

Rpt. 4b.

# REPORT ON OIL ENGINE MACHINERY.

No 103015

Received at London Office

NEWCASTLE-ON-TYNE

Date of writing Report 15<sup>th</sup> 7/ 1945 When handed in at Local Office 24 7 45

Port of

No. in Survey held at Wallsend on Tyne

Date, First Survey (1943) Jan 15<sup>th</sup> Last Survey 3<sup>rd</sup> July 1945

Reg. Book.

Number of Visits 170

Single  
Twin  
Triple  
Quadruple  
Screw vessel

EMPIRE CHANCELLOR.

Tons Gross 9916.61  
Net

Built at Sunderland

By whom built Sir J. Laing & Son. Ld

Yard No. 756 When built 1945-7ms.

Engines made at Wallsend on Tyne (New)

By whom made N.E. Mar. Eng'g Co (1938) Ld.

Engine No. 3035 When made 1945.

Donkey Boilers made at ditto

By whom made ditto

Boiler No. 3078. When made 1945

Brake Horse Power 4500.

Owners Min. of War Transport

Port belonging to

Nom. Horse Power as per Rule 1322

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.

OIL ENGINES, &c.—Type of Engines Heavy oil engine 4 stroke cycle 4. Single or double acting Dble. acting.

Maximum pressure in cylinders 575 lb/sq. in. Diameter of cylinders 700 m.m. Length of stroke 1200 m.m. No. of cylinders 5. No. of cranks 5.

Mean Indicated Pressure 80 lb/sq. in. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1030 m.m. Is there a bearing between each crank Yes

Revolutions per minute 105 Flywheel dia. 7'-6" Weight 4.25 tons Means of ignition Compression Kind of fuel used Diesel Oil fuel.

Crank Shaft, { Solid forged  
Semi built  
All built } dia. of journals as per Rule 17.4" as fitted 18" Crank pin dia. 18" Crank Webs Mid. length breadth shrunk Thickness parallel to axis 12" Mid. length thickness shrunk Thickness around eyehole 8.875"

Flywheel Shaft, diameter as per Rule 14.29" as fitted 15" Intermediate Shafts, diameter as per Rule 15.71" as fitted 16" Thrust Shaft, diameter at collars as per Rule 15" as fitted 15.25"

Tube Shaft, diameter as per Rule 15.71" as fitted 16" Is the shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per Rule 25/32" as fitted 13/16" Thickness between bushes as per Rule 18.75/32" as fitted 5/8" 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 In 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 a 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

Prepeller, dia. 17'-0" Pitch 13'-6" No. of blades 4. Material Bronze. whether Moveable No Total Developed Surface 114. sq. feet

Method of reversing Engines Servo motor Is a governor or other arrangement fitted to prevent racing of the engine when decelerated Yes Means of lubrication Forced Lubrication

Thickness of cylinder liners 2 1/2" at top & bottom 1" at centre. 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. Is the sea suction provided with an efficient strainer which can be cleared within the vessel on Sea water

Cooling Water Pumps, No. 2 for distilled water 3 for salt water Is the sea suction provided with an efficient strainer which can be cleared within the vessel on Sea water

Bilge Pumps worked from the Main Engines, No. 2. Diameter 4 1/2" Stroke 20 3/8" Can one be overhauled while the other is at work Yes

Pumps connected to the Main Bilge Line { No. and Size 2 Ballast Pumps (160 ton/hr.) 12 1/2" x 10 1/2" x 24" Str. & M. Eng Bilge Pumps. 2 1/2" x 4 1/2" x 20 3/8" Str. How driven Steam driven by M. Eng. lever 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

Ballast Pumps, No. and size 2 @ 12 1/2" x 10 1/2" x 24" Str. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 @ 13 1/2" x 10" x 24" Str. each 110 ton/hr.

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" dia. In Pump Room 2 of 4"

In Holds, &c. For Hold 2 of 2 1/2"; For Hold Pump Room 1 of 2 1/2"; For Store Space 1 of 2 1/2"; In Deep Cofferdam 1 of 4". Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 of 8" and 1 of 3 1/2".

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 with 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 below.

