

= Radetzky @-@ class battleship =

The Radetzky class was a group of three semi @-@ dreadnought battleships built for the Austro @-@ Hungarian Navy between 1907 and 1910 . All ships were built by the STT shipyard in Trieste . They were the last pre @-@ dreadnoughts built by the Austro @-@ Hungarians , and the penultimate class of any type of Austro @-@ Hungarian battleship completed . The class comprised three ships : Radetzky , Erzherzog Franz Ferdinand , and Zrínyi . They were armed with four 30 @. @ 5 @-@ centimeter (12 @. @ 0 in) guns in two twin turrets and eight 24 cm (9 @. @ 4 in) guns in four twin turrets ; the heavy secondary guns set the Radetzky @-@ class ships apart from other pre @-@ dreadnought type battleships .

Commissioned only a few years before the outbreak of World War I , the ships had limited service careers . All three of the battleships conducted training cruises in the Mediterranean Sea in 1912 . In 1913 , they took part in an international naval demonstration in the Ionian Sea that protested the Balkan Wars . After Italy declared war on Austro @-@ Hungary and the other Central Powers in 1915 , the three Radetzky @-@ class ships bombarded coastal targets in the Adriatic Sea . After 1915 , their participation in the war became minimal . All three ships were handed over to Italy after the end of the war , and broken up for scrap between 1920 and 1926 .

= = Design = =

= = = Development = = =

Design work for a new class of battleships started about two weeks after the launching of Erzherzog Friedrich , an Erzherzog Karl @-@ class battleship , which took place on April 30 , 1904 . By the end of July 1905 , the Austrian Commander in Chief of the Navy , Admiral Montecuccoli , laid out his vision for an expanded Austro @-@ Hungarian fleet . This included 12 battleships , four armored cruisers , eight scout cruisers , 18 destroyers , 36 large torpedo boats , and six submarines . A navy design board evaluated five designs for the new battleship type between September 25 ? 29 , 1905 .

The first design was armed with four 28 cm (11 in) guns in two twin turrets , four 24 cm (9 @. @ 4 in) guns in single turrets , and eight 19 cm (7 @. @ 5 in) guns in casemates . The second design retained the 28 and 24 cm guns as in the first version , though altered the tertiary guns to twelve 10 cm (3 @. @ 9 in) guns . The third design , representative of the new dreadnought type of battleship that was being contemplated in other navies , featured eight 28 cm guns in four twin turrets , one fore , one aft , and two wing turrets . The heavy secondary guns were dispensed with altogether , and the light @-@ caliber guns were increased to sixteen 10 cm guns . The fourth design was a variation on the third type ; the eight 28 cm guns were replaced by six 30 @. @ 5 cm (12 @. @ 0 in) guns , in two twin turrets and two single turrets . The 10 cm guns remained the same . The final design mounted four 30 @. @ 5 cm guns in two twin turrets , eight 19 cm guns in four wing turrets , and twelve 10 cm guns in casemates . The leader of the design staff , Siegfried Popper , advocated the construction of an " all @-@ big @-@ gun " ship . However , Austro @-@ Hungarian dock facilities at the time limited displacement to 16 @, @ 000 long tons (16 @, @ 000 t) ; the two " dreadnought " type designs were too heavy .

Popper eventually relented , after admitting that the larger dreadnought type design would also warrant the construction of a new floating dry dock , which would significantly increase the cost of the project . The design board selected the fifth design , though during refinement of the design , the secondary guns were increased in caliber from 19 cm to 24 cm . The 30 @. @ 5 cm gun was chosen because the breech of the new 28 cm was unreliable . The resulting design was the last pre @-@ dreadnought type of battleship built by the Austro @-@ Hungarian navy .

