

REPORT ON OIL ENGINE MACHINERY.

No. 35349

- 1 AUG 1950

Received at London Office

Date of writing Report

10

When handed in at Local Office

JUL 21 1950

Port of

Sunderland

No. in Survey held at
Reg. Book.

Sunderland

Date, First Survey

May 1949

Last Survey

20 July

1950

Number of Visits

56

on the ^{Single}
~~Twin~~
^{Triple}
~~Quadruple~~
Screw vessel

"BRITISH DEFENDER"

Tons Gross 6138
Net 3335

Built at

Sunderland

By whom built

Wm. Leasford & Sons Ld.

Yard No.

449

When built

1950

Engines made at

Sunderland

By whom made

Wm. Leasford & Sons Ld.

Engine No.

449

When made

1950

Donkey Boilers made at

Stockton

By whom made

Stockton Chem. Eng. & Ship. Co. Ld.

Boiler No.

4201/2

When made

1950.

Brake Horse Power

2250

Owners

British Tanker Co. Ld.

Port belonging to

London.

Nom. Horse Power as per Rule

M.N. 516.1

Is Refrigerating Machinery fitted for cargo purposes

No.

Is Electric Light fitted

Yes.

Trade for which vessel is intended

Tanker 23 7/8"

91 7/16"

OIL ENGINES, &c.

Type of Engines

Opposed piston airless injection 2 or 4 stroke cycle 2

Single or double acting Single.

Maximum pressure in cylinders

640 lbs/sq. in.

Diameter of cylinders

600 mm

Length of stroke

Upper 980 mm

No. of cylinders

3

No. of cranks

3 Triple throw

Mean Indicated Pressure

85 lbs/sq. in.

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

F. 2300 mm

Is there a bearing between each crank

Between each triple throw.

Revolutions per minute

100

Flywheel dia.

F. 2300 mm

Weight

A. 3.43 Tons

Means of ignition

Compression

Kind of fuel used

Heavy oil.

Crank Shaft.

Solid forged

dia. of journals

app. 418 mm

Crank pin dia.

450 mm

Crank Webs

Mid. length breadth

650 mm

Thickens parallel to axis

255 mm

Flywheel Shaft, diameter

as per Rule

as fitted

Intermediate Shafts, diameter

as per Rule

as fitted

Thrust Shaft, diameter at collars

as per Rule

as fitted

418 mm

Tube Shaft, diameter

as per Rule

as fitted

Screw Shaft, diameter

as per Rule

as fitted

Is the tube

screw

shaft fitted with a continuous liner

Yes.

Bronze Liners, thickness in way of bushes

as per Rule

as fitted

Thickness between bushes

as per Rule

as fitted

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

one length.

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

No.

Is an approved Oil Gland or other appliance fitted at the after end of the tube

shaft

No.

If so, state type

-

Length of Bearing in Stern Bush next to and supporting propeller

4'-11"

Propeller, dia.

15'-9"

Pitch

11'-6"

No. of blades

4

Material

Bronze

whether Moveable

No.

Total Developed Surface

85 sq. feet

Method of reversing Engines

Hand lever

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

Yes.

Means of lubrication

Land

forced

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

non-conducting material

Cooling Water Pumps, No.

one engine driven

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

(F.W. Cooling)

Bilge Pumps worked from the Main Engines, No.

none

Diameter

-

Stroke

-

Can one be overhauled while the other is at work

-

Pumps connected to the Main Bilge Line

No. and Size

2 @ 4" x 8" x 8"

How driven

Steam

Leupler.

Ballast Pump.

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 @ 10" x 12" x 16"

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

Yes.

Are two independent means arranged for circulating water through the Oil Cooler

Yes.

Suctions, connected to both Main Bilge Pump and Auxiliary Bilge

Pumps, No. and size: In Machinery Spaces

2 - 3 1/2"

In Holds, &c. (Tanker)

1 @ 6" in E.R.

In Pump Room

Main room amidships

3-4" in 4th.

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

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

-

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

Both.

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

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

none

How are they protected

What pipes pass through the deep tanks

none

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

(Tanker) Is the Shaft Tunnel watertight

none

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.

Two

No. of stages

3.

Diameters

11 1/2", 9 1/2", 2 1/2"

Stroke

4"

Driven by

Steam Engine.

