

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.** Received at London Office **1928**

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 **Bartram & Sons, Ltd.** Yard No. **261.** When built **1928.**

Engines made at **STOCKTON.** By whom made **Blair & Co (1926) Ltd.** Engine No. **1967.** when made **1928.**

Boilers made at **do.** By whom made **do.** Boiler No. **1967.** when made **1928.**

Registered Horse Power **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 1/2" 73"** Length of Stroke **48"** No. of Cylinders **3.** No. of Cranks **3.**
Crank shaft, dia. of journals as per Rule **13.86"** Crank pin dia. **15"** Mid. length breadth **2' 0 1/2"** Thickness parallel to axis **9 3/4"**
as fitted **14 1/2"** Crank webs **shrunk** Mid. length thickness **9 3/4"** Thickness around eye-hole **6 7/8"**

Intermediate Shafts, diameter as per Rule **13.2"** Thrust shaft, diameter at collars as per Rule **13.86"**
as fitted **14"** as fitted **15"**

Tube Shafts, diameter as per Rule **14.7"** Screw Shaft, diameter as per Rule **16 1/4"** Is the screw shaft fitted with a continuous liner **Yes.**
as fitted **14"** as fitted **16 1/4"**

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

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" Mumford Duplex** Pumps connected to the { No. and size **1-8 x 9 x 8" Hammet 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.**

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. **Nº1: 2-3"**; **Nº2: 2-3 1/2"**; **Nº3: 2-3"**; **Nº4: 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.**

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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W189-0163

Dates of Survey while building:

 During progress of work in shops: Feb. 24 - Apr. 8 - 22 - May 3 - 10 - 19 - 27 - 31 - Jun. 3 - 10 - 13 - 17 - 21 - 23 - 24 - 29 - Jul. 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 - 1928 Jan. 16 - 18 - 19 - 20 - 23 - 31

 ~ Feb 21.

 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 $\frac{1}{8}$ p. $\frac{11}{32}$ s.; Centre bolt $\frac{3}{8}$; Star $\frac{11}{32}$ p. $\frac{3}{8}$

 Crank shaft material Steel Identification Mark LLOYDS NO 5372 9. 8. 27 P.T.B. Thrust shaft material Steel Identification Mark LLOYDS NO 5372 9. 8. 27 P.T.B.

 Intermediate shafts, material Steel Identification Marks LLOYDS NO 5372 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 Copper Test pressure 360 lbs. Date of Test 18. 1. 28

 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 carrying and burning oil fuel been complied with ✓

 Is this machinery duplicate of a previous case Yes. 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.

[Signature] 27/2/28

P. J. 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. 28

 Donkey Boiler Fee ... £ see separate receipt received,

 Travelling Expenses (if any) £ hull no 13091 17. 2. 28

Committee's Minute TUES. 16 MAR 1928

 Assigned + L.M.C. 2. 28

CERTIFICATE WRITTEN.



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