Rpt. 4.

No. 100.315

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 13 APR 1942 NEWCASTLE-ON-TYNE

Date of writing Report 8/4/1942 When handed in at Local Office 8/4/1942 Port of

No. in Reg. Book 36428 Survey held at Wallsend on Tyne. Date, First Survey 27th July 1941 Last Survey 1st April 1942. (Number of Visits 66.)

on the S.S. "EMPIRE MARVELL" Tons Gross / Net

Built at Sunderland By whom built Sir J. Laing & Sons Ltd. Yard No. 740 When built 1942

Engines made at Wallsend. By whom made N.E. Marine Eng Co (1938) Ltd Engine No. 3010 When made 1942.

Boilers made at " By whom made " Boiler No. 3010 When made 1942.

Registered Horse Power Owners Ministry of War Transport Port belonging to Sunderland

Nom. Horse Power as per Rule 674. Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes.

Trade for which Vessel is intended Carrying Petroleum in bulk.

ENGINES, &c.—Description of Engines Triple Expansion. Revs. per minute

Dia. of Cylinders 27-44-76 Length of Stroke 51 No. of Cylinders 3 No. of Cranks 3

Crank shaft, dia. of journals as per Rule 15.2 as fitted 15½" Crank pin dia. 16" Crank webs Mid. length breadth HP+LP 2'-3¼" MP 9 5/8 Mid. length thickness HP 9 5/8 MP 10⅛ shrunk Thickness parallel to axis 9 5/8 & 10⅛" Thickness around eye-hole LP 8¼ MP 8"

Intermediate Shafts, diameter as per Rule 14.48 as fitted 14¾" **Thrust shaft,** diameter at collars as per Rule 15.2 as fitted 15¾" at Collar.

Tube Shafts, diameter as per Rule ✓ as fitted ✓ **Screw Shaft,** diameter as per Rule 16" as fitted 16¼" Is the ~~tube~~ screw shaft fitted with a continuous liner yes

Bronze Liners, thickness in way of bushes as per Rule .79 as fitted 13/16" Thickness between bushes as per Rule .59 as fitted 13/16" 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 ✓

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 Gland** or other appliance fitted at the after end of the tube shaft no If so, state type ✓ Length of Bearing in **Stern Bush** next to and supporting propeller 5'-5¼" ✓

Propeller, dia. 18'-3 Pitch 14'-6" No. of Blades 4 Material Bronze whether Moveable no Total Developed Surface 131¾ sq. feet

Feed Pumps worked from the **Main Engines,** No. ✓ Diameter ✓ Stroke ✓ Can one be overhauled while the other is at work ✓

Bilge Pumps worked from the **Main Engines,** No. 2 Diameter 5" Stroke 27" Can one be overhauled while the other is at work yes

Feed Pumps No. and size 2 @ 12"×9"×24" + 1 @ 9"×6"×10" How driven Steam

Pumps connected to the **Main Bilge Line** No. and size 1 @ 10"×12"×12" + 2 @ 5"×27" How driven Steam M. Engines.

Ballast Pumps, No. and size 1 @ 10"×12"×12" **Lubricating Oil Pumps,** including Spare Pump, No. and size ✓

Are two independent means arranged for circulating water through the **Oil Cooler** ✓ **Suctions,** connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room 1 @ 3½" Eng Rm PTS. 1 @ 3½" Eng Rm Aft. 1 @ 3½" Boiler Rm PTS.

In Pump Room 4" PTS For'd 1 @ 2½" In Holds, &c. 1 @ 2½" PTS. [1 @ 3" PTS. Gutterway to Transfer Pump

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Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 @ 10" **Independent Power Pump Direct Suctions** to the Engine Room Bilges, No. and size 1 @ 5" ✓ Are all the Bilge Suction Pipes in holds ~~and tunnel well~~ fitted with strum-boxes yes.

Are the Bilge Suctions in the Machinery Space 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. M. Jn.r on tank top. M. DISCH.e on RESERVOIR. Are they fitted with Valves or Cocks both.

