

REPORT ON STEAM TURBINE MACHINERY.

No. 9592
12 OCT 1926

Received at London Office

List of

pt. 4a.

Date of writing Report 9 Oct 1926 When handed in at Local Office 9 Oct 1926 Port of Genoa
No. in Survey held at Genoa Date, First Survey 16. 2. 1925 Last Survey 22. 9. 1926
Reg. Book. 81459 on the Quad. Sc. "Roma" (Number of Visits 180) Tons Gross 32582.8 Net 19357.89
Built at Sestri Ponente Genoa By whom built Messrs Ansaldo S.A. Yard No. 277 When built 1926
Engines made at Sanpiandarena Genoa By whom made Messrs Ansaldo S.A. Engine No. 741-4 When made 1926
Boilers made at Sanpiandarena Genoa By whom made Messrs Ansaldo S.A. Boiler No. 2846-49 When made 1926
Shaft Horse Power at Full Power 32,000 Owners Navigazione Gen. Italiana Port belonging to Genoa
Nom. Horse Power as per Rule 5553 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes
Trade for which Vessel is intended New York - Genoa

STEAM TURBINE ENGINES, &c.—Description of Engines

Parsons Turbine Reaction Type

No. of Turbines Ahead 8 Direct coupled, single reduction geared } to 4 propelling shafts. No. of primary pinions to each set of reduction gearing 2.
Astern 6 double reduction geared }

direct coupled to Alternating Current Generator phase periods per second Direct Current Generator rated Kilowatts Volts at revolutions per minute;

for supplying power for driving Propelling Motors, Type rated Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

TURBINE BLADING.

	2. H.P. TURBINES			2. 1 ST I.P. TURBINES			2. 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.
1 ST EXPANSION	39.		9	40		6	112		1	H.P. (1 ST M.P. TURBINE)		1
2 ND	51.		9	93		6	135		1			1
3 RD	66.		9	113		6	160		1			1
4 TH	86.		9	146.		5	190		1			1
5 TH							225		1	M.P. (2 ND M.P. TURBINE)		1
6 TH							260		1			1
7 TH				2. 2 ND	I.P. TURBINES		260		1			1
8 TH				84		2	260		1	L.P. (L.P. TURBINE)		1
9 TH				110		2						1
10 TH				143		2						1
11 TH				185		2						1
12 TH				240		2						3.

Shaft Horse Power at each turbine { H.P. 2 AT 4000 I.P. 1ST 2 AT 4000 I.P. 2ND 2 AT 4000 L.P. 2 AT 4000
Revolutions per minute, at full power, of each Turbine Shaft { H.P. 1600 I.P. 1ST 1600 I.P. 2ND 1600 L.P. 1600
1st reduction wheel main shaft 190 mm.

Rotor Shaft diameter at journals { H.P. 200 I.P. 1ST 2ND 200 L.P. 220
Pitch Circle Diameter { 1st pinion 344.76 mm 1st reduction wheel main wheel 2904.1 mm
2nd pinion main wheel 2904.1 mm Face 1st reduction wheel main wheel 2. 550 mm.

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion 392.746 mm 1st reduction wheel main wheel 2904.1 mm
2nd pinion main wheel 2904.1 mm

Flexible Pinion Shafts, diameter at bearings { 1st 190 External 2nd 230 Internal 1st 330
Pinion Shafts, diameter at bearings { 1st 190 External 2nd 230 Internal 1st 330
diameter at bottom of pinion teeth { 1st 330 2nd

Wheel Shafts, diameter at bearings { 1st 410 mm diameter at wheel shroud, 1st 410 mm
main 410 mm Propelling Motor Shaft, diameter at bearings

Intermediate Shafts, diameter as per rule 353.5 mm as fitted 340 mm Thrust Shaft, diameter at collars as per rule 341.2 mm as fitted 390 mm Tube Shaft, diameter as per rule 20 mm as fitted 22 mm

Screw Shaft, diameter as per rule 349.5 mm as fitted 410 mm Is the shaft fitted with a continuous liner Yes Bronze Liners, thickness in way of bushes as per rule 20 mm as fitted 22 mm

Thickness between bushes as per rule 15 mm as fitted 15 mm 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 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 Yes 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 2480 mm EACH SCREW
Propeller, diameter 3810 mm Pitch 4240 mm No. of Blades 3 State whether Moveable No Solid Total Developed Surface 6.48 sqm/s 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 L.P. Turbine exhaust direct to the

Condenser Yes No. of Turbines fitted with astern wheels 6 Feed Pumps { No. and size 4 WEIRS 7/8s. 508x355x813. 2 AUX Duplex 300x170x300
How driven INDEPENDENT. STEAM DRIVEN.

Pumps connected to the Main Bilge Line { No. and size 2. 300x275x300. INDEPENDENT.
How driven STEAM DRIVEN.

Ballast Pumps, No. and size 2. 300x275x300. Lubricating Oil Pumps, including Spare Pump, No. and size 4 - 266.5x305x610.

