

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

NEWCASTLE-ON-TYNE FEB 1942

Date of writing Report 10 When handed in at Local Office 2/2/42 Port of NEWCASTLE-ON-TYNE

No. in Survey held at Wallsend Date, First Survey 27 July 1941 Last Survey 26 Jan 1942
 Reg. Book. on the SS. 'EMPIRE AIRMAN' (Number of Visits 63) Tons } Gross
 Net

Built at Sunderland By whom built Sir J. Laing & Sons Ltd Yard No. 739 When built 1942
 Engines made at Wallsend By whom made N.E. Marine Eng Co (1938) Ltd Engine No. 3009 When made 1942
 Boilers made at " By whom made " Boiler No. 3009 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 Ocean going

ENGINES, &c.—Description of Engines Triple Expansion Revs. per minute 85

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 15.205 Crank pin dia. 16" Crank webs Mid. length breadth 2-3 3/4" Thickness parallel to axis 9 1/2" x 10 1/2"
 as fitted 15 1/2" Mid. length thickness 4 1/2" x 4 1/2" shrunk Thickness around eye-hole 8 1/2" x 8"

Intermediate Shafts, diameter as per Rule 14.48" Thrust shaft, diameter at collars as per Rule 15.205
 as fitted 14 3/4" as fitted 15 3/4"

Tube Shafts, diameter as per Rule " Screw Shaft, diameter as per Rule 16.00 Is the tubo shaft fitted with a continuous liner yes
 as fitted " as fitted 16 1/4" as fitted 16 1/4" Is the screw shaft fitted with a continuous liner yes

Bronze Liners, thickness in way of bushes as per Rule .789 Thickness between bushes as per Rule .592 Is the after end of the liner made watertight in the
 as fitted 13/16" as fitted 13/16" 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 no If so, state type " Length of Bearing in Stern Bush next to and supporting propeller 5-5 1/4"

Propeller, dia. 18'-3" Pitch 14'-6" No. of Blades 4 Material Bronze whether Moveable no Total Developed Surface 131 3/4 sq. feet

Feed Pumps worked from the Main Engines, No. 2 Diameter 5" Stroke 27" Can one be overhauled while the other is at work yes
 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 @ 12x9x24 1 @ 9x6x10" Pumps connected to the { No. and size 1 @ 10x12x12 2 @ 5x27"
 How driven Steam Main Bilge Line { How driven Stern M. Engo.

Ballast Pumps, No. and size 1 @ 10x12x12" Lubricating Oil Pumps, including Spare Pump, No. and size "

Are two independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both Main Bilge Pumps and Auxiliary
 Bilge Pumps;—In Engine and Boiler Room 1 @ 3 1/2" Eng R. S. 1 @ 3 1/2" Eng R. aft. 1 @ 3 1/2" Bilge Room P. S. aft.
 In Pump Room 4" P. S. for 1 @ 2 1/2" In Hold, &c. (1 @ 3" P. S. for gutterway 6 of transfer pump)
→ 2 1/2" P. S.

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 (M. Injection on tank top M. discharge on reservoir) filled direct on the skin of the ship yes 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 yes
 What pipes pass through the deep tanks none 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 none Is it fitted with a watertight door yes worked from yes

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

Is Forced Draft fitted yes No. and Description of Boilers 3 SB Working Pressure 220 lbs.

IS A REPORT ON MAIN BOILERS NOW FORWARDED? yes

IS A DONKEY BOILER FITTED? no If so, is a report now forwarded? yes

Is the donkey boiler intended to be used for domestic purposes only yes

PLANS. Are approved plans forwarded herewith for Shafting 19.1.40 Main Boilers 17.2.41 Auxiliary Boilers yes Donkey Boilers yes
 (If not state date of approval) Sister vessels

Superheaters 7.4.41 General Pumping Arrangements 20.3.41 Oil fuel Burning Piping Arrangements 21.3.41
Settling tanks 18.10.41

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.

John Neill

Manufacturer.

DIRECTOR



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Lloyd's Register
 Foundation

1941
 July 27.31. Aug. 5.13.15.18.20.26.29. Sep. 1.2.4.5.8.16.18.25.29. Oct. 10.13.15.16.20.22
 During progress of work in shops -- } 23.24. Nov. 3.6.10.12.13.14.17.24.25.26.27. Dec. 1.3.5.10.11.12.15.16.17.18.19.22.23
 1942
 24.29.30.31. Jan. 2.5.6.7.8.14.15.20.26.
 Dates of Survey while building }
 During erection on board vessel --- }
 Total No. of visits 63.

Dates of Examination of principal parts—Cylinders 20.24/10/41 Slides 17.11.41 Covers 24.10.41
 Pistons 17.11.41 Piston Rods 17.11.41 Connecting rods 17.11.41
 Crank shaft 15.10.41 Thrust shaft 14.11.41 Intermediate shafts 14.11.41
 Tube shaft ✓ Screw shaft 3.11.41 Propeller 3.11.41 & 5.12.41
 Stern tube 23.10.41. 3.11.41 Engine and boiler seatings 24.12.41 Engines holding down bolts 24.12.41
 Completion of fitting sea connections 17.11.41
 Completion of pumping arrangements 29.1.42 Boilers fixed 24.12.41 Engines tried under steam 14.15.26 & 29/10/42
 Main boiler safety valves adjusted 15.1.42 Thickness of adjusting washers
 Crank shaft material Steel Identification Mark 5874.75.76.77.78 & 5879 AEG. Thrust shaft material Steel Identification Mark 5994 AEG. Rht 13.11.41
 Intermediate shafts, material Steel Identification Marks 6312 AEG. Rht 13.11.41 Tube shaft, material ✓ Identification Mark ✓
 Screw shaft, material Steel Identification Mark 6000 AEG. Rht 13.11.41 Steam Pipes, material Steel Test pressure 660 Date of Test 30.12.41
 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 no
 Is this machinery duplicate of a previous case yes If so, state name of vessel *Empire Silver Nwe 99435*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been made under Special Survey in accordance with the Approved Plans, the Requirements of the Rules & the Specification. 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. 1.42. 3SB (3pt) Rht F.D. CL Fitted for oil fuel 1.42 FP above 150°F.

NEWCASTLE-ON-TYNE.

The amount of Entry Fee ... £ 6 : 0 : 0
 Special + 25% ... £ 135 : 17 : 6
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 2 FEB 1942
 When received, 19

R. C. Moffitt
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRL 20 FEB 1942
 Assigned *Fitted for oil fuel &c. J.D., Ch.*