

REPORT ON OIL ENGINE MACHINERY.

No. 61093

Received at London Office MAY 17 1939

Date of writing Report 19 15 When handed in at Local Office 5:5:39 Port of Glasgow
No. in Survey held at Glasgow Date, First Survey 20:5:38 Last Survey 27 May 1939
Reg. Book. Number of Visits 13

on the Single Screw vessel Stock Engine No. 317 fitted in M.S. Empire Ltd. Tons Gross
Triple Net
Quadruple

built at Glasgow By whom built British Auxiliaries Ltd Yard No. 317 When built 1939
Engines made at Glasgow By whom made British Auxiliaries Ltd Engine No. 317 When made 1939
Pump Boilers made at Glasgow By whom made British Auxiliaries Ltd Boiler No. 317 When made 1939
Indicated Horse Power 910 Owners British Auxiliaries Ltd Port belonging to Glasgow
Nom. Horse Power as per Rule 156 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes
Made for which vessel is intended Stock Engine No. 317

ENGINES, &c. Type of Engines Heavy Oil, M.45M. Type 2 or 4 stroke cycle 2 Single or double acting Single
Maximum pressure in cylinders 782 lbs Diameter of cylinders 340 7/8" Length of stroke 570 7/8" No. of cylinders 5 No. of cranks 5
Indicated Pressure 96 Flywheel dia. 1320 7/8" Weight 2250 Kgs Means of ignition Compu-sens Kind of fuel used Diesel
No. of bearings, adjacent to the Crank, measured from inner edge to inner edge 484 7/8" Is there a bearing between each crank? Yes
Revolutions per minute 300 Crank pin dia. 220 7/8" Crank Webs Mid. length thickness 122 7/8" Thickness around eyehole Yes
Crank shaft, dia. of journals 216 7/8" as per Rule 216 7/8" as fitted 220" Thrust Shaft, diameter at collars 154 7/8" as per Rule 154 7/8" as fitted 260 7/8"
Flywheel Shaft, diameter 260" as per Rule 216 7/8" as fitted 260" Intermediate Shafts, diameter 147 7/8" as per Rule 147 7/8" as fitted 260 7/8"
Main Shaft, diameter 260" as per Rule 216 7/8" as fitted 260" Screw Shaft, diameter 147 7/8" as per Rule 147 7/8" as fitted 260 7/8"
Is the tube shaft fitted with a continuous liner Yes

Liners, thickness in way of bushes as per Rule Thickness between bushes as per Rule Is the after end of the liner made watertight in the stern 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 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 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 the tube Yes
If so, state type Oil Gland Length of Bearing in Stern Bush next to and supporting propeller Yes
Propeller, dia. Yes Pitch Yes No. of blades Yes Material Yes whether Moveable Yes Total Developed Surface Yes sq. feet Yes

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when de-clutched Yes Means of lubrication Yes
Thickness of cylinder liners 25.5 7/8" Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with insulating material Yes
If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine Yes

Water Pumps, No. 1 off 135 7/8" x 140 7/8" Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes
Pumps worked from the Main Engines, No. One Diameter 100 7/8" Stroke 140 7/8" Can one be overhauled while the other is at work Yes
Pumps connected to the Main Bilge Line No. and Size How driven

Is cooling water led to the bilges Yes If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements Yes
Oil Pumps, No. and size 1 off 77 gallons per Hour Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 off 77 gallons per Hour
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 Yes In Pump Room Yes
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Yes
Are the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes
Sea Connections fitted direct on the skin of the ship Yes Are they fitted with Valves or Cocks Yes
Are they fitted 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 Yes
Are 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
How are they protected Yes Have they been tested as per Rule Yes
Do pipes pass through the bunkers Yes How are they protected Yes
Do pipes pass through the deep tanks Yes Have they been tested as per Rule Yes

Are 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 Yes worked from Yes
If the vessel is a food vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Yes
Air Compressors, No. One No. of stages 2 Diameters 175 7/8" - 70 7/8" Stroke 350 7/8" Driven by Main Engines
Auxiliary Air Compressors, No. Yes No. of stages Yes Diameters Yes Stroke Yes Driven by Yes
II Auxiliary Air Compressors, No. Yes No. of stages Yes Diameters Yes Stroke Yes Driven by Yes
Is provision made for first Charging the Air Receivers Yes
Engineering Air Pumps, No. One Diameter 850 7/8" Stroke 350 7/8" Driven by Main Engines
Auxiliary Engines crank shafts, diameter as per Rule No. Yes Position Yes
Have the Auxiliary Engines been constructed under special survey Yes Is a report sent herewith Yes



AIR RECEIVERS:—Have they been made under survey *None Supplied* State No. of Report or Certificate ✓
 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. *none Supplied* Total cubic capacity ✓ Internal diameter ✓ thickness ✓
 Seamless, lap welded or riveted longitudinal joint ✓ Material ✓ Range of tensile strength ✓ Working pressure by Rules ✓
Actual ✓

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 Shafting *7/4/33, 22/5/33* Receivers ✓ Separate Fuel Tanks ✓
(If not, state date of approval)
 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 *Yes* ✓
 State the principal additional spare gear supplied *as per attached list*

The foregoing is a correct description.

[Signature] Manufacturer.

Dates of Survey while building
 During progress of work in shops -- 1938 May: 20 Nov: 15 Dec: 7-12-14 (1939) Feb: 3-15-17-21-22 May: 1-2-9
 During erection on board vessel ---
 Total No. of visits 13

Dates of Examination of principal parts—Cylinders 12-12-38 Covers 12-12-38 Pistons 12-12-38 Rods 15-11-38 Connecting rods 15-11-38
 Crank shaft 15-11-38 Flywheel shaft 15-11-38 Thrust shaft 15-11-38 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 ✓
 Crank shaft, Material *steel* Identification Mark *and* Flywheel shaft, Material *steel* Identification Mark *Lloyds 9710 30*
 Thrust shaft, Material *steel* Identification Mark *9716.P.K 21-537* Intermediate shafts, Material ✓ Identification Marks ✓
 Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material ✓ Identification Mark ✓
 Identification Marks on Air Receivers *none supplied*

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 ✓ 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 *M/V Dofala. Gls report No 58*

General Remarks (State quality of workmanship, opinions as to class, &c. *These engines have been built in accordance with the Rules and approved plans. The material and workmanship are good. They have been tried on the bench at full power with satisfactory results. They have been built for stock. This engine has been sold to Messrs Henry Robb, Leith and intended for their Stock.*

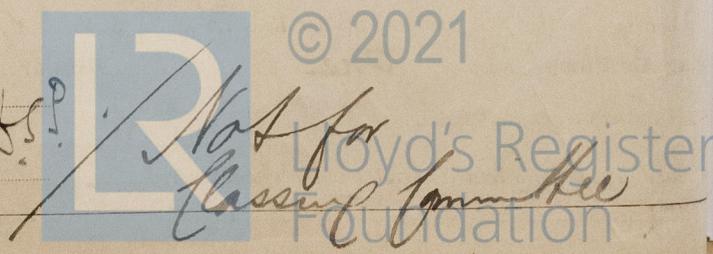
Robb
15/5/39

The amount of Entry Fee £ 3 0 0 When applied for, 16 MAY 1939
 Special Fee £ 26 0 0
 Donkey Boiler Fee £ : : When received, 30 6 1939
 Travelling Expenses (if any) £ : :

G. B. Murdoch
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute **GLASGOW 16 MAY 1939**

Assigned *Referred*



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