

16 JUN 1930

Bel. 10,572

# REPORT ON STEAM TURBINE MACHINERY.

No. 94979  
7 APR 1930

Rpt. 4a.

Date of writing Report **0261 APR 1930** When handed in at Local Office **7 APR 1930** Port of **London**  
 No. in Survey held at **Rugby** Date, First Survey **21 August 1929** Last Survey **5 March 1930**  
 Reg. Book. **26171** on the **Steel S.S. "LA MAREA" Now NAMED "DARIEN"** (Number of Visits) **1**  
 Built at **Birkenhead** By whom built **Cammell Laird & Co.** and No. **1924-4**  
 Engines made at **Rugby** By whom made **John British Thomson-Houston** Engine No. **R1488** When made **1930**  
 Boilers made at **Rugby** By whom made **Balboa Shipbuilding Co. Inc. (United Fruit)** Boiler No. **1924-4** When made **1930**  
 Shaft Horse Power at Full Power **3300** Owners **Balboa Shipbuilding Co. Inc. (United Fruit)** Port belonging to **Balboa PANAMA**  
 Nom. Horse Power as per Rule **839** Is Refrigerating Machinery fitted for cargo purposes **Yes** Is Electric Light fitted **Yes**  
 Trade for which Vessel is intended **Ocean going**

## STEAM TURBINE ENGINES, &c.—Description of Engines

*Curtis Horizontal Impulse Turbine*

No. of Turbines **One** Direct coupled, **single reduction geared** to **✓** propelling shafts. No. of primary pinions to each set of reduction gearing **✓**  
 direct coupled to **3** phase **50** periods per second **2700** Kilowatts **1200** Volts at **3000** revolutions per minute;  
 for supplying power for driving **One** Propelling Motors, Type **Synchronous, with spiral cage windings for starting purposes**  
 rated **2465** Kilowatts **1200** Volts at **125** revolutions per minute. Direct coupled, **single or double reduction geared** to **One** propelling shafts.

TURBINE BLADING.	H.P.			I.P.			L.P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION	0.71"	38.96"	2									
2ND "	0.66"	39.38"	1									
3RD "	0.79"	39.64"	1									
4TH "	0.98"	40.02"	1									
5TH "	1.08"	48.22"	1									
6TH "	1.66"	49.38"	1									
7TH "	2.56"	51.20"	1									
8TH "	4.00"	53.86"	1									
9TH "	6.40"	58.38"	1									
10TH "												
11TH "												
12TH "												

Shaft Horse Power at each turbine **3700** H.P. } **3000** I.P. } **3000** L.P. } 1st reduction wheel ✓  
 main shaft ✓  
 Rotor Shaft diameter at journals **5"** H.P. } **5"** Pitch Circle Diameter } 1st pinion ✓ 1st reduction wheel ✓  
**6"** I.P. } } 2nd pinion ✓ main wheel ✓  
 L.P. } }  
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings **6"** 1st pinion ✓ 1st reduction wheel ✓  
 2nd pinion ✓ main wheel ✓  
 Flexible Pinion Shafts, diameter **6"** External 1st ✓ 2nd ✓ diameter at bottom of pinion teeth **6"** 1st ✓  
 Internal 1st ✓ 2nd ✓  
 Wheel Shafts, diameter at bearings **13"** 1st ✓ diameter at wheel shroud, **13"** main ✓ Propelling Motor Shaft, diameter at bearings **13"**  
 Intermediate Shafts, diameter as per rule **13"** Thrust Shaft, diameter at collars as per rule **13"** Tube Shaft, diameter as per rule **13"**  
 as fitted **13"** Screw Shaft, diameter as per rule **13"** Is the tube screw } shaft fitted with a continuous liner **13"** Bronze Liners, thickness in way of bushes as per rule **13"**  
 as fitted **13"** Thickness between bushes as per rule **13"** Is the after end of the liner made watertight in the propeller boss **13"** If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner **13"** If the liner does not fit lightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive **13"** If two liners are fitted, is the shaft lapped or protected between the liners **13"** Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft **13"** Length of Bearing in Stern Bush next to and supporting propeller **13"** Total Developed Surface **13"** square feet. Can the H.P. or I.P. Turbine exhaust direct to the **13"**  
 If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine **13"**  
 Condenser No. of Turbines fitted with astern wheels **13"** Feed Pumps No. and size **13"** How driven **13"**  
 Pumps connected to the Main Bilge Line No. and size **13"** How driven **13"**  
 Ballast Pumps, No. and size **13"** Lubricating Oil Pumps, including Spare Pump, No. and size **13"** Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge **13"**  
 Are two independent means arranged for circulating water through the Oil Cooler **13"**  
 Pumps, No. and size:—In Engine and Boiler Room **13"**  
 In Holds, &c. **13"** Independent Power Pump Direct Suctions to the Engine Room **13"**  
 Main Water Circulating Pump Direct Bilge Suctions, No. and size **13"** Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes **13"**  
 Bilges, No. and size **13"** Are they fitted with Valves or Cocks **13"**  
 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 **13"**  
 Are all Sea Connections fitted direct on the skin of the ship **13"** Are the Overboard Discharges above or below the deep water line **13"**  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates **13"** Are the Blow Off Cocks fitted with a spigot and brass covering plate **13"**  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel **13"** How are they protected **13"**  
 What pipes pass through the bunkers **13"** Have they been tested as per rule **13"**  
 What pipes pass through the deep tanks **13"**  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times **13"**  
 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 **13"** Is the Shaft Tunnel watertight **13"** Is it fitted with a watertight door **13"** worked from **13"**

