

# REPORT ON OIL ENGINE MACHINERY.

No. 100775

Received at London Office

9 - OCT 1942

Writing Report

When handed in at Local Office

Port of

NEWCASTLE-ON-TYNE

Survey held at Newcastle on Tyne

Date, First Survey 12-11-41

Last Survey 24-9-1942

Number of Visits 64

Single  
Triple  
Quadruple

Screw vessel

M.V. "EMPIRE WORDSWORTH"

Tons  
Gross  
Net

Sunderland

By whom built Sir J. Laing & Co. Ld

Yard No. 742. When built 1942-9.

made at Newcastle (St Peters)

By whom made R.W. Hawthorn, Leslie & Co. Ld

Engine No. 3981 When made "

Boilers made at ditto (Forth Banks)

By whom made ditto

Boiler No. 3981 When made "

orse Power 3500.

Owners

Port belonging to

orse Power as per Rule 502.

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

for which vessel is intended Ocean going, Carrying Petroleum in bulk.

HAWTHORN, & Co. Type of Engines Hawthorn-Workshop Supercharged 4 stroke cycle 4. Single or double acting Single

Pressure in cylinders 700 lb/sq in

Diameter of cylinders 650 mm

Length of stroke 1400 mm

No. of cylinders 8

No. of cranks 8

Rated Pressure 135 lb/sq in

Rings, adjacent to the Crank, measured from inner edge to inner edge 844 mm

Is there a bearing between each crank Yes

per minute 120.

Flywheel dia. 2260 mm

Weight 6000 Kg.

Means of ignition Heat of Compression

Kind of fuel used Heavy oil fuel.

Solid forged  
Semi built  
All built

dia. of journals as per Rule 448 mm

as fitted 460

Crank pin dia. 460 mm

Crank Webs Mid. length breadth 870 mm

Thickness parallel to axis 267 + 290 mm

Mid. length thickness 267

Thickness around eyehole 204

Shaft, diameter as per Rule 448 mm

Intermediate Shafts, diameter as per Rule 325 mm

as fitted 470 at bearings

550 between brgs.

Thrust Shaft, diameter at collars as per Rule 341 mm

as fitted 460

ft, diameter as per Rule None

Screw Shaft, diameter as per Rule 358 mm

as fitted 457

Is the shaft fitted with a continuous liner Yes

Is the after end of the liner made watertight in the

liners, thickness in way of bushes as per Rule 18.55 mm

as fitted 22

Thickness between bushes as per Rule 13.9 mm

as fitted 17

Yes

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner In one length

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 a tight fit

ers 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

If so, state type mang. Brgs

Length of Bearing in Stern Bush next to and supporting propeller 1585 mm

dia. 15'-0" Pitch 12'-0" No. of blades 4 Material Mang. Brgs whether Moveable Solid Total Developed Surface 80 sq. feet

f reversing Engines Air Servo-motor Is a governor or other arrangement fitted to prevent racing of the engine when disconnected Yes Means of lubrication

ed Thickness of cylinder liners 55 mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with

ing 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 to top of

Water Pumps, No. Two { 1 - Rotary on M. Eng. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

umps worked from the Main Engines, No. 2 Diameter Rotary Stroke Can one be overhauled while the other is at work Yes

connected to the Main Bilge Line No. and Size Three; - viz 2 Rotary on M. Eng. each 32 ton/hr + 1 G.S.P. 8" x 8" x 10" duplex 100 ton/hr

How driven by main eng. by Steam

ing 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

umps, No. and size one G.S.P. 8" x 8" x 10" duplex Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size one Rotary - 40 ton/hr on main Eng.

dependent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

o. and size: - In Machinery Spaces 3 of 3 1/2" in E.R. + 2 of 2 1/2" to d. b. cofferdams in E.R. In Pump Room MAIN

&c. For Hold 2 of 2 1/2" to Pump Room 1 of 2 1/2" for Peak Store 1 of 2 1/2" F. Coff. 1 of 2 1/2" After 3" ejector 2 of 4"

lent Power Pump Direct Suctions to the Engine Room Bilges, No. and size one of 5 1/2" on P. Side; one of 6" on Star Side

e Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces

asily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes

a Connections fitted direct on the skin of the ship Yes Are they fitted with Valves or Cocks Both

ved 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 Below

y 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

pipes pass through the bunkers None How are they protected

pipes pass through the deep tanks None Have they been tested as per Rule

Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

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

ement to another Yes Is the Shaft Tunnel watertight None (mach. aft) Is it fitted with a watertight door

ood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

18 Air Compressors, No. None No. of stages Diameters Stroke Driven by

16 Auxiliary Air Compressors, No. Two No. of stages See Spec Part D 7160 Stroke Driven by Steam Engines

Auxiliary Air Compressors, No. None No. of stages 120 Cub ft of pressure @ 350 lb/sq in Stroke Driven by

provision is made for first Charging the Air Receivers Steam driven Compressors

nging Air Pumps, No. Diameter Stroke Driven by

ary Engines crank shafts, diameter as per Rule No. Position

as fitted Is the Auxiliary Engines been constructed under special survey

Is a report sent herewith

002529-002535-0069



**AIR RECEIVERS:**—Have they been made under survey *Yes* ✓ State No. of Report or Certificate *Letter to 550 lbs for 350 lbs* 5b.  
 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.** *None* Cubic capacity of each *✓* Internal diameter *✓* thickness *✓*  
 Seamless, lap welded or riveted longitudinal joint *✓* Material *✓* Range of tensile strength *✓* Working pressure *✓*  
**Starting Air Receivers, No.** *Two* Total cubic capacity *800 cub. ft* Internal diameter *4 10 7/8"* thickness *27/32"*  
 Seamless, lap welded or riveted longitudinal joint *T.R. ✓* Material *Steel plates* Range of tensile strength *28-32 tons* Working pressure *by Rules 372*  
*DBL butt straps* End plates *26-30 tons* Actual *350*

**IS A DONKEY BOILER FITTED?** *Yes* ✓ 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 *6/8/41 + 8/11/41* Receivers *25/8/42* Separate Fuel Tanks *9/2/42*  
 Donkey Boilers *W.T. 9/10/41* General Pumping Arrangements *29/8/41* Pumping Arrangements in Machinery Space *9/12/41*  
 Oil Fuel Burning Arrangements *9/12/41*

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied *Yes* ✓  
 State the principal additional spare gear supplied *1 Main Bearing, 1 Cylnr Head + Liner (jointed together), 1 Piston*  
*30 Condenser Tubes + 24 Ferrules, etc etc.*

The foregoing is a correct description.  
**R. & W. HAWTHORN, LEASE & CO. LIMITED**  
*R. B. Johnson* Manufacturer.

Dates of Survey while building	During progress of work in shops--	1941. Nov. 12. Dec. 18. 1942. Jan. 22. 26. 27. 28. 29. 31. Feb. 5. 11. 13. 16. 18. 19. 20. 24. 25. Mar. 2. 11. 16. 20. 24.
	During erection on board vessel--	30. 31. April. 2. 3. 4. 9. 14. 16. 17. 20. 22. 24. 27. 29. May. 1. 5. 6. 8. 12. 16. 21. 27. 28. June. 3. 10. 12. 15. 18.
	Total No. of visits	64.
Dates of Examination of principal parts—Cylinders	20/3/42 to 22/4/42	Covers <i>as Gls.</i> Pistons 31/3/42 to 14/4/42 Rods 10/4/42 Connecting rods 27/4/42
Crank shaft	14/4/42	Flywheel shaft 1/7/42 Thrust shaft 2/4/42 Intermediate shaft 18/6/42 Tube shaft ✓
Screw shaft	29/4/42	Propeller 3. 7. 42. Stern tube <i>in SHIP 3/7/42</i> Engine seatings 24. 7. 42 Engines holding down bolts 24. 7. 42
Completion of fitting sea connections	18. 5. 42.	Completion of pumping arrangements 10. 9. 42 Engines tried under working conditions
Crank shaft, Material	7 Stl.	Identification Mark 11485 HAI. 74 Flywheel shaft, Material 7 Stl Identification Mark 10904 HAI
Thrust shaft, Material	7 Stl	Identification Mark 10904 HAI F338 Intermediate shaft, Material 7 Stl Identification Marks 11200 HAI
Tube shaft, Material	none.	Identification Mark " Screw shaft, Material 7 Stl. Identification Mark "

Identification Marks on Air Receivers *The Two Starting Air Receivers Stamped*  
 LLOYD'S TEST  
 550 LBS  
 WP 350 LBS.  
 18-6-42 (AWAW)

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 *not desired*  
 Is this machinery duplicate of a previous case *No* If so, state name of vessel

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
*The Machinery of this vessel has been constructed under special survey in accordance with the approved plans & the Society's Rules & the materials & workmanship*  
*The machinery has been fitted on board under Special Survey in accordance with the approved Plans, the Requirements of Rules & the Specification & was found satisfactory under working conditions at quay.*  
*The Machinery is eligible in our opinion to have the keel + LMC 9.42. 1 water tube DB(FD) & 1 DB. CL.*

The amount of Entry Fee .. £	6 :	When applied for,
Special & Spec. ... £	125 : 2 :	8 OCT 1942
W.T. Donkey Boiler Fee & Spec. ... £	27 : 10 :	When received,
2 Starting Air Receivers ... £	8 : 8 :	19
Travelling Expenses (if any) ... £		
Committee's Minute	FRI. 16 OCT 1942	
Assigned	<i>+ LMC 9.42</i> <i>D.R. + W.T. DB - 180 lbs</i>	<i>oil Eng</i> <i>Ch</i>

*A. Watt & R. Moffitt*  
 Engineer Surveyor to Lloyd's Register of Shipping  
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NEWCASTLE-ON-TYNE.

Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.