

## REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

Date of writing Report 1<sup>st</sup> July 1943. When handed in at Local Office 2<sup>nd</sup> July 1943. Port of Greenock.  
 No. in Survey held at Greenock. Date, First Survey 29<sup>th</sup> May 1942. Last Survey 28<sup>th</sup> June 1943.  
 Reg. Book (Number of Visits 68.)  
 on the "EMPIRE SERVICE" Tons { Gross 7066.83  
 Net 6601.37  
 Built at Pont. Glasgow By whom built Lithgous Ltd. Yard No. 982 When built 1943  
 Engines made at Greenock By whom made Rankin & Blackman Ltd. Engine No. 490 When made 1943  
 Boilers made at Greenock By whom made Rankin & Blackman Ltd. Boiler No. 490 When made 1943  
 Registered Horse Power - Owners Murray of Shipping Port belonging to Greenock  
 Nom. Horse Power as per Rule 514 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
 Trade for which vessel is intended Foreign

ENGINES, &c.—Description of Engines Reciprocating Revs. per minute 70  
 Dia. of Cylinders 24 1/2 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 3/4 Mid. length breadth - Thickness parallel to axis 9"  
 as fitted 14 1/4 Crank webs shrunk 6 3/8"  
 Intermediate Shafts, diameter as per Rule 13.33 Thrust shaft, diameter at collars as per Rule 13.99  
 as fitted 13 5/8" as fitted 14 1/4"  
 Tube Shafts, diameter as per Rule - Screw Shaft, diameter as per Rule 14.85 Is the tubo shaft fitted with a continuous liner Yes  
 as fitted - as fitted 15 1/4 as fitted 9 1/6"  
 Bronze Liners, thickness in way of bushes as per Rule 7.53 Thickness between bushes as per Rule 9 1/6" Is the after end of the liner made watertight in the  
 as fitted 13 1/16" as fitted 5 1/8" 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 1/2" Pitch Var. 16 1/2" 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. 2 Diameter 4" Stroke 24" Can one be overhauled while the other is at work Yes  
 Feed { No. and size 9 1/2 x 21 (Twin) & One 9 1/2 x 21 Pumps connected to the { No. and size 1 - 9 1/2 x 12 1 - 9 1/2 x 21  
 Pumps { How driven Steam Main Bilge Line { How driven Steam  
 Ballast Pumps, No. and size One 9 1/2 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 @ 3" and 2 @ 2" (HAT BOXES)  
 In Pump Room Cofferdam 1 @ 2 1/2" In Holds, &c. Nº 1 - 2 @ 3" Nº 2 - 2 @ 3 1/2" Crossunker 2 @ 2 1/2"  
 Main Water Circulating Pump Direct Bilge Suctions, No. and size One at 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 / on Renovation 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 Main & Tank 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 Fond. Bilge Suctions How are they protected Wood casings  
 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. Access from Upper Deck Level

MAIN BOILERS, &c.—(Letter for record 5) Total Heating Surface of Boilers 7344 sq. ft.  
 Which Boilers are fitted with Forced Draft 3 Main Which Boilers are fitted with Superheaters 3 main  
 No. and Description of Boilers 3 Cylindrical 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 9/10/42 Main Boilers 17/4/42 Auxiliary Boilers - Donkey Boilers -  
 (If not state date of approval)  
 Superheaters N.E.M. Approved Type General Pumping Arrangements Yes 21/8/42 Oil fuel Burning Piping Arrangements -  
 SPARE GEAR.

Has the spare gear required by the Rules been supplied YesState the principal additional spare gear supplied -

The foregoing is a correct description.

James Green

Manufacturer.



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Lloyd's Register  
Foundation

00509-005074-0127



Rpt. 5  
Date of  
No. in  
Reg. Book  
Built at  
Engines  
Boilers  
Nomina  
MUL  
Manufa  
Total H  
No. and  
Tested  
Area o  
Area of  
In case  
Smaller  
Smaller  
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Pitch  
Front  
Thick  
Pitch  
Main  
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Screw  
Diam

(1942) MAY 29. JUNE 23 30. JULY 2 21 22 29. AUG. 3 18 24 28. SEPT. 1 4 16 23 28. OCT. 2 5 9 13 20 22 29  
During progress of work in shops - - -  
Nov. 3 10 13 20 25. DEC. 2 4 7 10 14 24 28. (1943) JAN. 5 6 12 13 22 28. FEB. 1 10. MAR. 1 2 10 26.  
Dates of Survey while building  
During erection on board vessel - - -  
APRIL 2 5 9 16 23 26 29. MAY 3 10 11 13 18 21 28. JUNE 4 7 16 17 18 25 28.  
Total No. of visits 68.

Dates of Examination of principal parts - Cylinders 29/10/42. Slides 13/11/42. Covers 25/11/42  
Pistons 13/11/42. Piston Rods 4/12/42. Connecting rods 4/12/42  
Crank shaft 23/9/42. Thrust shaft 24/12/42. Intermediate shafts 26/4/43  
Tube shaft 13/5/43. Screw shaft 13/5/43. Propeller 13/5/43  
Stern tube 13/5/43. Engine and boiler seatings 9/4/43. Engines holding down bolts 11/5/43  
Completion of fitting sea connections 11/5/43  
Completion of pumping arrangements 18/6/43. Boilers fixed 16/6/43. Engines tried under steam 18/6/43  
Main boiler safety valves adjusted 18/6/43. Thickness of adjusting washers P 3/32" Suplt 3/8" C 5/32" Suplt 3/8" S 5/32" Suplt 3/8"  
Crank shaft material S. Identification Mark MC. 23/9/42. Thrust shaft material S. Identification Mark MC. 24/12/42  
Intermediate shafts, material S. Identification Marks MC. 26/4/43. Tube shaft, material S. Identification Mark 17/5/43  
Screw shaft, material MC. 13/5/43. Identification Mark S. Steam Pipes, material S.O.S. 60/60 O.H. Test pressure 660/60 Date of Test 8/6/43  
Is an installation fitted for burning oil fuel No. Is the flash point of the oil to be used over 150° F. No.  
Have the requirements of the Rules for the use of oil as fuel been complied with No.  
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 No.  
If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with No.  
Is this machinery duplicate of a previous case No. If so, state name of vessel No.

General Remarks (State quality of workmanship, opinions as to class, &c.) These engines and boilers have been built under Special Survey, in accordance with the rules and the approved plans. The materials and workmanship are good. They have been securely fitted in the Vessel and tried under steam satisfactorily.  
The Machinery is eligible, in my opinion, to have the Record of L.M.C. 6.43 and the Notation T.S. CL. and 3 boilers F.D. (SUPHT).  
As requested in the Secretary's letter dated 4th March 1940 the plans and Specification have been supervised and a copy of the certificate issued is attached herewith.

Committee's Minute GLASGOW 6 JUL 1943  
Assigned -1- LMC 6.43  
F.D. Int

The amount of Entry Fee ... £ 6 : 0 :  
Special ... £ 100 : 14 :  
Donkey Boiler Fee 25% Spec. £ 25 : 4 :  
Travelling Expenses (if any) £ : :  
When applied for, 2nd July 1943.  
When received, 19.  
M. Caldwell  
Engineer Surveyor to Lloyd's Register of Shipping.  
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