

Rpt. 4b.

## REPORT ON OIL ENGINE MACHINERY.

No. 5591

Date of writing Report

10

When handed in at Local Office

10

Port of Manchester

No. in Survey held at Manchester

Date, First Survey 7th April 1925

Last Survey 28th Apr. 1925

Reg. Book.

Number of Visits 5

on the <sup>Single</sup> <sup>Twin</sup> <sup>Triple</sup> Screw vessels

"Rochester Castle"

Tons <sup>Gross</sup>  
<sub>Net</sub>

Master

Built at

Rochester

By whom built

Short Bros Ltd

Yard No.

When built

Engines made at

Manchester

By whom made

L. Gardner &amp; Sons Ltd

Engine No.

When made 1905

Donkey Boilers made at

By whom made

Boiler No.

When made

Brake Horse Power

192 (Total)

Owners

Port belonging to

Nom. Horse Power as per Rule

55

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

ALL ENGINES, &amp;c.

Type of Engines

Vertical Semi-Diesel

2 or 4 stroke cycle

2

Single or double acting

Single

Maximum pressure in cylinders

300

No. of cylinders

4

No. of cranks

4

Diameter of cylinders

9 1/2

Length of stroke

10 3/4

Revolutions per minute

370

Means of ignition

Hot Bulb

Kind of fuel used

Heavy Oil

Is there a bearing between each crank

Yes

Span of bearings (Page 92, Section 2, par. 7 of Rules)

14.25

Distance between centres of main bearings

19.75

Is a flywheel fitted

Yes

Diameter of crank shaft journals

as per Rule 4.07

as fitted 4.25

Diameter of crank pins

4 1/4

Breadth of crank webs

as per Rule 5.4

as fitted 5.625

Thickness of ditto

as per Rule 2.28

as fitted 2.375

Diameter of flywheel shaft

as per Rule

as fitted 5.22

Diameter of tunnel shaft

as per Rule

as fitted

Diameter of thrust shaft

as per Rule 2.88

as fitted 3.125

Diameter of screw shaft

as per Rule

as fitted 3.875

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

No.

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 joints burned

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

If without liners, is the shaft arranged to run in oil

Yes

Type of outer gland fitted to stern tube

Yarwood

Length of stern bush

Diameter of propeller

41

Pitch of propeller

35

No. of blades

4

state whether moveable

Fixed

Total surface

42.8 ft<sup>2</sup> square feet

Method of reversing

Camshaft Adjustment

Is a governor or other arrangement fitted to prevent racing of the engine when declutched

Yes

Thickness of cylinder liners

Are the cylinders fitted with safety valves

No

Means of lubrication

Forced Mechanical Dip

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

No. of cooling water pumps

Is the sea suction provided with an efficient strainer which can be cleared within the vessel

No. of bilge pumps fitted to the main engines

One

Diameter of ditto

1 3/4

Stroke

2 3/4

Can one be overhauled while the other is at work

Yes

No. of auxiliary pumps connected to the main bilge lines

How driven

Sizes of pumps

No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room

and in holds, etc.

No. of ballast pumps

How driven

Sizes of pumps

Is the ballast pump fitted with a direct suction from the engine room bilges

State size

Is a separate auxiliary pump suction fitted in

Engine Room and size

Are all the bilge suction pipes fitted with roses

Are the roses in Engine Room always accessible

Are the sluices on Engine Room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship

Are they valves or cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates

Are the discharge pipes above or below the deep water line

Are they each fitted with a discharge valve always accessible on the plating of the vessel

Are all pipes, cocks, valves and pumps in connection with the machinery accessible at all times

Are the bilge suction pipes, cocks and valves arranged so as to prevent any communication between the sea and the bilges

