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Rpt. 4b.

# REPORT ON OIL ENGINE MACHINERY.

No 14584  
NOV 14 1940

324  
Pollack

Date of writing Report 13-11-1940 Port of Bristol  
When handed in at Local Office Dursley Date, First Survey 30 July 1940 Last Survey 31 October 1940  
Number of Visits 2

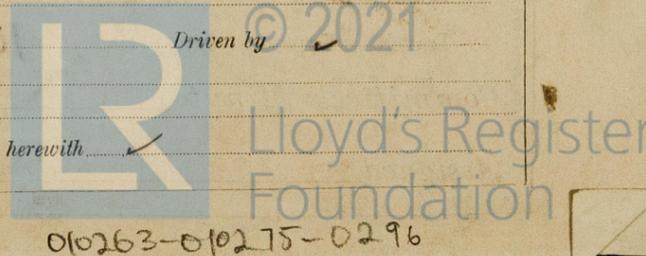
No. in Survey held at Reg. Book 88050 on the Single Screw vessel M.V. "EMPIRE CRAG" Tons Gross 332 Net 153  
Built at Dursley By whom built James Pollack & Sons Ltd Yard No. 1777 When built 1941  
Engines made at Dursley By whom made R. A. Hister & Co. Ltd. Engine No. 385122 When made 1940  
Donkey Boilers made at - By whom made - Boiler No. - When made -  
Brake Horse Power 14 Owners Ministry of Shipping Port belonging to London  
Nom. Horse Power as per Rule 46 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 6. E. M. 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 2 No. of cranks 2  
Mean Indicated Pressure 109.6 lbs.  
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 4 1/16" Is there a bearing between each crank yes  
Revolutions per minute 1000 Flywheel dia. (2) 23" Weight 350 lbs each Means of ignition Compression Kind of fuel used Heavy Oil  
Crank Shaft, { Solid forged as per Rule dia. of journals 2 3/8" Crank pin dia. 2 3/4" Crank Webs Mid. length breadth 3 1/2" Thickness parallel to axis shrunk  
                  { Semi built as fitted 2 3/8" Mid. length thickness 1 1/8" Thickness around eyehole shrunk  
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 shrunk } shaft fitted with a continuous liner { shrunk }

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 yes  
If so, state type Oil Gland Length of Bearing in Stern Bush next to and supporting propeller 12"  
Propeller, dia. 48" Pitch 20" No. of blades 3 Material Cast Iron whether Moveable yes Total Developed Surface 100 sq. feet  
Method of reversing Engines Clutch Is a governor no other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication oil  
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. 2 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. 2 Diameter 4" Stroke 6" Can one be overhauled while the other is at work yes  
Pumps connected to the Main Bilge Line { No. and Size 2 }  
  { How driven Electric }

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 2 Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2  
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 2 In Pump Room 2  
In Holds, &c. 2  
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2  
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Spaces yes  
all 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. 2 No. of stages 2 Diameters 12" Stroke 6" Driven by Electric  
Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 12" Stroke 6" Driven by Electric  
Small Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 12" Stroke 6" Driven by Electric  
What provision is made for first Charging the Air Receivers yes  
Savenging Air Pumps, No. 2 Diameter 12" Stroke 6" Driven by Electric  
Auxiliary Engines crank shafts, diameter as per Rule 2 1/4" No. 2 Position yes  
Have the Auxiliary Engines been constructed under special survey yes Is a report sent herewith yes



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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

Starting Air Receivers, No.  Total cubic capacity

Internal diameter  thickness

Seamless, lap welded or riveted longitudinal joint  Material

Range of tensile strength  Working pressure

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 20-10-34

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.

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

Dates of Survey while building: During progress of work in shops - 30-7-40, 31-10-40; During erection on board vessel - 2; Total No. of visits - 2

Dates of Examination of principal parts - Cylinders 30-7-40, Covers 30-7-40, Pistons 30-7-40, Rods, Connecting rods 30-7-40

Crank shaft 30-7-40, Flywheel shaft 30-7-40, 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 31-10-40

Crank shaft, Material Steel, Identification Mark Lloyd's 21.8, 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, &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 and jacket casings tested with hydraulic pressure 100 lbs. sq. inch. The materials and workmanship have been found good.

Upon completion the engine was examined during a six hour test bed run trial, direct coupled to Mawdsley's generator 90T431. M 941, under full load condition. The governor tested & found good. For identification purposes the engine has been stamped Lloyds Test. M 914. 30-7-40 S. The Engine made to the order of James Pollock, & Co. Ltd. This engine has been satisfactorily fitted on board & run on full load conditions 22. Surpise

The amount of Entry Fee £ 3 : 3 : When applied for, Special ... £ : : 12-11-1940 Donkey Boiler Fee ... £ : : When received, Travelling Expenses (if any) £ : 10 : 19

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

Committee's Minute

FRI. 11 JUL 1941

Assigned

See Lon. J.C. 10970

