

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

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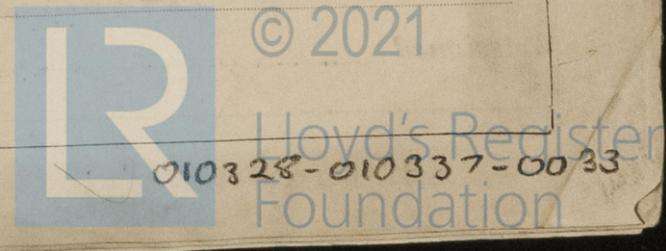
Date of writing Report 15.9.43 When handed in at Local Office 16.9.43 Port of WEST HARTLEPOOL
 No. in Survey held at WEST HARTLEPOOL Date, First Survey March 16 1943 Last Survey September 1 1943
 Reg. Book. on the STEEL SCREW STEAMER, EMPIRE RIVAL (Number of Visits 56) Tons { Gross 7044.81
 { Net 4846.82
 Built at WEST HARTLEPOOL By whom built WM. GRAY & CO LTD Yard No. 1151 When built 1943
 Engines made at WEST HARTLEPOOL By whom made CENTRAL MARINE ENG WRKS Engine No. 1151 When made 1943
 Boilers made at WEST HARTLEPOOL By whom made CENTRAL MARINE ENG WRKS Boiler No. 1151 When made 1943
 Registered Horse Power 510 Owners MINISTRY OF WAR TRANSPORT Port belonging to WEST HARTLEPOOL
 Nom. Horse Power as per Rule 510 Is Refrigerating Machinery fitted for cargo purposes NO Is Electric Light fitted Yes
 Trade for which Vessel is intended OCEAN GOING

ENGINES, &c.—Description of Engines INVERTED TRIPLE EXPANSION Revs. per minute 76
 Dia. of Cylinders 24 1/2 x 39 x 70 Length of Stroke 18 1/2 No. of Cylinders 3 No. of Cranks 3
 Crank shaft, dia. of journals as per Rule 13.99 Crank pin dia. 14 1/4 Crank webs Mid. length breadth 2 1/2 Thickness parallel to axis 8 3/4
 as fitted 14 1/4 Mid. length thickness 8 3/4 shrunk Thickness around eye-hole 6 1/4
 Intermediate Shafts, diameter as per Rule 13.32 Thrust shaft, diameter at collars as per Rule 13.99
 as fitted 13 7/8 as fitted 14 1/4
 Tube Shafts, diameter as per Rule 14.34 Is the { tube } shaft fitted with a continuous liner { Yes
 as fitted 15 1/4 { screw }
 Bronze Liners, thickness in way of bushes as per Rule 17.53 Thickness between bushes as per Rule 5.6 Is the after end of the liner made watertight in the
 as fitted 8.12 as fitted 2 1/2 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 One length
 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 tub
 shaft NO If so, state type — Length of Bearing in Stern Bush next to and supporting propeller 5-1 1/2
 Propeller, dia. 18-3 Pitch 16-6 No. of Blades 4 Material CAST IRON whether Moveable NO Total Developed Surface 110 sq. feet
 Can one be overhauled while the other is at work —
 Feed Pumps worked from the Main Engines, No. 2 Diameter 4 Stroke 28 Can one be overhauled while the other is at work Yes
 Bilge Pumps worked from the Main Engines, No. 2 Diameter 4 Stroke 28 Can one be overhauled while the other is at work Yes
 Feed Pumps { No. and size 3 @ 9 1/2 x 7 x 21 SINGLES Pumps connected to the { No. and size 2 @ 4 x 28 } @ 10 x 11 x 10 @ 9 1/2 x 7 x 21
 { How driven INDEPENDENT STEAM } Main Bilge Line { How driven HAM ENGINE } INDEPENDENT STEAM
 Ballast Pumps, No. and size 1 @ 10 x 11 x 10 DUPLEX 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 4 @ 3" 1 @ 5" In Holds, &c. N° 1 2 @ 3" N° 2 2 @ 3" N° 3 2 @ 3" N° 4 BLRRM.
 In Pump Room 2 @ 3" ENG RM. 2 @ 3" N° 5 2 @ 3" N° 6 1 @ 4 1/2 @ 3" TUNNEL WELL 1 @ 2 1/2"
 Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 @ 9" 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 On reservoirs 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 Bilge pipes to Forward Holds. How are they protected Wood ceilings
 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 Yes Is it fitted with a watertight door NO worked from —

