

Rpt. 4a.

Report on Steam Turbine Machinery.

N.Y.K. No. 52639

Date of writing Report Aug. 17th 1953 When handed in at Local Office NEW YORK Received at London Office 11 SEP 1953
No. in Survey held at Quincy, Mass. Date, First Survey June 23rd 1953 Last Survey Aug. 11th 1953
Reg. Book on the steel screw steamer "ANDROS HILLS" (Number of Visits one)
Built at Quincy, Mass. By whom built Bethlehem Steel Co. Yard No. 1632 When built 1953
Engines made at Trenton New Jersey By whom made De Laval Steam Turbine Co. Engine No. 650602-3 When made 1953
Boilers made at Tonawanda, N.Y. By whom made Foster Wheeler Corp. Boiler No. B.5003-4 When made 1953
Shaft Horse Power at Full Power 400 KW Owners Rio Venturado Compania Naviera S.A. Port belonging to Panama R.P.
Nom. Horse Power as per Rule ✓ Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes
Trade for which Vessel is intended Tanker

STEAM TURBINE ENGINES, &c.—Description of Engines 400 KW. A.C. Turbo-generators (Two units)
No. of Turbines one Direct coupled, single reduction geared to one generator propelling shafts. 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 Motors, 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.
Impulse Blading	No. of rows	<u>Eight rows</u>	<u>Nil.</u>	<u>Nil.</u>	<u>Nil.</u>
Reaction Blading	No. of stages	<u>Seven stages.</u>			
	No. of rows in each stage				

Shaft Horse Power at each turbine H.P. 5905 I.P. 1200 L.P. 1200
Revolutions per minute, at full power, of each Turbine Shaft 1200
Rotor Shaft diameter at journals H.P. 2.495" I.P. 5.811" L.P. 28.593"
Pitch Circle Diameter 1st pinion 5.811" 2nd pinion 28.593" main wheel 6 1/2"
Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 5 1/8" 2nd pinion 6 3/16" main wheel 6 3/16"

Flexible Pinion Shafts, diameter 1st 4.494" 2nd 5.573"
Pinion Shafts, diameter at bearings External 2 1/2" Internal 5.573"
Wheel Shafts, diameter at bearings 1st 4.494" 2nd 5.573"
Generator Shaft, diameter at bearings 5.378"
Propelling Motor Shaft, diameter at bearings 5.378"
Thrust Shaft, diameter at collars as per rule
Tube Shaft, diameter as per rule
Screw Shaft, diameter as per rule
Is the tube screw shaft fitted with a continuous liner ✓

Bronze Liners, thickness in way of bushes as per rule
Thickness between bushes as per rule
Is the after end of the liner made watertight in the propeller boss as fitted
If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner as fitted
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 as fitted
If two liners are fitted, is the shaft lapped or protected between the liners as fitted
Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft as fitted
Length of Bearing in Stern Bush next to and supporting propeller as fitted
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. Turbines 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
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, connected both to Main Bilge Pumps and Auxiliary
Bilge Pumps, No. and size:—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 they fitted with Valves or Cocks
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

BOILERS, &c.—(Letter for record yes) 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./sq. in.
Is a Report on Main Boilers now forwarded? yes

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

Is the donkey boiler intended to be used for domestic purposes only

Plans. Are approved plans forwarded herewith for Shafting Main Boilers Auxiliary Boilers Donkey Boilers
(If not, state date of approval)

Superheaters General Pumping Arrangements Oil Fuel Burning Arrangements

Geared turbines situated aft. Have torsional vibration characteristics of system been approved Date of approval

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

The foregoing is a correct description.

Dates of Survey while building
During progress of work in shops - -
During erection on board vessel - -
Total No. of visits **continuous**

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 fitting sea connections 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 Identification Mark
Flexible Pinion Shaft, Material and tensile strength Identification Mark
Pinion shaft, Material and tensile strength Identification Mark

; Chemical analysis

If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment

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

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with

Is this machinery a duplicate of a previous case If so, state name of vessel **S/S Andros Island**

General Remarks. (State quality of workmanship, opinions as to class, &c.) **These turbo generators have been built under special survey, in accordance with approved plans and examined during installation on vessel, examined under working conditions and found to be satisfactory.**

In my opinion these turbo-generators are suitable to be included with the machinery of vessel classed with this Society

Certificate (if required) to be sent to
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

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

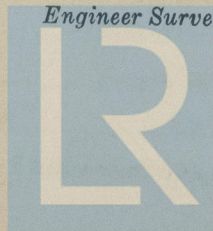
Committee's Minute

Assigned **See attached 14 entry list.**

NEW YORK AUG 26 1953

W. P. H. H. H.

Engineer Surveyor to Lloyd's Register of Shipping.



Lloyd's Register Foundation