

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 23 MAR 1942

Date of writing Report 21/3/42 When handed in at Local Office 21/3/42 Port of W. Hartlepool
 No. in Survey held at Hartlepool Date, First Survey 15th August, 1941. Last Survey 26th March, 1942
 Reg. Book. on the s/s 'EMPIRE DICKENS' (Number of Visits 93) Gross 9,819 Tons
 Built at Haverthwaite By whom built Furness Shipbuilding Co. Ltd. Yard No. 341 When built 1942
 Engines made at Hartlepool By whom made Richardsons Westgarth Co. Engine No. 2413 When made 1942
 Boilers made at " By whom made " Boiler No. 2413 When made 1942
 Registered Horse Power 674 Owners Ministry of Sea Transport. Port belonging to "
 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 "

ENGINES, &c.—Description of Engines Triple expansion, vertical, Surface Condensing Revs. per minute 85.5
 Dia. of Cylinders 27" x 44" x 76" Length of Stroke 51" No. of Cylinders 3 No. of Cranks 3
 Crank shaft, dia. of journals as per Rule 15.214" Crank pin dia. 16" Crank webs Mid. length breadth ✓ Thickness parallel to axis 9 5/8" 10 3/8"
 as fitted 15 1/2" Mid. length thickness ✓ shrunk Thickness around eye-hole 8 1/2"
 Intermediate Shafts, diameter as per Rule 14.49" Thrust shaft, diameter at collars as per Rule 15.214"
 as fitted 14 3/4" as fitted 15 3/4" - 15 1/2"
 Tube Shafts, diameter as per Rule 16.01" Screw Shaft, diameter as per Rule 16 1/4" Is the tube shaft fitted with a continuous liner Yes
 as fitted ✓ as fitted ✓ Is the screw shaft fitted with a continuous liner Yes
 Bronze Liners, thickness in way of bushes as per Rule .79" Thickness between bushes as per Rule .59" Is the after end of the liner made watertight in the
 as fitted 13 1/16" as fitted 13 1/16" 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 ✓
 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. 18'-3" Pitch varying No. of Blades 4 Material bronz whether Moveable NO Total Developed Surface 131.75 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 2-12" x 9" x 24" ; 1-9" x 6" x 10" Pumps connected to the { No. and size 2-5" x 27" ; 5" Connector Ball Valve Pump
 How driven Steam Main Bilge Line { 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" ER, 3 1/2" ER, 3 1/2" Copden, 3 1/2" BR, 3 1/2" BR
 In Pump Room MAIN 2-4" FORD 1-2 1/2" In Holds, &c. FORE PEAK 1-4" DEEP TANK 2-2 1/2" COFF. D. 1-4" COFF. D (aft.) 3" water
 sector, Aft. PEAK 1-4"

MAIN WATER CIRCULATING PUMP DIRECT BILGE SUCTIONS, No. and size 1-10" p. **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 mudbox, valve steel 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 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 worked from

MAIN BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 10020 sq
 Which Boilers are fitted with Forced Draft all Which Boilers are fitted with Superheaters all
 No. and Description of Boilers 3 L.E. Multitubular Working Pressure 220 LB/sq
 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 2/1/40 Main Boilers 16/10/39 Auxiliary Boilers ✓ Donkey Boilers ✓
 (If not state date of approval) 30/10/39 Oil fuel Burning Piping Arrangements 28/10/41
 Superheaters ✓ General Pumping Arrangements ✓

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.
 For RICHARDSONS, WESTGARTH & Co. LIMITED.

W. E. D. Morgan Manufacturer.
 DIRECTOR



1941. Aug. 15. Sept. 5. 22. 24. 26. 30. Oct. 4. 8. 9. 16. 21. 23. 31. Nov. 3. 4. 7. 10. 11. 12. 14. 17. 18. 19. 20. 21. 25. Dec. 4. 5. 6.
 During progress of work in shops -- 9. 11. 12. 16. 17. 19. 23. 24. 26. 29. 1942. Jan. 2. 5. 6. 7. 9. 12. 15. 16. 17. 19. 20. 21. 22. 23. 26. 27. 28. 29. 31. Feb. 2. 3. 4. 5. 6. 9. 10. 11. 12. 13. 14. 16. 17. 18. 19. 20. 21. 23. 24. 25. 26. 27. March 2. 3. 4. 5. 9. 10. 11. 12. 13. 16. 18. 19. 20.
 Dates of Survey while building During erection on board vessel -- 1942 Jan. 8. 15. 27. Feb. 10. 25. March 6. 18. 25. 28. 31. April 1. 3. 4. 8.
 Total No. of visits 93. Incl. 14 visits

Dates of Examination of principal parts—Cylinders 30/9/41 Slides 28/11/41 Covers 28/11/41
 Pistons 28/11/41 Piston Rods 17/11/41 Connecting rods 20/10/41
 Crank shaft 8/10/41 Thrust shaft 31/10/41 Intermediate shafts 4/2/42
 Tube shaft ✓ Screw shaft 31/1/42 Propeller ✓ 10/2/42.
 Stern tube 31/1/42 Engine and boiler seatings 6/3/42 Engines holding down bolts 18/3/42.
 Completion of fitting sea connections 1/4/42
 Completion of pumping arrangements 3/4/42. Boilers fixed 18/3/42. Engines tried under steam 1/4/42.
 Main boiler safety valves adjusted 31/3/42 Thickness of adjusting washers P.B.U.P. 1/32 S. 3/8 - C.B.U.P. 1/32 S. 5/16 - S.B.U.P. 1/32 S. 7/16.
 Crank shaft material steel Identification Mark 9822 HAI Thrust shaft material steel Identification Mark 9822 HAI
 Intermediate shafts, material steel Identification Marks 9822 HAI Tube shaft, material ✓ Identification Mark ✓
 Screw shaft, material steel Identification Mark 9822 HAI Steam Pipes, material ✓ Test pressure 660 LB/IN² Date of Test ✓
 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 Riv. 2112 FASEDALE

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 specification & approved plans.
 The workmanship & materials have been found good.
 The machinery has been forwarded to Haverton Hill to be fitted on board by Messrs Furness Shipbuilding Co. in their Yard No 341.
 In my opinion, this vessel will be eligible to have a class of +LMC - with date - on completion.
 The machinery has now been fitted on board in accordance with the approved plans & Rule Requirements, tried out under working conditions & found satisfactory & in my opinion is eligible for record of +LMC - 4.42. & notation of TS(CW) - 4.42. from draught & superheated.
 The ship's side valves re. inspected & strengthened in accordance with Admiralty Order MS/2385/40 & MS. 3199/40.
 The Steam Pipes for this vessel having been made of Basic Bessemer Steel, the class of this vessel should be made subject to examination of the main steam pipes before the end of April 1946.

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

The amount of Entry Fee ... £ 6 : 0 :
 Special. 4/5 LMC ... £ 86 : 19 :
 Donkey Boiler Fee ... £ 21 : 15 :
 Special 1/5 LMC
 Travelling Expenses (if any) £ 21 : 15 :
 Supervisor 5 : 8 :
 When applied for, 20/3/1942
 When received, 19/5/42 (total)
 19.
 Committee's Minute
 Assigned
 FRI. 5 JUN 1942
 J. Lamb. 4. 42
 J.D. CR.

Clive Bell
 Engineer Surveyor to Lloyd's Register of Shipping.
 S. Norman Stuart

