

REPORT ON OIL ENGINE MACHINERY.

No. 32584

MAR -4 1939

Received at London Office

Date of writing Report

When handed in at Local Office

- 1 MAR 1939

Port of

Sunderland.

No. in Survey held at

Sunderland.

Date, First Survey

3rd Aug 38 Last Survey 28 Feb 1939

Reg. Book.

Number of Visits 88

Single
on the Twin
Triple
Quadruple

Screw vessel

"BRITISH LIBERTY"

Tons

Gross

Net

Built at Haverton Hill - n. Des.

By whom built

J.A.D. Hughes S.B. Co Ld.

Yard No. 284

When built

1939

Engines made at Sunderland

By whom made

Wm. Bayford & Sons Ld.

Engine No. 209

When made

1939.

Donkey Boilers made at Stockton

By whom made

Stockton Chem. Engs. & Ship. Bldg.

Boiler No. 6295/6

When made

1938.

Brake Horse Power 2850

Owners

British Tanker Co Ld.

Port belonging to

London.

Nom. 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

23 5/8

9 1/2

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 5 1/2 lbs/sq. in. Diameter of cylinders 600 mm. Length of stroke Upper 980 mm. Lower 1340 mm. No. of cylinders 4 No. of cranks 4 (3 throws)

Mean Indicated Pressure 8 1/2 lbs/sq. in. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 940 mm. Is there a bearing between each crank Between each 3 throws.

Revolutions per minute 94. Flywheel dia. 2050 mm. Weight 2450 mm. Means of ignition Compression Kind of fuel used

Crank Shaft, dia. of journals as per Rule 425 mm. as fitted 450 mm. Crank pin dia. 450 mm. Crank Webs Mid. length breadth 650 mm. Thickness parallel to axis 255 mm. Mid. length thickness 255 mm. Thickness around eye hole 200 mm.

Flywheel Shaft, diameter as per Rule 425 mm. as fitted 450 mm. Intermediate Shafts, diameter as per Rule 326 mm. as fitted 430 mm. Thrust Shaft, diameter at collars as per Rule 425 mm. as fitted 450 mm.

Tube Shaft, diameter as per Rule 361.5 mm. as fitted 430 mm. Is the screw shaft fitted with a continuous liner Yes.

Bronze Liners, thickness in way of bushes as per Rule 18.6 mm. as fitted 21 mm. Thickness between bushes as per Rule 14 mm. 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

Propeller, dia. 16'-9" Pitch 12'-3" No. of blades 4 Material Bronze whether Moveable No. Total Developed Surface 99.8 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 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 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 one steam driven 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. none Diameter Stroke Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line No. and Size 1 @ 10" x 12" x 10" Duplex. 2 @ 4" x 8" x 8" Duplex. How driven Steam

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 one main engine driven 100 mm x 610 mm. one steam driven 4" x 8" x 18"

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 1 @ 6" aft hull, 3 1/2" Ø RS. (for 2nd). In Pump Room For 1 @ 2" MAIN 2 @ 4"

In Holds, &c. (Tanker) Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 8" (Ballast), 1 @ 6" (aft)

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 Both.

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 Both.

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 no tunnel 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 12 3/4" - 10 1/2" - 3" 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

Scavenging Air Pumps, No. One Diameter 1960 mm. Stroke 610 mm. Driven by Levers from main engine

Auxiliary Engines crank shafts, diameter as per Rule as fitted No. Position

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes (on discharge from compressors)*

Can the internal surfaces of the receivers be examined and cleaned *Yes.* Is a drain fitted at the lowest part of each receiver *Yes.*

High Pressure 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. *Two.* Total cubic capacity *280 cu ft.* 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 *600 lbs/sq. in.*

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 *Yes.* Receivers *Yes.* Separate Fuel Tanks *Yes.*

Donkey Boilers *Yes.* General Pumping Arrangements *Yes.* Pumping Arrangements in Machinery Space *Yes.*

Oil Fuel Burning Arrangements *Yes.*

SPARE GEAR.

