

REPORT ON OIL ENGINE MACHINERY.

No 14563.

OCT 31 1940

Date of writing Report *22nd October 40* When handed in at Local Office *28th 10th 40* Port of *Bristol*
 No. in Survey held at *Dursley* Date, First Survey *19th September* Last Survey *21st October 40*
 Reg. Book. *ms. Empire Foreland* Number of Visits *2*

on the *Single* *Twin* *Triple* *Quadruple* Screw vessel *ms. Empire Foreland* Tons *Gross* *Net*

Built at *Dursley* By whom built *R.A. Lister & Co. Ltd.* Yard No. *60/4914* When built *1940*
 Engines made at *Dursley* By whom made *R.A. Lister & Co. Ltd.* Engine No. *1* When made *1940*
 Donkey Boilers made at *Dursley* By whom made *R.A. Lister & Co. Ltd.* Boiler No. *1* When made *1940*
 Brake Horse Power *40* Owners *R.A. Lister & Co. Ltd.* Port belonging to *Dursley*
 Nom. Horse Power as per Rule *40* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *No*
 Trade for which vessel is intended *General cargo*

OIL ENGINES, &c.—Type of Engines *Lister 4 J.P. Heavy Oil* 2 or 4 stroke cycle *4* Single or double acting *single*

Maximum pressure in cylinders *450 lb - 500 lb / sq in* Diameter of cylinders *4 1/2"* Length of stroke *5 1/2"* No. of cylinders *4* No. of cranks *4*
 Mean Indicated Pressure *104 lb / sq in*

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge *14 5/16"* Is there a bearing between each crank *no*

Revolutions per minute *1200* Flywheel dia. *23"* Weight *415 lbs.* Means of ignition *compression* Kind of fuel used *Diesel*

Crank Shaft, *Solid forged* dia. of journals *as per Rule* *3"* Crank pin dia. *3"* Crank Webs *Mid. length breadth* *4 1/4"* Thickness parallel to axis *shrunk* Thickness around eye hole *shrunk*

Flywheel Shaft, diameter *as per Rule* *3"* Intermediate Shafts, diameter *as per Rule* *fitted* Thrust Shaft, diameter at collars *as per Rule* *fitted*

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

Bronze Liners, thickness in way of bushes *as per Rule* *fitted* Thickness between bushes *as per Rule* *fitted* 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 the tube

shaft *Yes* If so, state type *Yes* 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

Method of reversing Engines *forced* Is a governor or other arrangement fitted to prevent racing of the engine when de-clutched *yes* Means of lubrication *forced*

Thickness of cylinder liners *5/16"* 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 *Yes*

Cooling Water Pumps, No. *One, plunger type* 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. *Yes* Diameter *Yes* Stroke *Yes* Can one be overhauled while the other is at work *Yes*

Pumps connected to the Main Bilge Line *No. and Size* *How driven* *Yes*

Is the 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* Ballast Pumps, No. and size *Yes* Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size *Yes*

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 *Yes* In Pump Room *Yes*

In Holds, &c. *Yes* Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *Yes*

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes *Yes* 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 *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 *Yes*

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 *Yes* How are they protected *Yes*

What pipes pass through the deep tanks *Yes* 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 *Yes* worked from *Yes*

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork *Yes*

Main Air Compressors, No. *Yes* No. of stages *Yes* Diameters *Yes* Stroke *Yes* Driven by *Yes*

Auxiliary Air Compressors, No. *Yes* No. of stages *Yes* Diameters *Yes* Stroke *Yes* Driven by *Yes*

Small Auxiliary Air Compressors, No. *Yes* No. of stages *Yes* Diameters *Yes* Stroke *Yes* Driven by *Yes*

What provision is made for first Charging the Air Receivers *Yes*

Leaving Air Pumps, No. *Yes* Diameter *Yes* Stroke *Yes* Driven by *Yes*

Auxiliary Engines crank shafts, diameter *as per Rule* *fitted* 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 ✓ 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. ✓ 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 No. 30-5-35. Receivers ✓ 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 ✓

The foregoing is a correct description,

P.D.R.A. LISTER (MARINE SALES) LTD.

Manufacturer.

Dates of Survey while building
During progress of work in shops - - 19-9-40, 21-10-40
During erection on board vessel - - ✓
Total No. of visits 2

Dates of Examination of principal parts—Cylinders 19-9-40 Covers 19-9-40 Pistons 19-9-40 Rods ✓ Connecting rods 19-9-40

Crank shaft 19-9-40 Flywheel shaft 19-9-40 Thrust shaft ✓ 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 21-10-40

Crank shaft, Material Steel Identification Mark Lloyd's S Flywheel shaft, Material Steel Identification Mark As crank shaft

Thrust shaft, Material ✓ Identification Mark ✓ Intermediate shafts, Material ✓ Identification Marks ✓

Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material ✓ Identification Mark ✓

Identification Marks on Air Receivers ✓

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 ✓

Description of fire extinguishing apparatus fitted ✓

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 ✓ If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, etc.)

This Auxiliary Oil Engine has been built under Special Survey and in accordance with approved plan. All parts were examined in a finished machined condition before assembly. Cylinder head & casing jackets tested with hydraulic pressure. The materials and workmanship have been found good.

Upon completion the engine was examined during a six hours full load test bed running trial; governor tested and all found satisfactory.

For identification purposes the engine has been stamped Lloyd's M935

19-9-40 S.
The Engine made to the order of The Goole Shipbuilding Co.

The amount of Entry Fee .. £ 3 : 3 : When applied for,

Special £ : : 28-10-1940

Donkey Boiler Fee £ : : When received,

Travelling Expenses (if any) £ : 10 : 10.12.40

Committee's Minute

Assigned

14 MAR 1941

See H/L 7E 51120

J. Brooke Smith

Engineer Surveyor to Lloyd's Register of Shipping.



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