

REPORT ON OIL ENGINE MACHINERY.

No. 63310

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Date of writing Report 19 6.1.1941 Port of Glasgow
When handed in at Local Office Glasgow Date, First Survey 14.6.40 Last Survey 3rd Jan 1941
No. in Survey held at Reg. Book. 08 Number of Visits 15

on the Single Screw vessel EMPIRE. FORELAND. Tons 15
Twin Triple Quadryple

Built at Goole By whom built Goole S/S & Repairing Co. Ltd Yard No 358 When built 1940
Engines made at Glasgow By whom made British Auxiliaries Ltd Engine No. 377 When made 1940
Donkey Boilers made at _____ By whom made _____ Boiler No. _____ When made _____
Brake Horse Power 520 Owners _____ Port belonging to _____
Nom. Horse Power as per Rule 118 Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted _____
Trade for which vessel is intended _____

OIL ENGINES, &c. Type of Engines Heavy Oil Type M47E 2 or 4 stroke cycle 2 Single or double acting Single
Maximum pressure in cylinders 782 lbs per sq in Diameter of cylinders 250 7/8 Length of stroke 420 7/8 No. of cylinders 7 No. of cranks 7
Mean Indicated Pressure 96.7 lbs per sq in

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 366 7/8 Is there a bearing between each crank Yes
Revolutions per minute 300 Flywheel dia. 1050 7/8 Weight 625 lb. Means of ignition Compression Kind of fuel used Diesel
Crank Shaft, Solid forged dia. of journals as per Rule 155 7/8 Crank pin dia. 170 7/8 Crank Webs Mid. length breadth 226 7/8 Thickness parallel to axis shrunk
Semi-built as fitted 170 7/8 Mid. length thickness 95 7/8 Thickness around eyehole shrunk
All built

Flywheel Shaft, diameter as per Rule 155 7/8 Intermediate Shafts, diameter as per Rule 117 7/8 Thrust Shaft, diameter at collars as per Rule 123 7/8
as fitted 170 7/8 as fitted as fitted 170 7/8

Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule Is the tube shaft fitted with a continuous liner screw
as fitted as fitted

Bronze 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 propeller boss _____
as fitted as fitted

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 _____
If so, state type _____ Length of Bearing in Stern Bush next to and supporting propeller _____

Propeller, dia. _____ Pitch _____ No. of blades _____ Material _____ whether Moveable _____ Total Developed Surface _____ sq. feet
Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declatched Yes Means of lubrication Forced
Thickness of cylinder liners 19.5 7/8 Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting 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 _____

Cooling Water Pumps, No. 1 off 150 7/8 x 60 7/8 D.A. Is the sea suction provided with an efficient strainer which can be cleared within the vessel _____
Bilge Pumps worked from the Main Engines, No. One Diameter 120 7/8 Stroke 60 7/8 Can one be overhauled while the other is at work _____
Pumps connected to the Main Bilge Line { No. and Size _____
How driven _____

Is the cooling water led to the bilges _____ 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 _____ Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 off 2775 gallons per Hr
Are two independent means arranged for circulating water through the Oil Cooler _____ Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces _____ In Pump Room _____

In Holds, &c. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size _____ Are the Bilge Suctions in the Machinery Spaces _____
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes _____ Are the Bilge Suctions in the Machinery Spaces _____
ed from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges _____
Are all Sea Connections fitted direct on the skin of the ship _____ Are they fitted with Valves or Cocks _____

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates _____ Are the Overboard Discharges above or below the deep water line _____
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel _____ Are the Blow Off Cocks fitted with a spigot and brass covering plate _____
What pipes pass through the bunkers _____ 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 _____
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 _____ 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. One No. of stages 2 Diameters 70 7/8 x 175 7/8 Stroke 170 7/8 Driven by Main Engines
Auxiliary Air Compressors, No. _____ No. of stages _____ Diameters _____ Stroke _____ Driven by _____
Small Auxiliary Air Compressors, No. _____ No. of stages _____ Diameters _____ Stroke _____ Driven by _____

What provision is made for first Charging the Air Receivers _____
Savenging Air Pumps, No. One Diameter 650 7/8 Stroke 170 7/8 Driven by Main Engines
Auxiliary Engines crank shafts, diameter as per Rule No. _____ Position _____
as fitted _____

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



AIR RECEIVERS:—Have they been made under survey *No. Admiralty Survey* State No. of Report or Certificate *Please See London letter*

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 *✓*

Starting Air Receivers, No. *Two* Total cubic capacity *28 Cub. ft* Internal diameter *1'-9"* thickness *13/32"*

Seamless, lap welded or riveted longitudinal joint *Riveted* Material *Steel* Range of tensile strength *26/32 tons* Working pressure *by Rules 355 lb Actual 355 lb*

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 *22-4-36* Receivers *23-5-32* Separate Fuel Tanks

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 -- *1940 June: 10 July: 10-16-23 Aug 2-7-16 Nov 21-25 Dec: 2-11-16 24-30 (1941) Jan 3*

During erection on board vessel --

Total No. of visits *17*

Dates of Examination of principal parts—Cylinders *14-6-40* Covers *23-7-40* Pistons *10-7-40* Rods *16-7-40* Connecting rods *16-7-40*

Crank shaft *25-11-40* Flywheel shaft *and* Thrust shaft *12-11-40* Intermediate shafts

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 *LLOYD'S NO. 314* Flywheel shaft, Material *Steel* Identification Mark *and*

Thrust shaft, Material *Steel* Identification Mark *LLOYD'S NO. 228-T-T* Intermediate shafts, Material Identification Marks

Tube shaft, Material Identification Mark 53.1-8-40 Screw shaft, Material Identification Mark

Identification Marks on Air Receivers *W. A. D. TESTED. 555 lb. 10-9-40.*

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

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 *To Silvertown, Gls. reg. No. 61635*

General Remarks (State quality of workmanship, opinions as to class, &c.) *These engines have been built under Special Survey in accordance with the Rules and approved plans. The materials and workmanship are good. On completion they were tried on the bench at full power with satisfactory results. These engines are to the order of Messrs Goble Shipbuilding and Repairing Co. and intended for a vessel building at their yard under No. 358. The requirements of the M.O.S. Specification have been satisfactorily carried out.*

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

The amount of Entry Fee *£3.0.0* When applied for *17 JAN 1941*

Special *£24-11-8* When received, *19*

Donkey Boiler Fee *£36-17-6*

Travelling Expenses (if any) *£*

Committee's Minute *GLASGOW 7 JAN 1941*

Assigned *Deferred*

See Int. J. E. 5 11 20

14 MAR 1941

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