

# REPORT ON OIL ENGINE MACHINERY.

No. 32560

JAN 18 1939

Received at London Office

Date of writing Report 19 When handed in at Local Office 16 Jan 1939 Port of Sunderland.  
 No. in Survey held at Sunderland Date, First Survey 11 Jan '38 Last Survey 14 Jan 1939.  
 Reg. Book. Number of Visits 87

on the Single Screw vessel **"BRITISH GENIUS"** Tons Gross 8553 Net 4961  
 Built at Sunderland By whom built Wm Leyford & Sons Ld Yard No. 644 When built 1939  
 Engines made at Sunderland By whom made Wm Leyford & Sons Ld Engine No. 644 When made 1939.  
 Donkey Boilers made at Stoecton. By whom made Stockin Blm Eng. & Riley Bld Ld Boiler No. 6293 When made 1938.  
 Brake Horse Power 2850 Owners British Tanker Co Ld Port belonging to London.  
 Nom. Horse Power as per Rule 687 Is Refrigerating Machinery fitted for cargo purposes no. Is Electric Light fitted Ylo.  
 Trade for which vessel is intended 7358 915

**OIL ENGINES, &c.** Type of Engines Opposed piston airless injection or 4 stroke cycle 2 Single or double acting Single  
 Maximum pressure in cylinders 540 lbs/sq in Diameter of cylinders 600 in Length of stroke Upper 980 in No. of cylinders 4 No. of cranks 4 (3 throw)  
 Mean Indicated Pressure 84 lbs/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 throw  
 Revolutions per minute 94 Flywheel dia. FOR 2050 in Weight 62 cwt Means of ignition Compression Kind of fuel used Temperature  
 Crank Shaft, dia. of journals as fitted 425 in Crank pin dia. 450 in Crank Webs as fitted 326 Mid. length breadth 650 in Thickness parallel to axis 255 in  
 Flywheel Shaft, diameter as fitted 425 in Intermediate Shafts, diameter as fitted 430 in Thrust Shaft, diameter at collars as fitted 450 in  
 Tube Shaft, diameter as per Rule 361.5 Screw Shaft, diameter as fitted 430 in Is the screw shaft fitted with a continuous liner Ylo.  
 Bronze Liners, thickness in way of bushes as per Rule 18.6 in Thickness between bushes as per rule 14 in Is the after end of the liner made watertight in the propeller boss Ylo.  
 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 Ylo.  
 If two liners are fitted, is the shaft lapped or protected between the liners Ylo. Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft no.  
 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 Ylo. Means of lubrication Hand forced  
 Thickness of cylinder liners 25 in Are the cylinders fitted with safety valves Ylo. Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Ylo.  
 Cooling Water Pumps, No. one engine driven Is the sea suction provided with an efficient strainer which can be cleared within the vessel Ylo.  
 Bilge Pumps worked from the Main Engines, No. none Diameter 1 @ 10" x 12" x 10" duplex Stroke 2 @ 4" x 8" x 8" duplex Can one be overhauled while the other is at work Ylo.  
 Pumps connected to the Main Bilge Line } No. and Size 1 @ 10" x 12" x 10" 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 Ylo.  
 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 in x 610 in  
 Are two independent means arranged for circulating water through the Oil Cooler Ylo. Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size one steam driven 4" x 8" x 18"  
 Pumps, No. and size: In Machinery Spaces 1 @ 8", 2 @ 6", 3 1/2 @ 8" (for 2nd) In Pump Rooms FOR 1 @ 2" MAIN 2 @ 4"  
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 8" (Ballast) 2 @ 6" (Bilge Sanitary Pumps)  
 Are all the Bilge Suction pipes in Holds and Tunnels Well fitted with strum-boxes Ylo. 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 Ylo.  
 Are all Sea Connections fitted direct on the skin of the ship Ylo. 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 Ylo. Are the Overboard Discharges above or below the deep water line Above & below.  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Ylo. Are the Blow Off Cocks fitted with a spigot and brass covering plate Ylo.  
 What pipes pass through the bunkers none How are they protected Ylo.  
 What pipes pass through the deep tanks none Have they been tested as per Rule Ylo.  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Ylo.  
 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) no tunnel Is it fitted with a watertight door Ylo. worked from Ylo.  
 If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Ylo.  
 Main Air Compressors, No. two No. of stages three Diameters 12 3/4" - 10 1/4" - 3" Stroke 7" Driven by Steam engine  
 Auxiliary Air Compressors, No. Ylo. No. of stages Ylo. Diameters Ylo. Stroke Ylo. Driven by Ylo.  
 Small Auxiliary Air Compressors, No. Ylo. No. of stages Ylo. Diameters Ylo. Stroke Ylo. Driven by Ylo.  
 Scavenging Air Pumps, No. one Diameter 1960 in Stroke 610 in Driven by Levers from main engine.  
 Auxiliary Engines crank shafts, diameter as per Rule No. Ylo. Position Ylo.

