

Rpt. 4b.

## REPORT ON OIL ENGINE MACHINERY.

No. 95349

Received at London Office AUG 20 1937  
 Date of writing Report 17/8/37 When handed in at Local Office 18/8/37 Port of NEWCASTLE-ON-TYNE  
 No. in Survey held at Newcastle on Tyne Date, First Survey 23 Dec 1936 Last Survey 17/8/1937  
 Reg. Book. Number of Visits

on the <sup>Single</sup> ~~Triple~~ ~~Quadruple~~ Screw vessel "BRITISH RESOLUTION." Tons <sup>Gross</sup> 8298 <sup>Net</sup> 4936

Built at Newcastle By whom built Swan Hunter & W. Richardson Ltd Yard No. 1514 When built 1937  
 Engines made at Sunderland By whom made Wm Duxford & Sons, Ltd Engine No. 199 When made 1937  
 Donkey Boilers made at Newcastle By whom made Swan, Hunter & W. Richardson Ltd Boiler No. 1514 When made 1937  
 Brake Horse Power 2850 Owners British Tanker Co Port belonging to LONDON  
 Nom. Horse Power as per Rule 687 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
 Trade for which vessel is intended Ocean going, carrying petroleum in bulk 23 5/8 91 5/16

II. ENGINES, &c. Type of Engines Duxford opposed piston Airless 2 or 4 stroke cycle 2 Single or double acting Single  
 Maximum pressure in cylinders 570 lbs Diameter of cylinders 600 mm Length of stroke 1340 mm No. of cylinders 4 No. of cranks 4 three  
 Mean Indicated Pressure 84 lbs Flywheel dia. 25 ton ft<sup>2</sup> Weight 50 ton ft<sup>2</sup> Means of ignition Compression Kind of fuel used Heavy oil fuel  
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge Is there a bearing between each crank three-three  
 Revolutions per minute 97 Crank Shaft, dia. of journals as per Rule as fitted Crank pin dia. Crank Webs Mid. length breadth Mid. length thickness Thickness parallel to axis shrunk Thickness around eyehole

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule 12.85 as fitted 16.5 Thrust Shaft, diameter at collars as per Rule as fitted

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule 14.24 as fitted 16.5 Is the <sup>tube</sup> ~~screw~~ shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per Rule 23.5/32 as fitted 13/16 Thickness between bushes as per rule 9/16 as fitted 3/4 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 piece

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 tight fit

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' 6 1/2

Propeller, dia. 16' 9" Pitch max 12.86 No. of blades 4 Material Manx whether Moveable No Total Developed Surface 91 sq. feet

Method of reversing Engines Hand lever Is a governor or other arrangement fitted to prevent racing of the engine when detached Yes Means of lubrication Hand & forced Thickness of cylinder liners Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine led up funnel

Cooling Water Pumps, No. 1 main engine driven 1 standby steam 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 of 10' x 12' x 10' duplex, 180 tons/hr + 2 of 7' x 8' x 8' duplex, 100 tons/hr How driven Steam driven

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 Discharges overboard

Ballast Pumps, No. and size one 10' x 12' x 10' aft in E.R. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size one 8' x 7' x 18' Stand by Steam

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 3 of 3 1/2", also 1 of 2 1/2" from E.R. Cofferdam, & 2 of 2 1/2" from oil gutterway In Pump Room 2 of 2 1/4" In Holds, &c. 2 of 2 1/2" and 2 of 2" in Forward Cargo Hold

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 of 6" Ford

Are all the Bilge Suction pipes in Hold 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 yes 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 Yes Is the Shaft Tunnel watertight None 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. Airless 2 No. of stages 3 Diameters 1 1/2" to 2 3/4" Stroke 7" Driven by Steam Eng

Auxiliary Air Compressors, No. 2 No. of stages 3 Diameters 1 1/2" to 2 3/4" Stroke 7" Driven by Steam Eng

Small Auxiliary Air Compressors, No. None No. of stages 3 Diameters Stroke Driven by Main Eng

Scavenging Air Pumps, No. one Diameter See Sunderland Rpt 32126 Driven by Main Eng

Auxiliary Engines crank shafts, diameter as per Rule as fitted For oil engine See No. Two 30 Kw Lits - one Steam & one Oil Eng driven Position + one 8 Kw Steam all on Starboard in E.R.



