

## REPORT ON OIL ENGINE MACHINERY.

No. 166.

8 JUL 1946

Received at London Office

Date of writing Report 10-6-1946 When handed in at Local Office 5-7-1946 Port of LEEDS.

No. in Survey held at Reg. Book. Keighley Date, First Survey 23-8-45 Last Survey 27-5-1946 Number of Visits 7

Single  
on the Twin-  
Triple  
Quadruple  
Screw vessel

"T.R.V.8"

Tons  
Gross  
Net

Built at Gainsborough By whom built J.S. Watson (Gainsborough) Yard No. 1551 When built 1945

Engines made at Keighley By whom made H. Widdop &amp; Co. Ltd. Engine No. 4380 When made 1945

Donkey Boilers made at - By whom made - Boiler No. - When made -

Brake Horse Power 300 ✓ Owners The Admiralty Port belonging to

Nom. Horse Power as per Rule 139 ✓ Is Refrigerating Machinery fitted for cargo purposes - Is Electric Light fitted Yes

Trade for which vessel is intended Torpedo Recovery

OIL ENGINES, &amp;c.—Type of Engines Airless injection heavy oil. 2 or 4 stroke cycle 2 Single or double acting single

Maximum pressure in cylinders 700 Lbs/sq.in. ✓ Diameter of cylinders 11.5" ✓ Length of stroke 13.5" ✓ No. of cylinders 6 ✓ No. of cranks 6 ✓

Mean Indicated Pressure 50.5 Lbs/sq.in. ✓

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 16.75" Is there a bearing between each crank Yes ✓

Revolutions per minute 350 ✓ Flywheel dia. 34.75" ✓ Weight 14.5" cwt ✓ Means of ignition Compression ✓ Kind of fuel used heavy oil ✓

Crank Shaft, { Solid forged dia. of journals as per Rule 6.2" ✓ as fitted 6.75" ✓ Crank pin dia. 6.75" ✓ Crank Webs Mid. length breadth 9" shrunk Thickness parallel to axis - Mid. length thickness 3.75" Thickness around eyehole -

Flywheel Shaft, diameter as per Rule Flywheel mounted on Intermediate Shafts, diameter as per Rule 3.9" ✓ as fitted 4 ✓ Thrust Shaft, diameter at collars as per Rule 4.1" ✓ as fitted 4.75" ✓ crankshaft.

Tube Shaft, diameter as per Rule - as fitted - Screw Shaft, diameter as per Rule 4.42" ✓ as fitted 4.5" ✓ Is the tube screw shaft fitted with a continuous liner No ✓

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 chamber or other appliance fitted at the after end of the tube

shaft Yes ✓ If so, state type Drg. No. 3536 Approved 27-10-41 Length of Bearing in Stern Bush next to and supporting propeller 17.1"

Propeller, dia. 56" ✓ Pitch 43" No. of blades 4 Material C.I. whether Moveable No Total Developed Surface 9 sq. feet

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication

forced Thickness of cylinder liners 1.125" 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 4.25" dia x 3" stroke Is the sea suction provided with an efficient strainer which can be cleared within the vessel -

Bilge Pumps worked from the Main Engines, No. One Diameter 4.25" Stroke 3" Can one be overhauled while the other is at work -

Pumps connected to the Main Bilge Line { No. and Size - How driven - ( One on main engine 2.1" bore x 3" stroke 2 single acting ( one on main engine 1.1" bore x 3" stroke

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 one double acting on aux. eng. No. 4378 1.1" bore x 3" stroke

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, &amp;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. One No. of stages 2 Diameters 6" &amp; 2.75" Stroke 3" Driven by Main Engine ✓

Auxiliary Air Compressors, No. One No. of stages 2 Diameters 6" &amp; 2.75" Stroke 3" Driven by Aux. Engine ✓

Small Auxiliary Air Compressors, No. - No. of stages - Diameters - Stroke - Driven by -

What provision is made for first Charging the Air Receivers Auxiliary air compressor driven by hand started auxiliary engine.

Scavenging Air Pumps, No. Underside of pistons Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule 3" 2.21" ✓ as fitted 3.25" 2.25" ✓ No. 2 ✓ Position -

Have the Auxiliary Engines been constructed under special survey Yes ✓ Is a report sent herewith Yes



**AIR RECEIVERS:** — Have they been made under survey **Yes** State No. of Report or Certificate **Chesterfield Tube Co. Adv**  
Is each receiver, which can be isolated, fitted with a safety valve as per Rule **Yes** Is a drain fitted at the lowest part of each receiver **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**  
**Injection Air Receivers, No. 1** Cubic capacity of each **3,85 cu.ft.** Internal diameter **9 3/8"** thickness **5/16"**  
**For whistle** **Seamless Tube** with **O.H. Steel** Range of tensile strength **28/32 T.** Working pressure **by Rules**  
Seamless, lap welded or riveted longitudinal joint **Welded Ends.** Material **O.H. Steel** Range of tensile strength **28/32 T.** Working pressure **Actual 350 lbs/sq.in.**  
**Starting Air Receivers, No. 2** Total cubic capacity **14,5 cu.ft.** Internal diameter **12 1/2"** thickness **1"**  
Seamless, lap welded or riveted longitudinal joint **Seamless** Material **O.H. Steel** Range of tensile strength **28/32 T.** Working pressure **by Rules**  
Actual **350 lbs/sq.in.**

**IS A DONKEY BOILER FITTED?** **No.** If so, is a report now forwarded? **-**  
Is the donkey boiler intended to be used for domestic purposes only **-**  
**PLANS.** Are approved plans forwarded herewith for Shafting **9-12-43** Receivers **9-12-43** Separate Fuel Tanks **9-12-43**  
(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 **-**

The foregoing is a correct description.  
**J. MacLeod** Manufacturer.  
Dates of Survey while building: During progress of work in shops -- **23-8-45, 19-9-45, 19-11-45, 5-12-45, 17-12-45, 7-3-46, 27-5-46.**  
During erection on board vessel -- **-**  
Total No. of visits **-**  
Dates of Examination of principal parts — Cylinders **19-9-45** Covers **5-12-45** Pistons **27-5-46** Rods **-** Connecting rods **23-8-45**  
Crank shaft **23-8-45** Flywheel shaft **-** Thrust shaft **19-11-45** Intermediate shafts **-** Tube shaft **-**  
Screw shaft **-** Propeller **-** Stern tube **-** Engine seatings **-** Engines holding down bolts **-**  
Completion of fitting sea connections **-** Completion of pumping arrangements **-** Engines tried under working conditions **-**  
Crank shaft, Material **O.H. Steel** Identification Mark **LLOYD'S 189 JNB 16-6-43 DRW** Flywheel shaft, Material **-** Identification Mark **-**  
Thrust shaft, Material **O.H. Steel** Identification Mark **LLOYD'S 2347 19-11-45 DRW** Intermediate shafts, Material **-** Identification Marks **-**  
Tube shaft, Material **-** Identification Mark **-** Screw shaft, Material **-** Identification Mark **-**  
Identification Marks on Air Receivers **Starting Air.** Nos. **54593** **54587** **Whistle Air.** **43-81-42**  
**Chesterfield** **LLOYD'S TEST** **LLOYD'S TEST** **LLOYD'S TEST**  
**Tube Co.** **1000 lbs.** **1000 lbs.** **1000 lbs.**  
**W.P. 350 lbs.** **W.P. 350 lbs.** **W.P. 400 lbs.**  
**14-5-41 W.K.** **4-4-41 L.T.** **16-6-43**  
**D.1155 J.N.B.**

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 **-**  
Description of fire extinguishing apparatus fitted **-**  
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 **Watsons Yard No. 1550 (Leeds Report No. 13)**

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
**This engine has been constructed under special Survey, of tested materials, in accordance with the Secretary's letters, approved plans and the requirements of the Rules.**  
**The materials and workmanship are good and the engine was found to be satisfactory when tested in the shop under full load conditions.**  
**This engine is suitable, in my opinion, for the purpose intended and when satisfactorily installed and reported will be eligible to receive the notation L.M.C. (with date)**

*Satisfactorily fitted onboard at Garmborough. See Hull Report No. 53775 of 29.10.46.*  
*G.A. Lang*

The amount of Entry Fee .. £ : : When applied for, **2/3 Special 50% Special £ 39 : 0 : 28-5- 19 46**  
Donkey Boiler Fee ... £ : : When received, **19**  
Travelling Expenses (if any) £ : :  
**Committee's Minute** **FRI. 22 NOV 1946**  
**Assigned** **See F.E. mch. rph.**

**D. M. Walbury**  
Engineer Surveyor to Lloyd's Register of Shipping.  
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