

## REPORT ON OIL ENGINE MACHINERY.

Mach No 17449.

Std. No 33292

Date of writing Report

19

When handed in at Local Office

15 JAN 1942

Port of

Received at London Office

16 JAN 1942

No. in Survey held at  
Reg. Book.

SUNDERLAND.

Date, First Survey

Sunderland.

30 April 1943

Number of Visits 29

Tons Gross 5845  
Net 3164Single  
on the ~~Triple~~ Screw vessel

M.V. "British Purpose"

Built at Harveston HillBy whom built Furness S.B. Co Ld.Yard No. 348 When builtEngines made at SunderlandBy whom made Wm. Leachford & Sons Ld.Engine No. 221 When made 1942.

Donkey Boilers made at

By whom made

Boiler No. When made

Brake Horse Power 2500Owners British Tanker Co Ltd.Port belonging to LondonNom. Horse Power as per Rule 516

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

Trade for which vessel is intended

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 mm. Length of stroke upper 980 mm. No. of cylinders 3 No. of cranks 3 (3 throws)

Mean Indicated Pressure 88 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 108 Flywheel dia. F 2800 mm. Weight F 2.26 tons. Means of ignition Compression Kind of fuel used Heavy oil

Crank Shaft, { Solid forged dia. of journals as per Rule as fitted 418 mm. Crank pin dia. 450 mm. Mid. length breadth 308 mm. Thickness parallel to axis 255 mm.  
Semi built dia. of journals as per Rule as fitted 450 mm. Crank pin dia. 450 mm. Mid. length thickness 365 mm. Thickness around eye hole 200 mm.  
All built dia. of journals as per Rule as fitted 450 mm. Crank pin dia. 450 mm. Mid. length thickness 365 mm. Thickness around eye hole 200 mm.

Flywheel Shaft, diameter as per Rule as fitted 450 mm. Intermediate Shafts, diameter as per Rule as fitted 163/4" Thrust Shaft, diameter at collars as per Rule as fitted 450 mm.

Tube Shaft, diameter as per Rule as fitted 163/4" Screw Shaft, diameter as per Rule as fitted 163/4" Is the { tube shaft fitted with a continuous liner } Yes.  
screw shaft fitted with a continuous liner

Bronze Liners, thickness in way of bushes as per Rule as fitted 13/16" Thickness between bushes as per Rule as fitted 39/64" 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 Yes.

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 Yes. Is an approved Oil Gland or other appliance fitted at the after end of the tubeshaft No. If so, state type VariableLength of Bearing in Stern Bush next to and supporting propeller 5'10"Propeller, dia. 15'8" Pitch 11'3" mean No. of blades 4 Material Brass whether Moveable No. Total Developed Surface 86 sq. feetMethod of reversing Engines Hand lever Is a governor or other arrangement fitted to prevent racing of the engine when disconnected Yes. Means of lubricationforced Thickness of cylinder liners 25 mm. Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled or lagged withnon-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 Yes.Cooling Water Pumps, No. One Engine 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 One Ballast Pump, 10" x 11" x 10" 2. Bilge pumps 7" x 8" x 8" Lamont.  
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 pumpingarrangements 1" Bore to Bilges from Fuel Valve Cooling Tank. one Engine driven 85 mm x 610 mmBallast Pumps, No. and size 1 - 10" x 11" x 10" Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 - 1 1/2" x 1 1/2" x 1 1/2"Are two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both Main Bilge Pumps and Auxiliary BilgePumps, No. and size:—In Machinery Spaces 1 - 3 1/2" port & star. fwd. 5" direct star. In Pump Room —In Holds, &c. 1 - 3 1/2" after well suction. 8" direct Port.Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size one 8" direct port fwd. - at 5" direct star aft.Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes. Are the Bilge Suctions in the Machinery Spacesled 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 Box.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 BelowAre 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 — How are they protected —What pipes pass through the deep tanks — 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 Yes. Is it fitted with a watertight door 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 —Main Air Compressors, No. two No. of stages three Diameters 10 1/2 in. Strokes 6" Driven by Steam.Auxiliary Air Compressors, No. — No. of stages — Diameters — Stroke — Driven by —Small Auxiliary Air Compressors, No. — No. of stages — Diameters — Stroke — Driven by —What provision is made for first Charging the Air Receivers Steam driven compressor.Scavenging Air Pumps, No. one Diameter 1400 mm. Stroke 610 mm. Driven by Steam from Main EngineAuxiliary Engines crank shafts, diameter as per Rule as fitted — No. — Position —Have the Auxiliary Engines been constructed under special survey Yes. Is a report sent herewith Yes.

