

REPORT ON STEAM TURBINE MACHINERY. No. 7904

Received at London Office

Date of writing Report **Sept. 29, 1943** When handed in at Local Office **Oct. 7, 1943** Port of **Baltimore, Maryland** **19 NOV 1943**

No. in Survey held at **Baltimore, Maryland** Date, First Survey **9th March** Last Survey **26th August 1943**

Reg. Book. **28236** on the **S.S. "LEONARDO da VINCI" now "EMPIRE CLYDE"** (Number of Visits **-**)

built at **Spezia** By whom built **Ansaldo San Giorgio** Yard No. **192** Tons ^{Gross} **7515** _{Net} **4205**

Engines made at **Sampierdarena** By whom made **Gio Ansaldo & Co.** Engine No. **-** When made **-**

Boilers made at **Sampierdarena** By whom made **Gio Ansaldo & Co** Boiler No. **-** When made **-**

Shaft Horse Power at Full Power **5000** Owners **Ministry of War Transport** Port belonging to **Mombassa**

Nom. Horse Power as per Rule **1116** Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **Yes**

Trade for which Vessel is intended **Passenger**

STEAM TURBINE ENGINES, &c.—Description of Engines **2 sets of triple reaction ahead and compound astern**

No. of Turbines **6** Ahead **4** ~~Double reduction geared~~ to **2** propelling shafts. No. of primary pinions to each set of reduction gearing **3**

Directly coupled to **Alternating Current Generator** ~~place~~ **periods per revolution** ~~Direct Current Generator ~~place~~ **Revolutions per minute**~~

Applying power for driving **Propelling Motors, Type**

Revolutions per minute **Directly coupled, single or double reduction geared to** **propelling shafts**

TURBINE LOADING.	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	.91"	11.27"	10	1.69	16.39	10	2.48	27.01		HP 1.17	25.98	1
2nd	.99	12.60	8	1.81	18.20	8	3.11	28.27		1.57	26.38	1
3rd	1.10	13.63	7	2.13	19.62	7	3.89	29.83		1.96	26.76	1
4th	1.22	14.65	6	2.44	21.40	6	2.94	37.38		HP in I.P. AHD. Casing		
5th							3.73	38.96		LP 1.02	35.67	1
6th							4.67	40.84		1.79	36.44	1
7th							5.06	41.61		2.40	37.05	1
8th							6.23	43.97		1.45	25.73	2
9th							7.61	46.71		2.07	26.97	2
10th							7.61	46.71		2.91	28.66	2
11th							7.61	46.71		2.91	28.66	2
12th										2.91	28.66	2

Shaft Horse Power at each turbine { H.P. **833** I.P. **833** L.P. **833** } **Revolutions per minute, at full power, of each Turbine Shaft** { H.P. **4504** I.P. **3342** L.P. **2302** }

Motor Shaft diameter at journals { H.P. **3.52"** I.P. **3.52"** L.P. **5.887"** } **Pitch Circle Diameter** { 1st pinion **LP 10.962"** 2nd pinion **17.717"** } **1st reduction wheel** **55.782"** **main wheel** **73.12** **HP & MP 8.283"** **LP 11.535** **1st reduction wheel** **29.016** **main wheel** **34.173**

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion **HP & MP 2.953** 2nd pinion **LP 4.530** } **Generator Shaft, diameter at bearings** **53.84"** **Propelling Motor Shaft, diameter at bearings** **70.5"**

Exible Pinion Shafts, diameter at bearings { 1st **9.447"** 2nd **-** } **Pinion Shafts, diameter at bearings** { 1st **53.84"** 2nd **-** } **Generator Shaft, diameter at bearings** **53.84"** **Propelling Motor Shaft, diameter at bearings** **70.5"**

Wheel Shafts, diameter at bearings { 1st **9.447"** 2nd **-** } **Pinion Shafts, diameter at bearings** { 1st **53.84"** 2nd **-** } **Generator Shaft, diameter at bearings** **53.84"** **Propelling Motor Shaft, diameter at bearings** **70.5"**

Intermediate Shafts, diameter { as per rule **12.84"** as fitted **12.205"** } **Thrust Shaft, diameter at collars** **13.48** **as fitted** **13"**

