

# REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

16 SEP 1943

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  
(Number of Visits 56)

Reg. Book. on the STEEL SCREW STEAMER, EMPIRE RIVAL 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 WORKS Engine No. 1151 When made 1943

Boilers made at WEST HARTLEPOOL By whom made CENTRAL MARINE ENG WORKS Boiler No. 1151 When made 1943

Registered Horse Power 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" x 39" x 70" Length of Stroke 48" 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 21" Thickness parallel to axis 8 3/4" shrunk

Intermediate Shafts, diameter as per Rule 13.32" as fitted 13 3/8" Thrust shaft, diameter at collars as per Rule 13.99" as fitted 14 1/4"

Tube Shafts, diameter as per Rule 14.34" as fitted 15 1/4" Is the { tube } shaft fitted with a continuous liner { Yes

Screw Shaft, diameter as per Rule 17.53" as fitted 18 1/2" Is the { screw } shaft fitted with a continuous liner { Yes

Bronze Liners, thickness in way of bushes as per Rule 17.53" as fitted 18 1/2" Thickness between bushes as per Rule 2 1/2" as fitted 2 1/2" 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 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

shaft No. If so, state type

Is an approved Oil Gland or other appliance fitted at the after end of the tube

Length of Bearing in Stern Bush next to and supporting propeller 5' 1"

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" @ 9 1/2" x 7" x 21"

Pumps { 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 = BLR RM.

In Pump Room 2 @ 3" ENGRM. 2 @ 3" N° 5 2 @ 3" N° 6 1 @ 4" 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 3.) Total Heating Surface of Boilers 7,248 sq. ft.

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.

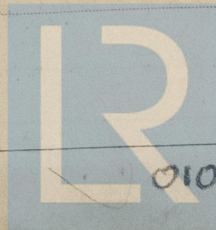
Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied

The foregoing is a correct description.

FOR THE CENTRAL MARINE ENGINE WORKS

Manufacturer.



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Lloyd's Register  
Foundation

010328-010337-0033



1943. Mar. 16. April 7. 29. May 7. 22. 25. 27. June 2. 3. 5. 7. 8. 9. 10. 11. 15. 16. 18. 19. 31. 22. 23.  
During progress of work in shops - - -  
24. 25. 28. 29. 30. July 1. 2. 3. 5. 6. 7. 8. 9. 10. 12. 13. 14. 16. 19. 31. 22. 23. 24. 26. 27. 28. 29. 30.  
Dates of Survey while building  
During erection on board vessel - - -  
Aug. 11. 17. 25. 30. 31. Sept. 1.  
Total No. of visits 1256

Dates of Examination of principal parts—Cylinders 29.4.43 - 21.6.43 Slides 7.6.43 Covers 7.6.43  
Pistons 7.6.43 Piston Rods 7.6.43 Connecting rods 7.6.43  
Crank shaft 11.5.43 - 29.6.43 Thrust shaft American Intermediate shafts American  
Tube shaft ✓ Screw shaft American Propeller 30.6.43  
Stern tube 30.6.43 Engine and boiler seatings 9.6.43 Engines holding down bolts 22.7.43  
Completion of fitting sea connections 9.6.43  
Completion of pumping arrangements 30.8.43 Boilers fixed 22.7.43 Engines tried under steam 31.8.43  
Main boiler safety valves adjusted 30.8.43 Thickness of adjusting washers  
Crank shaft material INGOT STEEL Identification Mark N° 575 CP Thrust shaft material INGOT STEEL Identification Mark N° 9664 H13C  
Intermediate shafts, material INGOT STEEL Identification Marks N° 6214 6212 7488 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 24.7.43  
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 as LMC 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, 24.9.43  
When received, 19.

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

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