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold 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 none How are they protected ✓

What pipes pass through the deep tanks none 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 ✓ Is it fitted with a watertight door ✓ worked from ✓

MAIN BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 10020 ft².

Is Forced Draft fitted yes. ✓ No. and Description of Boilers 3 S.E. Working Pressure 220

IS A REPORT ON MAIN BOILERS NOW FORWARDED? yes

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 Similar Vessels Main Boilers 17.2.41 Auxiliary Boilers ✓ Donkey Boilers ✓
(If not state date of approval)

Superheaters 7.4.41 General Pumping Arrangements 20.3.41 Oil fuel Burning Piping Arrangements 21-3-41

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.

THE NORTH EASTERN MARINE ENGINEERING CO. (1938) LTD.

Robin Neill

DIRECTOR Manufacturer.

Dates of Survey while building

During progress of work in shops - - 1941 July 27. Aug. 13. 15. 25. 26. Sept. 1. 25. 26. 29. Oct. 7. 20. 27. Nov. 3. 10. 12. 14. 17. 18. 19. 2(
Dec. 1. 2. 3. 10. 11. 15. 19. 22. 24. 30. 31. 1942 Jan. 5. 6. 7. 8. 12. 13. 16. 19. 20. 21. 22. 27. 29. 30. Feb. 2. 3. 5. 6.

During erection on board vessel - - - 10. 12. 16. 17. 19. Mar. 3. 9. 10. 12. 16. 17. 18. 20. 24. 25. Apl. 1.

Total No. of visits 66.

Dates of Examination of principal parts—Cylinders 31.12.41 & 5.1.42 Slides 11.12.41 Covers 5.1.42

Pistons 11.12.41 Piston Rods 11.12.41 Connecting rods 11.12.41

Crank shaft 10.12.41 Thrust shaft 14.11.41 Intermediate shafts 6.1.42

Tube shaft ✓ Screw shaft 10.12.41 Propeller 10.12.41

Stern tube 15.12.41 Engine and boiler seatings 12.3.42 Engines holding down bolts 12.3.42

Completion of fitting sea connections 5.3.42.

Completion of pumping arrangements 1.4.42. Boilers fixed 12.3.42 Engines tried under steam 24.25/3/42 & 1/4/42

Main boiler safety valves adjusted 24.3.42. Thickness of adjusting washers P 13/32 Spt 9/32. C 3/8 S 3/8 Spt 3/8 S 1/4 Spt 3/8 S 7/16 Spt 1/4

Crank shaft material Steel Identification Mark 6296 6297 6299 6300/1/2/3/4 JD Roll 10.12.41 Thrust shaft material Steel Identification Mark 6308 AEG RM 14.11.41

Intermediate shafts, material Steel Identification Marks AEG 6476 / RM 6.1.42 Tube shaft, material ✓ Identification Mark ✓

Screw shaft, material Steel Identification Mark AEG 6475 / RM 10.12.41 Steam Pipes, material Steel Test pressure 660 Date of Test Various 9.1.42 to 16.2.42

Is an installation fitted for burning oil fuel yes. Is the flash point of the oil to be used over 150°F. yes

Have the requirements of the Rules for the use of oil as fuel 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 ✓

Is this machinery duplicate of a previous case yes. If so, state name of vessel Empire Airman Nos. 100141

General Remarks (State quality of workmanship, opinions as to class, &c. This machinery has been made & installed under Special Survey in accordance with the Approved Plans, the Specification & the Requirements of the Rules. The materials & workmanship are good & the machinery proved Satisfactory under working conditions at Quay

The machinery is eligible in my opinion to have the Records +LMC 4.42. 3SB Spt FD CL. Rlt. & Fitted for oil fuel 4.42. FP above 150°F.

Certificate to be sent to NEWCASTLE-ON-TYNE.

The Surveyors are requested not to write on or below the space for Committee's Minute.

The amount of Entry Fee ... £ 6 : 0 - 0.
Special +25% ... £ 135 : 17 - 6.
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :

When applied for, 10 APR 1942 19..
When received, ... 19.....

R Moffat
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 17 APR 1942

Assigned Fitt. final fuel oc FD, CL.