

REPORT ON, OIL ENGINE MACHINERY.

No 14451.

Date of writing Report *25th July 1940* When handed in at Local Office *Dursley* Port of *Bristol* Date, First Survey *20th June* Last Survey *22nd July 1940*

No. in Survey held at Reg. Book. *88050* on the *Single* Screw vessel *M.V. "EMPIRE CRAG"* Tons *Gross 332 Net 153*

Built at *Dursley* By whom built *James P. Rogers & Sons Ltd* Yard No. *1777* When built *1941*
Engines made at *Dursley* By whom made *R.H. Lister & Co. Ltd.* Engine No. *358031* When made *1940*
Donkey Boilers made at *✓* By whom made *✓* Boiler No. *✓* When made *✓*
Brake Horse Power *7.2* Owners *Ministry of Shipping* Port belonging to *London*
Nom. Horse Power as per Rule *4.5* Is Refrigerating Machinery fitted for cargo purposes *no* Is Electric Light fitted *yes*
Trade for which vessel is intended *boasting*

IL ENGINES, &c.—Type of Engines *b. D. Airless Injection* 2 or 4 stroke cycle *4* Single or double acting *single*
Maximum pressure in cylinders *800 lbs.* Diameter of cylinders *4 1/2"* Length of stroke *4 3/8"* No. of cylinders *one* No. of cranks *one*
Mean Indicated Pressure *109.6 lbs.*

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge *4 7/8"* Is there a bearing between each crank *✓*
Revolutions per minute *1000* Flywheel dia. *23 1/2 x 15"* Weight *342 lbs.* Means of ignition *Compression* Kind of fuel used *Diesel Oil*
Crank Shaft, *Solid forged* dia. of journals *as per Rule 2 3/8"* Crank pin dia. *2 3/4"* Crank Webs *Mid. length breadth 3 1/2"* Thickness parallel to axis *shrunk* Thickness around eye-hole *✓*

Flywheel Shaft, diameter *as per Rule 2 1/4"* 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 screw 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 *✓*
If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner *✓*

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 *✓*
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 *✓* Is a governor or other arrangement fitted to prevent racing of the engine when declutched *yes* Means of lubrication *forced*
Thickness of cylinder liners *266* Are the cylinders fitted with safety valves *no* Are the exhaust pipes and silencers water cooled or lagged with non-conducting material *✓*

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. *one plunger type* Is the sea suction provided with an efficient strainer which can be cleared within the vessel *✓*
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* *✓* 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 *✓*

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 all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes *✓* Are the Bilge Suctions in the Machinery Spaces *✓*
and 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 *✓*
That pipes pass through the bunkers *✓* How are they protected *✓*

That 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 *✓*

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

Is that provision is made for first Charging the Air Receivers *✓*
Savenging Air Pumps, No. *✓* Diameter *✓* Stroke *✓* Driven by *✓*
Auxiliary Engines crank shafts, diameter *as per Rule fitted* No. *✓* Position *✓*
Have the Auxiliary Engines been constructed under special survey *✓* Is a report sent herewith *✓*



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. 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

The foregoing is a correct description, *afuo*

p.p. R.A.LISTER (MARINE SALES) LTD. Manufacturer.

Dates of Survey while building

During progress of work in shops - - During erection on board vessel - - Total No. of visits	20-6-40.	22-7-40.		

Dates of Examination of principal parts - Cylinders 20-6-40 Covers Pistons 20-6-40 Rods Connecting rods 20-6-40.

Crank shaft 20-6-40. Flywheel shaft 20-6-40 Thrust shaft Intermediate shafts Tube shaft

Screw shaft Propeller Stern tube Engine seatings Engines holding down bolts

Completion of filling sea connections Completion of pumping arrangements Engines tried under working conditions 22-7-40.

Crank shaft, Material *Steel* Identification Mark *29 S* Flywheel shaft, Material *as crankshaft* Identification Mark

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, &c.)

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 & jacket tested with hydraulic pressure 100lb per sq. inch. The materials & workmanship have been found good.

Upon completion the engine was examined running on test bed under full load conditions and found satisfactory. For identification purposes the engine has been stamped Lloyd's Test 1909 20-6-40 S

This Engine has been made to the order of Messrs James Pollock, Sons & Co Ltd, their order 22610/F. This engine had been fitted on board *sun under full load conditions with satisfactory results. J. J. Super*

The amount of Entry Fee ..	£ 3	: 3	:	When applied for,
Special ...	£	:	:	6-8-19-40
Donkey Boiler Fee ...	£	:	:	When received,
Travelling Expenses (if any) £	:	15	:	19

J. Brooke Smith
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 11 JUL 1941**

Assigned *See Lon. J.C. 109702*



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