NOTE:—The words which do not apply should be deleted.

BOILERS, &c.—(Letter for record ) Total Heating Surface of Boilers

Is Forced Draft fitted No. and Description of Boilers Working Pressure

Is a Report on Main Boilers now forwarded?

Is { a Donkey } Boiler fitted? If so, is a report now forwarded?

Plans. Are approved plans forwarded herewith for Shafting Main Boilers Auxiliary Boilers Donkey Boilers

Superheaters General Pumping Arrangements Oil Fuel Burning Arrangements

Spare Gear. State the articles supplied:—

The foregoing is a correct description, for propelling machinery only. W. J. Belsey per H.R.B. Manufacturer

THE BRITISH THOMSON-HOUSTON CO., LTD.

Dates of Survey while building { During progress of work in shops -- } 1929 Aug 21, 29 Oct 7, Nov 6, 1930 Jan 8, Feb 17, March 5

Dates of Examination of principal parts—Casings 1929 Aug 29, Nov 6, 1930 Jan 8, Feb 17 Rotors 1929 Aug 21, 29 Oct 7, Nov 6, 1930 Feb 17 Blading Nov 6 1929 Gearing

Wheel shaft Thrust shaft Intermediate shafts Tube shaft Screw shaft

Propeller Stern tube Engine and boiler seatings Engine holding down bolts

Completion of pumping arrangements Boilers fixed Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

Rotor shaft, Material and tensile strength Ingot Steel - 46 T/O" Identification Mark LLOYDS 1824 - 33155 RWF28-29

Flexible Pinion Shaft, Material and tensile strength Identification Mark

Pinion shaft, Material and tensile strength Identification Mark

1st Reduction Wheel Shaft, Material and tensile strength Identification Mark

Wheel shaft, Material Identification Mark Thrust shaft, Material Identification Mark

Intermediate shafts, Material Identification Marks Tube shaft, Material Identification Marks

Screw shaft, Material Identification Marks 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

Is this machinery a duplicate of a previous case If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. This machinery has been constructed

under special survey in accordance with the Rules and has been despatched to Belfast to be installed.

The workmanship & materials have been tested in accordance with Rule requirements and, so far as can be seen, are good.

In my opinion the machinery will be eligible for the record of H.M.C. (with date) when it has been installed and examined under working conditions under the Society's survey.

This machinery has been efficiently fastened in the vessel & tested under working conditions.

John K. Williams Belfast.

Arthur W. Palmero. Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee £ 131 : 4 : 0 } 229 - 1 - 0 When applied for 16 June 30 1930

Donkey Boiler Fee £ 30/4/30 When received 1.11.30

Travelling Expenses (if any) £ 16 : 4 : 10 1.11.30

Committee's Minute FRI. 11 JUL 1930

Assigned See Receipt No 10392

