

REPORT ON, OIL ENGINE MACHINERY.

No 14584

NOV 14 1940

Date of writing Report

When handed in at Local Office

13-11-1940

Port of

Bristol

No. in Survey held at
Reg. Book.

88050

on the

Single
Triple
Quadruple

Screw vessel

M.V. "EMPIRE CRAG"

Date, First Survey

30 July 1940

Last Survey

31 October 1940

Number of Visits

Tons

Gross

332

Net

153

Built at

Dursley

By whom built

James P. P. & Sons Ltd

Yard No.

When built

1941

Engines made at

Dursley

By whom made

R. A. Hister & Co. Ltd

Engine No.

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

116

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. E. M. Airless injection

2 or 4 stroke cycle

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

dia. of journals

as per Rule

23 3/8"

Crank pin dia.

2 3/4"

Crank Webs

Mid. length breadth

3 1/2"

Mid. length thickness

1 1/8"

Thickens parallel to axis

shrunk

Thickens around eyehole

Flywheel Shaft, diameter

as per Rule

as fitted

2 1/4"

Intermediate Shafts, diameter

as per Rule

as fitted

Thrust Shaft, diameter at collars

as per Rule

as fitted

Tube Shaft, diameter

as per Rule

as fitted

Screw Shaft, diameter

as per Rule

as fitted

Is the tube

screw

shaft fitted with a continuous liner

Bronze Liners, thickness in way of bushes

as per Rule

as fitted

Thickness between bushes

as per Rule

as 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

Thickness of cylinder liners

5/16"

Are the cylinders fitted with safety valves

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.

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

all 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.

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

What 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

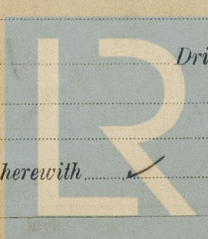
as fitted

No.

Position

Have the Auxiliary Engines been constructed under special survey

Is a report sent herewith



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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 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 Shafing 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

State the principal additional spare gear supplied

The foregoing is a correct description,

pp 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 crankshaft

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 Lloyd's 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 free load conditions 22. Surplus

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

Committee's Minute

Assigned

FRI. 11 JUL 1941

See Lon. J.E. 109702

L. Brooke Smith

Engineer Surveyor to Lloyd's Register of Shipping.



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