

Report on Steam Turbine Machinery.

No. 21286
9 FEB 1956

pt. 4a.

Date of writing Report 29-1-56 When handed in at Local Office 3/2/1956 Port of GENOA
No. in Survey held at GENOA Date, First Survey 25-11-54 Last Survey 18-1-56
Reg. Book on the SINGLE SC "MIRAFLORES" (Number of Visits 28)
Built at GENOA-SESTAI By whom built S.A. ANSALDO-CANTIERI NAVALI Yard No. 1499 When built 1956
Engines made at GENOA-SAMPIERDARENA By whom made S.A. ANSALDO-STABILIMENTO Engine No. 1563 When made 1955
Boilers made at - ditto - By whom made - ditto - Boiler No. 5946 When made 1955
Shaft Horse Power at Full Power 14500 H.P. Owners MIRAFLORES S.A. COMPANIA NAVIERA Port belonging to PANAMA
Nom. Horse Power as per Rule 2900 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted YES
Trade for which Vessel is intended CARRYING PETROLEUM IN BULK.

ONE SET CONSISTING OF TWO STEAM TURBINES, DOUBLE REDUC-
TION GEARED TO ONE PROPELLER SHAFT.

STEAM TURBINE ENGINES, &c.—Description of Engines
No. of Turbines Ahead TWO Direct coupled, single reduction geared to ONE propelling shafts. No. of primary pinions to each set of reduction gearing TWO
Astern ONE double reduction geared
direct coupled to Alternating Current Generator phase periods per second rated Kilowatts Volts at revolutions per minute;
for supplying power for driving Propelling Motors, Type Direct Current Generator rated Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.
rated Kilowatts Volts at revolutions per minute.

TURBINE BLADING.	H. P.	I. P.	L. P. DOUBLE FLOW	ASTERN IN LP TURBINE CASING
Impulse	ONE WHEEL WITH TWO ROWS	✓	15 STAGES IN EACH FLOW	TWO WHEELS WITH TWO ROWS EACH
Blading	7	✓	3-3-2-2-2-1-1-1-1	✓
Reaction			1-1-1-1-1-1-1	✓
Blading	5-6-5-5-5-5-5	✓		
stage				

Shaft Horse Power at each turbine H.P. 7250 I.P. 7250 L.P. 7250
Revolutions per minute, at full power, of each Turbine Shaft H.P. 2619.6 I.P. 2619.6 L.P. 2619.6
Rotor Shaft diameter at journals H.P. 250 mm with 50 mm central hole I.P. 250 mm with 50 mm central hole L.P. 250 mm with 50 mm central hole
Pitch Circle Diameter 1st pinion 391.238 mm 1st reduction wheel 1455.634 mm 2nd pinion 594.401 mm main wheel 3805.615 mm
Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 610 mm 1st reduction wheel 670-1985 mm 2nd pinion 845-1730 mm main wheel 1290-950 mm
Pinion Shafts, diameter at bearings 1st 249 mm 2nd 520 mm
Wheel Shafts, diameter at bearings 1st 430 mm with 180 mm central hole 2nd 600 mm with 140 mm central hole
Intermediate Shafts, diameter as per rule 520 mm
Tube Shaft, diameter as per rule 565 mm reduced 542 mm
Screw Shaft, diameter as per rule 27.5 mm
Bronze Liners, thickness in way of bushes as fitted 27.5 mm
Thrust Shaft, diameter at collars as per rule 545 mm with 110 mm central hole
Generator Shaft, diameter at bearings as per rule 540 mm with 140 mm central hole
Propelling Motor Shaft, diameter at bearings as per rule 540 mm with 140 mm central hole
Shaft fitted with a continuous liner YES
Is the after end of the liner made watertight in the 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 YES
If two liners are fitted, is the shaft lapped or protected between the liners YES
Is an approved Oil Gland or other appliance fitted at the after end of the tube YES
Length of Bearing in Stern Bush next to and supporting propeller 2600 mm
Propeller, diameter 6300 mm Pitch 5335 mm No. of Blades FOUR State whether Moveable SOLID Total Developed Surface 16.40 square m.
If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine YES Can the H.P. Turbines exhaust direct to the Condenser YES

No. of Turbines fitted with astern wheels ONE Feed Pumps No. and size THREE @ 90 Ton/h. How driven STEAM TURBINE
Pumps connected to the Main Bilge Line No. and size TWO @ 100 Ton/h. - ONE @ 40 Ton/h. - IN FORWARD ROOM: ONE @ 100 Ton/h. How driven ELECTRICALLY STEAM

