

Rpt. 4b.

5 APR 1946

REPORT ON OIL ENGINE MACHINERY.

No 34436

Received at London Office

3 APR 1946

Date of writing Report

When handed in at Local Office

29th 1946 Port of

No. in Survey held at
Reg. Book

Date, First Survey 19 Feb. 45 Last Survey 26 June 1946

Number of Visits 77

on the Single
Triple Screw vesselBRITISH MAJORTons Gross 8564
Net 4908Built at Sunderland

By whom built

W. Beaford & Sons Ltd.Yard No. 134When built 1946Engines made at Sunderland

By whom made

W. Beaford & Sons Ltd.Engine No. 134When made 1946Donkey Boilers made at Stockton

By whom made

Stockton Chem. Eng. & Ship. Bldg. Co. Ltd.Boiler No. 6923/4When made 1946Brake Horse Power 3100

Owners

British Tanker Co. Ltd.

Port belonging to

LondonNom. Horse Power as per Rule 684

Is Refrigerating Machinery fitted for cargo purposes

no.

Is Electric Light fitted

Yes.

Trade for which vessel is intended

91/5

OIL ENGINES, &c.—Type of Engines

Opposed piston and injection 2 or 4 stroke cycleSingle or double acting Single

Maximum pressure in cylinders

640 lb/sq. in.

Diameter of cylinders

23 3/8 in.

Length of stroke

upper 980 mm

No. of cylinders

4

No. of cranks

4 (3 throws)

Mean Indicated Pressure

85 lb/sq. in.

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

886 mm

Is there a bearing between each crank

Between each 3 throws

Revolutions per minute

105

Flywheel dia.

F. 1690 mm

Weight

A. 326 lbs.

Means of ignition

Champion

Kind of fuel used

—Crank Shaft, Solid forged
Semi built
All built

dia. of journals

as per Rule 431 mm

Crank pin dia.

450 mm

Crank Webs

Mid. length breadth 650 mm

Thickness parallel to axis

255 mm

Flywheel Shaft, diameter

as per Rule 431 mm

Intermediate Shafts, diameter

as per Rule 450 mm

Thrust Shaft, diameter at collars

as per Rule 431 mm

as fitted

450 mm

Tube Shaft, diameter

as per Rule

Screw Shaft, diameter

as per Rule 450 mm

Is the tube

screw

shaft fitted with a continuous liner

Yes.

Bronze Liners, thickness in way of bushes

as per Rule 22 mm

Thickness between bushes

as fitted 14 mm

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

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

5'-8"

Propeller, dia.

16'-3"

Pitch

11'-9"

No. of blades

4

Material

Bronze

whether Moveable

no.

Total Developed Surface

93

sq. feet

Method of reversing Engines

Hand lever

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

Yes.

Means of lubrication

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

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 engine driven

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

one steam driven(F.W. cooling)

Can one be overhauled while the other is at work

—

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" (duplex)

How driven

SteamBallast 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 10"

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

Yes.one engine driven8" x 4" x 18"one steam driven110" x 510"

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

Yes.

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

2 @ 3 1/2" x 4" E.R.1-6" hull suctioneachIn Pump Room 4" P.S.

Pumps, No. and size:—In Machinery Spaces

(Lanker)

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

1 @ 8" (Ballast)1-6" (G.S.)1-4" main enginecooling pumps—

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

Yes.

Are the Bilge Suctions in the Machinery Spaces

Yes.Both

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

Yes.

Are they fitted with Valves or Cocks

Yes.Below.

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

Yes.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.Below.

What pipes pass through the bunkers

none

How are they protected

—

Have they been tested as per Rule

Yes.—

What pipes pass through the deep tanks

none

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

Yes.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

(Lanker)

Is the Shaft Tunnel watertight

none

Is it fitted with a watertight door

—worked from

Main Air Compressors, No.

Two

No. of stages

Three

Diameters

12 3/4"-3", 12 3/4"-10 1/2"-3"

Stroke

4"

Auxiliary Air Compressors, No.

—

No. of stages

—

Diameters

—

Stroke

—

Small Auxiliary Air Compressors, No.

—

No. of stages

—

Diameters

—

Stroke

—

What provision is made for first Charging the Air Receivers

(Steam driven compressor)

Scavenging Air Pumps, No.

Two

Diameter

1510 mm

Stroke

510 mm

Auxiliary Engines crank shafts, diameter

as per Rule

No.

