= Italian battleship Leonardo da Vinci =

Leonardo da Vinci was one of three Conte di Cavour @-@ class dreadnoughts built for the Regia Marina (Italian Royal Navy) in the early 1910s . Completed just before the beginning of World War I , the ship saw no action and was sunk by a magazine explosion in 1916 with the loss of 248 officers and enlisted men . The Italians blamed Austro @-@ Hungarian saboteurs for her loss , but it may have been accidental . Leonardo da Vinci was refloated in 1919 and plans were made to repair her . Budgetary constraints did not permit this and her hulk was sold for scrap in 1923 .

= = Description = =

Leonardo da Vinci was 168 @.@ 9 meters (554 ft 2 in) long at the waterline , and 176 meters (577 ft 5 in) overall . The ship had a beam of 28 meters (91 ft 10 in) , and a draft of 9 @.@ 3 meters (30 ft 6 in) . She displaced 23 @,@ 088 long tons (23 @,@ 458 t) at normal load , and 25 @,@ 086 long tons (25 @,@ 489 t) at deep load . The Conte di Cavour @-@ class dreadnoughts had a complete double bottom and their hull was subdivided by 23 longitudinal and transverse bulkheads . They had a crew of 31 officers and 969 enlisted men .

The ship 's machinery consisted of four Parsons steam turbines , each driving one propeller shaft . Steam for the turbines was provided by 20 Blechynden water @-@ tube boilers , eight of which burned oil and twelve of which burned both fuel oil and coal . Designed to reach a maximum speed of 22 @.@ 5 knots (41 @.@ 7 km / h ; 25 @.@ 9 mph) from 31 @,@ 000 shaft horsepower (23 @,@ 000 kW) , Leonardo da Vinci failed to reach this goal on her sea trials , despite generally exceeding the rated power of her turbines . The ship only made a maximum speed of 21 @.@ 6 knots (40 @.@ 0 km / h ; 24 @.@ 9 mph) using 32 @,@ 800 shp (24 @,@ 500 kW) . The ship could store a maximum of 1 @,@ 450 long tons (1 @,@ 470 t) of coal and 850 long tons (860 t) of oil that gave her a range of 4 @,@ 800 nautical miles (8 @,@ 900 km ; 5 @,@ 500 mi) at 10 kn (19 km / h ; 12 mph) , and 1 @,@ 000 nmi (1 @,@ 900 km ; 1 @,@ 200 mi) at 22 knots (41 km / h ; 25 mph) .

= = = Armament = = =

Leonardo da Vinci 's main armament consisted of thirteen 46 @-@ caliber 305 @-@ millimeter guns , in five gun turrets . The turrets were arranged all on the centerline , with a twin @-@ gun turret superfiring over a triple @-@ gun turret in fore and aft pairs , and a third triple turret amidships . These were designated ' A ' , ' B ' , ' Q ' , ' X ' , and ' Y ' from bow to stern . The turrets had an elevation capability of ? 5 / + 20 degrees and the ship could carry 100 rounds for each gun , although 70 was the normal load . Sources disagree regarding these guns ' performance , but naval historian Giorgio Giorgerini claims that they fired 452 @-@ kilogram (996 lb) armor @-@ piercing (AP) projectiles at the rate of one round per minute and that they had a muzzle velocity of 840 metres per second (2 @,@ 800 ft / s) which gave a maximum range of 24 @,@ 000 meters (26 @,@ 000 yd) .

The secondary armament consisted of eighteen 50 @-@ caliber 120 @-@ millimeter (4 @.@ 7 in) guns mounted in casemates on the sides of the hull . These guns could depress to ? 10 degrees and had a maximum elevation of + 15 degrees ; they had a rate of fire of six shots per minute . They could fire a 22 @.@ 1 @-@ kilogram (49 lb) high @-@ explosive projectile with a muzzle velocity of 850 meters per second (2 @,@ 800 ft / s) to a maximum distance of 12 @,@ 000 yards (11 @,@ 000 m) . The ship carried a total of 3 @,@ 600 rounds for them . For defense against torpedo boats , Leonardo da Vinci carried fourteen 50 @-@ caliber 76 mm (3 @.@ 0 in) guns ; thirteen of these could be mounted on the turret tops , but they could be mounted in 30 different positions , including some on the forecastle and upper decks . These guns had the same range of elevation as the secondary guns , although their rate of fire was higher at 10 rounds per minute . They fired a 6 @-@ kilogram (13 lb) AP projectile with a muzzle velocity of 815 meters per second (2 @,@ 670 ft / s) to a maximum distance of 10 @,@ 000 yards (9 @,@ 100 m) . The ships were also fitted with

three submerged 45 @-@ centimeter (18 in) torpedo tubes , one on each broadside and the third in the stern .

