

Rpt. 4a.

REPORT ON STEAM TURBINE MACHINERY.

N.Y.K. No. 52406

Date of writing Report May 7th 1953 When handed in at Local Office 13 JUN 1953 Received at London Office 13 JUN 1953
No. in Survey held at Quincy, Mass. Port of NEW YORK
Reg. Book Quincy, Mass. Date, First Survey March 3rd Last Survey May 6th 1953
on the steel screw steamer "ANDROS ISLAND" (Number of Visits cond.)
Built at Quincy, Mass. By whom built Bethlehem Steel Co. Yard No. 1631 Tons {Gross 18,735
Engines made at Quincy, Mass. By whom made Bethlehem Steel Co. Engine No. 1630-H2 When built 1953
Boilers made at Carteret N.J. By whom made Foster, Wheeler Corp. Boiler No. 1630-H2 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
Astern — double reduction geared } 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 shafts, type Ships auxiliaries
rated — Kilowatts — Volts at — revolutions per minute. Direct coupled, single or double reduction geared to — propelling shafts.

TURBINE BLADING.

T. P.				I. P.			L. P.			ASTERN.								
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.		
1ST EXPANSION				1ST ROW			.550			21.106								
2ND				2ND			.890			21.586								
3RD							.540			23.126								
4TH							.840			23.736								
5TH							.540			23.126								
6TH							.840			23.736								
7TH							1.580			24.226								
8TH							2.450			24.866								
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 Pitch Circle Diameter { 1st pinion 5.811 1st reduction wheel 28.593
I.P. — 2nd pinion — main wheel — } Width of Face { 1st reduction wheel 6 1/2"
L.P. — 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 { 1st — Pinion Shafts, diameter at bearings { External 1st 2 1/2" 2nd { — diameter at bottom of pinion teeth { 1st 5.573"
2nd — Internal — 2nd { — 2nd { —

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

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

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

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 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 (If not state date of approval)

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 - - } { During erection on board vessel - - } Total No. of visits

continuous during March 3rd 1953 to May 6th 1953.

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 KD 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 1st entry Rpt.



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