

# Report on Steam Turbine Machinery.

No. 20175  
3-SEP 1954

Date of writing Report 24-7-54 19 When handed in at Local Office 26-7-54 19 Port of GENOA  
No. in Survey held at GENOA Date, First Survey 9-10-52 Last Survey 24-7-54 19  
Reg. Book 361435 on the SINGLE SC "GIUSEPPE GIULIETTI" (Number of Visits 102)  
Built at GENOA-SESTRI By whom built SA ANSALDO-CANTIERI NAVALI Yard No. 1486 When built 1954  
Engines made at GENOA-SAMPIERDARENA By whom made SA ANSALDO-STABILIM MECCANICA Engine No. 1449 When made 1954  
Boilers made at d/Ho By whom made d/Ho Boiler No. 5898 When made 1954  
Shaft Horse Power at Full Power 12500 @ 100 R.P.M. Owners "CAPIBALDI" Soc. Coop. di Nav. & Rep. L.T.O.A. Port belonging to GENOA  
Nom. Horse Power as per Rule 2500 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted YES  
Trade for which Vessel is intended CARRYING PETROLEUM IN BULK

## STEAM TURBINE ENGINES, &c.—Description of Engines

ONE SET CONSISTING OF TWO STEAM TURBINES DOUBLED REDUCTION GEARED TO ONE PROPELLING SHAFT.  
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.

TURBINE	H. P.	I. P.	L. P.	ASTERN.
BLADING.				
Impulse Blading	No. of rows TWO	✓	✓	TWO IMPULSE WHEELS: EACH WITH TWO ROWS.
Reaction Blading	No. of stages SEVEN	✓	DOUBLE FLOW 15 IN EACH FLOW	✓
	No. of rows in each stage 5-6-5-5-5-5-5	✓	3-3-2-2-2-1-1-1-1	✓
		✓	1-1-1-1-1-1	✓

Shaft Horse Power at each turbine H.P. 6250 ✓ I.P. ✓ L.P. 6250 ✓  
Revolutions per minute, at full power, of each Turbine Shaft H.P. 2521 ✓ 1st reduction wheels 640 ✓  
I.P. ✓ L.P. 2521 ✓ main shaft 100 ✓

Rotor Shaft diameter at journals H.P. 250 m/m ✓ I.P. 250 m/m ✓ L.P. 250 m/m ✓  
Pitch Circle Diameter 1st pinion 373.97 m/m 1st reduction wheel 1472.89 m/m Width of 1st reduction wheel 2 x 400 m/m  
2nd pinion 594.40 m/m main wheel 3805.615 m/m Face main wheel 1200 m/m

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 610 m/m 1st reduction wheel 670 x 1985 m/m  
2nd pinion 845 x 1730 m/m main wheel 950 x 1290 m/m  
Flexible Pinion 1st 249 m/m ✓  
Shafts, diameter 2nd 520 m/m Pinion Shafts, diameter at bearings External 1st 250 m/m 2nd 430 m/m 1st 359.79 m/m  
Internal 1st 250 m/m 2nd 430 m/m diameter at bottom of pinion teeth 2nd 546.02 m/m

Wheel Shafts, diameter at bearings 1st 430 WITH HOLE 180 m/m ✓  
main 600 WITH HOLE 140 m/m ✓  
Generator Shaft, diameter at bearings 1st ✓  
Propelling Motor Shaft, diameter at bearings main ✓

Intermediate Shafts, diameter as per rule 25 approved as fitted 510 m/m ✓  
Thrust Shaft, diameter at collars as per rule 25 approved as fitted 54.5 m/m ✓  
Tube Shaft, diameter as per rule 25 approved as fitted 555 at top of prop. Is the tube screw shaft fitted with a continuous liner YES ✓

Bronze Liners, thickness in way of bushes as per rule 25 approved as fitted 27.5 m/m Thickness between bushes as per rule 25 approved as fitted 21 m/m  
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 ✓

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 No If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller 2600 m/m

Propeller, diameter 6400 m/m Pitch 4480 ÷ 5600 No. of Blades FOUR State whether Moveable SOLID Total Developed Surface 17 square m/m  
If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine YES Can the H.P. & L.P. Turbines exhaust direct to the

Condenser YES ✓ No. of Turbines fitted with astern wheels ONE Feed Pumps No. and size TWO @ 76 T/h each ONE @ 84 T/h  
How driven STEAM TURBINE

Pumps connected to the Main Bilge Line No. and size IN E.R. TWO @ 100 T/h each ONE @ 110 T/h ONE @ 30 T/h IN FORWARD PUMP ROOM:  
How driven STEAM DRIVEN - ELECTR. ELECTR.