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

Pumps, No. and size:—In Engine and Boiler Room 8. AT 130. E.R. 5.12 12. AT 130 B.R. In Holds, &c. No. 1. 110 No. 2. 110 No. 3. 110 No. 4. 2. 110 No. 5. 2. 110 No. 6. 1. 110 4. 34

Main Water Circulating Pump Direct Bilge Suctions, No. and size 2. AT 500. 19.7 Independent Power Pump Direct Suctions to the Engine Room

Bilges, No. and size 6. 130. 5.12 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 Yes Are they fitted with Valves or Cocks Both

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 brass covering plate Yes

What pipes pass through the bunkers fuel heating pipes How are they protected Have they been tested as per rule Yes

What pipes pass through the deep tanks 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 doors Yes worked from D. DECK

NOTE.—The words which do not apply should be crossed out.

BOILERS, &c.—(Letter for record S.) Total Heating Surface of Boilers 5500 sq m²
Is Forced Draft fitted *yes* No. and Description of Boilers *9 D.E. & 4 S.E. Multi-tubular* Working Pressure *15.46 kg/cm²*
Is a Report on Main Boilers now forwarded? *yes*

Is *a Donkey* Boiler fitted? *no* If so, is a report now forwarded? *yes*
an Auxiliary

Plans. Are approved plans forwarded herewith for Shafting *yes* Main Boilers *yes* Auxiliary Boilers *yes* Donkey Boilers *yes*
(If not state date of approval)

Superheaters *yes* General Pumping Arrangements *yes* Oil Fuel Burning Arrangements *yes*
Spare Gear. State the articles supplied:— *Two propeller shafts, Two propellers, 2 Bolts and nuts for each cog
rotor bearing & gear wheel bearing & pinion bearing, 1 set coupling bolts, 5% bolts for each
Turbin's casing and gear case joint, 2. Thermometers for oil circulating system, 1 set
bearing bushes for gear wheel & pinion shafts & rotor, 154 Dummy piston rings,
4. Adjusting rings & 12 pads for Michot thrust, 1 set of liners for adjusting blocks,
1 set valves for feed, bilge, & lubricating oil pump, 1 bucket rod for lubricating oil
pump, Escape valve springs, Assorted sizes of bolts, nuts, bars & plates of mild steel
2. spare pinion shafts, 2. muffle couplings complete, Boiler tubes, condenser tubes, etc
oil cooling tubes & glands, 2 tunnel shaft bearings.*

The foregoing is a correct description,

"ANSALDO, Società Anonima
STABILIMENTO MECCANICO
SAMPIERDARENA

H. Direttore

Manifattura

Dates of Survey while building
During progress of work in shops -- 1925 FEB. 16, 23, 26 MAR. 5, 24, 26, AP. 2 MAY 25, 28, JUN. 8, 26, 5, 8, 18, 28, JULY 2, 8, 9, 11, 24, 24, 27, 29, 29, AUG. 6, 10, 11, 13, 14, 17, 20, 25, 26, 28, 31.
SEP. 3, 11, 17, 18, 20, 21, 25, OCT. 1, 2, 5, 6, 9, 15, 16, 19, 19, 22, 23, 26, 30, NOV. 7, 10, 15, 16, 21, 22, 30, DEC. 5, 7, 9, 10, 29, 31.
1926 JAN. 4, 7, 8, 19, 22, 25, 29, FEB. 1, 4, 8, 11, 18, 19, 20, 25, MAR. 1, 4, 5, 8, 11, 18, 22, 25, 15, 26, 29, APR. 1, 2, 13, 26, 29, MAY 1, 6, 17, 20, 22.
JUNE 1, 7, 11, 14, 21, 22, 28, JULY 5, 10, 20, 29, AUG. 23, 30, SEP. 17.
During erection on board vessel --- 1926 MAR. 8, 11, 20, 25, 27, 29, 30, AP. 6, 8, 16, 20, 26, 27, MAY 3, 8, 20, 25, 27, JUNE 5, 10, 15, 22, 30, JULY 6, 13, 20, AUG. 14, 17, 19, 20, 23, 24, 25, 31, SEP. 2, 3, 4, 29, 11, 13, 14, 16, 18, 19, 20, 21, 22.
Total No. of visits 180.

Dates of Examination of principal parts—Casings *5/3/25 6/9/25 7/3/25* Rotors *11. 17/2/25 1/3/26* Blading *19.6.25* Gearing *22/2/25 4/3/26*

Wheel shaft *Thrust shaft 3/2/25, 6/25 11/25* Intermediate shafts *2/6/25 24/7 4/8 3/11* Tube shaft *✓* Screw shaft *11/9/25 16/10 2/7/26*

Propeller *3/9/25 8/26* Stern tube *3/9/25* Engine and boiler seatings *8/3/26* Engine holding down bolts *20/5/26*

Completion of pumping arrangements *22.9.26* Boilers fired *6/4/26 8/5* Engines tried under steam *14/9/26*

Main boiler safety valves adjusted *21.9.26* Thickness of adjusting washers *See other sheet*

Rotor shaft, Material and tensile strength *S.M. High Carbon Ingot Steel 53÷60 kg/cm² Elong. 23%* Identification Mark *SEE OTHER SHEET*

