

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 24 JUL 1942

Date of writing Report 23/7/42 when handed in at Local Office 23/7/42 Port of Hartlepool
 No. in Survey held at Hartlepool & Middlesbrough Date, First Survey 27th Oct., 1941, Last Survey 22nd July, 1942
 Reg. Book. on the s/s "EMPIRE LYTON" (Number of Visits 90)
 Built at Haveron Hill By whom built Furness Shipbuilding Co. Ltd. Yard No. 343 Tons { Gross
 Engines made at Hartlepool By whom made Richardsons Westgarth Co. Engine No. 2716 When built 1942 Net
 Boilers made at " By whom made " Boiler No. " When made "
 Registered Horse Power 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 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 15.214" Crank pin dia. 16" Crank webs Mid. length breadth 10 1/8" Thickness parallel to axis 8 1/4"
 as fitted 15 1/2" Mid. length thickness shrunk Thickness around eye-hole
 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 5/8"
 Tube Shafts, diameter as per Rule 16.01" Is the { tube } shaft fitted with a continuous liner { Yes }
 as fitted 16 1/4" { screw }
 Screw Shaft, diameter as per Rule 16.01" as fitted 16 1/4"
 Bronze Liners, thickness in way of bushes as per Rule 79 13/16" Thickness between bushes as per Rule 59" Is the after end of the liner made watertight in the
 as fitted 79 13/16" 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 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"
 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 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 3
 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 3 1/2" aft well, 3 1/2" E.R.P., 3 1/2" E.R.P., 2 1/2" Copden, 3 1/2" B.R.P., 3 1/2" B.R.P.
 In Pump Room MAIN 2-4" FORD 1-2 1/2" In Holds, &c. FORE PEAK 1 1/4" DEEP TANK 2-2 1/2", COFF: D 1-4"
AFT PEAK 1-4" COFF: D (AFT) 3" WATER EJECTOR.

MAIN BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 10020 sq. ft. all
 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/10"
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes
 IS A DONKEY BOILER FITTED? Yes 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
 Superheaters ✓ General Pumping Arrangements ✓ Oil fuel Burning Piping Arrangements 28/10/41

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes.
 State the principal additional spare gear supplied

For RICHARDSONS, WESTGARTH & Co. LIMITED
 The foregoing is a correct description.
W. J. Overage
 DIRECTOR

Manufacturer.



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1941. Oct. 29. Nov. 17. 26. 27. Dec. 8. 12. 15. 17. 26. 1942. Jan. 6. 8. 10. 15. 21. 22. 23. 24. Feb. 3. 4. 10.
 12. 13. March 3. 9. 10. 11. 16. 17. 20. 24. 25. 30. 31. April 1. 3. 10. 11. 15. 14. 17. 22. 23. 24. 27. 28. 30. May 5. 6. 8. 11.
 13. 14. 18. 20. 27. 28. 29. June 1. 2. 3. 4. 8. 11. 12. 15. 16. 17. 19. 22. 20. 23. 24. 26. 27. 30. July 1. 2. 3. 6. 7. 8. 9. 13. 14. 15.
 17. 18. 20. 21. 22.
 1942. May 22. 24. 29. June 1. 5. 8. 15. 18. 26. July 8. 10. 20. Aug. 4. 13. 19. 25.

Dates of Survey while building
 During progress of work in shops
 During erection on board vessel
 Total No. of visits 90 16 (Huller)

Dates of Examination of principal parts—Cylinders 27/4/42 Slides 27/4/42 Covers 5/5/42
 Pistons 5/5/42 Piston Rods 3/4/42 Connecting rods 3/4/42
 Crank shaft 23/1/42 Thrust shaft 23/4/42 Intermediate shafts 8/6/42
 Tube shaft ✓ Screw shaft 8/6/42 Propeller ✓ 15/6/42
 Stern tube 8/6/42 Engine and boiler seatings 25/6/42 Engines holding down bolts 24/7/42
 Completion of fitting sea connections 15/6/42
 Completion of pumping arrangements 12/8/42 Boilers fixed 4/8/42 Engines tried under steam 12/8/42
 Main boiler safety valves adjusted 13/8/42 Thickness of adjusting washers P.B. 2 5/16 S 7/16 C.B. 1/2 S 1/2 S.P. 1/2 S 5/16
 Crank shaft material Steel Identification Mark 10734 HAI Thrust shaft material Steel Identification Mark 5956 JFC
 Intermediate shafts, material Steel Identification Marks 5955 JFC Tube shaft, material ✓ Identification Mark
 Screw shaft, material Steel Identification Mark 5954 JFC Steam Pipes, material Steel Test pressure 600 lb Date of Test 24/7/42
 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 2715

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 Harland & Wolff to be fitted on board by Messrs. Furness Shipbuilding Co. in their Yard No. 343. In my opinion, this vessel will be eligible to have record 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 our opinion is eligible for record of + LMC - 8.42. & notation of T.S. (C-1) - 8.42. (forced draught & Superheat). The ship's side valves etc. inspected & strengthened in accordance with Admiralty notices MS/2385/40 & MS 3199/40, & instructions according to SR & O 1942 No. 1519 carried into effect.

Certificate to be sent to
 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 :
 Supervision Donkey Boiler Fee ... £ 21 : 15 :
 Travelling Expenses (if any) £ - : - :
 Special 1/5 LMC 21 : 15 :
 Supervision 5 : 8 :
 Committee's Minute TUE, 22 SEP 1942

Clue Bell.
 Engineer Surveyor to Lloyd's Register of Shipping.
 G. Norman Stuart.

Assigned + LMC 8.42
 Fitt. for oil fuel
 J.D. Co.