

# REPORT ON OIL ENGINE MACHINERY.

Sld. No. 33210  
No. 18170  
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of writing Report 26/7/1941 When handed in at Local Office 28/7/1941 Port of *W. Hartlepool* Sld. 23.9.41  
in Survey held at *Hartlepool* Date, First Survey 10<sup>th</sup> May, 1939 Last Survey 24<sup>th</sup> July 1941.  
Book. Number of Visits 116

on the *Single* Screw vessel *M.V. "ST. EUSTACE"* Tons { Gross *5434* Net *3308*  
lt at *Sunderland* By whom built *J.L. Thompson & Sons Ltd.* Yard No. *600* When built  
ines made at *Hartlepool* By whom made *Richardson Westcott & Co* Engine No. *2695* When made *1941*  
lkey Boilers made at By whom made Boiler No. When made  
lke Horse Power *3200* Owners *Sand American Line Ltd.* Port belonging to *London*  
m. Horse Power as per Rule *688* Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
ude for which vessel is intended

ENGINE, &c.—Type of Engines *Doxford Opposed Piston Airless Injection* or 4 stroke cycle *2* Single or double acting *Single*  
imum pressure in cylinders *540 LB/SQ IN* Diameter of cylinders *600 mm* Length of stroke *2320 mm* No. of cylinders *4* No. of cranks *12*  
n Indicated Pressure *86.5 LB/SQ IN (Service)* Weight *1.37 tons* Means of ignition *Compression* Kind of fuel used *Heavy oil*  
of bearings, adjacent to the Crank, measured from inner edge to inner edge *1890 mm* Is there a bearing between each crank *Between each cylinder*  
olutions per minute *106* Flywheel dia. *2308 mm* Crank pin dia. *450 mm* Crank Webs *Mid. length breadth 650 mm, Mid. length thickness 255 mm* Thickness parallel to axis *255 mm*  
nk shaft, *Solid forged* dia. of journals *as per Rule 420 mm* as fitted *450 mm* Thrust Shaft, diameter at collars *as per Rule 420 mm* as fitted *450 mm*  
wheel Shaft, diameter *as per Rule* Intermediate Shafts, diameter *as per Rule 13.19"* as fitted *13.12"* Is the *tube* shaft fitted with a continuous liner *Yes*  
be Shaft, diameter *as per Rule* Screw Shaft, diameter *as per Rule 14.52"* as fitted *15"* Is the *screw* shaft fitted with a continuous liner *Yes*  
ize Liners, thickness in way of bushes *as per Rule 13"* as fitted *13"* Thickness between bushes *as per Rule 9/16"* as fitted *5/8"* Is the after end of the liner made watertight in the  
eller 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*

he 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*  
wo 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  
*No* If so, state type Length of Bearing in Stern Bush next to and supporting propeller *5'-0"*

propeller, dia. *16'-0"* Pitch *Varying* No. of blades *4* Material *Bronze* whether Moveable *No* Total Developed Surface *96* sq. feet  
hod of reversing Engines *Sliding Camshaft* Is a governor or other arrangement fitted to prevent racing of the engine when decelerated *Yes* Means of lubrication  
endent Thickness of cylinder liners *25 mm* Are the cylinders fitted with safety valves *Yes* Are the exhaust pipes and silencers water cooled or lagged with  
conducting material *Lagged* If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine *Yes*

ling Water Pumps, No. *1, Ballast pump - stand by* Is the sea suction provided with an efficient strainer which can be cleared within the vessel *Yes*  
ge Pumps worked from the Main Engines, No. *1, Electric 20/36 B.H.P.* Diameter *Stroke* Can one be overhauled while the other is at work  
aps connected to the Main Bilge Line { No. and Size *1, Ballast pump, 1-6"x6" Lamont's Bilge pump 10 B.H.P.* How driven *Electric*

he cooling water led to the bilges *No, overboard discharge* If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping  
ngements. last Pumps, No. and size *1-12"x12" Lamont 35 B.H.P. Electric* Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size *2-5" Hamworthy Rotax Pumps Electric 33 lbs/hr.*

two independent means arranged for circulating water through the Oil Cooler *Yes, Ballast pump* Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
ps, No. and size:—In Machinery Spaces *4-3", 1-2 1/2" Coffeyden, 1-4 1/2" Tunnel* In Pump Room *Yes*  
olds, &c. *6-3" for for holds (2 P. & S. for each hold)*