Ballast Pumps, No. and size TWO @ 100 Ton/h. - ONE @ 100 Ton/h. Lubricating Oil Pumps, including Spare Pump, No. and size TWO @ 40 Ton/h.
Are two independent means arranged for circulating water through the Oil Cooler YES Suctions, connected both to Main Bilge Pumps and Auxiliary
Bilge Pumps, No. and size: In Engine and Boiler Room TWO: @ 150 mm - FOUR: @ 100 mm - TWO: @ 80 mm - COFF: @ 25 mm: 1 @ 100 mm Pump Room: @ 143 mm: 2 @ 100 mm
In FORWARD PUMP ROOM: 1 @ 175 mm - 1 @ 80 mm

Main Water Circulating Pump Direct Bilge Suctions, No. and size ONE: @ 500 mm Independent Power Pump Direct Suctions to the Engine Room
Bilges, No. and size TWO: @ 150 mm Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes YES
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 YES
Are all Sea Connections fitted direct on the skin of the ship ON STROOLS WELDED Are they fitted with Valves or Cocks VALVES and COCKS

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates YES Are the Overboard Discharges above or below the deep water line BELOW Are they each fitted with a Discharge Valve always accessible on the plating of the vessel YES Are the Blow Off Cocks fitted with a spigot and steel covering plate YES What pipes pass through the bunkers YES Have they been tested as per rule YES

What pipes pass through the deep tanks YES Are all Pipes, Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times YES
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 YES Is the Shaft Tunnel watertight YES Is it fitted with a watertight door YES worked from YES

BOILERS, &c.—(Letter for record YES) Total Heating Surface of Boilers as per Rules 3627 sq. m.
Is Forced Draft fitted YES No. and Description of Boilers THREE - TWO DOWN ASTER WHEELER Working Pressure 47 Kg/cm²
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. 18-1-54 Auxiliary Boilers. ☒ Donkey Boilers. ☒
 (If not, state date of approval) 10-5-54, 25-10-54
 Superheaters. 18-1-54 General Pumping Arrangements. 25-6-54, 6-7-54 Oil Fuel Burning Arrangements. 12-8-54
 Geared turbines situated aft. Have torsional vibration characteristics of system been approved? ☒ Date of approval. See Secretary's Letter 18-1-54

SPARE GEAR.

Has the spare gear required by the Rules been supplied? ☒
 State the principal additional spare gear supplied. ONE SCREW SHAFT
 ONE CAST IRON PROPELLER.

ANSALDO S.A. STABILIMENTO MECCANICO

The foregoing is a correct description.

Dates of Examination of principal parts—Casings. FROM 25-11-54 TO 14-11-54
 During erection on board vessel. FROM 20-6-55 TO 18-1-56
 Total No. of visits. 88
 Dates of Examination of principal parts—Casings. FROM 17-2-55 TO 17-10-55 Rotors. FROM 2-2-55 TO 17-10-55 Blading. FROM 12-5-55 TO 17-10-55 Gearing. FROM 25-11-54 TO 2-10-55
 Wheel shaft. 28-7-55 Thrust shaft. 28-7-55 Intermediate shafts. 26-11-55 Tube shaft. ☒ Screw shaft. 21-6-55
 Propeller. 21-6-55 Stern tube. 26-6-55 Engine and boiler seatings. 18-7-55 Engine holding down bolts. 26-11-55
 Completion of fitting sea connections. 5-7-55 Completion of pumping arrangements. 10-1-56 Boilers fixed. 26-11-55 Engines tried under steam. 18-1-56
 Main boiler safety valves adjusted. 10-1-56 Thickness of adjusting washers. SEE ATTACHED SHEET
 Rotor shaft, Material and tensile strength. S.H.P. Ni-Cr-Mo-STEEL - U.T.S. 63/75 Kg/mm² Identification Mark. SEE ATTACHED SHEET
 Steam Impulse Wheel, Material and tensile strength. L.P. Ni-Cr-Mo-STEEL - U.T.S. 53/60 Kg/mm² Identification Mark. - d/Ho -
 Pinion shaft, Material and tensile strength. Ni-Cr-Mo-STEEL - U.T.S. 63/75 Kg/mm² Identification Mark. - d/Ho -
 Chemical analysis. C 0.24 / 0.25 - Ni 3.25 / 3.75 - V 0.15 - S & P < 0.035
 If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment. 3-9-53
 1st Reduction Wheel Shaft, Material and tensile strength. Ni-Cr-STEEL - U.T.S. 75 Kg/mm² Identification Mark. SEE ATTACHED SHEET
 Wheel shaft, Material. S.H. STEEL Identification Mark. ATTACHED SHEET Thrust shaft, Material. S.H. STEEL Identification Mark. - d/Ho -
 Intermediate shafts, Material. S.H. STEEL Identification Marks. - d/Ho - Tube shaft, Material. ☒ Identification Marks. ☒
 Screw shaft, Material. S.H. STEEL Identification Marks. - d/Ho - Steam Pipes, Material. CH 75 STEEL FOR SUPERHEATED STEAM Test pressure. 95 Kg/cm²
 Date of test. FROM 8-10-55 TO 3-1-56 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 the notation for ice strengthening desired, state whether the requirements in this respect have been complied with. NO
 Is this machinery a duplicate of a previous case. ☒ If so, state name of vessel. "ARCA PRIMA" - SEE GENOA REP. N° 2059.

