Rpt. 4.

No. 31972

# REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Date of writing Report ____ 19 ____ When handed in at Local Office 20 NOV. 1936 Received at London Office 5 DEC 1936 Port of Sunderland.

No. in Reg. Book ____ Survey held at Sunderland. Date, First Survey 23rd April Last Survey 18 Nov. 1936 (Number of Visits 47)

on the Steel Screw Steamer "LLANASHE" Tons Gross 4836 Net 2911

Built at Sunderland By whom built Bartram & Sons Ltd. Yard No. 243. When built 1936.

Engines made at Newcastle on Tyne By whom made White's Marine Eng. Co Ltd Engine No. 60. When made 1936.

Boilers made at Sunderland By whom made G. Clark (1936) Ltd. Boiler No. 1200 When made 1936.

Registered Horse Power ____ Owners Clarina Radcliffe Stm Ship. Co Ltd Port belonging to London.

Nom. Horse Power as per Rule 348. Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

Trade for which Vessel is intended ____

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ENGINES, &c.—Description of Engines Please see Nwc. Rpt. 94262. Propr Revs. per minute 61

Dia. of Cylinders ✓ Length of Stroke ✓ No. of Cylinders ✓ No. of Cranks ✓

**Crank shaft,** dia. of journals as per Rule ✓ as fitted ✓ Crank pin dia. ✓ Crank webs Mid. length breadth ✓ Mid. length thickness ✓ Thickness parallel to axis ✓ shrunk Thickness around eye-hole ✓

**Intermediate Shafts,** diameter as per Rule app. 12" as fitted 12" ✓

**Thrust shaft,** diameter at collars as per Rule app. 13¼" as fitted 13¼" ✓

**Tube Shafts,** diameter as per Rule ✓ as fitted ✓ **Screw Shaft,** diameter as per Rule app. 13½" as fitted 13½" ✓ Is the tube screw shaft fitted with a continuous liner Yes.

**Bronze Liners,** thickness in way of bushes as per Rule 23/32" as fitted ¾" ✓ Thickness between bushes as per Rule 17/32" as fitted 23/32" ✓ 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 ✓ Is an approved **Oil Gland** or other appliance fitted at the after end of the tube shaft No. ✓ If so, state type ✓

**Propeller,** dia. 18'-0" ✓ Pitch 19'-9" Variable No. of Blades 4 Material Bronze ✓ whether Moveable No. ✓ Length of Bearing in **Stern Bush** next to and supporting propeller 4'-6¼" ✓ Total Developed Surface 106 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 Pumps** No. and size 2 6"-8½"-x 18" ✓ How driven Steam

**Pumps** connected to the **Main Bilge Line** No. and size 2 (@ 10"-12"x12" & 1 @ 6"x6"x6") How driven Steam. 1 @ 8"x9"x8"

**Ballast Pumps,** No. and size 2 @ 10"x 12"x 12" 1 @ 8"x 9"x 8" ✓

**Lubricating Oil Pumps,** including Spare Pump, No. and size 2 6"x 5½"x 15"

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 3 @ 3" E.A. ✓ 1 @ 2½" Dunnal well. ✓

In Pump Room ✓ In Holds, &c. Forehold 3½" pr. ✓ Fore main Hold 3½" pr. ✓

Cross bunker 2" pr. ✓ Aft main hold 3" pr. ✓ Aft hold 3" pr. ✓

**Main Water Circulating Pump Direct Bilge Suctions,** No. and size 1 @ 8" **Independent Power Pump Direct Suctions** to the Engine Room Bilges, No. and size 2 @ 4½" ✓

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 placed 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. ✓

What Pipes pass through the bunkers Forward bilge Suctions. ✓ How are they protected wood Casing. ✓

What pipes pass through the deep tanks none. ✓ 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 Yes. ✓ worked from E.R. Cip. Grating. ✓

MAIN BOILERS, &c.—(Letter for record S.) Total Heating Surface of Boilers 4483¼ sf (3514 sf main & 1264 sf aux.)

