

REPORT ON OIL ENGINE MACHINERY.

No. 34314

Received at London Office

18 OCT 1945

date

Date of writing Report

When handed in at Local Office

Port of

Sunderland.

No. in Survey held at Reg. Book.

Sunderland

Date, First Survey

Last Survey

19

Number of Visits

Single on the Tonnage Triple Screw vessel

EMPIRE SENLAC

Tons Gross Net

Built at

Sunderland

By whom built

J.L. Thompson & Sons Ltd

Yard No.

642

When built

1945

Engines made at

Sunderland

By whom made

Wm. Hayford & Sons Ltd

Engine No.

245

When made

1945

Donkey Boilers made at

Stockton

By whom made

Stockton Chem. & Eng. Works Ltd

Boiler No.

6892/3

When made

1945

Brake Horse Power

2500

Owners

Ministry of War Transport

Port belonging to

Sunderland

Nom. Horse Power as per Rule

516

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

Trade for which vessel is intended

12370

91516

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

Diameter of cylinders

600 in

Length of stroke

48 in

No. of cylinders

3

No. of cranks

3 (3 throws)

Mean Indicated Pressure

88 lbs

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

940 in

Is there a bearing between each crank

Between each 3 throws

Revolutions per minute

108

Flywheel dia.

2300 in

Weight

45 cwt

Means of ignition

Compression

Kind of fuel used

—

Crank Shaft

Solid forged

dia. of journals

418 in

as fitted

Crank pin dia.

450 in

Crank Webs

Mid. length breadth

650 in

Thickness parallel to axis

255 in

Flywheel Shaft, diameter

as fitted

450 in

Intermediate Shafts, diameter

as fitted

430 in

Thrust Shaft, diameter at collars

as fitted

450 in

Tube Shaft, diameter

as per Rule

as fitted

18 in

Screw Shaft, diameter

as fitted

430 in

Is the tube screw

shaft fitted with a continuous liner

Yes

Bronze Liners, thickness in way of bushes

as per Rule

as fitted

18 in

Thickness between bushes

as per Rule

as fitted

13.5 in

Is the after end of the liner made watertight in the

propeller boss

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

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

shaft

Yes

Length of Bearing in Stern Bush next to and supporting propeller

4'-11"

propeller, dia.

15'-0"

Pitch

13'-9"

No. of blades

4

Material

Brass

whether Moveable

Yes

Total Developed Surface

84.8 sq. feet

Method of reversing Engines

Hand lever

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

Yes

Means of lubrication

and forced

Yes

Thickness of cylinder liners

25 in

Are the cylinders fitted with safety valves

Yes

Are the exhaust pipes and silencers water cooled or lagged with

non-conducting material

Yes

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.

one

one

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

2

Stroke

5 1/2 x 6 x 15

Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line

No. and Size

2 @ 5 1/2 x 6 x 15

How driven

Steam

Is the cooling water led to the bilges

arrangements

Yes

If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping

Ballast Pumps, No. and size

1 @ 10 1/2 x 12 x 24

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

Yes

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

In Pump Room

10 1/2 x 12 x 24

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

Yes

Pumps, No. and size

2 @ 3 x 1 x 1

3 1/2 (eff) in E.R.

In Holds, &c.

(Tanker)

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

Yes

10 8 (Ballast pump) 10 5 (G.S.), 10 7 (main)

Are the Bilge Suctions in the Machinery Spaces

Yes

Are they fitted with Valves or Cocks

Below

Are the Overboard Discharges above or below the deep water line

Below

Are all Sea Connections fitted direct on the skin of the ship

Yes

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

Yes

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

Yes

Have they been tested as per Rule

Yes

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

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

Yes

Is it fitted with a watertight door

None

worked from

Steam Engine

12 1/2 x 12 1/2

Driven by

12 1/2 x 12 1/2

Driven by

12 1/2 x 12 1/2

Driven by

12 1/2 x 12 1/2

Driven by

12 1/2 x 12 1/2

Driven by

12 1/2 x 12 1/2

What provision is made for first Charging the Air Receivers

(Steam driven Compressors)

Diameter

1400 in

Stroke

610 in

Driven by

Steam Engine

12 1/2 x 12 1/2

Driven by

12 1/2 x 12 1/2

Driven by

12 1/2 x 12 1/2

Scavenging Air Pumps, No.

