1-34 GAL. & 2-2 GAL. " "
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. This machinery has been constructed under Special Survey in accordance with the Society's Rules and Regulations and the Secretary's letters. The arrangements and arrangements 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. The welded bed plates and entablatures were found in order.

In our opinion this machinery is eligible to receive the notation
+ L.M.C. 11,44 T.S.-C.L. 2 DB. 100 LBS. OIL ENGINES TWIN SCREW

The amount of Entry Fee ... £ 6 : -
Special ... £ 163 : 15 :
AIR RECEIVERS ... £ 8 : 8 :
Donkey Boiler Fee ... £ 12 : 12 :
WELOED BED PLATES & ENTABLTS ...
Travelling Expenses (if any) £ : :
When applied for 11/11/1944
When received 19

Committee's Minute
Assigned
FRL 1 DEC 1944
+ LMC 11,44 Oil Eng
2 DB 100 lbs.
John Miller & John B. Thomas
Engineer Surveyors to Lloyd's Register of Shipping
for R. de la Rivecourt & Co.
Lloyd's Register Foundation