

Rpt. 4.

Slid No. 34109

Run No. 2961.

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

8 JAN 1945

Received at London Office

Date of writing Report 20-10-1944 When handed in at Local Office 20-10-1944 Port of BARROW. 21 OCT 1943

No. in Survey held at Barrow. Date, First Survey 14-10-44 Last Survey 20-10-1943
Reg. Book. on the EMPIRE MANDALAY. (Number of Visits 78.)

Built at Sunderland By whom built Shipbuilding Corp. (Leam Branch) Yard No. 5 Tons Gross 7085 Net 4889
When built

Engines made at Barrow. By whom made Vickers-Armstrongs Ltd Engine No. 847 When made 1943-

Boilers made at Sunderland By whom made G. Black (1938) Ltd Boiler No. 1333 When made 1944.

Registered Horse Power Owners Ministry of War Transport Port belonging to Sunderland.

Nom. Horse Power as per Rule 510 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 24 1/2" - 39" - 70" Length of Stroke 48" No. of Cylinders 3 No. of Cranks 3

Crank shaft, dia. of journals as per Rule 24" as fitted 14 1/4" Crank pin dia. 14 3/4" Crank webs Mid. length breadth shrunk Thickness parallel to axis 9" Mid. length thickness 6 1/8"

Intermediate Shafts, diameter as per Rule 13.32" as fitted 13 7/8" Thrust shaft, diameter at collars as per Rule 14" as fitted 14 1/4"

Tube Shafts, diameter as per Rule 14.85" as fitted 15 1/4" Is the tube screw shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per Rule 3/4" as fitted 13/16" Thickness between bushes as per Rule 9/16" Is the after end of the liner made watertight in the 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

a t If so, state type Length of Bearing in Stern Bush next to and supporting propeller

Propeller, dia. 18' 3" Pitch 16' 6" No. of Blades 4 Material C-1. whether Moveable Solid 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 27" Can one be overhauled while the other is at work Yes

Feed Pumps { No. and size Pumps connected to the { No. and size
How driven Main Bilge Line How driven

Ballast Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size

Are two independent means arranged for circulating water through the Oil Cooler Suctions, connect d to both Main Bilge Pumps and Auxiliary

Bilge Pumps;—In Engine and Boiler Room

In Pump Room In Holds, &c.

Main Water Circulating Pump Direct Bilge Suctions, No. and size Independent Power Pump Direct Suctions to the Engine Room Bilges,

No. and size 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.) Designed—Total Heating Surface of Boilers 7248.4

Which Boilers are fitted with Forced Draft All Which Boilers are fitted with Superheaters All

No. and Description of Boilers 3 S.B. Working Pressure 220 lbs/sq. in

IS A REPORT ON MAIN BOILERS NOW FORWARDED? No. Boiler from Barrow.

IS A DONKEY BOILER FITTED? 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 19-11-40 Main Boilers 18-8-41 Auxiliary Boilers Donkey Boilers

(If not state date of approval)

Superheaters General Pumping Arrangements 30-12-40 Oil fuel Burning Piping Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied See List attached.

State the principal additional spare gear supplied

The foregoing is a correct description.
For VICKERS-ARMSTRONGS LIMITED,

Manufacturer.



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Lloyd's Register

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1944 Oct. 14. 16. Nov. 1. 4. 7. 10. 25. 28. Dec. 2. 5. 8. 12. 15. 18. 22. 26. 31. 1942 Jan. 6. 8. 16. 23. 29. Feb. 4. 10. 17. 24. 28. 29. Mar. 1. 3. 5. 26. Apr. 7. 13. 15. 18. 24. May. 1. 7. 9. 19. 21. June. 2. 8. 12. 17. 19. 22. 30. July. 2. 6. 17. 24. Aug. 12. 13. 21. Sept. 1. 8. 14. 19. 22. Oct. 1. 8. 14. Nov. 14. 20. 24. Dec. 11. 14. 16. 1943 Apr. 9. May 21 Aug 20 Sep. 2. 16. Oct 11. 14. 20

Dates of Survey while building

During progress of work in shops - -

During erection on board vessel - - -

Total No. of visits 78.

Dates of Examination of principal parts—Cylinders 6.3.42 & 21.5.42. Slides 2.9.43. Covers 6.3.42 & 21.5.42.

Pistons 24.11.42. Piston Rods 9.4.43. Connecting rods 9.4.43.

Crank shaft 14.12.43. Thrust shaft. Intermediate shafts.

Tube shaft. Screw shaft. Propeller.

Stern tube 18.6.42. Engine and boiler seatings. Engines holding down bolts.

Completion of fitting sea connections.

Completion of pumping arrangements. Boilers fixed. Engines tried under steam.

Main boiler safety valves adjusted. Thickness of adjusting washers.

Crank shaft material Steel. Identification Mark 102. D.L.H.C. 14/44. Thrust shaft material. Identification Mark.

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

Screw shaft, material. Identification Mark. Steam Pipes, material. Test pressure. Date of Test.

Is an installation fitted for burning oil fuel. 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 Vickers-Armstrongs No 846 Bow Rpt 2957.

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

These Engines have been constructed under Special Survey in accordance with the approved plans, the Specification & the Rules. The workmanship & materials are good. The Engines are eligible, in my opinion, to have the record of D.L.M.C. (with class), when fitted in a vessel classed with the Society. They are being sent to Sunderland for fitting in a vessel under Geo. Clarkers No 1333.

The line shafts has already been sent to Sunderland in the black state for machining. This line shafts is to be fitted in Geo Clarkers No 1334 & the shafts covered by Bow Rpt No 2957 (V.A. No 846) has been allocated to Geo Clarkers No 1333.

The amount of Entry Fee ... £ 6 : 0 : When applied for, 31. 10. 1943.

+ 25% Special Donkey Boiler Fee ... £ 50 : 5 : When received, 19.

Travelling Expenses (if any) £ : : 19.

Committee's Minute FRI. 16 FEB 1945

Assigned Su F.E. machy.rph.

Dykes J. J. Colman
Engineer Surveyor to Lloyd's Register of Shipping.



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