

- 8 DEC 1927

Bel. 9872

No. 47311

t. 4b

# REPORT ON OIL ENGINE MACHINERY.

23 NOV 1927

of writing Report 17<sup>th</sup> Nov 1927 When handed in at Local Office 21. 11. 1927 Port of GLASGOW.

in Survey held at GLASGOW Date, First Survey 24<sup>th</sup> Octr Last Survey 11<sup>th</sup> Nov 1927

Number of Visits 5

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

M.Y 490

"BERMUDA"

Tons { Gross  
Net

lt at Belfast.

By whom built Messrs Workman & Clark Yard No. 490 When built 1927

ines made at GLASGOW

By whom made MESS<sup>RS</sup> G & J WEIR LTD Engine No. 85094 When made 1927

key Boilers made at

By whom made Boiler No. When made

ke Horse Power

Owners Bermuda West Indies S.S. Co. Ltd. Port belonging to Bermuda

n. Horse Power as per Rule

Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

de for which vessel is intended

**ENGINES, &c.**—Type of Engines **SOLID INJECTION** 2 or 4 stroke cycle **2** Single or double acting **SINGLE**  
imum pressure in cylinders **500 lbs/sq"** Diameter of cylinders **9 1/2"** Length of stroke **13 1/2"** No. of cylinders **2** No. of cranks **2**  
of bearings, adjacent to the Crank, measured from inner edge to inner edge **14 1/8"** Is there a bearing between each crank **YES.**  
olutions per minute **350** Flywheel dia. **4'-0"** Weight **4160 lbs** Means of ignition **COMPRESSION** Kind of fuel used **DIESEL**  
nk Shaft, dia. of journals as per Rule **4-9/16"** Crank pin dia. **5 1/8"** Crank Webs Mid. length breadth **7"** Thickness parallel to axis  
as fitted **5"** Mid. length thickness **3"** shrunk Thickness around eyehole  
wheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as per Rule  
as fitted Screw Shaft, diameter as per Rule Is the { tube } shaft fitted with a continuous liner {  
as fitted

ze Liners, thickness in way of bushes as per Rule Thickness between bushes as per rule Is the after end of the liner made watertight in the

eller boss If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

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

wo liners are fitted, is the shaft lapped or protected between the liners Is an approved Oil Gland or other appliance fitted at the after

of the tube shaft Length of Bearing in Stern Bush next to and supporting propeller

opeller, dia. Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet

thod of reversing Engines Is a governor or other arrangement fitted to prevent racing of the engine when disengaged **YES** Means of lubrication

Thickness of cylinder liners MAX. 25 MIN. 5/8 Are the cylinders fitted with safety valves **YES** Are the exhaust pipes and silencers water cooled or lagged with

conducting material **SILENCER LAGGED.** If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine

oling Water Pumps, No. 1 Is the sea suction provided with an efficient strainer which can be cleared within the vessel

ge Pumps worked from the Main Engines, No. Diameter Stroke Can one be overhauled while the other is at work

mps connected to the Main Bilge Line { No. and Size How driven

last Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size

two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

mps, No. and size: In Machinery Spaces

Holds, &c.

pendent Power Pump Direct Suctions to the Engine Room Bilges, No. and size

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

from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges

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

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

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

at pipes pass through the bunkers How are they protected

at pipes pass through the deep tanks Have they been tested as per Rule

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

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

partment to another Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from

a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

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

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

all Auxiliary Air Compressors, No. 1 No. of stages 1 Diameters 2 3/4" Stroke 3 1/4" Driven by **FRICTION DRIVE**

avenging Air Pumps, No. **CRANKCASE SCAVENGE** Diameter Stroke Driven by

uxiliary Engines crank shafts, diameter as per Rule as fitted

**R RECEIVERS:**—Is each receiver, which can be isolated, fitted with a safety valve as per Rule

the internal surfaces of the receivers be examined What means are provided for cleaning their inner surfaces

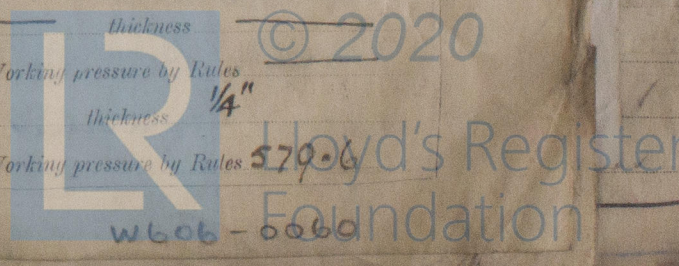
there a drain arrangement fitted at the lowest part of each receiver

gh Pressure Air Receivers, No. Cubic capacity of each Internal diameter thickness

unless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules

arting Air Receivers, No. 2 Total cubic capacity 4.8 CUB. FT. Internal diameter 10" thickness 1/4"

unless, lap welded or riveted longitudinal joint **SEAMLESS** Material **STEEL** Range of tensile strength 28-32 TONS/sq" Working pressure by Rules 570.6





IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

PLANS. Are approved plans forwarded herewith for Shafing  
(If not, state date of approval)

Receivers

Separate Tanks

Donkey Boilers

General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR

1- FUEL INJECTION VALVE

1- FLAME PLATE

1- AIR STARTING VALVE

1- CYLINDER RELIEF VALVE

2 GROUP- CRANKCASE AIR VALVES

1- FUEL NEEDLE VALVE WITH SLEEVE

1 SET PISTON RINGS

2- BIG END BOLTS

2- MAIN BEARING STUDS

1 SET COMPRESSOR PISTON RINGS

1- COMPRESSOR SUCTION VALVE

1- COMPRESSOR DISCHARGE VALVE

1- FUEL PUMP PLUNGER

1- " " GUIDE

2- " " VALVES

2- " " " SPRINGS

1 SET CYLINDER COVER STUDS

1 SET CIRCULATING PUMP VALVES AND SEATS

1 SET SEALING RINGS

1 BOX OF IGNITERS

The foregoing is a correct description,

For G. & J. Weir, Ltd.

Manufacturer.

Dates of Survey while building  
During progress of work in shops - 1927 Oct 24-27-28 Nov 8-11  
During erection on board vessel -  
Total No. of visits 5

Dates of Examination of principal parts - Cylinders 24-10-27 Covers 24-10-27 Pistons 27-10-27 Rods 27-10-27 Connecting rods 27-10-27

Crank shaft 24-10-27 Flywheel shaft 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 8-11-27

Crank shaft, Material Steel Identification Mark S.E.M. Flywheel shaft, Material Identification Mark

Thrust shaft, Material Identification Mark Intermediate shafts, Material Identification Marks

Tube shaft, Material Identification Mark Screw shaft, Material Identification Mark

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

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.) These auxiliary diesel engines have been built under special survey. The workmanship and materials are good. They were examined while working on the test bed and found satisfactory.

The materials have been tested in accordance with the rules.

To be fitted on board at Belfast

These auxiliary diesel engines have been efficiently installed and fastened in the engine room of the "Bermuda". They have been tried out under working conditions with satisfactory results.

R. Lee Amers  
Belfast

The amount of Entry Fee ... £ : : When applied for

Special ... £ 12 : 0 : 0

Donkey Boiler Fee ... £ : : When received

Travelling Expenses (if any) £ : : 19

Committee's Minute GLASGOW 22 NOV 1927

Assigned Transmit to London

G. E. Murdoch  
Engineer Surveyor to Lloyd's Register of Shipping.  
FRI 22 JAN 1932

TUES. 13 DEC 1927

Lloyd's Register  
Foundation