one

as per Rule

as fitted

Diameter

1400 in

Stroke

610 in

Driven by

Steam Engine

12 1/2 x 12 1/2

Driven by

12 1/2 x 12 1/2

Driven by

12 1/2 x 12 1/2

Auxiliary Engines crank shafts, diameter

as per Rule

as fitted

Position

—

Is a report sent herewith

—

Have the Auxiliary Engines been constructed under special survey

—

Is it fitted with a watertight door

—

worked from

—

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

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)

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

1 set. Propeller, 1 Cyl. liner & packed Campbell, 1 main piston head & rings, 2 (each) Side & Central top & bottom end bearing bolts & nuts, 2 main bearing slide & nut, 1 set. Coupling bolts & nuts, 4 fuel valves complete, 1 N.R. air starting valve, 1 Cyl. relief valve, 4 discharge pumps 1/2 inch, 1 fuel pump body bolt & nut, 1 full crank pin valve & tappet, 3 rubber hoses for upper piston cooling system, 6 links roller chain for camshaft drive, 1 set. Mitchell pads for thrust, 3 dials for lub. shaft & main shaft bearings

The foregoing is a correct description

WILLIAM DOXFORD & SONS, Limited.

Wm. J. Purdie

Manufacturer.

Dates of Survey while building
During progress of work in shops - 1945. Jan. 23, 24, 25, 26, 30, Feb. 5, 9, 19, Apr. 4, 10, 13, 16, 17, 18, 19, 20, 23, 25, 27, May 1, 4, 10, 17, 18, 23, 25, 28, 29, 30, 31, June 1, 5, 6, 7, 12, 13, 19, 20, 21, 22, 25, July 9, 18, Sept. 4, 28, Oct. 2.
During erection on board vessel -
Total No. of visits

Dates of Examination of principal parts - Cylinders 9/2/45, 4/4/45, Covers 28/5/45, 28/5/45, Pistons 29/5/45, Rods 29/5/45, Connecting rods 31/5/45

Crank shaft 23/5/45, Flywheel shaft 20 crank, Thrust shaft 20 crank, Intermediate shafts 25/6/45, Tube shaft -

Screw shaft 25/6/45, Propeller 25/6/45, Stern tube 12/6/45, 19/6/45, Engine sealings (Pank lip) 4/9/45, Engines holding down bolts 4/9/45

Completion of fitting sea connections 19/6/45, Completion of pumping arrangements 9/10/45, Engines tried under working conditions 28/9/45

Crank shaft, Material Super Steel, Identification Mark N° 245 N.H.F., Flywheel shaft, Material 20 crank, Identification Mark 20 crank

Thrust shaft, Material 20 crank, Identification Mark 20 crank, Intermediate shafts, Material Super Steel, Identification Marks N° 14338-527, N.H.F. 25/6/45

Tube shaft, Material - Identification Mark - Screw shaft, Material Super Steel, Identification Mark N° 14338-526, N.H.F. 25/6/45

Identification Marks on Air Receivers K. 1448/9, L.R. 21921, L.C.D. 25/4/45

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 in. 1.5 in. fire hose for steam led around ER & Blk. 8-2 full. Contaminant for

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

(Tanker)

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. Specification & the rules of the Society. The materials & workmanship are good. It has been secured fitted on board the vessel & tried under working conditions alongside Qu with satisfactory results. The two donkey boilers have also been securely fixed on board the vessel, fitted to burn oil fuel (F.P. above 150° F.). Section 20 of the rules has been complied with & safety valves adjusted to working pressure in accordance with rule requirements.

The machinery is eligible in our opinion to have notation 10.45 (oil Eng.) T.S. (CL) 2 DB 150 H.P.

The amount of Entry Fee .. £ 6 : : When applied for,

Special Specification .. £ 100 : 16 : : When received,

Donkey Boiler Fee .. £ 25 : 4 : : 19.

Travelling Expenses (if any) .. £ 12 : 12 : : 19.

Committee's Minute

FRI. 16 NOV 1945

Assigned + LMC 10.45 Oil Eng.

C.L. 2 D.B. 150 H.P.

Engineer-Surveyor to Lloyd's Register of Shipping.



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