Flexible Pinion Shaft, Material and tensile strength *✓* Identification Mark *✓*

Pinion shaft, Material and tensile strength *S.M. Nickel Steel 3 1/4 ÷ 3 3/4 % 63÷74 kg/cm² Elong. 16÷26* Identification Mark *✓*

1st Reduction Wheel Shaft, Material and tensile strength *S.M. INGOT. STEEL 49÷55 kg/cm²* Identification Mark *✓*

Wheel shaft, Material *S.M. INGOT. STL* Identification Mark *SEE OTHER SHEET* Thrust shaft, Material *Steel* Identification Mark *SEE OTHER SHEET*

Intermediate shafts, Material *Steel* Identification Marks *SEE OTHER SHEET* Tube shaft, Material *✓* Identification Marks *✓*

Screw shaft, Material *Steel* Identification Marks *D/TO.* Steam Pipes, Material *Steel* Test pressure *46.5 kg/cm²*

Date of test *18/2/26 5/3 1/4 22/5 1/6 11/6 22/6 10/7 23/8* 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 carrying and burning oil fuel been complied with *yes*

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 has been constructed under Special Survey in accordance with the Society's Rules, Approved Plans, & Secretary's Letters. The material and workmanship are good. "The oil fuel burning installation" is in accordance with Sect. 35 page 61. of the Rules.

The vessel in our opinion is eligible for the Record + L.M.C. 9.26 and the Notations "Fitted for oil fuel 9.26 F.P. above 150°F" and Yail shafts C.L. in the Register Book.

The amount of Entry Fee ... £ 800 LIT. When applied for, 9. 10. 1926
Special ... £ 31,460 LIT. When received, 3. 1. 1927
Donkey Boiler Fee ... £ ✓
Travelling Expenses (if any) £ 2500 LIT.
LATE & HOLIDAY FEES 1180 LIT.

Committee's Minute

FRI. 15 OCT 1926

CERTIFICATE WRITTEN

Assigned

+ Lmc 9.26

F D

Fitted for oil fuel 9.26

C L

F.P. above 150°F

FRI. 10 DEC 1926

FRI. 21 JAN 1927

Lloyd's Register
Foundation

Thickness of adjusting washers in m.m.

FORWARD.

43. 40. 40	28. 30. 30	40. 39. 42
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40. 40. 32	36. 38. 42	25. 30. 42
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PORT.

35. 37. 40.	35. 35. 41	26. 35. 40.
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STAR.

45. 38	42. 39	38. 42
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39. 34.

12 OCT. 1926

Accumulation tests as per Rules. carried out satisfactory.

Identification marks:- Intermediate Shafing.

N^o 583. N^o 562 N^o 518 N^o 524 N^o 472 N^o 473. N^o 474. N^o 475
G.E.M. 2.6.25. G.E.M. 2.6.25 G.E.M. 14.8.25 A.S.M. 30.10.25 A.S.M. 24.7.25 A.S.M. 30.10.25 A.S.M. 30.10.25 G.E.M. 18.9.25.

N^o 563 N^o 564 N^o 565. N^o 443. N^o 472 b. N^o 554 N^o 558 N^o 552
G.E.M. 14.8.25 G.E.M. 14.8.25. A.S.M. 30.10.25 G.E.M. 23.6.25 G.E.M. 23.6.25 G.E.M. 23.6.25 G.E.M. 2.6.25 G.E.M. 2.6.25

N^o 444 N^o 472 N^o 556 N^o 12
A.S.M. 24.7.25 A.S.M. 24.7.25 A.S.M. 24.7.25 G.E.M. 11.9.25

Propeller Shafts

N^o 440 N^o 6-4. N^o 441. N^o 442 SPARES. N^o 519 N^o 8-9.
G.E.M. 16.10.25 G.E.M. 16.10.25 G.E.M. 11.9.25 G.E.M. 18.9.25 G.B. 2.7.26 G.B. 2.7.26.

Thrust Shafts

N^o 383 N^o 384 N^o 385 N^o 386
G.E.M. 2.6.25. A.S.M. 23.2.25 G.E.M. 2.6.25 A.S.M. 23.2.25.

Pinion Shafts

N^o 2. 618. N^o 589. N^o 153. N^o 612 N^o 154 N^o 266. N^o 327. N^o 328
A.S.M. 4.3.26 A.S.M. 4.3.26 A.S.M. 4.3.26 G.B. 18.3.26 A.S.M. 4.3.26 A.S.M. 4.3.26 R.M. 18.9.26 R.M. 18.9.26.

Rotor Shafts

N^o 485 N^o 486 N^o 541. N^o 542 N^o 543. N^o 569. N^o 570
A.S.M. 1.3.26. A.S.M. 1.3.26. G.B. 29.3.26. G.B. 18.3.26 A.S.M. 1.3.26 A.S.M. 1.3.26. A.S.M. 1.3.26

Gear Wheel Shafts

N^o 469. N^o 470. N^o 451. N^o 471.
G.B. 4.3.26. A.S.M. 4.3.26. G.B. 22.3.26 A.S.M. 4.3.26.



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