

Rpt. 4a.

# REPORT ON STEAM TURBINE MACHINERY.

N.Y.K. No. 52406

Date of writing Report May 7<sup>th</sup> 1953 19 53 When handed in at Local Office NEW YORK Port of NEW YORK Received at London Office 13 JUN 1953

No. in Survey held at Quincy, Mass. Reg. Book Quincy, Mass. Date, First Survey March 3<sup>rd</sup> Last Survey May 6<sup>th</sup> 19 53 (Number of Visits cont.)

on the steel screw steamer "ANDROS ISLAND" Tons Gross 18,735 Net 11,652

Built at Quincy, Mass. By whom built Bethlehem Steel Co. Yard No. 1631 When built 1953

Engines made at Quincy, Mass. By whom made Bethlehem Steel Co. Engine No. 1630-H2 When made 1953

Boilers made at Carteret N.J. By whom made Foster, Wheeler Corp. Boiler No.            When made 1953

Shaft Horse Power at Full Power 15,000 Owners RIO Venturado Compania Nav. S.A. Port belonging to Panama R.P.

Nom. Horse Power as per Rule 3,000 Is Refrigerating Machinery fitted for cargo purposes NO. Is Electric Light fitted Yes.

Trade for which Vessel is intended Tanker "Petroleum in Bulk"

STEAM TURBINE ENGINES, &C.—Description of Engines 400 K.W. A.C. Turbo Generators (two units)

No. of Turbines Ahead one Direct coupled, single reduction geared } to one Generator propelling shafts Astern — double reduction geared } No. of primary pinions to each set of reduction gearing one

direct coupled to Alternating Current Generator 3 phase 60 periods per second } rated 400 Kilowatts 450 Volts at 1200 revolutions per minute;

for supplying power for driving propelling shafts, type Ships auxiliaries

rated            Kilowatts            Volts at            revolutions per minute. Direct coupled, single or double reduction geared to            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	1 <sup>ST</sup> ROW .550	21.106"										
2ND "	2 <sup>ND</sup> " .890	21.586"										
3RD "	" .840	23.736"										
4TH "	" .540	23.126"										
5TH "	" .840	23.736"										
6TH "	" 1.580	24.226"										
7TH "	" 2.450	24.866"										
8TH "												
9TH "												
10TH "												
11TH "												
12TH "												

Shaft Horse Power at each turbine H.P.            I.P.            L.P.            Revolutions per minute, at full power, of each Turbine Shaft H.P. 5905 reduction wheel 1200 I.P.            L.P.            main shaft           

Rotor Shaft diameter at journals H.P. 2.495 I.P.            L.P.            Pitch Circle Diameter            1st pinion 5.811 1st reduction wheel 28.593 2nd pinion            main wheel            Width of Face 1st reduction wheel 6 1/2" main wheel           

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 5 7/8" 1st reduction wheel 6 3/16" 2nd pinion            main wheel           

Flexible Pinion Shafts, diameter 1st            2nd            Pinion Shafts, diameter at bearings External Internal 1st 2 1/2" 2nd            diameter at bottom of pinion teeth 1st 5.573" 2nd           

Wheel Shafts, diameter at bearings 1st 4.494" main            diameter at wheel shroud, 1st            Generator Shaft, diameter at bearings 5.378" main            Propelling Motor Shaft, diameter at bearings           

Intermediate Shafts, diameter as per rule            as fitted            Thrust Shaft, diameter at collars as per rule            as fitted            Tube Shaft, diameter as per rule            as fitted           

Screw Shaft, diameter as per rule            as fitted            Is the tube screw shaft fitted with a continuous liner            Bronze Liners, thickness in way of bushes as per rule            as fitted           

Thickness between bushes as per rule            as fitted            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 shaft           

Propeller, diameter            Pitch            No. of Blades            State whether Moveable            Total Developed Surface            square feet. If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine            Can the H.P. or I.P. Turbine exhaust direct to the           

Condenser            No. of Turbines fitted with astern wheels            Feed Pumps No. and size            How driven           

Pumps connected to the Main Bilge Line No. and size            How driven            Lubricating Oil Pumps, including Spare Pump, No. and size           

Ballast Pumps, No. and size            Are two independent means arranged for circulating water through the Oil Cooler            Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room           

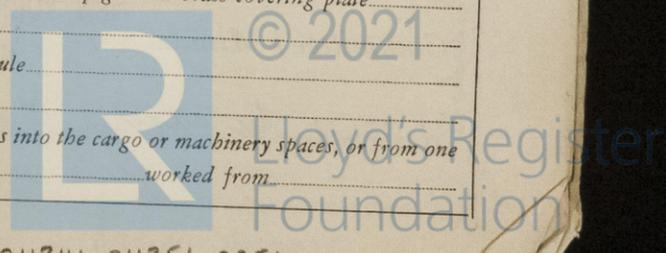
In Holds, &c.            Main Water Circulating Pump Direct Bilge Suctions, No. and size            Independent Power Pump Direct Suctions to the Engine Room           

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           



**BOILERS, &c.**— (Letter for record) Total Heating Surface of Boilers 21,130 sq. ft.  
 Is Forced Draft fitted yes No. and Description of Boilers two "D" type "Foster Wheeler" Working Pressure 675 lbs.  
 Is a Report on Main Boilers now forwarded? yes  
 Is a Donkey Boiler fitted? no If so, is a report now forwarded? no  
 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:— As specified.

The foregoing is a correct description,

*M. J. Sullivan* Manufacturer

Dates of Survey while building { During progress of work in shops - - } continuous during March 3<sup>rd</sup> 1953 to May 6<sup>th</sup> 1953.  
 { During erection on board vessel - - }  
 Total No. of visits

Dates of Examination of principal parts—Casings \_\_\_\_\_ Rotors \_\_\_\_\_ Blading \_\_\_\_\_ 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 O.H. steel 75,000 lbs (spec. D.E. 1006) Identification Mark 28 C 371  
 Flexible Pinion Shaft, Material and tensile strength \_\_\_\_\_ Identification Mark \_\_\_\_\_  
 Pinion shaft, Material and tensile strength O.H. steel 105,000 lbs (stock C.F.M) Identification Mark K.D. 416 D.J.  
 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 yes If so, state name of vessel S/S CHRYSSI

General Remarks (State quality of workmanship, opinions as to class, &c.) These turbo-generators have been built under the special survey of the Society's Surveyors in accordance with approved plans. The materials & workmanship are good and tests required by the Rules have been carried out, except when under special circumstances American Bureau of Shipping material tests have been accepted. These turbo-generators have been examined and tested under working conditions, with various loads and found to be satisfactory. In my opinion the above described turbo generator's are suitable to be included in the machinery of a vessel classed with this Society.

The amount of Entry Fee	£	:	:	When applied for,
Special	£	:	:	19
Donkey Boiler Fee	£	:	:	When received,
Travelling Expenses (if any)	£	:	:	19

*A. P. Shless*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK MAY 20 1953  
 Assigned See attached 1<sup>st</sup> entry Rpt.