

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 26 SEP 1941

Date of writing Report 25/9/41 When handed in at Local Office *Hull* 1941 Port of *W. Hartlepool*
 No. in Survey held at *Hartlepool Haverston* Date, First Survey 11th November, 1940. Last Survey 25th September 1941
 Reg. Book. 36312 on the *S.S.C. "EMPIRE EMERALD"* (Number of Visits 82) Tons { Gross 8032.20 Net 4675.62
 Built at *Haverston Hill* By whom built *Furness Shipbuilding Co. Ltd.* Yard No. 334 When built 1941
 Engines made at *Hartlepool* By whom made *Richardsons Westgarth Co.* Engine No. 2405 When made 1941
 Boilers made at *"* By whom made *"* Boiler No. 2405 When made 1941
 Registered Horse Power Owners *Ministry of War Transport* Port belonging to *Middlesbrough*
 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 *Oil Tauger.*

ENGINES, &c.—Description of Engines *Triple Expansion Vertical Surface Condensing* Revs. per minute 85.5
 Dia. of Cylinders 24" x 44" x 46" Length of Stroke 51" No. of Cylinders 3 No. of Cranks 3
 Crank shaft, dia. of journals as per Rule 15.24" as fitted 15 1/2" Crank pin dia. 16" Crank webs Mid. length breadth ✓ Thickness parallel to axis 9 5/8" 10 1/8" shrunken ✓ Thickness around eye-hole 8 1/4" Mid. length thickness ✓
 Intermediate Shafts, diameter as per Rule 14.49" as fitted 14 3/4" Thrust shaft, diameter at collars as per Rule 15.24" as fitted 15 1/2" - 15 3/4"
 Tube Shafts, diameter as per Rule ✓ as fitted ✓ Screw Shaft, diameter as per Rule 16.01" 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 .49" 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 5-5"
 Propeller, dia. 19'-3" Pitch *Varying* No. of Blades 4 Material *Brass* whether Moveable *No* Total Developed Surface 131.75 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 24" Can one be overhauled while the other is at work *Yes*
 Feed Pumps { No. and size 2 @ 12" x 9" x 24", 1 @ 9" x 6" x 10" Pumps connected to the Main Bilge Line { No. and size 2 @ 5" x 24" 5" Connection Ballast Pump How driven *Steam* How driven *Main Engine* *Steam*
 Ballast Pumps, No. and size 1 @ 10" x 12" x 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 3 1/2" aft well, 3 1/2" E.R., 3 1/2" E.R.s, 2 1/2" Cofferdam 3 1/2" B.R.P., 3 1/2" B.R.S.
 In Pump Room (E.R.) 1-2 1/2" Main P.R. (E) 1-3" Port 1-3" (S) 70rd 60ff 1-2 (P) 1-2 (S) Deep Tanks 1-3 (S). After Cofferdam 1-3" ejector.
 Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 @ 5" S. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 5" S. Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes *mud box, valve & lead pipe* ✓
 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* 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 ✓ 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 *none* Is it fitted with a watertight door ✓ worked from ✓

MAIN BOILERS, &c.—(Letter for record *S*) Total Heating Surface of Boilers 10020 sq ft
 Which Boilers are fitted with Forced Draft *all* Which Boilers are fitted with Superheaters *all*
 No. and Description of Boilers 3 S.E. Multitubular Working Pressure 220 lb/sq in
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? *Yes*
 IS A DONKEY BOILER FITTED? *No* If so, is a report now forwarded? ✓
 Can the donkey boiler be used for domestic purposes only ✓

PLANS. Are approved plans forwarded herewith for Shafting 30/10/39 Main Boilers 16/10/39 Auxiliary Boilers ✓ Donkey Boilers ✓
 Superheaters ✓ General Pumping Arrangements 12/3/40 Oil fuel Burning Piping Arrangements 8/10/40

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.

Richardsons Westgarth & Co. Limited

W.R. Westgarth Manufacturer.



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002987-002996-0175

1940. Nov. 11. Dec. 26. 30. 31. 1941. Jan. 3. 7. 17. 21. Feb. 5. 11. 22. 27. 28. March 18. 24. 31. April 4. 8. 9. 15. 17. 21. 22. May 5. 13. 14. 15. 21. 22. 29. June 9. 11. 13. 16. 18. 25. 27. July 1. 7. 9. 11. 16. 17. 18. 21. 24. 25. 28. 31. Aug. 1. 2. 5. 6. 8. 11. 12. 13. 14. 15. 26. 27. 28. 29. 30. Sept. 1. 2. 3. 4. 5. 8. 9. 11. 16. 17. 18. 20. 22. 25.

During progress of work in shops - - -

Dates of Survey while building

During erection on board vessel - - -

Total No. of visits

1941
July 18, Aug. 18, Sept. 9, 15, 19, 29, Oct. 1, 2. (Tudor City)

82

Dates of Examination of principal parts—Cylinders 22/2/41 Slides 30/3/41 Covers 30/3/41
 Pistons 1/5/41 Piston Rods 1/5/41 Connecting rods 24/3/41
 Crank shaft 22/2/41 Thrust shaft 4/4/41 Intermediate shafts 4/8/41
 Tube shaft ✓ Screw shaft 7/8/41 Propeller ✓
 Stern tube 6/8/41 Engine and boiler seatings Engines holding down bolts ✓
 Completion of fitting sea connections Boilers fixed Engines tried under steam ✓
 Completion of pumping arrangements Thickness of adjusting washers ✓
 Main boiler safety valves adjusted ✓ Crank shaft material steel Identification Mark 9264 HAT Thrust shaft material steel Identification Mark 9265 HA
 Intermediate shafts, material steel Identification Marks 9820 WEL Tube shaft, material Identification Mark ✓
 Screw shaft, material steel Identification Mark 9265 HAT Steam Pipes, material steel Test pressure 660 LB. Date of Test 25/9/41
 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 tanker If so, have the requirements of the Rules been complied with ON
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with Not required
 Is this machinery duplicate of a previous case Yes If so, state name of vessel R.W. 2704

General Remarks (State quality of workmanship, opinions as to class, &c.)

The engines & boilers of this vessel have been constructed under Special Survey & in accordance with the approved plans.

The workmanship & materials have been found good.

The machinery has been forwarded to Haverton Hill to be fitted on board by Messrs. Jones Shipbuilding Co. in their Yd. No. 334.

In my opinion, this vessel will be eligible to have record of +LMC - with date - on completion.

The machinery fitted on board in accordance with the approved plans, & Rule Requirements, tried under steam & found working satisfactorily, & in our opinion is eligible for record of +LMC 10,41 & notation of T.S.(CL) 10,41, forced draught & superheated.

The ship's side inlet & discharge valves re-inforced in accordance with Admiralty Notice M.S. 2385/40 and M.S. 3199/40.

0 11/01/48

0 41/8/51

The amount of Entry Fee ... £ 6 : 0 :
 Special 4/5 LMC ... £ 86 : 19 :
 Donkey Boiler Fee ... £ 21 : 15 :
 Travelling Expenses (if any) £ :

When applied for, 25/9/1941
 When received, 20/10/41

Clive Bell or R. J. Easton
 Engineer Surveyor to Lloyd's Register of Shipping.

FRI. 31 OCT 1941

Committee's Minute

Assigned J. Lamb 10.41
 Jitt. for oil fuel
 J.D. C.



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