

Rpt. 4.

No. 53172

## REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Date of writing Report 19 When handed in at Local Office 10 NOV 1945 Port of Hull  
No. in Survey held at Silby Gool Date, First Survey 9. 3. 45 Last Survey Oct 23. 1945  
Reg. Book on the "EMPIRE CLARA" A/M 1150 (Number of Visits 26)  
Built at Silby By whom built Cochran & Sons Ltd. Yard No. 1300 Tons { Gross 292  
Net Nil  
Engines made at Providence, Rhode Is. USA By whom made Franklin Mach. & Foundry Co. Engine No. 1018 When made 1943 }  
Boilers made at Glasgow By whom made Barclay Curle & Co. Ltd. Boiler No. 42/21 When made 1944 }  
Registered Horse Power Owners Ministry of War Transport Port belonging to Hull  
Nom. Horse Power as per Rule 109 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
Trade for which vessel is intended Towing Services

ENGINES, &c.—Description of Engine Triple Expansion - in USA cut no. B-638 Revs. per minute 130  
Dia. of Cylinders 12", 20", 33" Length of Stroke 24" No. of Cylinders 3 No. of Cranks 3  
Crank shaft, dia. of journals as per Rule 7 3/4" Crank pin dia. 7 3/4" Mid. length breadth 15 1/2" Thickness parallel to axis 5"  
as fitted 7 3/4" Crank webs shrunk Mid. length thickness 5 1/8" Thickness around eye-hole 3 1/2"  
Intermediate Shafts, diameter as per Rule approx. Thrust shaft, diameter at collars as per Rule approx.  
as fitted 6 5/8" as fitted 8 1/2"  
Tube Shafts, diameter as per Rule approx. Screw Shaft, diameter as per Rule approx.  
as fitted 8" Is the { tube } shaft fitted with a continuous liner { No }  
Bronze Liners, thickness in way of bushes as per Rule Thickness between bushes as per Rule Is the after end of the liner made watertight in the  
as fitted propeller boss. 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  
shaft YES If so, state type. Length of Bearing in Stern Bush next to and supporting propeller 2'-7 1/2"  
Propeller, dia. 9'-0" Pitch 9'-6" No. of Blades 4 Material Cast Iron whether Moveable No Total Developed Surface 31.5 sq. feet  
Feed Pumps worked from the Main Engines, No. none Diameter Stroke Can one be overhauled while the other is at work.  
Bilge Pumps worked from the Main Engines, No. none Diameter Stroke Can one be overhauled while the other is at work.  
Feed { No. and size Two 7" x 5" x 12" Pumps connected to the { No. and size One 7 1/2", 5", 6" One 12", 9", 12" Ejector  
Pumps How driven Ind. Stm. Main Bilge Line How driven Ind. Stm. Ind. Stm. Stm.  
Ballast Pumps, No. and size One 7 1/2", 5", 6" as above. { Lubricating Oil Pumps, including Spare Pump, No. and size One 2 1/2" } One hand pump to filter  
Are two independent means arranged for circulating water through the Oil Cooler { independent duplex & two MC driven pumps } one to MC bearings  
Bilge Pumps:—In Engine and Boiler Room ER 3-2 1/2" & 1-3" BR 2-2 1/2" Suctions, connected to both Main Bilge Pumps and Auxiliary  
In Pump Room In Holds, &c. 1-2"

Main Water Circulating Pump Direct Bilge Suctions, No. and size 1-4" Independent Power Pump Direct Suctions to the Engine Room Bilges,  
No. and size 1-3" Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes.  
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.  
Are all Sea Connections fitted direct on the skin of the ship. Are they fitted with Valves or Cocks.  
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates. Are the Overboard Discharges above or below the deep water line.  
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel. Are the Blow Off Cocks fitted with a spigot and brass covering plate.  
What Pipes pass through the bunkers. How are they protected.  
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.  
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. 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 1786 sq. ft.  
Which Boilers are fitted with Forced Draft SOLE BOILER Which Boilers are fitted with Superheaters NONE  
No. and Description of Boilers 15B Working Pressure 220 lb.  
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 25.7.44 Main Boilers 14.9.42 Auxiliary Boilers Donkey Boilers  
(If not state date of approval)  
Superheaters General Pumping Arrangements 19.7.44 Oil fuel Burning Piping Arrangements 11.5.45

## SPARE GEAR.

Has the spare gear required by the Rules been supplied.