002830-002837-0219

Lloyd's Register  
Foundation

AIR RECEIVERS: - Have they been made under survey *Yes.* State No. of Report or Certificate *2198 - CERT. No. 1036*

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 *Yes.*

Is a drain fitted at the lowest part of each receiver *Yes.*

Injection Air Receivers, No. *1*

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. *2*

Total cubic capacity

Internal diameter

thickness

Seamless, lap welded or riveted longitudinal joint  *riveted*

Material  *steel*

Range of tensile strength  *28/32*

Working pressure

by Rules

IS A DONKEY BOILER FITTED? *Yes. 2.*

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.* 16/6/42

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 *Yes.*

State the principal additional spare gear supplied

*for main engine - 2 expt bearings for top & bott. Ends of conn. 2 cyl. liner & jacket complete, 1 main piston head & 24 rings, 2 (each) Cent. side Conn. rod top & bott. end bearing bolts & nuts, 2 Side rod (transverse end) bearing bolts & nuts, 2 Front & 2 Back fuel valves complete, 8 Spray plugs, 1 N.R. Starting valve complete, 1 Cyl. relief valve, 4 Scavenge pump half discs, 2 valve discs for each size Eng. driven pump, 1 fuel pump body, complete with delivery chamber, Suct. Valve, main & inter. crosshead w/ strut & bell crank lever, 1 Set Thrust pads, 1 roller chain for camshaft drive.*

The foregoing is a correct description, Limited.

*M. J. Keller*

Manufacturer.

Dates of Survey while building: During progress of work in shops - *21. Oct. 7. 8. 17. 19. 26. 27. 28. Dec. 1. 2. 3. 8. 9. 10. 11. 12. 15. 16. 17. 18. 19. 21. 24. 29. 30. 4. Jan. 26. 7. 8. 29*  
During erection on board vessel - *19. 4. 3. Feb. 16, 18, 19, 25, March 3, 10, 23, 26, April 6, 8, 16, 20, 21, 22, 27, 28, 30*  
Total No. of visits *17 + 29 = 46*

Dates of Examination of principal parts - Cylinders *2/12/41* Covers *16/12/41* Pistons *16/12/41* Rods *16/12/41* Connecting rods *23/12/41*  
Crank shaft *7/10/41* Flywheel shaft *as crank* Thrust shaft *as crank* Intermediate shafts *12/2/43* Tube shaft *✓*  
Screw shaft *12/2/43* Propeller *19/2/43* Stern tube *12/2/43* Engine seatings *25/2/43* Engines holding down bolts *8/4/43*  
Completion of fitting sea connections *18/2/43* Completion of pumping arrangements *27/4/43* Engines tried under working conditions *(TEST BED) 8/1/41*  
Crank shaft, Material *as crank* Identification Mark *as crank* Flywheel shaft, Material *as crank* Identification Mark *as crank*  
Thrust shaft, Material *as crank* Identification Mark *as crank* Intermediate shafts, Material *steel* Identification Marks *11803 HAI*  
Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *steel* Identification Mark *11804 HAI*  
Identification Marks on Air Receivers *No. 2198 C.B. 20/11/42*

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 *Steam, also "Phonix" fire extinguishers to comply with M.S. Statutory notice No. 2176.*

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 *No.* If so, state name of vessel *Contract No. 220.*

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. Specification & the rule of the Society. The materials & workmanship are good. The steel castings in the crankshaft are, so far as can be seen, sound.*

*The engine has been tried under full load conditions on the test bed with satisfactory results & has been despatched to Messrs. Richardson's heatgirth & Co. Ltd. for installation on board the vessel at the Shipbuilders' yard. On the satisfactory completion of which the machinery will be, in our opinion, eligible to have the notation "L.M.C. (with date) oil Eng." in the Register Book. The machinery fitted on board in accordance with the approved plans & Rule Requirements, tried on the working conditions & found satisfactory in our opinion is eligible for record of L.M.C. (oil eng) 4.43 & notation of TS (CL) 4.43. NOTE. Steam pipes of BESSEMER STEEL to be submitted for examination.*

The amount of Entry Fee *£ 6* : : When applied for, *15 Jan 1943*  
*2/3 Special Specification* *£ 6 1/4* : : *16 Mar 1943*  
*2/3 Donkey Boiler Fee* *£ 16* : :  
*Welded Constr.* *£ 12* : :  
*Travelling Expenses (if any)* *£ 12* : :  
*1/3 Special* *£ 33* : :  
Committee's Minute *£ 33* : :  
Assigned *+ LMC 4.43 CL*  
*2 DB 150 ll*

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