

and a List

pt. 4.

No. 12939

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office APR - 7 1941

Date of writing Report *10* When handed in at Local Office *4. 4 10 41* Port of *Belfast*

No. in Survey held at *Belfast* Date, First Survey *1st Aug 1940* Last Survey *30 March 1941*
 Reg. Book. on the *STEEL SE "ARMERIA"* (Number of Visits *78*)

Built at *Belfast* By whom built *Messrs Harland & Wolff Ltd* Yard No. *1098* Tons *1941*
 Engines made at *Belfast* By whom made *Harland & Wolff Ltd* Engine No. *1098* When made *1941*
 Boilers made at *Belfast* By whom made *Harland & Wolff Ltd* Boilers No. *1098* When made *1941*

Registered Horse Power *-* Owners *The Admiralty* Port belonging to *-*
 Nom. Horse Power as per Rule *399* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*
 Trade for which Vessel is intended *Admiralty Service*

ENGINES, &c. — Description of Engines *Four Cylinder Inverted Triple Expansion.* Revs. per minute *185*
 Dia. of Cylinders *18 1/2 - 31 - 38 1/2 - 38 1/2* Length of Stroke *30"* No. of Cylinders *4* No. of Cranks *4*
 Crank shaft, dia. of journals *10.035"* as per Rule *10.035"* Crank pin dia. *10 1/2"* Crank webs *16 3/4"* Mid. length breadth *6 1/2"* Thickness parallel to axis *6 1/2"*
 as fitted *10 1/2"* Crank pin dia. *10 1/2"* Crank webs *16 3/4"* Mid. length thickness *6 1/2"* Thickness around eye-hole *4 3/4"*
 Intermediate Shafts, diameter *9.557"* as per Rule *10.035"* Thrust shaft, diameter at collars *10.035"* as per Rule *10.035"*
 as fitted *10 1/4"* at ends increased to *15 1/2"* in body. as fitted *10 1/4"*

Tube Shafts, diameter *10.432"* as per Rule *10.432"* Screw Shaft, diameter *10 7/8"* as per Rule *10 7/8"* Is the *10 7/8"* screw shaft fitted with a continuous liner *Yes*
 as fitted *10 7/8"* as fitted *10 7/8"*

Bronze Liners, thickness in way of bushes *3/8"* as per Rule *3/8"* Thickness between bushes *19 1/32"* as per Rule *19 1/32"* 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 *Yes* Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft *No*
 Length of Bearing in Stern Bush next to and supporting propeller *5-0"*
 Propeller, dia. *10-6"* Pitch *10-8"* No. of Blades *3* Material *Man. Bronze* whether Moveable *Solid* Total Developed Surface *31* sq. feet

Feed Pumps worked from the Main Engines, No. *2* Diameter *-* Stroke *-* Can one be overhauled while the other is at work *-*
 Bilge Pumps worked from the Main Engines, No. *2* Diameter *-* Stroke *-* Can one be overhauled while the other is at work *-*
 Feed Pumps { No. and size *1 off 10 1/2" x 8" x 22"* main *Aux.* Pumps connected to the { No. and size *2 off 50 tons/hr. each* *One 5" Donkey Pump*
 How driven *Steam* Main Bilge Line How driven *Steam* *Hand*

Ballast Pumps, No. and size *As for Bilge* 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 *Eng. Room 2 @ 3"* *Boiler Rooms 4 @ 3"* including 3 direct suction
 In Pump Room *-* In Holds, &c. *12 @ 2"*

Main Water Circulating Pump Direct Bilge Suctions, No. and size *One @ 9 1/2"* Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *One @ 3" in ER, 1 @ 3" in each BLR Room.* 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 *Yes*
 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 *At water line*
 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 *None (Leaking Coils only)* How are they protected *-*
 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 *-* worked from *-*

