

## REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 25 JUN 1941

Date of writing Report 19 When handed in at Local Office 23.6.41 Port of GLASGOW  
 No. in Survey held at GLASGOW Date, First Survey 18.7.40 Last Survey 11.6.1941  
 Reg. Book. on the 3/s "EMPIRE MOAT" (Number of Visits 40) Gross 2922 Tons Net 1640  
 Built at PT GLASGOW By whom built LITHGOWS LD. Yard No. 951 When built 1941  
 Engines made at GLASGOW By whom made DAVID ROWAN & CO. LD. Engine No. 1076 When made 1941  
 Boilers made at -DO- By whom made -DO- Boiler No. 1076 When made 1941  
 Registered Horse Power - Owners MINISTRY OF WAR TRANSPORT Port belonging to  
 Nom. Horse Power as per Rule 240 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 Revs. per minute  
 Dia. of Cylinders 18 1/2" - 31" - 52" Length of Stroke 39" No. of Cylinders 3 No. of Cranks 3  
 Crank shaft, dia. of journals as per Rule 10 1/2" as fitted 10 1/2" Crank pin dia. 10 3/4" Crank webs Mid. length breadth 20 1/2" Thickness parallel to axis 6 3/4"  
 as fitted 10 1/2" Mid. length thickness 6 3/4" Thickness around eye-hole 4 7/8"  
 Intermediate Shafts, diameter as per Rule - as fitted - Thrust shaft, diameter at collars as per Rule 10 1/2" as fitted 10 7/8"  
 Tube Shafts, diameter as per Rule - as fitted - Screw Shaft, diameter as per Rule 11 23/32" as fitted 12" Is the tube shaft fitted with a continuous liner Yes  
 as fitted - as fitted 12" Is the screw shaft fitted with a continuous liner Yes  
 Bronze Liners, thickness in way of bushes as per Rule 6 1/4" as fitted 11/16" Thickness between bushes as per Rule 4 1/8" as fitted 5/8" 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 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  
 Length of Bearing in Stern Bush next to and supporting propeller 4'-0"  
 Propeller, dia. 15'-3" Pitch 14'-9 3/4" No. of Blades 4 Material CS whether Moveable No Total Developed Surface 84 sq. feet  
 Feed Pumps worked from the Main Engines, No. 2 Diameter 3" Stroke 21" Can one be overhauled while the other is at work Yes  
 Bilge Pumps worked from the Main Engines, No. 2 Diameter 3 1/2" Stroke 21" Can one be overhauled while the other is at work Yes  
 Feed Pumps { No. and size 10 8" x 6" x 15" Pumps connected to the { No. and size Ballast Pump & 10 8" x 6" x 15"  
 How driven Steam Main Bilge Line How driven Steam  
 Ballast Pumps, No. and size 10 12" x 14" x 12" Lubricating Oil Pumps, including Spare Pump, No. and size -  
 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 20 2 1/2" in ER 10 2 1/2" in ER well  
 In Pump Room - In Holds, &c. Nos 1 & 2 Holds 20 3" Nos 3 & 4 Holds 20 3 1/2"

Main Water Circulating Pump Direct Bilge Suctions, No. and size 10 6" Independent Power Pump Direct Suctions to the Engine Room Bilges,  
 No. and size 10 4" 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 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 Above  
 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  
 That Pipes pass through the bunkers - How are they protected -  
 That 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 - Is it fitted with a watertight door - worked from -

MAIN BOILERS, &c. — (Letter for record S) Total Heating Surface of Boilers 3434 sq. ft.  
 Is Forced Draft fitted Yes No. and Description of Boilers 2 SE Working Pressure 200 lb.  
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? YES  
 IS A DONKEY BOILER FITTED? No If so, is a report now forwarded? -  
 Is the donkey boiler intended to be used for domestic purposes only -

PLANS. Are approved plans forwarded herewith for Shafting Yes Main Boilers Yes Auxiliary Boilers - Donkey Boilers -  
 (If not state date of approval)  
 Superheaters - General Pumping Arrangements - Oil fuel Burning Piping Arrangements -

## SPARE GEAR.

Is the spare gear required by the Rules been supplied Yes  
 State the principal additional spare gear supplied List attached.

The foregoing is a correct description.

For David Rowan & Co. Ltd.  
Arch. N. Grierson.

Manufacturer.



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Foundation

W30-0085



During progress of work in shops - - 1940 July 18 Aug. 12-22 Oct. 21-28-31 Dec. 12-24, 27-30 (1941) Jan. 13-23-27 Feb. 4-10  
21, 25 Mar. 4-11-14-24-31 Apr. 7-8-16-18-21-29 May 2-7-9-12-13-16-20-21 June 3-11  
Dates of Survey while building During erection on board vessel - - -  
Total No. of visits 40

Dates of Examination of principal parts—Cylinders 10-2-41 Slides 11-3-41 Covers 10-2-41

Pistons 31-3-41 Piston Rods 31-3-41 Connecting rods 8-4-41

Crank shaft 24-2-41 Thrust shaft 21-4-41 Intermediate shafts —

Tube shaft — Screw shaft 18-4-41 Propeller 18-4-41

Stern tube 21-4-41 Engine and boiler seatings 24-4-41 GRK. Engines holding down bolts 16-5-41

Completion of fitting sea connections 24-3-41 GRK.

Completion of pumping arrangements 3-6-41 Boilers fixed 16-5-41 Engines tried under steam 11-6-41

Main boiler safety valves adjusted 3-6-41 Thickness of adjusting washers P+S 3/8" P+S

Crank shaft material SM. Stel Identification Mark 9799 AJS Thrust shaft material SM. Stel Identification Mark 9799 AJS

Intermediate shafts, material — Identification Marks — Tube shaft, material — Identification Mark —

Screw shaft, material SM. Stel Identification Mark 9799 AJS Steam Pipes, material Stel Test pressure 600 lb. Date of Test May/41

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 — 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 "EMPIRENESS" GLS. RB 637

General Remarks (State quality of workmanship, opinions as to class, &c. This machinery has been built under special survey in accordance with the Rules and approved plans, and the materials and workmanship are good. It has been satisfactorily installed in the vessel, tested under working conditions and found efficient and, in my opinion, is eligible to be classed in the Register Book with record + LMC 6, 41 and notation CL.

The requirements of the Ministry of War Transport specification have been carried out satisfactorily.

The amount of Entry Fee ... £ 4 : - : When applied for,  
Special SPECIFICATION ... £ 60 : - : 24 JUN 1941  
Donkey Boiler Fee ... £ 15 : - :  
Travelling Expenses (if any) £ : : : When received, 19

Committee's Minute GLASGOW 24 JUN 1941

Assigned - LMC 6.41 J.D.

Engineer Surveyor to Lloyd's Register of Shipping.



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