Auxiliary Air Compressors, No.

-

No. of stages

-

Diameters

-

Stroke

-

Driven by

-

Small Auxiliary Air Compressors, No.

-

No. of stages

-

Diameters

-

Stroke

-

Driven by

-

What provision is made for first Charging the Air Receivers

Steam driven Compressors.

Scavenging Air Pumps, No.

one

Diameter

1400 mm

Stroke

610 mm

Driven by

Steam Engine.

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

Lloyd's Register
Foundation

013939 - 013944 - 0166

AIR RECEIVERS: - Have they been made under survey

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

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

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

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

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

PLANS.

Are approved plans forwarded herewith for Shafting

(If not, state date of approval)

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

1 C.I. Propeller, 1 Screw Shaft, 1 C.I. Liner + packer Complete, 1 upper & 1 lower piston & rings, 4 scraper rings, 2 main piston heads, 4o rings, 8 fuel valves & spares, 1 Centres & Ecc. Conn. rod bolt, End Spherical bearings, 1 main Sph. bearing, 4 Centres & side top & bottom bearing bolts & nuts, 2 main bearing studs & nuts, 1 Set Coupling bolts, 2 N.R. Starting air valves, 2 relief valves Complete, 1 Fuel pump Suct. Chamber Complete, 2 fuel pump bodies Complete, 4 fuel valves Complete, 1 Esc. pump Suct. & del. valve Complete, 1 Set Pad. for ahd. side of thrust, 1 roller chain for Camshaft drive, 3 pads for int. & ahd. shaft bearings etc.

The foregoing is a full description

WILLIAM BOXFORD & SONS, LIMITED

Manufacturer.

Dates of Survey while building
During progress of work in shops - 25/1/50 Jan 4.9.14.23.27 Mar 2.6.9.14.15.20.21.23.27 Apr 3.4.5(2) 6.11.12.13.17.18.19.24.27 May 13. Jun 20.26. Jul 3.11.12.20
During erection on board vessel -
Total No. of visits 56

Dates of Examination of principal parts - Cylinders 23/12/49, 4/1/50 Covers 14/2/50 Pistons 2/3/50 Rods 2/3/50 Connecting rods 5/4/50.

Crank shaft 30/9/50 Flywheel shaft as crank Thrust shaft as crank Intermediate shafts 24/4/50 Tube shaft -

Screw shaft 5/4/50 Propeller 3/4/50 Stern tube 3/4/50 Engine seatings (Lank top) Engines holding down bolts 26/6/50.

Completion of fitting sea connections 24/1/50 Completion of pumping arrangements 20/4/50 Engines tried under working conditions 20/4/50.

Crank shaft, Material Ingot Steel Identification Mark 30/9/50 Flywheel shaft, Material as crank Identification Mark as crank.

Thrust shaft, Material as crank Identification Mark as crank Intermediate shafts, Material Ingot Steel Identification Marks N° 19950-595 N° 24/4/50.

Tube shaft, Material - Identification Mark - Screw shaft, Material Ingot Steel Identification Mark N° 19950-593 W.H.F. 5/4/50.

Identification Marks on Air Receivers K. 2323/4

L.R. 23054

R.B. 29/12/49.

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 1 1/2" perforated pipe for steam led around E.R. & B.R.

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 machinery has been built under Special Survey in accordance with the approved Plans & the rules of the Society. The materials & workmanship are good. It has been securely fitted on board the vessel & tried under full working conditions with satisfactory results. The two donkey boilers have also been securely fixed on board, fitted to burn oil fuel (i.e. above 150° F.) & the safety valves adjusted under steam to working pressure. Section 20 of the rules has been complied with.

The machinery is now eligible, in my opinion, to have notation of L.M.C. 4.50 (oil fuel) T.S. (C.I.) 2 DB 15 0/100.

Note: The Service B.H.P. may be considered 2250.

The amount of Entry Fee .. £

Special ... £ 148 : 4 JUL 31 1950

Donkey Boiler Fee ... £

Travelling Expenses (if any) £

Committee's Minute

Assigned + LMC 7.50. Oil fuel. C.L. 2 DB - 150 B

Engineer Surveyor to Lloyd's Register of Shipping.



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