Is Forced Draft fitted Yes (on main brs.) No. and Description of Boilers 2 SB. & 1 Aux. Sc ✓ Working Pressure 230 lbs/o. ✓

IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes. ✓

IS AN ~~AUXILIARY~~ AUX. BOILER FITTED? Yes ✓ If so, is a report now forwarded? Yes. ✓

Is the donkey boiler intended to be used for domestic purposes only ✓

PLANS. Are approved plans forwarded herewith for Shafting NWC. Main Boilers Retained for Sister Vessel Auxiliary Boilers Retained for Sister Vessel. Donkey Boilers ✓

(If not state date of approval)

Superheaters (Manchester) General Pumping Arrangements Retained for Sister Vessel. Oil fuel Burning Piping Arrangements ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes. Please See Nwc. Rpt. No 94262.

State the principal additional spare gear supplied

One Cast iron Propeller, one Propeller Shaft, 4 main Check valve lids, 4 auxiliary Check valve lids, 12 Condenser tubes, 6 plain boiler tubes, 1 Set valves for Dust. Edl. Chest of ballast pump, 2 main boiler Safety Valve Springs, one Superheater Safety valve Spring, one top & one bottom end bearings & bolts for fan Engine.

The foregoing is a correct description.

FOR GEORGE CLARK (1936) LTD.

Manufacturer.

**Dates of Survey while building**

*During progress of work in shops* — 1936. Apl. 23. 30. May 18. 22. 29. June 12. 17. 19. 22. 26. 30. July 10. 13. 15. 17. 27. Aug. 4. 6. 7. 14. 18. 19. 21. 27. 31. Sep. 11. 16. 17. 18. 22. 23. 24. 28. Oct. 1. 6. 8

*During erection on board vessel* — Oct 12. 15. 19. 20. 22. 26. 27. 28. Nov. 9. 10. 18

*Total No. of visits* 47.

**Dates of Examination of principal parts**—Cylinders ✓ Slides ✓ Covers ✓

Pistons ✓ Piston Rods ✓ Connecting rods ✓

Crank shaft ✓ Thrust shaft 26/3/36 (Lr.) Intermediate shafts 24/8/36.

Tube shaft ✓ Screw shaft 24/8/36. Propeller 24/8/36.

Stern tube 8/10/36 Engine and boiler seatings 23/9/36. Engines holding down bolts 22/10/36.

Completion of fitting sea connections 23/9/36.

Completion of pumping arrangements 9/11/36 Boilers fixed 20/10/36 Engines tried under steam 10/11/36. P 3/8" - Aux. Bs.

Main boiler safety valves adjusted 9/11/36 Thickness of adjusting washers P.Bs. S 3/8" P 3/8" Sp.H. 1/4" S.Bs. S 3/8" Sp.H. 1/4 P 3/8" - S 11/32"

Crank shaft material ✓ Identification Mark ✓ Thrust shaft material Ingot Steel Identification Mark No 2415 C.R.R. 26/3/36

Intermediate shafts, material Ingot Steel Identification Marks No 415 M.C. 24/8/36 Tube shaft, material ✓ Identification Mark ✓

Screw shaft, material Ingot Steel Identification Mark No 415 M.C. 24/8/36 Steam Pipes, material S.D. Steel ✓ Test pressure 690 lbs/" Date of Test 19/10/36. 26/10/36.

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 not desired.

Is this machinery duplicate of a previous case no. If so, state name of vessel ✓

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

This machinery has been Securely fitted on board the Vessel & tried under working conditions alongside Quay with Satisfactory results.

The machinery is now eligible in our opinion to have notation of + L.M.C. 11.36 T.S. (Cr.) in the Register Book.

Certificate to be sent to SUNDERLAND

The Surveyors are requested not to write on or below the space for Committee's Minute.)

Two main boilers

The amount of Entry Fee ... £ : : ~~Aux. Boiler 30 18~~

Special ... £ : : ~~Installing mchy. 15 9~~

Donkey Boiler Fee ... £ : : (Charged on Nwc. a/c)

Travelling Expenses (if any) £ : :

When applied for, at Nwc 19

When received, at Nwc 1. 12. 1936 Nwc.

B.B. Kaser. L.R.

*Engineer Surveyor to Lloyd's Register of Shipping.*

*Committee's Minute* FRI. 18 DEC 1936

*Assigned* + LMC 11.36 (S.H.) C.L.