

REPORT ON OIL ENGINE MACHINERY.

No 13111

Received at London Office

24 NOV 1941

Date of writing Report

19

When handed in at Local Office

20. 11. 1941

Port of

Belfast

No. in Survey held at

Belfast.

Date, First Survey

24. Sept. 1940

Last Survey

12 November 1941

Reg. Book

Number of Visits

157

on the ~~Single~~
~~Triple~~
~~Quadruple~~

Screw vessel

EMPIRE DIAMONDTons: Gross 8235.6
Net 4793.9.

Built at

Belfast.

By whom built

Harland & Wolff Ltd

Yard No. 1053

When built 1941

Engines made at

Belfast.

By whom made

Harland & Wolff Ltd

Engine No. 1053

When made 1941

Donkey Boilers made at

Belfast

By whom made

Harland & Wolff Ltd

Boiler No. 1053/5

When made 1941

Brake Horse Power

3500

Owners

Ministry of War Transport

Port belonging to

Belfast.

Nom. Horse Power as per Rule

502

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

yes

Trade for which vessel is intended

Carrying Petroleum in Bulk.

OIL ENGINES, &c.—Type of Engines

Harland B & W Airless Injection or 4 stroke cycle

Single or double acting Single

Maximum pressure in cylinders

700 lbs sq. in.

Diameter of cylinders

650 7/8

Length of stroke

1400 7/8

No. of cylinders

8

No. of cranks

8

Mean Indicated Pressure

135 lbs sq. in.

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge

84 1/4

Is there a bearing between each crank

yes

Revolutions per minute

120

Flywheel dia.

2218.5 7/8

Weight

2150 kgs

Means of ignition

Compression

Kind of fuel used

Diesel oil

Crank Shaft.

Solid forged

dia. of journals

as per Rule

as approved

Crank pin dia.

460 7/8

Crank Webs

Mid. length breadth

800 7/8

shrink

Thickness parallel to axis

267

Flywheel Shaft, diameter

as per Rule

as fitted

Intermediate Shafts, diameter

as per Rule

as approved

Thrust Shaft, diameter at collars

as per Rule

as approved

Tube Shaft, diameter

as per Rule

as fitted

Screw Shaft, diameter

as per Rule

as fitted

Is the

screw

shaft fitted with a continuous liner

yes

Bronze Liners, thickness in way of bushes

as per Rule

as fitted

7/8

Thickness between bushes

as per Rule

as fitted

3/4

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 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

shaft

no

If so, state type

Propeller, dia.

15' 6"

Pitch

12' 0"

No. of blades

4

Material

Bronze

whether Moveable

Fixed

Total Developed Surface

75 sq. feet

Method of reversing Engines

Air

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

yes

Means of lubrication

Forced

Thickness of cylinder liners

48 7/8

Are the cylinders fitted with safety valves

yes

Are the exhaust pipes and silencers water cooled or lagged with

non-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

Cooling Water Pumps, No. 2

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. 2

Diameter

Stroke

Can one be overhauled while the other is at work

yes

Pumps connected to the Main Bilge Line

No. and Size

4, 2 @ 32 tons hr.

1 @ 80 tons hr.

1 @ 200 tons hr.

How driven

main engine;

Steam driven.

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

1 @ 200 tons hr.

Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size

2 1 Main Eng. 40 tons hr.

1 In Dept 40 " "

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

5

3 @ 3 1/2" dia

2 @ 2 1/2" dia

In Pump Rooms

2 @ 4" dia

In Holds, &c.

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

2 @ 6"

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

valves

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

below

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

yes

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

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

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. 2

No. of stages

2

Diameters

2 1/2 / 280 7/8

Stroke

130 7/8

Driven by

Steam Engine

Small Auxiliary Air Compressors, No.

No. of stages

Diameters

Stroke

Driven by

What provision is made for first Charging the Air Receivers

as above

Scavenging Air Pumps, No.

Diameter

Stroke

Driven by

Auxiliary Engines crank shafts, diameter

as per Rule

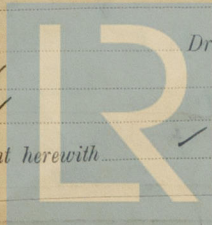
as fitted

No.

Position

Have the Auxiliary Engines been constructed under special survey

Is a report sent herewith



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Foundation

002361-003371-0096

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

MANOEUVRING

MANOEUVRING Air Receivers, No. 2

Cubic capacity of each

Is a drain fitted at the lowest part of each receiver

Internal diameter 5' 1 7/32"

thickness

Seamless, lap welded or riveted longitudinal joint

Riveted

Material Steel

Range of tensile strength 28/32 6000

Working pressure

by Rules 360 lbs sq. inch
Actual 356 lbs sq. inch

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?

Yes (2)

If so, is a report now forwarded?

Yes

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

No Steam Auxiliaries, Fire Extinguishing & Heating coils.

PLANS. Are approved plans forwarded herewith for Shafting

Receivers 14/12/39

Separate Fuel Tanks

Donkey Boilers 22/2/40

General Pumping Arrangements 20/5/40

Pumping Arrangements in Machinery Space 30/4/40

Oil Fuel Burning Arrangements 4/12/40

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--
During erection on board vessel--
Total No. of visits

Dates of Examination of principal parts—Cylinders

Crank shaft

Screw shaft

Completion of fitting sea connections

Crank shaft, Material

Thrust shaft, Material

Tube shaft, Material

Identification Marks on Air Receivers

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

Description of fire extinguishing apparatus fitted

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

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

General Remarks

The materials and workmanship are good

The machinery has been efficiently installed on board the vessel and tried

under full working conditions during sea trials with satisfactory results and

is eligible in our opinion to have notation in the Register Book of

+LMC 11.41. 2DB 150 lbs sq. inch TS CL. Oil Engine.

The amount of Entry Fee

Special

Donkey Boiler Fee

Travelling Expenses (if any)

Committee's Minute

Assigned