State the principal additional spare gear supplied.

The foregoing is a correct description.

Manufacturer.

014654 - 014665 - 0205



E. CLARA.

Dates of Survey while building  
During progress of work in shops -- *main engines built in Providence, Rhode Island, U.S.A by Franklin Machine & Foundry Co and supplied to installers by Admiralty.*  
During erection on board vessel --- *1945 MAR 8, 21 APR 3, 16 MAY 29 JULY 23 AUG 9, 21 SEP 3, 6, 11, 14, 15, 17, 18, 19, 20, 21, 22, 25, 28 OCT 1, 3, 4, 6, 23*  
Total No. of visits *26.*

Dates of Examination of principal parts—Cylinders \_\_\_\_\_ Slides \_\_\_\_\_ Covers *Nº. B-638.*  
Pistons \_\_\_\_\_ Piston Rods \_\_\_\_\_ Connecting rods *but*  
Crank shaft *See American* Thrust shaft *Bureau of Shipping* Intermediate shafts *16.1.45.*  
Tube shaft \_\_\_\_\_ Screw shaft *15.12.44.* Propeller *16.4.45.*  
Stern tube *14.3.45* Engine and boiler seatings *6.9.45* Engines holding down bolts *14.9.45.*  
Completion of fitting sea connections *16.4.45.*  
Completion of pumping arrangements *3.10.45* Boilers fired *17.9.45* Engines tried under steam *1/10/45 6/10/45*  
Main boiler safety valves adjusted *3.10.45* Thickness of adjusting washers *P & S 3/8"*  
Crank shaft material *See American* Identification Mark *Bureau 29.9.44.* Thrust shaft material *Cut* Nº. Identification Mark *B-638.*  
Intermediate shafts, material *F.I. STL.* Identification Marks *161, FW, 11.10.44.* Tube shaft, material \_\_\_\_\_ Identification Mark \_\_\_\_\_  
Screw shaft, material *F.I. STL.* Identification Mark *184, FW* Steam Pipes, material *Stal* Test pressure *660 lb* Date of Test *28.9.45*  
Is an installation fitted for burning oil fuel *YES* Is the flash point of the oil to be used over 150° F. *YES*  
Have the requirements of the Rules for the use of oil as fuel been complied with *YES*  
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 Stella"*

General Remarks (State quality of workmanship, opinions as to class, &c.)

*The main engines and boilers for this vessel supplied by Admiralty from reserve stock and installed by Amos Smith, Hull in accordance with the Specification, the Secretary's letters and the Rules.*

*The workmanship and materials appear to be good.*

*The machinery has been tried under working conditions and found satisfactory at completion of the trials*

*Eligible in my opinion to have record of LMC *10.45* O.G.*

*T 3 Cy 12", 20", 33" - 24" M.N. 109. 15B 220 lb.*

*3 cf 145 1786 lb F.D. Fitted for oil fuel 10.45. F.P. above 150° F.*

*NHP 109 @ 5/- = 27-5-0*

*FE 3-0-0*

*{ One fifth for fitting-out 5-9-0  
25% for Specification 1-7-3  
F.E. 3-0-0*

The amount of Entry Fee ... £ *3 : 0 : 0* When applied for, *10 NOV 1945*  
Special F.I.T. O.H.T. ... £ *5 : 9 : 0*  
25% SPECIFICATION ... £ *1 : 7 : 3*  
Donkey Boiler Fee ... £ : : : When received, *19*  
Travelling Expenses (if any) £ : : : *19*

Committee's Minute *FRL 30 NOV 1945*

Assigned *LMC(R) 10.45*

FITTED FOR OIL FUEL *10.45* FLASH POINT ABOVE 150° F. *F.D. O.G.*

*W. S. Shillies*

Engineer Surveyor to Lloyd's Register of Shipping.



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