**AIR RECEIVERS:**—Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes. On discharge from Compressor.*

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 *✓* Actual *✓*

**Starting Air Receivers, No.** *Two.* Total cubic capacity *280 cuft.* Internal diameter *4'-6"* thickness *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* Actual *600 lbs/sq in*

**IS A DONKEY BOILER FITTED?** *Yes (Two).* If so, is a report now forwarded? *Yes.*

Is the donkey boiler intended to be used for domestic purposes only? *no.* Receivers *Yes.* Separate Fuel Tanks *Yes.*

**PLANS.** Are approval plans forwarded herewith for Shafting *Yes.* (If not, state date of approval) Pumping Arrangements in Machinery Space *Yes.*

Donkey Boilers *Yes.* General Pumping Arrangements *Yes.* Oil Fuel Burning Arrangements *Yes.*

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied *Yes (To latest requirements).*

State the principal additional spare gear supplied *One Screw shaft, one Cast iron Propeller, one cylinder lens & jacket.*

*One Starting air non return valve complete, one Cyl. relief valve complete, 4 Scavenge pump half discs,*

*2 fuel pump bodies complete with Suct. & del. valves, one intermediate crosshead with Stud & nuts, 1 bell*

*crank pin & Suct. tappet for fuel pump, four 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 & donkey*

*pumps, 1 set pads for michell block, 8 spray plugs, 2 (each) top & bottom end bolts for side & centre conn rods,*

*1 side conn. rod spherical bearing & 2 centre & side conn. rod top end bearings.*

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

*W. Miller* Director.

Dates of Survey while building: During progress of work in shops-- *38. Jan. 11, 18. Apr. 5, 26. May. 10, 25, 26, 27. June 3, 8, 9, 15, 16, 17, 21, 22, 24, 29, 30. July 1, 5, 8, 12, 15, 18, 21, 22. Aug 3, 4.*

During erection on board vessel-- *17, 22, 26, 31. Sep. 6, 8, 9, 12, 13, 14, 15, 16, 19, 21, 22, 23, 26, 27, 28, 29, 30. Oct. 3, 4, 5, 6, 7, 14, 17, 18. Nov. 2, 14, 17, 18, 21, 22, 23, 24, 25, 28, 29. Dec. 1, 2, 5, 7, 8, 9, 13, 15, 16, 17, 21, 22, 30. 1939. Jan. 3, 4, 5, 14.*

Total No. of visits *87*

Dates of Examination of principal parts—Cylinders *5/4/38 26/4/38* Covers *✓* Pistons *22/8/38 26/8/38* Rods *22/8/38 26/8/38* Connecting rods *14/9/38 28/9/38*

Crank shaft *26/9/38 & Gls.* Flywheel shaft *as crank.* Thrust shaft *as crank.* Intermediate shafts *18/10/38* Tube shaft *✓*

Screw shaft *14/10/38.* Propeller *5/10/38.* Stern tube *22/9/38 30/9/38* Engine seating *(Tank top.)* Engines holding down bolts *1/12/38.*

Completion of fitting sea connections *2/11/38* Completion of pumping arrangements *14/1/39.* Engines tried under working conditions *14/1/39.*

Crank shaft, Material *Ingot Steel* Identification Mark *S.O. 4520 L.C.D. 29/8/38* 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° 13202 W.N.F. 18/10/38*

Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *Ingot Steel* Identification Mark *N° 13294 W.N.F. 14/10/38*

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 *(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 *Yes.* If so, state name of vessel *M/V "BRITISH FAME" etc.*

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. The machinery 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 reliable in my opinion to have notation*

*2 1/2 L.N.C. 1.39 (oil eng) T.S. (CL) & DB 150 lbs/sq in.*

The amount of Entry Fee .. £ 6 : - : When applied for, *4 JAN 1939*

Special ... .. £ 109 : 4 : When received, *7 JAN 1939*

Donkey Boiler Fee *held up* .. £ 12 : 12 : *7 JAN 1939*

Traveling Expenses (if any) .. £ 5 : - : *FRI 20 JAN 1939*

Committee's Minute

Assigned *+ LMC 1.39 CL Oil Eng*

*2DB 150 lb*

*W. Miller* Engineer Surveyor to Lloyd's Register of Shipping.

*W. Miller*

*W. Miller*</