

## REPORT ON OIL ENGINE MACHINERY.

No. 51291

15 AUG 1941

Received at London Office

Date of writing Report 18.7.41 When handed in at Local Office 17 AUG 1941

No. in Survey held at Reg. Book.

Port of HULL

Date, First Survey 10.2.41

Last Survey 9.7.41

Number of Visits

on the ~~Empire~~ <sup>Single</sup> ~~Empire~~ <sup>Triple</sup> ~~Empire~~ <sup>Quadruple</sup> Screw vessel

EMPIRE ISLE.

Tons Gross 402  
Net 183

Built at Hesse By whom built Henry Scarr Ltd. Yard No. 416 When built 1941.7  
Engines made at Manchester By whom made Crossley Bros. Engine No. 127905 When made do.  
Donkey Boilers made at Cyone By whom made Boiler No. When made  
Brake Horse Power 385 Owners Ministry of Shipping Port belonging to Hull.  
Nom. Horse Power as per Rule 135 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes.  
Trade for which vessel is intended Coasting

OIL ENGINES, &amp;c.—Type of Engines Direct injection heavy oil engine 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 800 lbs/sq. in. Diameter of cylinders 10 1/2 Length of stroke 13 1/2 No. of cylinders 7 No. of cranks 7.

Mean Indicated Pressure 76 lbs/sq. in. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 14 1/16 Is there a bearing between each crank Yes.

Revolutions per minute 500 Flywheel dia. 37 1/2 Weight 2166 lbs Means of ignition Comp. Kind of fuel used Heavy oil.

Crank Shaft, { Solid forged as per Rule Appd. dia. of journals as fitted 7 1/2 Crank pin dia. 7 1/4 Crank Webs Mid. length breadth 9 1/4 Thickness parallel to axis 3 1/2 Mid. length thickness 3 1/2 Thickness around eye hole 3 1/2

Flywheel Shaft, diameter as per Rule Appd. as fitted ON SHAFT CRANK COUPLING Intermediate Shafts, diameter as per Rule Appd. as fitted 5 1/8 Thrust Shaft, diameter at collars as per Rule Appd. as fitted 5 1/4

Tube Shaft, diameter as per Rule Appd. as fitted Screw Shaft, diameter as per Rule Appd. as fitted 5 3/4 Is the { tube } shaft fitted with a continuous liner { No

Bronze Liners, thickness in way of bushes as per Rule Appd. as fitted Thickness between bushes as per Rule Appd. 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

shaft Yes If so, state type Newark type Length of Bearing in Stern Bush next to and supporting propeller 24"

Propeller, dia. 67" Pitch 4'-1" No. of blades 4 Material bronze whether Moveable Solid Total Developed Surface 11.6 sq. feet

Method of reversing Engines direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication

forced Thickness of cylinder liners 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 Up funnel.

Cooling Water Pumps, No. One M.E. 5" x 3" 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. One Diameter 5" Stroke 3" Can one be overhauled while the other is at work Yes

Pumps connected to the Main Bilge Line { No. and Size One 5" x 3" { One 40 lons/hr. { One 8 lons/hr. How driven Main Engine Aux Diesel Engine Bell driven from Main Eng Shaft.

Is the cooling water led to the bilges No 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 One 40 lons/hr. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 in Series 2 1/2" x 1 1/4" x 2" Stroke

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 3—No 2 1/2" dia + one 3" dia oil well. In Pump Room

In Holds, &amp;c. F.P. 3" dia, Fold. 2 2 1/2" dia AP One 2 3/4" dia

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One 2 1/2" dia included above

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

led 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 Above

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

What pipes pass through the bunkers Cyone How are they protected

What pipes pass through the deep tanks Cyone 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 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 Cyone 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 5 1/4" x 2 1/2" Stroke 4" Driven by Main Engine

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

Small Auxiliary Air Compressors, No. One No. of stages One 3 1/4" Stroke 3 1/4 Driven by Aux Engine

What provision is made for first Charging the Air Receivers The above aux. engine is hand started.