ependent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *1-5 1/2" port salt water pump, 1-5" stand. Ballast pump*  
all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes *Yes* Are the Bilge Suctions in the Machinery Spaces  
rom easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges *Yes*

all Sea Connections fitted direct on the skin of the ship *Yes* Are they fitted with Valves or Cocks *Both*  
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 *below*  
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*

l pipes pass through the bunkers *none* How are they protected  
l pipes pass through the deep tanks *none* Have they been tested as per Rule *Yes*  
all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *Yes*

o 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  
partment to another *Yes* Is the Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *upper deck*

wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork  
n Air Compressors, No. *2, 125 cu.ft. of air per minute* No. of stages *2* Diameters *9 1/2" x 7 1/2" x 3 1/2"* Stroke *8"* Driven by *Electric Motor 63 B.H.P.*  
iliary Air Compressors, No. *1, 14 cu.ft. of air per minute* No. of stages *2* Diameters *Stroke* Driven by *H.O. Engine 8 1/2 B.H.P. 1000 R.P.M.*

provision is made for first Charging the Air Receivers *By Small air compressor - hand started H.O. Engine*  
venting Air Pumps, No. *1* Diameter *19 60 mm* Stroke *600 mm* Driven by *Lever from Main Eng. crosshead*  
iliary Engines crank shafts, diameter *as per Rule* Position  
e 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

Is a drain fitted at the lowest part of each receiver

Can the internal surfaces of the receivers be examined and cleaned

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.

2

Total cubic capacity 220 cu ft.

Internal diameter 3'-6"

thickness 1 1/2"

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure by Rules

Actual

IS A DONKEY BOILER FITTED?

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

If so, is a report now forwarded?

PLANS. Are approved plans forwarded herewith for Shafting

(If not, state date of approval)

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,

For RICHARDSON WESTGARTH & Co. LIMITED

Manufacturer.

Dates of Survey while building

During progress of work in shops --  
During erection on board vessel --  
Total No. of visits

1939 May 10-26 June 2-13-16 DIRECTOR 17-21-22-27-29 July 6-7-11-12-13-14-17-21-31 Aug 2-14-16-18-21-28 Sept 6-12-19  
Oct 4-10-17-24-31 Nov 9-13-21-22-27-29 Dec 7-11-14-18-21 1940 Jan 9-10-11-13-14-17-18-26 Feb 9-15-21-22-23-26-29 Mar  
6-8-11-19-21-28 April 3-4-15 May 5-13-20-23 June 6-7-8-15-16-18 Aug 8-20 Oct 25 Nov 4-13 1941 Jan 9-10-11  
March 22-27 April 28-29 May 1-12-13-19-22 June 5-9-11-13-15-25 July 9-15-16-21-22-24

Dates of Examination of principal parts—Cylinders

9-1-40

Covers

Pistons

Rods 18-1-40

Connecting rods 26-2-

Crank shaft

Flywheel shaft

Thrust shaft

Intermediate shafts 6-6-40

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

Crank shaft, Material

Steel

Identification Mark

2695 J.S.C

Flywheel shaft, Material

Identification Mark

Thrust shaft, Material

Steel

Identification Mark

2695 J.S.C

Intermediate shafts, Material

Identification Marks 5434 5678 9

Tube shaft, Material

Identification Mark

Screw shaft, Material

Identification Mark 8974 H.A.C.

Identification Marks on Air Receivers

LLOYD'S TEST 800 LB.

W.P. 600 LB.

C.B. 15/11/40

Is the flash point of the oil to be used over 150° F.

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with

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 vessel's machinery has been constructed under Special Survey & in accordance with the approved plans. The engines have been under working conditions in shop. The two riveted air receivers have been constructed under Special Survey & in accordance with the approved plan for a working pressure of 600 lb/10" & tested hydraulically on completion to 800 lb/10" & found sound & tight. The fusion welded bedplate & entablature have been examined during construction & on completion of test bed trial. The materials & workmanship have been found good. All parts subjected to pressure have been tested hydraulically. The machinery has been forwarded to Sunderland to be fitted on board J.L. Thompson's Yd. No. 601. In our opinion, this vessel will be eligible to have record of L.M.C. - with on completion.

The amount of Entry Fee

£ 6 : 0

When applied for,

Special

£ 72 : 18

When received,

Bedplate & Entablature

£ 12 : 12

Air Receivers

£ 4 : 4

Travelling Expenses (if any)

Committee's Minute

Assigned

See Std. J.C. 33210

Howard & Clive Bell  
Engineer Surveyor to Lloyd's Register of Shipping.

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Foundation