—

Position

——

Have the Auxiliary Engines been constructed under special survey

—

Is a report sent herewith

———

AIR RECEIVERS: - Have they been made under survey *Yes.*
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 and cleaned *Yes.*
Is a drain fitted at the lowest part of each receiver *Yes.*

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 Actual -
Starting Air Receivers, No. *Two* Total cubic capacity *280 Cuft.* Internal diameter *4'-6"* thickness *1 1/4"*
Seamless, lap welded or riveted longitudinal joint *Riveted* Material *m/Steel* Range of tensile strength *28/32* Working pressure by Rules Actual *600 lb.*

IS A DONKEY BOILER FITTED? *Yes.* If so, is a report now forwarded? *Yes.*
Is the donkey boiler intended to be used for domestic purposes only *No.*

PLANS. Are approved plans forwarded herewith for Shafting *Retained for Sister vessels*
(If not, state date of approval) *1/5/45* *Line 1803* Receivers *23/1/45*
Donkey Boilers *Retained for Sister vessels.* General Pumping Arrangements *Retained for Sister vessels.* Separate Fuel Tanks
Oil Fuel Burning Arrangements *Retained for Sister vessels.* Pumping Arrangements in Machinery Space *Retained for Sister vessels.*

SPARE GEAR.
Has the spare gear required by the Rules been supplied *Yes.*

State the principal additional spare gear supplied *Cylinders liner Complete with jacket, 1 upper & 1 lower piston skirt, 4 scrap rings, 1 main piston head, 40 main piston rings, 4 fuel valves complete, 8 spray plugs, 1 central cam rod belt end spherical bearing, 2 side cam rod belt end spherical bearings, 1 main (spherical) bearing, 2 main bearing studs & nuts, 4 centre & side (rod) top & belt end bearing nuts & bolts, 2 side rod studs, 1 set coupling bolts & nuts, 2 N.R. air starting valves, 2 G.L. relief valves, 1 fuel pump & fuel chamber & fuel pump & fuel chamber complete with valves, 1 seawater pump delivery valve, 1 ditto for suction, 1 set of propeller & tail shaft & nut, 8 rubber hoses for piston cooling, 1 roller chain for camshaft drive, 1 C.I. propeller & tail shaft & nut, 3 sets for int. shaft bearings, 3 ditto tail shaft bearing.*
The foregoing is a correct description,
WILLIAM DOXFORD & SONS, Limited. Manufacturer.

Wm. Doxford & Sons, Limited.
Dates of Survey while building
During erection on board vessel - *Aug 9, 10, 12, 17, 21, 23, 28, 29, 30, 31, Sep 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 17, 18, 19, 20, 21, 25, 26, 27, Oct 2, 23, 25, Nov 6, 22, 30, Dec 3, 6, 10, 12, 13, 27, 31, Jan 1, 17, 31, Feb 6, 7, 8, 11, 12, 13, 18, 27, Mar 4, 6, 26*
Total No. of visits *77*
Dates of Examination of principal parts - Cylinders *12/4/45, 13/4/45, 14/4/45* Covers *19/7/45* Pistons *20/8/45* Rods *20/8/45* Connecting rods *31/8/45*
Crank shaft *13/8/45* Flywheel shaft *as crank* Thrust shaft *as crank* Intermediate shafts *20/9/45* Tube shaft -
Screw shaft *12/12/45* Propeller *12/12/45 & (LON)* Stern tube *6/12/45, 10/12/45* Engine sealings *(Junk top)* Engines holding down bolts *18/2/46*
Completion of fitting sea connections *30/11/45* Completion of pumping arrangements *26/3/46* Engines tried under working conditions *26/3/46*
Crank shaft, Material *Inf. Steel* Identification Mark *N° 434 W.H.F.* Flywheel shaft, Material *as crank* Identification Mark *as crank*
Thrust shaft, Material *as crank* Identification Mark *as crank* Intermediate shafts, Material *Inf. Steel* Identification Marks *N° 9258 T. 941 W.H.F. 20/9/45*
Tube shaft, Material - Identification Mark - Screw shaft, Material *Inf. Steel* Identification Mark *N° 9261 T. 943 W.H.F. 12/12/45*
Identification Marks on Air Receivers *K. 1854 / 5*
L.R. 22036
A.R.R. 31/10/45.

Is the flash point of the oil to be used over 150° F. *Yes.*
Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *Yes.*
Description of fire extinguishing apparatus fitted *2 1/2" pipe led across furnace ports & between boilers for fighting & spraying.*
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 *Not desired.*
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.) *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 fixed on board the vessel & tried under working conditions alongside quay & also at sea with satisfactory results. The two donkey boilers have also been securely fixed on board, fitted to burn oil fuel (F.P. above 150°F) & safety valves adjusted under steam to working pressure in accordance with rule requirements. Section 20 of the rules has been complied with. The machinery is eligible in my opinion to have notation 0% L.M.C. 3.46 (oil Eng.) T. 3 (C.I.) 2 DB 150 lbs.*
Springograph records approved 18/4/46.

The amount of Entry Fee .. £ *6*
Special £ *109* 4/2
Donkey Boiler Fee .. £ *12* 12/12
Travelling Expenses (if any) £
When applied for, *8 MAR 1946*
When received,

Committee's Minute *FRI. 10 MAY 1946*
Assigned *+ L.M.C. 3.46*