Is the screw shaft tunnel watertight

Is it fitted with a watertight door

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

No. of main air compressors

One

No. of stages

One

Diameters

4 1/2

Stroke

2 3/4

Driven by

No. of auxiliary air compressors

One

No. of stages

One

Diameters

3 1/2

Stroke

2

Driven by

No. of small auxiliary air compressors

No. of stages

Diameters

Stroke

Driven by

No. of scavenging air pumps

Diameter

Stroke

Driven by

Diameter of auxiliary Engine crank shafts

as per Rule

as fitted 1 3/8 - 1 1/2

Are the air compressors and their coolers made so as to be easy of access

AIR RECEIVERS:—No. of high pressure air receivers

Internal diameter

Cubic capacity of each

material Seamless, lap welded or riveted longitudinal joint

thickness working pressure by Rules

Total cubic capacity

12 ft<sup>3</sup>

Material

Mild Steel

Seamless, lap welded or riveted longitudinal joint

Chesterfield Seamless

Range of tensile strength

thickness

0.25

Working pressure by rules

580 lbs./in.<sup>2</sup>

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

Yes

What means are provided for cleaning their inner surfaces

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

Yes

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

Yes



# IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

## HYDRAULIC TESTS:-

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS	Not tested	Examination Only. (Record LMC inclot-4)			
COVERS	"	"	"		
JACKETS	"	"	"		
PISTON WATER PASSAGES	"	"	"		
MAIN COMPRESSORS—1st Stage	"	"	"		
2nd	"	"	"		
3rd	"	"	"		
AIR RECEIVERS—STARTING	16-4-25	200 lbs	400 lbs	As (Certificate)	
INJECTION	"	"	"	"	
AIR PIPES	"	"	"	"	
FUEL PIPES	"	"	"	"	
FUEL PUMPS	"	"	"	"	
SILENCER	Not tested	Examination only.			
WATER JACKET	"	"	"	"	
SEPARATE FUEL TANKS	"	"	"	"	

PLANS. Are approved plans forwarded herewith for shafting ☒ Receivers ☒ Separate Tanks ☒

## SPARE GEAR

The foregoing is a correct description.

L. GARDNER & SONS, LIMITED.

H. Gardner.

Manufacturer.

Dates of Survey while building  
During progress of work in shops - 1925. April 7. 16. 21. 24. 25.  
During erection on board vessel -  
Total No. of visits

Dates of Examination of principal parts—Cylinders 7.4.25 Covers 7.4.25 Pistons 7.4.25 Rods ✓ Connecting rods 7.4.25

Crank shaft 7.4.25 Thrust shaft 7.4.25 Tunnel shafts Screw shaft 7.4.25 Propeller 7.4.25 Stern tube 7.4.25 Engine seatings

Engines holding down bolts Completion of pumping arrangements Engines tried under working conditions

Completion of fitting sea connections Stern tube Screw shaft and propeller

Material of crank shaft Mild steel Identification Mark on Do. As Material of thrust shaft Mild steel Identification Mark on Do. As

Material of tunnel shafts Identification Marks on Do. Material of screw shafts Mild steel Identification Marks on Do. As

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

Is this machinery duplicate of a previous case Yes If so, state name of vessel "Myrwa" Incl. Rept. 5246.

General Remarks (State quality of workmanship, opinions as to class, &c.) The above main engine of Gardner Type 4 T6 and one auxiliary engine Gardner Type 1AY direct coupled to a 3½" x 2" air compressor (Gardner) have been opened up and examined throughout when the materials and workmanship were found so far as could be seen sound and good. The scantlings of the principal parts were also checked with the approved plans and found in order. Both the two main and auxiliary engines proved satisfactory under a full power shop test. The three starting air receivers have been tested by hydraulic pressure in the presence of the undersigned. These engines in my opinion are eligible for the notation of LMC (without star) with date when fitted on board the vessel in accordance with the Rules of this Society. (Sees. Letter 20.2.25 to Mch. Office)

The amount of Entry Fee ... 45-0-0  
Special ... 45-0-0  
Donkey Boiler Fee ... 45-0-0  
Travelling Expenses (if any) ... 45-0-0

When applied for, 45-0-0  
When received, 45-0-0  
7 JUL 1925

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

9a.

rt of

MANCHESTER

Continuation of Report No.

dated

on the

"Rochester Castle".

## List of Plans.

Main Engine.

General Arrangement.

" "

Crank Shaft.

" "

Connecting Rod.

" "

Thrust Shaft.

" "

Clutch.

" "

Flywheel.

" "

Details of Tail Shaft & Stern Tube.

Aux. Engine.

General Arrangement.

" "

Air Compressor, General Arrangement.

" "

" " Cylinder.

Air Receivers

2 plans in duplicate.



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