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

State the principal additional spare gear supplied *One Screw Shaft, one Cast iron Propeller, one Cylinder liner Complete,*

one Starting air return Valve Complete, one Cyl. relief Valve Complete, 4 Scavenge pump Suct. valves half dozen, 2 fuel pump bodies Complete with Valves, one inter. crosshead with Stent & nuts, 1 bull crank lever with Suct. tappet for fuel pump, 4 fuel valves Complete, one main piston head, one upper & lower piston skirt, one roller chain for Cam shaft drive, 1 Set each size of valves for main engine & indep. pumps, 1 Set each inchell Block, 8 spray plugs, 2 each top & side end bolts for Side & Centrl. Conn. rods, 1 Centrl. & 1 Side Conn. rod spherical bearing & 2 Centrl. & 2 Side Conn. rod top end bearings.

The foregoing is a correct description,

WILLIAM DOXFORD & SONS, Limited.

Manufacturer.

Dates of Survey while building
During progress of work in shops—*1938 Aug. 2, 17, 22, Sep. 1, 6, 7, 9, 12, 19, 26, 27, 30, Oct. 3, 4, 5, 6, 7, 11, 12, 13, 17, 18, 19, 20, 21, 24, 26, 27, Nov. 1, 2, 4, 8, 9, 10, 14, 16,*
During erection on board vessel—*22, 23, 24, 28, 29, 30, Dec. 1, 5, 7, 8, 9, 12, 13, 14, 15, 16, 19, 20, 21, 22, 23, 29, Jan. 3, 4, 5, 6, 7, 11, 12, 13, 16, 17, 18, 19, 20, 23, 25, 26, 27, 30, 31,*
Total No. of visits *88*

Dates of Examination of principal parts—Cylinders *14/10/38* Covers *9/11/38* Pistons *8/12/38* Rods *8/12/38* Connecting rods *8/12/39*

Crank shaft *20/12/38 (Duc.)* Flywheel shaft *as crank* Thrust shaft *as crank* Intermediate shafts *18/10/38* Tube shaft *✓*

Screw shaft *9/12/39* Propeller *24/11/38* Stern tube *8/11/38* Engine seatings *(Bank top)* Engines holding down bolts *6/2/39*

Completion of fitting sea connections *21/12/38 (M60)* Completion of pumping arrangements *28/2/39* Engines tried under working conditions *28/2/39*

Crank shaft, Material *Infot. Steel* Identification Mark *Nos 4496 4494 4498* Flywheel shaft, Material *as crank* Identification Mark *as crank*

Thrust shaft, Material *Infot. Steel* Identification Mark *as crank* Intermediate shafts, Material *Infot. Steel* Identification Marks *Nos 13240 WNF 18/10/38*

Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *Infot. Steel* Identification Mark *Nos 13298 W.H.F. 9/12/39*

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.*

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *(Yanker)* 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 *Yes.* If so, state name of vessel *M/V "BRITISH GENIUS"*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been*

built under Special Survey in accordance with the Rules of the Society & the Secretary's

letters. The materials & workmanship are good. It has been securely

fitted on board the vessel & tried under full working conditions at sea,

including rule requirements for starting, with satisfactory results. The two

donkey boilers have also been securely fixed on board, fitted to burn oil fuel

(F.P. above 150° F.), Section 20 of the Rules has been complied with, Safety valves

of boilers adjusted to working pressure in accordance with rule requirements.

The machinery is eligible in my opinion to have notation

25 LMC 2.39 (oil sup.) T.S. (CL) 2 DB 150 lbs/sq. in.

The amount of Entry Fee .. £ 6 : - :
Special *hull & boiler* .. £ 109 : 4 :
Donkey Boiler Fee .. £ 12 : 12 :
Duplicate Cert (50%) .. £ 5 : - :
Travelling Expenses (if any) £ : :
When applied for, *1 MAR 1939*
When received, *3 MAR 1939*

Committee's Minute *TUE 7 MAR 1939*

Assigned *+ LMC 2.39 Oil Eng*

25 LMC 2.39 Oil Eng

W. H. F.

Engineer Surveyor to Lloyd's Register of Shipping.



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