Ballast Pumps, No. and size IN E.R. TWO @ 109 T/h each Lubricating Oil Pumps, including Spare Pump, No. and size TWO @ 110 T/h each  
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 SIX @ 100 m/m IN COFF 34/35: ONE @ 100 m/m IN COFF 51/52: TWO @ 100 m/m IN COFF 67/68: ONE @ 80 m/m  
In Hold, &c. IN CARGO PUMP ROOM: THREE @ 80 m/m IN FORWARD PUMP ROOM: 2 @ 80 m/m IN COFF 209/210: ONE @ 80 m/m ✓

Main Water Circulating Pump Direct Bilge Suctions, No. and size ONE @ 450 m/m ✓ Independent Power Pump Direct Suctions to the Engine Room  
Bilges, No. and size TWO @ 150 m/m ✓ 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 STOWLS WELDED TO SHELL Are they fitted with Valves or Cocks VALVES ✓

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 5/8" brass covering plate YES What pipes pass through the bunkers NONE How are they protected ✓

What pipes pass through the deep tanks NONE 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 YES AS PRACTICABLE ✓  
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 ✓ Is it fitted with a watertight door ✓ worked from ✓

OILERS, &c.—(Letter for record) Total Heating Surface of Boilers (as per Rules) 31740 sq. ft. © 2021  
Is Forced Draft fitted YES ✓ No. and Description of Boilers THREE: TWO DRUMS FOSTER-WHEELER Working Pressure 47.5 Kg/cm<sup>2</sup> (675 lb/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. NEW YORK: 1-7-52 General Pumping Arrangements 25-9-53, 3-11-53 Oil Fuel Burning Arrangements 3-11-53   
 Geared turbines situated aft. Have torsional vibration characteristics of system been approved. YES ☒ Date of approval 13-1-53

#### SPARE GEAR.

Has the spare gear required by the Rules been supplied. YES ☒   
 State the principal additional spare gear supplied. 1 screw shaft.

ANSALDO S. A.  
STABILIMENTO MECCANICO  
Via Goldreforge

Manufacturer.

Dates of Survey while building   
 During progress of work in shops - FROM 9-10-52 To 25-3-54.   
 During erection on board vessel - FROM 9-12-53 To 26-7-54   
 Total No. of visits 102

Dates of Examination of principal parts - Casings FROM 11-12-52 To 3-8-53 Rotors FROM 5-1-53 To 17-2-53 Blading FROM 23-4-53 To 14-12-53 Gearing FROM 9-10-52 To 14-12-53   
 Wheel shaft 10-9-53 Thrust shaft 10-9-53 Intermediate shafts 12-3-54 Tube shaft 13-12-53 Screw shaft 13-12-53   
 Propeller 16-12-53 Stern tube 10-12-53 Engine and boiler seatings 16-12-53 Engine holding down bolts 13-3-54   
 Completion of fitting sea connections 16-12-53 Completion of pumping arrangements 22-6-54 Boilers fixed 26-3-54 Engines tried under steam 11-7-54   
 Main boiler safety valves adjusted 8-7-54 Thickness of adjusting washers SEE ATTACHED SHEET   
 Rotor shaft, Material and tensile strength. H.P.: Ni. Cr. Mo. STEEL. U.T.S. 63/75 Kg/mm<sup>2</sup> L.P.: Mn. V. STEEL. U.T.S. 53/60 Kg/mm<sup>2</sup> Identification Mark SEE ATTACHED SHEET   
 Flexible Pinion Shaft, Material and tensile strength. Identification Mark   
 Pinion shaft, Material and tensile strength. Ni. V. STEEL - U.T.S. > 75 Kg/mm<sup>2</sup> Identification Mark SEE ATTACHED SHEET   
 ; Chemical analysis C 0.24, P 0.35, S 0.035, Ni 0.15, V 0.035, P < 0.035

