

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Date of writing Report **23. 2. 1928** When handed in at Local Office **23. 2. 1928** Port of **MIDDLESBROUGH.**
 No. in Survey held at **STOCKTON.** Date, First Survey **24-2-27.** Last Survey **21-2-1928.**
 Reg. Book. **641 Sup. on the** **Sc. "LLANOVER"** (Number of Visits **47.**)
 Built at **Sunderland.** By whom built **Barthram & Sons. Ltd.** Yard No. **261.** Tons } Gross
 Engines made at **STOCKTON.** By whom made **Blair & Co (1926) Ltd.** Engine No. **1967.** when made **1928.** Net
 Boilers made at **do.** By whom made **do.** Boiler No. **1967.** when made **1928.**
 Registered Horse Power **460.4.** Owners **Anne Thomas S.S. Co Ltd.** Port belonging to **London.**
 Nom. Horse Power as per Rule **460.4.** 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 **63.**
 Dia. of Cylinders **27" 44" 73"** Length of Stroke **48"** No. of Cylinders **3.** No. of Cranks **3.**
 Crank shaft, dia. of journals **13.86"** as per Rule **14.2"** as fitted **13.2"** Crank pin dia. **15"** Crank webs **2' 0 1/2"** Mid. length breadth **9 3/4"** Mid. length thickness **9 3/4"** Thickness parallel to axis **9 3/4"** Thickness around eye-hole **6 3/8"**
 Intermediate Shafts, diameter **14"** as per Rule **14"** as fitted **14"** Thrust shaft, diameter at collars **15"** as per Rule **15"** as fitted **15"**
 Tube Shafts, diameter **14.7"** as per Rule **14.7"** as fitted **14.7"** Screw Shaft, diameter **16 1/4"** as per Rule **16 1/4"** as fitted **16 1/4"** Is the screw shaft fitted with a continuous liner **Yes.**
 Bronze Liners, thickness in way of bushes **3/4"** as per Rule **3/4"** as fitted **3/4"** Thickness between bushes **9/16"** as per Rule **9/16"** as fitted **9/16"** 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 shaft **Yes.**
 Length of Bearing in Stern Bush next to and supporting propeller **5' 6"**
 Propeller, dia. **18' 0"** Pitch **18' 0"** No. of Blades **4.** Material **Bronze** whether Movable **No.** Total Developed Surface **102.** sq. feet
 Feed Pumps worked from the Main Engines, No. **2.** Diameter **3 1/2"** Stroke **34"** Can one be overhauled while the other is at work **Yes.**
 Bilge Pumps worked from the Main Engines, No. **2.** Diameter **5"** Stroke **34"** Can one be overhauled while the other is at work **Yes.**
 Feed Pumps { No. and size **2-7 1/2" x 5 1/2" x 8" Humphrey Duplex** Pumps connected to the { No. and size **1-8" x 9" x 8" Humphrey Duplex**
 { How driven **1-6" x 4" x 6"** { Main Bilge Line { How driven **Steam**
 Ballast Pumps, No. and size **1-10" x 12" x 12"** Lubricating Oil Pumps, including Spare Pump, No. and size **1-8"**
 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"; 1-2 1/4" in Tunnel Well.**
 In Holds, &c. **No. 1: 2-3"; No. 2: 2-3 1/2"; No. 3: 2-3"; No. 4: 2-3"**

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 **1-4 1/2"**
 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.**
 What Pipes pass through the bunkers **Forward Bilge Suctions** How are they protected **Wood casing**
 What pipes pass through the deep tanks **Yes.** 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 **Yes.** worked from **E.R. top platform**

MAIN BOILERS, &c.—(Letter for record **S.**) Total Heating Surface of Boilers **7917 sq. ft.**
 Is Forced Draft fitted **No.** No. and Description of Boilers **3 S.B.** Working Pressure **180 lbs.**
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? **Yes.**
 IS A DONKEY BOILER FITTED? **Yes.** If so, is a report now forwarded? **Yes.**
 PLANS. Are approved plans forwarded herewith for Shafting **Yes.** Main Boilers **Yes.** Auxiliary Boilers **Yes.** Donkey Boilers **Yes.**
 (If not state date of approval)
 Superheaters **Yes.** General Pumping Arrangements **1. 6. 27.** Oil fuel Burning Piping Arrangements **Yes.**