AIR RECEIVERS:—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*

High Pressure Air Receivers, No. *None*

Cubic capacity of each. *As per inspection*

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 cu ft*

Internal diameter. *4'-1 1/2"*

thickness. *1 3/32"*

Seamless, lap welded or riveted longitudinal joint. *✓*

*T. R. Welch*  
*DBL built shape*

Material. *Steel*

Range of tensile strength. *29-33 tons*

Working pressure. *602 lbs*

by Rules. *602 lbs*

Actual. *600 lbs*

IS A DONKEY BOILER FITTED? *Yes Two*

If so, are reports now forwarded? *Yes*

Is the donkey boiler intended to be used for domestic purposes only. *No*

PLANS. Are approved plans forwarded herewith for Shafting. *26/8/36*

(If not, state date of approval)

Receivers. *26/8/36*

Separate Fuel Tanks. *26/8/36*

Donkey Boilers. *26/8/36*

General Pumping Arrangements. *24/4/36*

*for British Fame etc*

Pumping Arrangements in Machinery Space. *11/3/36*

*for British Fame etc*

Oil Fuel Burning Arrangements. *✓*

SPARE GEAR.

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

State the principal additional spare gear supplied.

*1 set of ahead Thrust Pads, 1- six feed T&K lubricator for Cylinders*

*1- Solid C.I. Propeller, 1 Screw Shaft, 2 feed check valve lifts, 12 boiler tubes,*

*1 safety valve spring, 1 set of cages for feed water filters, 1 nest of tubes for*

*distilled water cooler, 1 nest of tubes for oil cooler, 1 set of cages & strainers*

*for forced lubrication filters.*

The foregoing is a correct description of the machinery of the vessel.

*G. J. Shundy*

Manufacturer.

Dates of Survey while building. During progress of work in shops. *1936. Dec. 23, 1934. Jan. 8, 21, Feb. 2, 2, 18, 19, 25, Mar. 2, 5, 9, 11, 12, 15, 16, 17, 22, 25, Apr. 5, 7, 8, 12, 15, 16, 21, 23, 26*  
During erection on board vessel. *27, 28, 29, 30, May 3, 7, 10, 13, 18, 24, June 2, 4, 8, 16, 21, July 1, 13, 26, 28, 29, Aug. 10, 11, 17.*  
Total No. of visits. *51.*

Dates of Examination of principal parts—Cylinders. *See Sunderland Rpt 26 32126.*

Crank shaft. *✓* Flywheel shaft. *✓* Thrust shaft. *✓* Intermediate shafts. *25/3/36* Tube shaft. *✓*

Screw shaft. *25/3/36* Propeller. *25/3/36* Stern tube. *8/4/36* Engine seatings. *26/7/36* Engines holding down bolts. *26/7/36*

Completion of fitting sea connections. *8/4/36* Completion of pumping arrangements. *11/8/37* Engines tried under working conditions. *17/8/37*

Crank shaft, Material. *✓* Identification Mark. *✓* Flywheel shaft, Material. *✓* Identification Mark. *✓*

Thrust shaft, Material. *✓* Identification Mark. *✓* Intermediate shafts, Material. *7. Steel* Identification Marks. *6726/402 H.A.*

Tube shaft, Material. *✓* Identification Mark. *✓* Screw shaft, Material. *7. Steel* Identification Mark. *Working 6726/400 H.A. Spare 6726/401 H.A.*

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. *✓* 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. *British Fame No. Rpt 94124*

General Remarks (State quality of workmanship, opinions as to class, &c.) *British Endurance " " 94275 etc.*

*The machinery of this vessel has been constructed and installed*

*under special survey in accordance with the Society's Rules, and the*

*approved plans, & the materials & workmanship are good,*

*The machinery has been satisfactorily tested under working conditions*

*and the vessel is eligible in my opinion for record + LMC.8.37. T.S. cl.*

*2. DB. 150th. FD.*

The amount of Entry Fee. £ *✓* : : When applied for, *19 AUG 1937*  
Special *5 installing* £ *21* : *17* :  
2 Donkey Boilers Fee *10-2* £ *27* : *8* :  
2 Starting Air Boilers *4* £ *4* : *4* :  
Travelling Expenses (if any) £ : :  
When received, *31.8 37 11/19*

Committee's Minute

Assigned

*+ LMC 8.37*

*CL*

*Del Eng*

*2 DB 150 lb*

*A. Watt & W. Nicholson*  
Engineer Surveyor to Lloyd's Register of Shipping.



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