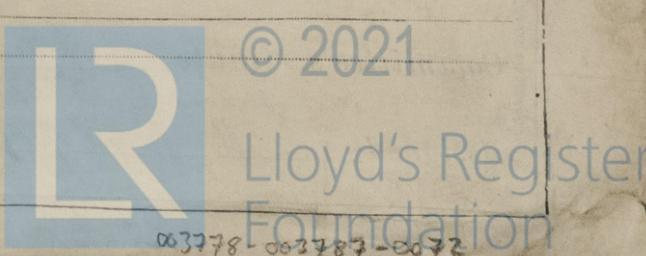
MAIN BOILERS, &c. — (Letter for record *S.*) Total Heating Surface of Boilers *6852 sq. ft.*
 Is Forced Draft fitted *Yes* No. and Description of Boilers *2 Multitubular Howden Johnson type* Working Pressure *225 lbs/0.*
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? *Yes*
 IS A DONKEY BOILER FITTED? *No* 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 Staffing *Yes* Main Boilers *Plans approved London.* 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 *Please see attached list.*

The foregoing is a correct description,
 For HARLAND AND WOLFF, LIMITED

A. Marshall Secretary



NOTE.—The words shown in not apply should be

003778 003787-0072

1940
 Aug 1 Nov. 7. 13. 21. 25. 26. 28. 30 Dec 3. 6. 7. 16. 17. 18. 23. 24. 30. 31 Jan 1. 3. 4. 6. 7. 8. 9. 10. 11. 15.
 During progress of work in shops -- 15. 16. 19. 21. 22. 23. 24. 25. 27. 28. 29. 30 Feb. 3. 6. 10. 11. 12. 13. 14. 17. 19. 20. 21. 22. 24. 25. 26. 27.
 Dates of Survey while building }
 During erection on board vessel -- 28 Mar 6. 7. 11. 12. 13. 14. 15. 17. 18. 19. 21. 22. 24. 25. 26. 27. 28. 29. 30
 Total No. of visits 78

Dates of Examination of principal parts—Cylinders 13.1.41 to 23.1.41 Slides 13.1.41 to 23.1.41 Covers 13.1.41 to 23.1.41
 Pistons 25.1.41 to 3.2.41 Piston Rods 25.1.41 to 3.2.41 Connecting rods 25.1.41 to 29.1.41
 Crank shaft 26.1.41 Thrust shaft 13.11.40 Intermediate shafts 9.1.41
 Tube shaft ✓ Screw shaft 9.1.41 Propeller 6.1.41
 Stern tube 14.1.41 Engine and boiler seatings 15.1.41 Engines holding down bolts 26.2.41
 Completion of fitting sea connections 15.1.41
 Completion of pumping arrangements 17.3.41 Boilers fixed 6.3.41 Engines tried under steam 18.3.41 + 25.3.41
 Main boiler safety valves adjusted 17.3.41 Thickness of adjusting washers FORD BLR. P 5/16" S 9/32" AFTER BLR P 1/4" S 7/16"
 Crank shaft material Steel Identification Mark LLOYD No. 1021 RLA 24.1.41 Thrust shaft material Steel Identification Mark LLOYD No. 372 RS 9.1.41
 Intermediate shafts, material Steel Identification Marks LLOYD No. 372 RS 9.1.41 Tube shaft, material ✓ Identification Mark ✓
 Screw shaft, material Steel Identification Mark LLOYD No. 372 RS 9.1.41 Steam Pipes, material SD steel Test pressure 675 lbs Date of Test 11.10.40 / 14.3.41
 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 "ABELIA" etc

General Remarks (State quality of workmanship, opinions as to class, &c. These engines have been constructed under Special Survey in accordance with the Rules and approved plans. The materials and workmanship are good. This machinery has been efficiently installed onboard the vessel and tried out under full working conditions at sea, with satisfactory results. In our opinion the vessel is eligible for the notation in The Society's Register Book of ..

FLMC 3.41 CL 2SB 225 lbs. FD.

Certificate to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.

The amount of Entry Fee ... £	:	:	When applied for,
Special ... £ 170	:	:	19
Donkey Boiler Fee ... £	:	:	When received,
Travelling Expenses (if any) £	:	:	19

R. L. Ames
 Engineer Surveyor to Lloyd's Register of Shipping.
 R. L. Ames & Co.

Committee's Minute
 Assigned *Att. for oil fueln 22, CL*