MAIN BOILERS, &c.—(Letter for record S.) Total Heating Surface of Boilers 7,248 sq
 Which Boilers are fitted with Forced Draft all Which Boilers are fitted with Superheaters all
 No. and Description of Boilers 3 single ended multitubular 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? —
 Can the donkey boiler be used for domestic purposes only —
PLANS. Are approved plans forwarded herewith for Shafting 9.5.41 Main Boilers 19.2.41 Auxiliary Boilers — Donkey Boilers —
 (If not state date of approval)
 Superheaters — General Pumping Arrangements — Oil fuel Burning Piping 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 THE CENTRAL MARINE ENGINE WORKS
M. Gray
 Manufacturer.



NOTE.—The words which do not apply should be deleted.

1943. Mar. 16. April. 7. 29. May. 7. 22. 25. 27. June. 2. 3. 5. 7. 8. 9. 10. 11. 15. 16. 18. 19. 21. 22. 23.
 24. 25. 28. 29. 30. July. 1. 2. 3. 5. 6. 7. 8. 9. 10. 12. 13. 14. 16. 19. 21. 22. 23. 24. 26. 27. 28. 29. 30.
 Aug. 11. 17. 25. 30. 31. Sept. 1.

Dates of Survey while building: During erection on board vessel - - -
 Total No. of visits: 1256

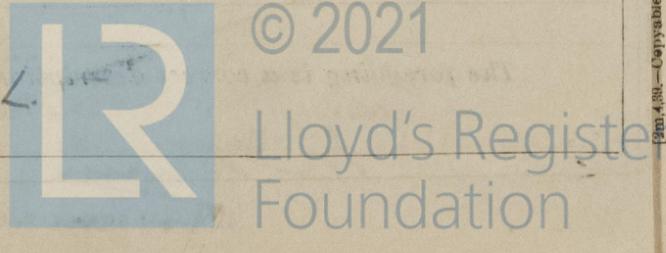
Dates of Examination of principal parts—Cylinders 29-4-H3 - 21-6-H3 Slides 7-6-H3 Covers 7-6-H3
 Pistons 7-6-H3 Piston Rods 7-6-H3 Connecting rods 7-6-H3
 Crank shaft 11-5-H3 - 29-6-H3 Thrust shaft American Intermediate shafts American
 Tube shaft ✓ Screw shaft American Propeller 30-6-H3
 Stern tube 30-6-H3 Engine and boiler seatings 9-6-H3 Engines holding down bolts 22-7-H3
 Completion of fitting sea connections 9-6-H3
 Completion of pumping arrangements 20-8-H3 Boilers fixed 22-7-H3 Engines tried under steam 31-8-H3
 Main boiler safety valves adjusted 30-8-H3 Thickness of adjusting washers
 Crank shaft material INGOT STEEL Identification Mark N° 575 CP Thrust shaft material INGOT STEEL Identification Mark N° 9664 H3C
 Intermediate shafts, material INGOT STEEL Identification Marks N° 6214, 6272, 7488, 9601 H3C, 7488, 795 H3C Tube shaft, material Identification Mark -
 Screw shaft, material INGOT STEEL Identification Mark N° 6208 OH. Steam Pipes, material SP STEEL Test pressure 600 lbs Date of Test 24-7-H3
 Is an installation fitted for burning oil fuel No. Is the flash point of the oil to be used over 150°F.
 Have the requirements of the Rules for the use of oil as fuel been complied with ✓
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo No. 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 S.S. EM PEAK. RPTN° 18437.

General Remarks (State quality of workmanship, opinions as to class, &c.) The engines and boilers of this vessel have been built under special survey and in accordance with the approved plans and specification. The materials and workmanship have been found good. Upon completion they were examined under full working conditions and found satisfactory. It is recommended that the machinery of this vessel be classed in the Register Book of L.M.C. 9.43. 3SB(SPT) F.D. C.L. Note: Basic Bessemer Steel Tubes. All auxiliary steam pipes to be submitted for examination after 4 years.

The amount of Entry Fee ... £ 6 : 0 :
 Special ... £ 100 : 10 :
 SUPERVISION Donkey Boiler Fee ... £ 25 : 3 :
 Travelling Expenses (if any) £ : :
 When applied for, Sept 15 1943.
 When received, 19

Arthur W. Oxford
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 28 SEP 1943
 Assigned + LMC 9.43 F.D. C.L.



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