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 Nil. How are they protected

What pipes pass through the deep tanks Nil. 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

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Is it fitted with a watertight door worked from

Main Air Compressors, No. Nil No. of stages 3 (each 120 cub. ft.) Driven by Steam

Auxiliary Air Compressors, No. Two No. of stages 3 (each 120 cub. ft.) Driven by Steam

Small Auxiliary Air Compressors, No. Nil No. of stages 3 (each 120 cub. ft.) Driven by Steam

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

Scavenging Air Pumps, No. Two Diameter 83" Stroke 20 3/8" Driven by Main Engine

Auxiliary Engines crank shafts, diameter as per Rule One 30KW Steam Set & No. One 30KW Oiling Pump Set for lighting & De-Gaussing Position ON FLAT IN ENG. ROOM STARB. SIDE. Have the Auxiliary Engines been constructed under special survey No. Is a report sent herewith No.

003591-003590-0038

CONTD OVER



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 ✓ 9 Safety Valve on each Compressor ✓  
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. Nil ✓ Cubic capacity of each \_\_\_\_\_ 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 400 cub ft. Internal diameter 4'-2 1/2" thickness 1 1/8"  
Seamless, lap welded or riveted longitudinal joint Riveted Material Stl. Range of tensile strength 29-33 tons Working pressure \_\_\_\_\_ by Rules \_\_\_\_\_ Actual 600 lbs/sq

IS A DONKEY BOILER FITTED? Yes. Two ✓ 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 4/3/42 crank sh 31/8/42 + 8/10/42 Jorthograph Calcs. ✓  
(If not, state date of approval) Receivers 8/9/42 Separate Fuel Tanks 24-8-42  
Donkey Boilers 31-3-42 General Pumping Arrangements 19/4/42 24/5/42 11/6/42 Pumping Arrangements in Machinery Space 10/6/42  
Oil Fuel Burning Arrangements 11-6-42

### SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes ✓  
State the principal additional spare gear supplied as Specification

The THE NORTH EASTERN MARINE ENGINEERING CO. (LONDON) LTD.

John Neill

Manufacturer.

Dates of Survey while building  
During progress of work in shops--  
During erection on board vessel--  
Total No. of visits 170

Dates of Examination of principal parts—Cylinders 29-2-44 and Covers 14-3-44 Pistons 27-1-44 and Rods 31-1-44 Connecting rods 4-2-44  
Crank shaft 3-2-44 Flywheel shaft as Cr. Shaft Thrust shaft 2-1-43 Intermediate shafts 7-9-44 Tube shaft ✓  
Screw shaft 2-1-43 Propeller IN WKS 15-8-44 Stern tube IN WKS 12-7-44 Engine seatings 22-9-44 Engines holding down bolts 2-5-45  
Completion of fitting sea connections Stl. Completion of pumping arrangements 22-6-45 Engines tried under working conditions IN WKS. OCT 44 to 28-2-45  
Crank shaft, Material F. Stl. Identification Mark LOYDS 2-11-43 RM Flywheel shaft, Material as Crank shaft Identification Mark as crank shaft  
Thrust shaft, Material F. Stl. Identification Mark LOYDS 7944 CP Intermediate shafts, Material F. Stl. Identification Mark LOYDS 7932 CP 17.11.42  
Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material F. Stl. Identification Mark LOYDS 7919 CP 2-11-42  
Identification Marks on Air Receivers LOYDS TEST 800 LBS  
Two each 200 cub ft WP 600 LBS  
24-2-44 RM

Description of FIRE EXTINGUISHING APPARATUS fitted:—  
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 Yes If so, state name of vessel M.S. EMPIRE INVENTOR  
General Remarks (State quality of workmanship, opinions as to class, etc.) See Rpt 45101831. 2 Dec 1943.

The machinery has been constructed under Special Survey in accordance with the Society's Rules, the approved plans and Specification and the materials and workmanship are good. The Main Engine Bedplate and the Columns are of fabricated steel welded construction in accordance with the approved plans. The Bedplate was made at W. H. & Co. of Richardson, Westgarth (See W. H. & Co. C1060 of April 1943). The machinery has been efficiently fitted on board, tested under working conditions at wharf, and at sea under full load and found satisfactory and is eligible, in our opinion, for record + LMC. 7.45, and the notations Oil Eng. Washy aft. Ch. 2 DB. 180 lbs. 28.C.D.A. 5 cy. 27 9/16" - 47 1/4".

The amount of Entry Fee .. £ 6: 0: 0 When applied for, 133: 1: 2 25 JUL 1945  
Special 133: 1: 2 When received, 19  
Donkey Boiler Fee 26: 2: 0  
Travelling Expenses (if any) 40: 17: 0

Committee's Minute 3 AUG 1945

Assigned + LMC 7.45 Oil Eng.  
C.L. 2 DB. 180 lbs

Awatt for R. Moffitt & self

Engineer Surveyor to Lloyd's Register of Shipping.