SPARE GEAR. State the articles supplied:—**As per Rules + 1 tail shaft; 4 main deck valve; 4 donkey check valves; 5 air pump valve; 2 Feed Donkey Pump valves; 1 impeller & shaft for circulating pump; 9 piston bolts and nuts; quantity gland & cover studs & nuts; boiler tube, condenser tubes, condenser ferrules, firebars, furnace door baffle.**

The foregoing is a correct description,
 For BLAIR & CO. (1926) LIMITED.

H. J. Chambers
 SECRETARY.

Manufacturer.



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Lloyd's Register
 Foundation

W189-0163

1921 Feb. 24 - April 8 - 22 - May 3 - 10 - 19 - 27 - 31 - June 3 - 10 - 13 - 17 - 21 - 23 - 24 - 29 - July 1 - 4 - 6 - 13 - 14 - 20
22 - 27 - Aug. 3 - 9 - 11 - 25 - Sep. 5 - 6 - 12 - 16 - 22 - Oct. 7 - 26 - 28 - 31 - Nov. 3 - 10 - 1922 Jan 16 - 18 - 19 - 20 - 23 - 31
~ Feb 21.
During progress of work in shops - -
Dates of Survey while building
During erection on board vessel - - -
Total No. of visits 47.

Dates of Examination of principal parts—Cylinders 9. 8. 27. Slides 27. 7. 27 Covers 3. 8. 27.
Pistons 27. 7. 27. Piston Rods 3. 8. 27. Connecting rods 3. 8. 27.
Crank shaft 9. 8. 27 Thrust shaft 9. 8. 27. Intermediate shafts 3. 8. 27.
Tube shaft ✓ Screw shaft 10. 11. 27. Propeller 10. 11. 27.
Stern tube 7. 10. 27. Engine and boiler seatings 11. 1. 28. Engines holding down bolts 16. 1. 28.
Completion of fitting sea connections See Sta. Rpt. 9. 11. 27.
Completion of pumping arrangements 21. 2. 28 Boilers fixed 16. 1. 28. Engines tried under steam 23. 1. 28.
Main boiler safety valves adjusted 23. 1. 28. Thickness of adjusting washers Port 1/8 p. 3/25; Centre bolt 3/8; Star 1/2 p. 3/8
Crank shaft material Steel Identification Mark LLOYDS NO 5322 9. 8. 27 P.T.B. Thrust shaft material Steel Identification Mark LLOYDS NO 5322 9. 8. 27 P.T.B.
Intermediate shafts, material Steel Identification Marks LLOYDS NO 5322 9. 8. 27 P.T.B. Tube shaft material ✓ Identification Mark ✓
Screw shaft, material Iron Identification Mark LLOYDS NO 7454 6. 11. 27 P.T.B. Steam Pipes, material Coppe. Test pressure 360 lbs Date of Test 18. 1. 28
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 carrying and burning oil fuel been complied with ✓
Is this machinery duplicate of a previous case 46. If so, state name of vessel See "LLANBERIS" ✓

General Remarks (State quality of workmanship, opinions as to class, &c. The materials and workmanship are good. This machinery has been built under special survey in accordance with the Rules and Approved Plans, securely fitted aboard and tested with satisfactory results under steam and is, in my opinion, suitable for classification with record + L.M.C 2, 28.

Steel pipes & superheaters fitted 2. 25.

It is submitted that this vessel is eligible for THE RECORD. + LMC 2. 28. CL.

27/2/28

A. I. Man
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ 5-0-0 When applied for,
Special ... £ 94-0-0 17. 2. 19. 28
Donkey Boiler Fee ... £ See separate receipt received,
Travelling Expenses (if any) £ 11. 10. 13091. 17. 2. 19. 28

Committee's Minute
Assigned
+ L.M.C. 2. 28
CERTIFICATE WRITTEN.