If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment 13-11-52   
 1st Reduction Wheel Shaft, Material and tensile strength. Ni. V. STEEL. U.T.S. > 75 Kg/mm<sup>2</sup> Identification Mark SEE ATTACHED SHEET   
 Wheel shaft, Material. S.M. STEEL Identification Mark ATTACHED SHEET Thrust shaft, Material. S.M. STEEL Identification Mark ATTACHED SHEET   
 Intermediate shafts, Material. S.M. STEEL Identification Marks ditto Tube shaft, Material. Identification Marks ditto   
 Screw shaft, Material. S.M. STEEL Identification Marks ditto Steam Pipes, Material. C.M. STEEL for superheated steam Test pressure 95 Kg/cm<sup>2</sup>   
 Date of test FROM 25-3-54 To 9-6-54 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. YES ☒ If so, have the requirements of the Rules been complied with. YES ☒   
 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 ON THIS VESSEL HAS BEEN CONSTRUCTED UNDER SPECIAL SURVEY OF TESTED MATERIALS AND IS IN ACCORDANCE WITH THE APPROVED PLANS, 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 TURBINE, GEAR CASE AND GEAR WHEELS HAVE BEEN SPECIALLY EXAMINED AND FOUND, SO FAR AS COULD BE SEEN, SOUND AND FREE FROM DEFECTS.

THIS VESSEL IS WORTHY TO BE CLASSED IN THE SOCIETY'S REGISTER BOOK WITH THE RECORD: + L.M.C. 7-54, C.L. AND NOTATIONS: "FITTED FOR OIL FUEL F.P. ABOVE 150°F", "TWO STEAM TURBINES D.R. GEARED TO PROPELLER SHAFT."

FIRST ENTRY FEE DURING CONSTRUCTION: 44.586.500   
 LESS 15% 6.684.500   
 COR FUND 14.955.000   
 The amount of Entry Fee EXM. 44.586.500   
 REV. TAX 17.202.000   
 FIRST ENTRY FEE DURING SPECIAL INSTALLATION: 41.517.500   
 COR FUND 14.955.000   
 Donkey Boiler Fee 8.298.000   
 Travelling Expenses (if any) 41.36.922.000   
 REV. TAX 14.568.000

Committee's Minute   
 Assigned 7 LMC 7.54 [with Torsional Indt]   
 Fitted for oil fuel 7.54 F.P. above 150°F.   
 3WTB 475 lb. cl.

FRIDAY, OCT 1954

Rpt. 9a

Port of GENOA

Continuation of Report No. 20178 dated 21/8/54 on the "GIUSEPPE GIULIETTI"

#### IDENTIFICATION MARKS

	H.P. TURBINE	L.P. TURBINE
TURBINE ROTOR	LLOYD'S 5.2488 A.G. 7-9-53	FOUND. SECTION: LLOYD'S 5.2488 A.G. 17-9-53 AFTER SECTION: LLOYD'S 5.2488 A.G. 17-9-53 OSTERNA MACC/I: LLOYD'S 5.2488 A.G. 17-9-53
PINION SHAFT	LLOYD'S 5.2421 A.G. 12-10-53	LLOYD'S 5.2422 A.G. 12-10-53
1ST RED. GEAR WHEEL SHAFT & 2ND RED. PINION	LLOYD'S 5.2444 A.G. 12-10-53	LLOYD'S 5.2445 A.G. 7-10-53
1ST RED. GEAR WHEEL RIM	LLOYD'S 1545 A.G. 12-10-53	LLOYD'S 1544 A.G. 7-10-53
MAIN GEAR WHEEL SHAFT AND THRUST SHAFT.	LLOYD'S 5.2380 A.G. 10-9-53	
MAIN GEAR WHEEL RIM	LLOYD'S 1545 A.G. 10-9-53	
INTERMEDIATE SHAFT	LLOYD'S 1546 E.F.B. 23-6-53	
INTERMEDIATE SHAFT	LLOYD'S 1547 E.F.B. 23-6-53	
SCREEN SHAFT	LLOYD'S 1545 E.F.B. 23-6-53	
PROPELLER	LLOYD'S 1545 A.G. 27-11-53	

#### W. T. BOILERS: THICKNESS OF ADJUSTING WASHERS OF SAFETY VALVES:

	saturated steam.	superheated steam
FORWD. PORT BOILER.	TORW. 20.4 m/m - AET. 21.8 m/m	14.6 m/m
FORW. STARS. BOILER	" 20.2 m/m - " 19.5 m/m	11.5 m/m
AFTER BOILER	" 17.8 m/m - " 20.5 m/m	10.4 m/m

AG.

Engineer Surveyor to Lloyd's Register of Shipping.