General Remarks. (State quality of workmanship, opinions as to class, &c.) THE MACHINERY OF THIS VESSEL HAS BEEN CON-
 -STRUCTED UNDER SPECIAL SURVEY OF TESTED MATERIALS AND IS IN ACCORDANCE WITH THE APPROVED PLAN,
 SECRETARY'S LETTERS AND RULE REQUIREMENTS. THE MATERIALS AND WORKMANSHIP ARE GOOD.
 THE COMPLETE INSTALLATION HAS BEEN TRIED UNDER WORKING CONDITION AT FULL POWER AND FOUND
 SATISFACTORY. AFTERWARDS THE FABRICATED L.P. TURBINE CASING, GEAR CASE AND GEAR WHEELS HA
 BEEN SPECIALLY EXAMINED AND FOUND, SO FAR AS COULD BE SEEN, SOUND AND FREE FROM DEFECTS.
 THE MACHINERY OF THIS VESSEL IS WORTHY TO BE CLASSED IN THE SOCIETY'S REGISTER BOOK
 WITH THE RECORD: + L.M.C. 1-56. C.L. AND NOTATION: "FITTED FOR OIL FUEL F.P. ABOVE 150°
 AND "TWO STEAM TURBINES D.R. GEARED TO PROPELLER SHAFT.

FIRST ENTRY FEE DURING
 CONTINUATION. £ 633.500.
 COM. 11% £ 69.685.
 CAR. FUND. £ 18.822.
 BANK ADV. £ 6.839.31
 REV. TAX £ 18.855.
 14/12/55
 FIRST ENTRY FEE DURING INSTALLATION
 The amount of Entry Fee £ 465.325.
 COM. 11% £ 51.186.
 CAR. FUND. £ 15.692.
 REV. TAX £ 15.692.
 Special CAR FUND... £ 9.308.
 5-2-1956
 Donkey Boiler Fee ... £ : When received.
 Travelling Expenses (if any) £ 44.712. 19.
 REV. TAX £ 15.692.
 Committee's Minute. FRIDAY 16 MAR 1956
 Assigned. + LMC 1.56
 3 with 668 of. OF 1.56
 CH

Engineer Surveyor to Lloyd's Register of Shipping.

Rpt. 9a

Port of GENOA

Continuation of Report No. 21286 dated 29/1/56 on the "MIRAFLORES"

IDENTIFICATION MARKS

	H.P. TURBINE	L.P. TURBINE
		forward section LLOYD'S-GEN S. 3830 A.G. 10-9-55
		after section LLOYD'S-GEN S. 3829 A.G. 10-9-55
		after end of rotor LLOYD'S-GEN S. 4262 A.G. 10-9-55
		external impulse wheel LLOYD'S-GEN S. 3859 A.G. 10-9-55
TURBINE ROTOR	LLOYD'S-GEN S. 3860 A.G. 12-9-55	
1st PINION	LLOYD'S-GEN S. 3854 A.G. 29-8-55	LLOYD'S-GEN S. 3853 A.G. 8-9-55
1st RED. GEAR WHEEL SHAFT and 2nd PINION	LLOYD'S-GEN S. 3817 A.G. 28-7-55	LLOYD'S-GEN S. 3823 A.G. 27-6-55
1st RED. GEAR WHEEL RIM	LLOYD'S-GEN S. 3151 A.G. 28-7-55	LLOYD'S-GEN S. 2150 A.G. 27-6-55
MAIN GEAR WHEEL RIM		LLOYD'S-GEN S. 3170 A.G. 28-7-55
MAIN GEAR WHEEL SHAFT and THRUST SHAFT		LLOYD'S-GEN S. 3724 A.G. 28-7-55
INTERMEDIATE SHAFT		LLOYD'S-GEN S. 3958 A.G. 6-5-55
SCREW SHAFT		LLOYD'S-GEN S. 3889 A.G. 6-5-55
PROPELLER		LLOYD'S-GEN S. 3199 G.M. 30-5-55
SPARE SCREW SHAFT		LLOYD'S-GEN S. 3957 G.V. 11-6-55

W.T. BOILERS - THICKNESS OF ADJUSTING WASHERS OF SAFETY VALVES.

	SATURATED STEAM	SUPERHEATED STEAM
PORT BOILER	9 m/m.	FORN: 11.7 m/m. - ART: 11.5 m/m.
CENTRE BOILER	11.4 m/m.	FORN: 11.2 m/m. - ART: 11.3 m/m.
STARBOARD BOILER	8.4 m/m.	FORN: 9.2 m/m. - ART: 10.7 m/m.

AG.



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