

# REPORT ON OIL ENGINE MACHINERY.

No 10,374.  
FEB 20 1941

Received at London Office

Date of writing Report 4-2-1941 When handed in at Local Office 15-2-1941 Port of MANCHESTER  
No. in Survey held at KEIGHLEY Date, First Survey 26. Aug. 1940 Last Survey 31-1-1941  
Reg. Book. 09 Number of Visits 6

on the Single Double Triple Quadruple Screw vessel "EMPIRE FORD" Tons Gross Net  
Built at GAINSBOROUGH By whom built J.S. WATSON (GAINSBOROUGH) LTD Yard No. 1520 When built 1941  
Engines made at KEIGHLEY By whom made H. WIDDOP & CO LTD Engine No. 4022 When made 1941  
Donkey Boilers made at - By whom made - Boiler No. - When made -  
Brake Horse Power 300 Owners MESSRS R & L Port belonging to HULL  
Nom. Horse Power as per Rule 138 1/40 Is Refrigerating Machinery fitted for cargo purposes - Is Electric Light fitted YES  
Trade for which vessel is intended COASTING VESSEL

OIL ENGINES, &c. Type of Engines VERTICAL SOLID INJECTION 2 or 4 stroke cycle 2 Single or double acting SINGLE  
Maximum pressure in cylinders 650 LBS Diameter of cylinders 11.5" Length of stroke 13.5" No. of cylinders 6 No. of cranks 6  
Mean Indicated Pressure 53.5 LBS/SQ. INCH 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 330 Flywheel dia. 36.75" Weight 15.6 CWT Means of ignition COMPRESSION Kind of fuel used HEAVY OIL  
Crank Shaft, { Solid forged APPROVED as per Rule APPROVED dia. of journals 6.75" as fitted 6.75" Crank pin dia. 6.75" Crank Webs Mid. length breadth 9" Thickness parallel to axis SOLID  
{ Semi built APPROVED as fitted 6.75" Mid. length thickness 3.75" Thickness around eye-hole  
Flywheel Shaft, diameter as per Rule APPROVED as fitted 4" Intermediate Shafts, diameter as per Rule APPROVED as fitted 4" Thrust Shaft, diameter at collars as per Rule APPROVED as fitted 4.75"  
Tube Shaft, diameter as per Rule APPROVED as fitted 4 5/8" Is the { tube YES } screw { shaft fitted with a continuous liner } YES

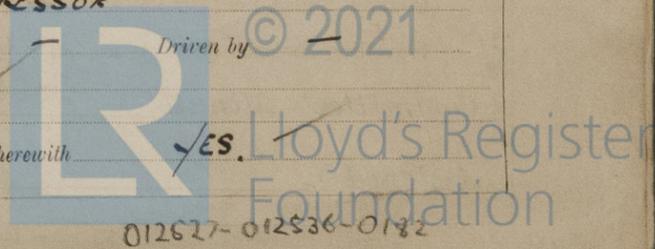
Bronze Liners, thickness in way of bushes as per Rule APPROVED as fitted APPROVED Thickness between bushes as per Rule APPROVED as fitted APPROVED Is the after end of the liner made watertight in the propeller boss YES  
If the liner is in more than one length are the junctions made by fusion through 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 YES  
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 tube shaft YES  
If so, state type ROTATING RUBBER SLEEVE TYPE Length of Bearing in Stern Bush next to and supporting propeller 19.5"  
Propeller, dia. 59.5" Pitch 43" No. of blades 4 Material C.I. whether Moveable NO Total Developed Surface 9.6 sq. feet  
Method of reversing Engines DIRECT Is a governor or other arrangement fitted to prevent racing of the engine when disengaged YES Means of lubrication FORCED  
Thickness of cylinder liners 1/8" 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 YES

Cooling Water Pumps, No. ONE 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. ONE Diameter 4.25" Stroke 3" Can one be overhauled while the other is at work YES  
Pumps connected to the Main Bilge Line { No. and Size ONE }  
{ How driven BY MAIN ENGINE }  
Is the cooling water led to the bilges YES If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements YES

Ballast Pumps, No. and size ONE Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 3. 1 1/2" DIA x 3" STROKE  
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 ONE In Pump Room ONE  
In Holds, &c. ONE  
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size ONE

Are all the Bilge Suction pipes in Holds 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  
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 YES  
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 YES How are they protected YES  
What pipes pass through the deep tanks YES 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 YES  
If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork YES

Main Air Compressors, No. ONE No. of stages TWO Diameters 6" & 2 3/4" Stroke 3" Driven by MAIN ENGINE  
Auxiliary Air Compressors, No. ONE No. of stages ONE Diameters 4.5" Stroke 2 3/4" 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 INDEPENDENT AIR COMPRESSOR  
Scavenging Air Pumps, No. ONE Diameter 2.25" Stroke 3" Driven by APPROVED  
Auxiliary Engines crank shafts, diameter as per Rule APPROVED as fitted 2.25" No. 3 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  
 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  
**Injection 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  
**Starting Air Receivers, No.** THREE Total cubic capacity 18.4 COB FT. Internal diameter 2. 9 7/8" Working pressure Actual 5/16"  
 Seamless, lap welded or riveted longitudinal joint SEAMLESS Material STEEL Range of tensile strength 28-32 TONS Working pressure by Rules APPROVED Actual 350 LBS/SQ IN

**IS A DONKEY BOILER FITTED?** - 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 22-1-40 Receivers 22-1-40 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

The foregoing is a correct description,

**FOR R. WIDDOP & COMPANY LTD.**

Manufacturer.

Dates of Survey while building  
 During progress of work in shops - 1940. AUG 26. SEPT 9. OCT 30. DEC 6 1941 JAN 29. 31.  
 During erection on board vessel -  
 Total No. of visits 6

Dates of Examination of principal parts - Cylinders 26.8.40 Covers 26.8.40 Pistons 26.8.40 Rods - Connecting rods 26.8.40  
 Crank shaft 26.8.40 Flywheel shaft - Thrust shaft 9.9.40 Intermediate shafts - Tube shaft -  
 Screw shaft 8.11.40 Propeller 8.11-40 Stern tube 8-11-40 Engine sealings - 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 LLOYDS 3341 AS Flywheel shaft, Material - Identification Mark -  
 Thrust shaft, Material O.H. STEEL Identification Mark LLOYDS 27. J.W. Intermediate shafts, Material O.H. STEEL Identification Marks LLOYDS 284 20.10  
 Tube shaft, Material - Identification Mark - Screw shaft, Material O.H. STEEL Identification Mark LLOYDS 23 8-11-4  
 Identification Marks on Air Receivers C.T.CO. C.T.CO. ROSTON  
 890443. WP 350 LBS 890447. WP 350 LBS 39.81.791. D. 153.  
 LLOYDS TEST 1,000. 7.5.40. LT. LLOYDS TEST. 1,000. LBS. 21.6.40. HM. LLOYDS TEST. AS. 8.1.40. 1,000 LBS

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 PIMALOTTS. YARD NO 635 MCH RPT 10,283.

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
 THIS ENGINE HAS BEEN CONSTRUCTED UNDER SPECIAL SURVEY OF TESTED MATERIALS AND IS IN ACCORDANCE WITH THE SECRETARY'S LETTERS, APPROVED PLANS AND RULE REQUIREMENTS. THE MATERIALS AND WORKMANSHIP ARE OF A GOOD QUALITY AND THE ENGINE, WHEN TESTED IN SHOP UNDER FULL LOAD CONDITIONS, SHOWN SATISFACTORY RESULTS. IN MY OPINION THIS ENGINE IS SUITABLE FOR THE PURPOSE INTENDED AND WHEN INSTALLED ON BOARD AND SATISFACTORILY REPORTED UPON BY THE SOCIETY'S SURVEYORS WILL BE ELIGIBLE TO HAVE THE NOTATION OF + LLOYDS MACHINERY CERTIFICATE (WITH DATE)

The amount of Entry Fee .. £ 3 : 0 : 0 When applied for, 18-2-41. J.M.  
 2/3<sup>20%</sup> Special +25% ... £ 28 : 15 : 0  
 Donkey Boiler Fee ... £ - : - : - When received,  
 Travelling Expenses (if any) £ 4 : 10 : 0

Committee's Minute

Assigned

FRI. 24 OCT 1941

All Gms. J.C. 211400

*J. M. [Signature]*  
 Engineer Surveyor to Lloyd's Register of Shipping.



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