Tube Shaft, diameter { as per rule **-** as fitted **-** } **Screw Shaft, diameter** **14.13"** **as fitted** **13.78"** **Is the** **shaft fitted with a continuous liner** **Yes**

Bronze Liners, thickness in way of bushes { as per rule **.73"** as fitted **.766"** } **Thickness between bushes** **.55"** **as fitted** **.59** **Is the after end of the liner made watertight in the** **Yes**

Propeller boss **Yes** **If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner** **No - by caulked metal**

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 **Not known**

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** **Yes**

ft **No** **If so, state type** **P 17 1"** **Length of Bearing in Stern Bush next to and supporting propeller** **59 1/2"**

Propeller, diameter **15' 6 1/2"** Pitch **3 17' 9"** No. of Blades **3** **State whether Moveable** **Moveable** **Total Developed Surface** **-** **square feet.**

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** **4** **Feed Pumps** { No. and size **4 - 92 G.P.M.** **1 - 184 G.P.M.** How driven **Stm - Simplex** **Stm - duplex** }

Pumps connected to the Main Bilge Line { No. and size **2 - 215 GPM.** **2 - 458 GPM.** **1 - Emergency** How driven **Attached M.E.** **Stm. - duplex** **24 HP El. Motor** }

Ballast Pumps, No. and size **1 - 458 GPM** **Lubricating Oil Pumps, including Spare Pump, No. and size** **4 - 147 GPM**

Two independent means arranged for circulating water through the Oil Cooler **Yes** **Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge** **Yes**

Pumps, No. and size:—In Engine and Boiler Room **4 - 3 1/2" in E.R., 4 - 3 1/2" in Aft. Elr. Room, 4 - 3 1/2" in Fwd. Elr. Room, 4 - 3 1/2" in Pump Room, 2 1/2" in cofferdams**

Holds, &c. **6 - 3 1/2" (i.e. 1-3 1/2" from each hold sump) also 19 - 3 1/2" (1 from each of the 19 drainage tanks)**

in Water Circulating Pump Direct Bilge Suctions, No. and size **2 - 10" dia.** **Independent Power Pump Direct Suctions to the Engine Room** **Yes**

ges, No. and size **None** **Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes** **Yes**

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 **Yes**

all Sea Connections fitted direct on the skin of the ship **Yes except blow downs** **Are they fitted with Valves or Cocks** **Valves except cocks on blow downs.**

BOILERS, &c.—(Letter for record)

Total Heating Surface of Boilers 15414 sq. ft.

Is Forced Draft fitted Yes No. and Description of Boilers 4 Yarrow W.T. and 2 Scotch Working Pressure All 200 lb

Is a Report on Main Boilers now forwarded? Yes

Is an Auxiliary Boiler fitted? Yes - Two

If so, is a report now forwarded? Yes

Is the donkey boiler intended to be used for domestic purposes only No

Plans. Are approved plans forwarded herewith for Shafting (If not state date of approval)

Plans not available

Main Boilers

Auxiliary Boilers

Donkey Boilers

Superheaters

None

General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied 1 Tailshaft, 3 flexible couplings (1 H.P., 1 M.P., 1 L.P.)

3 High Speed Pinions (1 H.P., 1 M.P., 1 L.P.)

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

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

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

Solid drawn copper Test pressure

400 lb

Date of test

Is an installation fitted for burning oil fuel

Yes

Is the flash point of the oil to be used over 150°F.

Yes

Have the requirements of the Rules for the use of oil as fuel been complied with

Yes

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo

No

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

No

If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery of this vessel was not built under Special Survey, but has been thoroughly overhauled throughout, parts renewed as necessary and seen under full

steam working conditions and found satisfactory.

The workmanship is good and in my opinion the machinery is eligible to be classed and have records of

L.M.C. 8,43 and T.S. 4,43, fitted for oil fuel F.P. above 150° F. made in the Register Book

The amount of Entry Fee ... £ SEE

Special ... £ REP

Donkey Boiler Fee ... £ 9

Travelling Expenses (if any) £

When applied for,

19

When received,

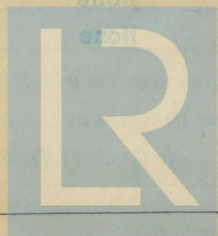
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Committee's Minute

NEW YORK OCT 20 1943

Assigned See Rpt. 9 attached

Wm. C. Cowin
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation