

# REPORT ON OIL ENGINE MACHINERY.

No 100775

Received at London Office

9-OCT 1942

Writing Report

19

When handed in at Local Office

19

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  
on the ~~Four~~  
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

r which vessel is intended

Ocean going, Carrying Petroleum in bulk.

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

ressure in cylinders 700 lb/sq in

Diameter of cylinders 650 mm

Length of stroke 1400 mm

No. of cylinders 8

No. of cranks 8.

ated 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

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 mm

shrunk 290 mm

Mid. length thickness 267.

Thickness around eyehole 204.

Shaft, diameter as per Rule 448 mm

as fitted 460.

Intermediate Shafts, diameter as per Rule 325 mm

as fitted 470 at bearings

Thrust Shaft, diameter at collars as per Rule 341 mm

as fitted 460.

ft, diameter as per Rule None.

as fitted

Screw Shaft, diameter as per Rule 358 mm

as fitted 457.

Is the screw shaft fitted with a continuous liner Yes

iners, 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.

Is the after end of the liner made watertight in the

ss 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

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.

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.

1-Steam Centrif.

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

nnected to the Main Bilge Line

No. and Size Three; - viz 2 Rotary on M. Eng

each 32 tons/hr

+ 1 G.S.P. 8" x 8" x 10" duplex 100 tons/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 tons/hr

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

cc. For Hold 2 of 2 1/2" to Pump Room 1 of 2 1/2" to Peak Store 1 of 2 1/2" F. Coff. 1 of 2 1/2" Aft. Coff. 3 of 3 1/2" ejectors 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" in Star Side.

e Bilge Suction pipes in Holds and Tunnels 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

ed 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

ment to another Yes

Is the Shaft Tunnel watertight None (machinery aft)

Is it fitted with a watertight door

worked from

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 Sp. Part D 7160

Stroke

Driven by Steam Engines

Auxiliary Air Compressors, No. None

No. of stages

Diameters

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

as fitted

No.

Position

the Auxiliary Engines been constructed under special survey

Is a report sent herewith

000529-000535-0069

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AIR RECEIVERS:—Have they been made under survey *Yes* ✓ State No. of Report or Certificate *Letter to 550 lbs in 350 lbs*  
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 by Rules *✓*  
Starting Air Receivers, No. *Two* Total cubic capacity *800 cub. ft* Internal diameter *4 1/8"* thickness *27/32"*  
Seamless, lap welded or riveted longitudinal joint *T.R. One butt strap* Material *Steel plates* Range of tensile strength *28-32 tons* Working pressure by Rules *372*  
*one water tube Riv. and plates 26-30 tons* Actual *350*

IS A DONKEY BOILER FITTED? *Yes* *one water tube Riv. and plates 26-30 tons* 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*  
*W.T. 9/10/41* (If not, state date of approval.) General Pumping Arrangements *29/8/41* Pumping Arrangements in Machinery Space *9/12/41*  
Donkey Boilers *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 Cyln 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. 27. 28. 29. 31. Apr. 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. 20. 24. 27. 28. 29. 31. July. 3. 14. 17. 22. 29. 31. Aug. 7. 10. Sept. 7. 8. }  
Total No. of visits *64*

Dates of Examination of principal parts—Cylinders *20/3/42 to 22/4/42* Covers *as gln.* 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 *In Work. 16/4/42.* 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 *8.9.42*  
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.* 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 :  
Special & Spec. ... £ 125. 2. :  
W.T. Donkey Boiler Fee & Spec. ... £ 27. 10. :  
2 Starting Air Receivers ... £ 8. 8. :  
Travelling Expenses (if any) £ :  
When applied for, *8 OCT 1942*  
When received, *19*

Committee's Minute

Assigned

*A. Watt & R. Moffat*  
Engineer Surveyor to Lloyd's Register of Shipping



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