

Report on Steam Turbine Machinery.

N.Y.K. No. 52639

Rpt. 4a.

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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 cont.) Tons (Gross 18,735 Net 11,603)

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.J. By whom made Foster Wheeler Corp. Boiler No. B.5003v4 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 double reduction geared to one 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 Direct Current Generator rated 400 Kilowatts 450 Volts at 1200 revolutions per minute;
 for supplying power for driving Propelling Motors, Type Ships auxiliaries
 rated 400 Kilowatts 450 Volts at 1200 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>				
Reaction Blading { No. of rows in each stage				

Shaft Horse Power at each turbine { H.P. 5905 I.P. ✓ L.P. ✓ } Revolutions per minute, at full power, of each Turbine Shaft { H.P. 1200 I.P. ✓ L.P. ✓ } 1st reduction wheel 1200 main shaft ✓

Rotor Shaft diameter at journals { H.P. 2.495" I.P. ✓ L.P. ✓ } Pitch Circle Diameter { 1st pinion 5.811" 2nd pinion 28.593" } 1st reduction wheel 28.593" main wheel 6 1/2" Width of Face { 1st reduction wheel 6 1/2" main wheel 6 3/16"

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" } 1st reduction wheel 6 3/16" main wheel 6 3/16"

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

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

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 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 ✓ If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller ✓

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 ✓ } 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 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 ✓) 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

NOTE.—The words which do not apply should be deleted. If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship?