Scavenging Air Pumps, No. 3 in line vertically Diameter 20 1/2" Stroke 7 1/4 Driven by Main Engine

Auxiliary Engines crank shafts, diameter as per Rule Appd. as fitted No. Position Port Side of Super Room

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



## AIR RECEIVERS:—Have they been made under survey

No

State No. of Report or Certificate *10,540*

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.

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?

No

If so, is a report now forwarded?

No

Is the donkey boiler intended to be used for domestic purposes only

Yes

## PLANS. Are approved plans forwarded herewith for Shafting

(If not, state date of approval)

2.4.41 &amp; 27/4/40

Receivers

12.11.40

Separate Fuel Tanks

1.15.10.40

Donkey Boilers

None

General Pumping Arrangements

30.5.40

Pumping Arrangements in Machinery Space

1.8.40

Oil Fuel Burning Arrangements

Yes

## SPARE GEAR.

Has the spare gear required by the Rules been supplied

Yes

State the principal additional spare gear supplied

See attached list.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building

During progress of work in shops--	1941- Feb. 10. 12. 14. 17.	May. 27. 30.
	June 4. 16. 19. 27. 30	July 1. 3. 9.
	Total No. of visits 14	

Dates of Examination of principal parts—Cylinders *Man Rpt* Covers *Man Rpt* Pistons *Man Rpt* Rods *Man Rpt* Connecting rods *Man Rpt*Crank shaft *Man Rpt* Flywheel shaft *Man Rpt* Thrust shaft *Man Rpt* Intermediate shafts *Man Rpt* Tube shaft *Man Rpt*Screw shaft *14/2/41* Propeller *14/2/41* Stern tube *12/2/41* Engine seatings *14/2/41* Engines holding down bolts *30/5/41*Completion of fitting sea connections *14/2/41* Completion of pumping arrangements *3.7.41* Engines tried under working conditions *3.7.41*Crank shaft, Material *Steel* Identification Mark *1323. W.T.M. 9.4.41* Flywheel shaft, Material *Steel* Identification Mark *1341 W.T.M. 5.5.41*Thrust shaft, Material *Steel* Identification Mark *1341 W.T.M. 5.5.41* Intermediate shafts, Material *Steel* Identification Marks *5137 JFC 26.7.41*Tube shaft, Material *Steel* Identification Mark *1341 W.T.M. 5.5.41* Screw shaft, Material *Steel* Identification Mark *5134 JFC 26.7.41*Identification Marks on Air Receivers *No 2124* *Thin Air Receivers have not been constructed under survey.*

*No 2127* but are duplicate of those being fitted in the second vessel which have been approved & built under survey. - Marine Certificate on attached.

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

Yes

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo

No

If so, have the requirements of the Rules been complied with

No

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with

No

Is this machinery duplicate of a previous case

No

If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &amp;c.)

The Machinery of this vessel has been constructed & fitted on board under Special Survey in accordance with the approved plans & the Rules. The workmanship & materials are good & when tried under full working conditions it was found satisfactory in every respect. It is eligible, in my opinion, to be classed with the record of *25.41.09* & the notations of *Oil Eng. 25.41.09* & *4. Cy. 10 1/2 - 13 1/2 135 N.H.*

The Machinery has been installed in accordance with the Specification

The amount of Entry Fee .. £ : : When applied for, *14.8.1941*

*1/3* Special + 25% ... £ 14 : 1 : When received, 19

Donkey Boiler Fee ... £ : : 19

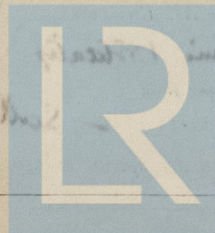
Travelling Expenses (if any) £ : : 19

Committee's Minute

Assigned

*+ Lmb 7.41*  
*oil Eng. 26.7.41*

*D. H. Williams*  
Engineer Surveyor to Lloyd's Register of Shipping.



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