

## REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office.

Date of writing Report 16<sup>th</sup> SEPT. 1944. When handed in at Local Office 22<sup>nd</sup> SEPT. 1944. Port of Greenock  
 No. in Survey held at Greenock Date, First Survey 5<sup>th</sup> AUGUST 1943. Last Survey 26<sup>th</sup> SEPTEMBER 1944.  
 Reg. Book (Number of Visits 56)  
 on the EMPIRE BALFOUR  
 Built at Port Glasgow By whom built Lithgows Ltd. Yard No. 998 Tons { Gross 7200.97  
 Engines made at Glasgow By whom made Harland & Wolff Ltd. Engine No. 8370 Net 4946.38 When built 1944  
 Boilers made at Glasgow & Greenock By whom made John Brown & Co. Ltd. & Rankin & Blackmore Ltd. Boiler No. 496 When made 1944  
 Registered Horse Power Owners Ministry of War Transport Port belonging to GREENOCK  
 Nom. Horse Power as per Rule 560 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes  
 Trade for which vessel is intended Foreign

## ENGINES, &amp;c.—Description of Engines

Revs. per minute  
 Dia. of Cylinders Length of Stroke No. of Cylinders No. of Cranks  
 Crank shaft, dia. of journals as per Rule Crank pin dia. 13.3" Crank webs length breadth Thickness parallel to axis  
 as fitted 13.3" Mid. length thickness shrunk Thickness around eye-hole  
 Intermediate Shafts, diameter as per Rule 13.58" Thrust shaft, diameter at collars as per Rule 13.99"  
 as fitted 13.58" as fitted 14.4"  
 Tube Shafts, diameter as per Rule Screw Shaft, diameter as per Rule 14.85" Is the tube shaft fitted with a continuous liner { Yes  
 as fitted 7.54" as fitted 15.14" screw  
 Bronze Liners, thickness in way of bushes as per Rule 13.16" Thickness between bushes as per Rule 5.65" Is the after end of the liner made watertight in the  
 as fitted 13.16" as fitted 5.65" 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  
 at No. If so, state type Length of Bearing in Stern Bush next to and supporting propeller 61"  
 Propeller, dia. 18.3" Pitch Var 16.6" Max. No. of Blades 4 Material C.I. whether Moveable No Total Developed Surface 110 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. Diameter Stroke 27" Can one be overhauled while the other is at work Yes  
 Feed Pumps { No. and size Pair 10.5-8"x22" One 9.5-7"x21" Pumps connected to the { No. and size One 9.12"x12" One 9.5-7"x21"  
 { How driven Steam Main Bilge Line { How driven Steam  
 Ballast Pumps, No. and size One 9.12"x12" Lubricating Oil Pumps, including Spare Pump, No. and size none  
 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 @ 3"  
 In Pump Room No. 4. -2@3" No. 5. -2@2" 8 1@3" In Holds, &c. No. 1. -2@3" No. 2. -2@3" No. 3. -2@3" Trougher 2@2.5"  
No. 4. -2@3" No. 5. -2@2" 8 1@3" Tunnel Well one at 2.5"  
 Main Water Circulating Pump Direct Bilge Suctions, No. and size One @ 9" Independent Power Pump Direct Suctions to the Engine Room Bilges,  
 No. and size One @ 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 Yes. Main hulet in Reservoir 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 Fuel Hold Suctions How are they protected Wood Casings  
 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 Yes Is it fitted with a watertight door Access by trunk from Upper Deck

MAIN BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 8368 sq. ft.  
 Which Boilers are fitted with Forced Draft all Which Boilers are fitted with Superheaters Both wing boilers (main)  
 No. and Description of Boilers 3 Cylindrical Multitubular Working Pressure 220 lbs  
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes. Glasgow Report No. 68720. Reply. Gk Report.  
 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 Main Boilers Auxiliary Boilers Yes Donkey Boilers  
 (If not state date of approval)  
 Superheaters General Pumping Arrangements Yes 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 As per Specification

The foregoing is a correct description.  
 For Rankin & Blackmore Ltd.  
James Lewis  
 Works Manager.

Manufacturer.



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Foundation

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Dates of Survey while building  
During progress of work in shops - - (1943) AUG. 5. NOV. 16. DEC. 15. 28. (1944) JAN. 5. 14. 19. 24. 31. FEB. 14. MAR. 10. 21. 24. 29. APRIL 4. 10. 14. 19. 21. 24.  
During erection on board vessel - - - MAY 2. 9. 15. 24. JUNE 1. 14. 19. 21. 23. 24. JULY 11. 12. 15. 17. 24. 25. 26. 27. AUG. 2. 5. 7. 8. 9. 10. 11. 16. 18. 21. 28.  
SEPT. 1. 4. 11. 12. 13. 15. 20.  
Total No. of visits 56.

Dates of Examination of principal parts—Cylinders Slides  
Pistons GLASGOW REPORT No. 65888  
Connecting rods  
Crank shaft Thrust shaft 19.6.44 Intermediate shafts 19.6.44  
Tube shaft Screw shaft 23.6.44 Propeller 23.6.44  
Stern tube 19.6.44 Engine and boiler seatings 27.6.44 Engines holding down bolts 7.8.44  
Completion of fitting sea connections 19.6.44  
Completion of pumping arrangements 21.8.44 Boilers fixed 27.7.44 Engines tried under steam 21.8.44  
Main boiler safety valves adjusted 21.8.44 Thickness of adjusting washers P. 5 1/2" Suppl. 13" C. 5 3/4" S. 5 1/6" Suppl. 23/64  
Crank shaft material Identification Mark Thrust shaft material S.M. Steel Identification Mark 12558  
Intermediate shafts, material S.M. Steel Identification Marks 12558 19.6.44 Tube shaft, material Identification Mark  
Screw shaft, material S.M. Steel Identification Mark 12558 23.6.44 Steam Pipes, material S.D. Steel Test pressure 660 lbs. Date of Test Aug. 1944  
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 "EMPIRE TALISMAN" GRK. REPORT. No. 22733

General Remarks (State quality of workmanship, opinions as to class, &c.)  
These engines and boilers, as per Glasgow Reports No. 65888 and 68720, have been built under Special Survey and have been satisfactorily installed in the vessel, tried under steam on short sea trial.  
The materials and workmanship are good.  
The Ministry of War Transport Specification has been supervised.  
They are eligible, in my opinion, to be classed in the Register book + LMC. 9.44. and the notation C.L. 2 main and 1 Auxly. boiler. Main boilers superheated.

The amount of Entry Fee ... £ : : When applied for,  
Special 1/5 ... £ 20 : 12. : 16th SEPT 1944  
Donkey Boiler Fee ... £ 5 : 2. :  
Travelling Expenses (if any) £ : : When received,  
21st SEPT 1944

M. Caldwell.  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 27 SEP 1944  
Assigned + L.M.C.G. 44



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