Underwater protection was also emphasized . Between August and November 1906 , the Austro @-@ Hungarian navy conducted explosive tests using the 50 @-@ year @-@ old ironclad Kaiser Max . The tests were conducted with 10 kilograms (22 lb) , in an attempt to investigate blast effects

of the standard 100 kilograms (220 lb) naval mine on a 1 : 10 scale . The tests were generally unsuccessful ; as a result , Popper devised a mathematical model to predict the strength the underwater protection system would require to adequately protect the new battleships . The ships were ultimately equipped with an armored double bottom for defense against mines and torpedoes .

== General characteristics ==

The Radetzky @-@ class ships were 137 @. @ 5 m (451 ft 1 in) long at the waterline and 138 @. @ 8 m (455 ft 5 in) long overall . They had a beam of 24 @. @ 6 m (80 ft 9 in) and a draft of 8 @. @ 1 m (26 ft 7 in) . The ships were designed to displace 14 @, @ 508 long tons (14 @, @ 741 t) normally , and up to 15 @, @ 845 @. @ 5 long tons (16 @, @ 099 @. @ 8 t) with a full combat load . Machinery consisted of two four @-@ cylinder vertical triple expansion engines . Each engine was powered by six Yarrow boilers . Power output was 19 @, @ 800 indicated horsepower (14 @, @ 800 kW) , for a top speed of 20 @. @ 5 knots (38 @. @ 0 km / h ; 23 @. @ 6 mph) . The ships carried 1 @, @ 350 long tons (1 @, @ 370 t) of coal , which enabled a maximum range of 4 @, @ 000 nmi (7 @, @ 400 km ; 4 @, @ 600 mi) at a cruising speed of 10 kn (19 km / h ; 12 mph) .

== Armament ==

The Radetzky @-@ class ships , as noted above , carried a main battery of four 30 @. @ 5 cm (12 in) 45 @-@ caliber guns in two twin gun turrets . The guns were built by Koda Works in Pilsen . They were capable of a rate of fire of three shells in the first minute , and then 1 to 2 rounds per minute afterward . The guns fired armor @-@ piercing (AP) shells that weighed 450 kg (990 lb) and required a 138 kg (304 lb) propellant charge . Their muzzle velocity was 800 metres per second (2 @, @ 600 ft / s) . The turrets could depress to 3 ° and elevate to 20 ° . At maximum elevation , the guns could hit targets out to 20 @, @ 000 m (22 @, @ 000 yd) . These turrets suffered from a number of design faults ; among them were the overly @-@ large cupolas on top . If a cupola was struck by gunfire , the thin top armor could be peeled back . Another serious issue was a defect in the ventilation system : when the turret was being ventilated under combat conditions , the system would duct toxic propellant gases into the gun house . It was estimated that the turrets contained only 15 minutes of oxygen once the ventilation system was activated .

The ships carried a heavy secondary battery of eight 24 cm (9 @. @ 4 in) guns in four twin turrets . The turrets were mounted amidships , two on either side . These guns had nearly half the penetration power of the larger 30 @. @ 5 cm guns , and approximately 25 % shorter range . The secondary armament was augmented by twenty 10 cm L / 50 guns in single mounts . These guns fired 26 @. @ 2 kg (58 lb) shells at a rate of between 8 and 10 rounds per minute . The shells were fired at a muzzle velocity of 880 m / s (2 @, @ 900 ft / s) and could hit targets out to 11 @, @ 000 m (12 @, @ 000 yd) . Radetzky and her sisters also carried several smaller caliber guns , including two 66 mm (2 @. @ 6 in) landing guns , four 47 mm (1 @. @ 9 in) L / 44 and one 47 mm L / 33 quick @-@ firing guns . Three 45 cm (17 @. @ 7 in) torpedo tubes were also carried , two on the beams and one in the stern .

== Armor ==

The ships had an armored belt that was 230 mm (9 @. @ 1 in) thick in the central portion of the ship , where it protected the ammunition magazines , machinery spaces , and other critical areas of the ship . Forward and to the rear of the main battery barbettes , the belt reduced in thickness to 100 mm (3 @. @ 9 in) . A 54 mm (2 @. @ 1 in) thick torpedo bulkhead ran the length of the hull to provide a second layer of underwater protection should the main belt be penetrated . The armored deck was 48 mm (1 @. @ 9 in) thick , and supported by a sloped deck that was also 48 mm thick .

