

Newcastle-on-Tyne 95139

Rpt. 4b.

# REPORT ON OIL ENGINE MACHINERY.

No. 32077

Received at London Office MAY - 4 1937

Date of writing Report

19 When handed in at Local Office

- 3 MAY 1937

Port of

Sunderland

No. in Survey held at  
Reg. Book.

Sunderland

Date, First Survey

30 Dec 36

Last Survey

28 Apr 1937

Number of Visits 5

on the <sup>Single</sup> ~~Twin~~ ~~Triple~~ ~~Quadruple~~ Screw vessel

M.V. "BRITISH DILIGENCE"

Tons { Gross 8297  
Net 4935

Built at

Newcastle

By whom built

L. D. Swan Hunter, Threlkeld & Co. Ltd. Yard No. 1508

When built 1934

Engines made at

Sunderland

By whom made

Wm. Bayford & Sons Ltd.

Engine No. 194

When made 1934

Donkey Boilers made at

By whom made

Boiler No.

When made

Brake Horse Power 2850

Owners

British Tanker Co. Ltd.

Port belonging to

Nom. Horse Power as per Rule 684

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

Trade for which vessel is intended

## OIL ENGINES, &c.

Type of Engines

Approved piston oilless injection 2 or 4 stroke cycle 2

Single or double acting

Single

Maximum pressure in cylinders

540 lb/sq. in.

Diameter of cylinders

600 in.

Length of stroke

Upper 980 in.

No. of cylinders

4

No. of cranks

4

Mean Indicated Pressure

84 lb/sq. in.

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

94

Flywheel dia.

FOR 2050 in.

Weight

F. 62 cwt.

Means of ignition

Compression

Kind of fuel used

Temperature

Crank Shaft, dia. of journals

as per Rule 425 in.

as fitted 450 in.

Crank pin dia.

450 in.

Crank Webs

Mid. length breadth

650 in.

Thickness parallel to axis

255 in.

Flywheel Shaft, diameter

as per Rule 425 in.

as fitted 450 in.

Intermediate Shafts, diameter

as per Rule

as fitted

Thrust Shaft, diameter at collars

as per Rule

as fitted 425 in.

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

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

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

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

Length of Bearing in Stern Bush next to and supporting propeller

Propeller, dia. Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet

Method of reversing Engines Hand lever. Is a governor or other arrangement fitted to prevent racing of the engine when disengaged

Thickness of cylinder liners 25 in. Are the cylinders fitted with safety valves

Cooling Water Pumps, No. Is the sea suction provided with an efficient strainer which can be cleared within the vessel

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 How driven

Is the cooling water led to the bilges 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 Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size

Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Machinery Spaces In Pump Room

In Holds, &c.

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

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

Are they fitted with Valves or Cocks

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

Are the Overboard Discharges above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel

Are the Blow Off Cocks fitted with a spigot and brass covering plate

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

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

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. 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 in. Stroke 610 in. Driven by

Auxiliary Engines crank shafts, diameter as per Rule as fitted Position



004755 - 004760 - 0134

**AIR RECEIVERS:**—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. Is a drain fitted at the lowest part of each receiver

**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 Actual

**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?**

Is the donkey boiler intended to be used for domestic purposes only? If so, is a report now forwarded?

**PLANS.** Are approved plans forwarded herewith for Shafting 20/11/35 Receivers ..... Separate Fuel Tanks .....  
 (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? Yes

State the principal additional spare gear supplied One cylinder liner & jacket Complete, one starting air non-return valve Complete, one cyl. relief valve Complete, 4 Scavenge pump Suct. & del. valve discs (halves), two fuel pump handles Complete with Suct. & del. valves, one intermediate crosshead with Strut & nut, 1 hull crank liner & ducting tappet for fuel pump, four fuel valves Complete, 1 roller Chain for Camshaft drive.

The foregoing is a correct description.  
**WILLIAM DOXFORD & SONS, Limited.**

*W. M. Miller* ..... Manufacturer.  
 Director.

Dates of Survey while building: During progress of work in shops - - 1936. Dec. 10. 1937. Jan. 5, 7, 12, 15, 19, 21, 22, 25, 26, 28, 29. Feb. 1, 2, 4, 5, 8, 9, 12, 15, 17, 18, 23, 24, 25. Mar. 1, 9, 15. During erection on board vessel - - 11, 12, 15, 16, 17, 18, 19, 22, 23, 25, 31. Apr. 2, 4, 8, 9, 12, 13, 14, 15, 16, 19, 20, 21, 22, 23, 28. Total No. of visits 54

Dates of Examination of principal parts—Cylinders 7/1/34 12/1/34 Covers ✓ Pistons 14/4/34 16/4/34 14/4/37 16/4/34 Connecting rods 9/4/34  
 Crank shaft 9/4/34 Flywheel shaft as crank Thrust shaft as crank Intermediate shafts 14/4/34 20/4/34 14/4/37 20/4/34 Tube shaft  
 Screw shaft ..... Propeller ..... Stern tube ..... Engine sealings ..... Engines holding down bolts

Completion of fitting sea connections ..... Completion of pumping arrangements ..... Engines tried under working conditions  
 Crank shaft, Material Engot Steel Identification Mark N° 11482 JL. Flywheel shaft, Material as crank Identification Mark as crank.  
 Thrust shaft, Material as crank. Identification Mark as crank. Intermediate shafts, Material ..... Identification Marks  
 Tube shaft, Material ..... Identification Mark ..... Screw shaft, Material ..... Identification Mark

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 .....  
 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? Yes. If so, state name of vessel M/V "BRITISH FAME"  
**General Remarks** (State quality of workmanship, opinions as to class, &c.) This machinery has been built under Special Survey in accordance with the Rules of the Society & the Secretary's letter E 25/4/34.

The materials & workmanship are good.  
The engine has been tried under full load conditions on the test bed with satisfactory results & has been despatched to Messrs. Swan Hunter & Wigham Richardson Ltd. of Wallsend for installation on board the vessel, after which it will be eligible, in my opinion, to have notation <sup>1/2</sup> LMC (with date) oil fuel in the Register Books.  
These engines have been satisfactorily installed on board & tried under working conditions at Newcastle on Tyne 10th June 1937.

The amount of Entry Fee .. £ 6 : - :  
 4/5 Special ... .. £ 84 : 10 :  
 Hulled tonnage ..... £ 12 : 12 :  
 Donkey Boiler Fee .....  
 Travelling Expenses (if any) £ .....  
 Committee's Minute

When applied for, **3 MAY 1937**  
 When received, **FRI 18 JUN 1937**

*J. St. Fraser*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Assigned See NWC. FE. 95789



SUNDERLAND