= = = Armor = = =

The Conte di Cavour @-@ class ships had a complete waterline armor belt that was 2 @.@ 8 meters (9 ft 2 in) high ; 1 @.@ 6 meters (5 ft 3 in) of this was below the waterline and 1 @.@ 2 meters (3 ft 11 in) above . It had a maximum thickness of 250 millimeters (9 @.@ 8 in) amidships , reducing to 130 millimeters (5 @.@ 1 in) towards the stern and 80 millimeters (3 @.@ 1 in) towards the bow . The lower edge of this belt was a uniform 170 millimeters (6 @.@ 7 in) in thickness . Above the main belt was a strake of armor 220 millimeters (8 @.@ 7 in) thick that extended 2 @.@ 3 meters (7 ft 7 in) up to the lower edge of the main deck . Above this strake was a thinner one , 130 millimeters thick , that extended 138 meters (452 ft 9 in) from the bow to ' X ' turret . The upper strake of armor protected the casemates and was 110 millimeters (4 @.@ 3 in) thick . The ships had two armored decks : the main deck was 24 mm (0 @.@ 94 in) thick in two layers on the flat that increased to 40 millimeters (1 @.@ 6 in) on the slopes that connected it to the main belt . The second deck was 30 millimeters (1 @.@ 2 in) thick , also in two layers . Fore and aft transverse bulkheads connected the armored belt to the decks .

The frontal armor of the gun turrets was 280 millimeters (11 @.@ 0 in) in thickness with 240 @-@ millimeter (9 @.@ 4 in) sides , and an 85 @-@ millimeter (3 @.@ 3 in) roof and rear . Their barbettes also had 230 @-@ millimeter armor above the forecastle deck that reduced to 180 millimeters (7 @.@ 1 in) between the forecastle and upper decks and 130 millimeters below the upper deck . The forward conning tower had walls 280 millimeters thick those of the aft conning tower were 180 millimeters thick .

= = Construction and service = =

Leonardo da Vinci , named after the artist and inventor , was built by the Odero Shipbuilding Co . , at their Sestri Ponente , Genoa shipyard . She was laid down on 18 July 1910 , launched on 14 October 1911 , and completed on 17 May 1914 . The ship saw no combat during the war and spent most of it at anchor . She capsized in Taranto harbor , in 11 metres (36 ft) of water , after an internal magazine explosion on the night of 2 / 3 August 1916 while loading ammunition . Casualties included 21 officers and 227 enlisted men . The subsequent investigation blamed Austro @-@ Hungarian saboteurs , but unstable propellant may well have been responsible .

The Regia Marina wanted to raise the ship and rejected initial plans to demolish the wreck with explosives . They ultimately settled on a plan to make the ship 's hull airtight and raise it using compressed air and pontoons . This required that the ship 's coal , ammunition , and gun turrets be removed or cut loose , respectively , by divers to reduce her weight . A further complication was that the largest drydock in Taranto had a maximum depth of only 12 @.@ 2 metres (40 ft) and the upside @-@ down Leonardo da Vinci drew 15 @.@ 2 metres (50 ft) . This meant that her funnels had to be cut off as well .

All of this preparation required over two years and the ship was refloated on 17 September 1919 . A deep channel had been dredged from her location to the drydock and she was moved there . A special wooden framework had to be built to support her , still inverted , after the water in the drydock had been drained . Her decks were not designed to handle the stresses involved in her unique situation and had to be reinforced to withstand the weight of the hull and preliminary repairs were made in preparation for righting her . A deep spot in the harbor was dredged for this task and some 400 long tons (410 t) of ballast were added in spots calculated to assist in the righting effort . The primary work was done by 7 @,@ 500 long tons (7 @,@ 600 t) of water pumped into the ship 's starboard side and she was successfully righted on 24 January 1921 . The Regia Marina planned to modernize Leonardo da Vinci by replacing her center turret with six 102 @-@ millimeter (4 in) AA guns , but ultimately lacked the funds to do so and sold her for scrap on 22 March 1923 .