The main battery turrets were heavily armored . Their sides and face were 250 mm (9 @. @ 8 in) thick , while their roofs were 60 mm (2 @. @ 4 in) thick . The turrets for the secondary 24 cm guns had slightly less armor , with 200 mm (7 @. @ 9 in) thick sides and 50 mm (2 @. @ 0 in) thick

roofs . The casemates that mounted the 10 cm guns were protected with 120 mm (4 @. @ 7 in) worth of armor plating . The armored conning tower had 250 mm @- @ thick sides and a 100 mm @- @ thick roof .

= = Construction Program = =

All three ships were built by the STT shipyard in Trieste .

= = Service careers = =

= = = Pre @- @ war = = =

The three Radetzky @- @ class battleships were assigned to the 2nd Division of the 1st Battle Squadron , alongside the Tegetthoff ships in the 1st Division . The three ships conducted several training cruises in the Mediterranean Sea after their commissioning in 1910 ? 11 . Radetzky was present during the British Coronation Review at Spithead in 1911 . In 1912 , Zrínyi took part in a training cruise with the recently commissioned dreadnoughts Tegetthoff and Viribus Unitis in the eastern Mediterranean , which included a stop at Malta . The following year , the three ships were involved in an international naval demonstration to protest the raging Balkan Wars ; during the operation the first seaplanes to be launched from a warship in combat were operated from Radetzky and her sisters .

= = = World War I = = =

The assistance of the Austro @- @ Hungarian fleet was called upon by the German Mediterranean Division , which consisted of the battlecruiser SMS Goeben and light cruiser SMS Breslau . The German ships were attempting to break out of Messina , where they had been coaling prior to the outbreak of war ? British ships had begun to assemble off Messina in an attempt to trap the Germans . By this time , the Austro @- @ Hungarians had not yet fully mobilized their fleet , though the three Radetzky's and three Tegetthoffs , along with several cruisers and smaller craft , were available . The Austro @- @ Hungarian high command , wary of instigating war with Great Britain , ordered the fleet to avoid the British ships , and to only openly support the Germans while they were in Austro @- @ Hungarian waters . On August 7 , when the Germans broke out of Messina , the Austro @- @ Hungarian fleet , including the Radetzky @- @ class battleships , sailed as far south as Brindisi , before returning to port .

In October 1914 , the French army established artillery batteries on Mount Lovćen to support the Army of Montenegro against the Austrian army at Cattaro . By the time they were operational , on October 15 , the Austro @- @ Hungarians were ready with the pre @- @ dreadnoughts of the Habsburg class . However , their 24 cm guns were insufficient to dislodge the French artillery batteries , and so Radetzky was sent to assist them . On October 21 , the ship arrived , and the gunfire from her 30 @. @ 5 cm guns forced the French to abandon the position . On May 24 , 1915 , all three ships bombarded the Italian coast , including the important naval base at Ancona , following the entrance of Italy into the war on the side of the Triple Entente .

By October 1918 , Austria prepared to transfer her entire fleet to Yugoslavia in order to keep it out of Italian hands . On November 10 , 1918 , one day before the armistice , Yugoslav officers with scratch crews sailed Radetzky and Zrínyi out of Pola . As they cleared the breakwater at Pola , they sighted the approaching Italian fleet . The two battleships hoisted American flags and sailed south along the Adriatic coast to Castelli Bay near Spolato . They appealed for American naval forces to meet them and accept their surrender , which a squadron of USN submarine chasers in the area did . However , under the subsequent peace treaty , the Allied powers ignored the transfer of the Austro @- @ Hungarian ships to the Yugoslav navy ; instead , the ships were to be ceded to Italy . Radetzky and Zrínyi were broken up in Italy between 1920 ? 21 ; Erzherzog Franz Ferdinand

survived until 1926 , when she too was scrapped in Italy .