

= Kaiser Friedrich III @-@ class battleship =

Kaiser Friedrich III @-@ class battleships were a class of pre ? World War I , pre @-@ dreadnought battleships of the German Kaiserliche Marine . The class was made up of five ships , all of which were named for German emperors . The Kaiser Friedrich III class saw the introduction of the traditional armament layout for German battleships ? four large @-@ caliber guns , but of comparatively smaller caliber compared to contemporary battleships , in two gun turrets ? prior to the advent of the dreadnought type of battleship in the early 1900s . They also standardized the use of three screws for battleships .

Kaiser Friedrich III was laid down at Wilhelmshaven Navy Dockyard in March , 1895 , followed by Kaiser Wilhelm II in October , 1896 , also in Wilhelmshaven . Kaiser Wilhelm der Grosse was laid down at Germania , Kiel in January , 1898 , followed by Kaiser Barbarossa at Schichau , Danzig in August of that year , and Kaiser Karl der Grosse , a month later in September , at Blohm & Voss , Hamburg . Work on all five vessels was completed by 1901 .

The five Kaiser Friedrich III @-@ class battleships were assigned to the I Squadron of the Home Fleet (Heimatflotte) after commissioning . Here they conducted extensive annual training maneuvers with the rest of the fleet . After ten years of fleet service , they were replaced with newer ships . They were transferred to the III Squadron of the fleet , which had by then been reorganized as the High Seas Fleet , and placed in reserve . The ships were recalled to active service at the outbreak of World War I , but saw limited duty during the war . They initially served in V Squadron , until 1915 , when the ships were relegated to auxiliary roles , primarily as prison ships . After the war , all five of the ships were sold and scrapped by 1922 .

= = Design = =

Design work on the class began in 1892 and lasted until 1894 . The ships of the Kaiser Friedrich III class marked a significant departure from the previous Brandenburg @-@ class battleships . Influenced by the Japanese cruisers ' victory over a heavier @-@ armed Chinese fleet at the Battle of Yalu , heavy @-@ caliber guns designed to penetrate armor were abandoned and replaced with smaller quick @-@ firing guns . These guns were intended to raze the superstructure of enemy battleships and demoralize the crew . The propulsion system was improved and reorganized to incorporate a third propeller shaft . The armor system , however , remained similar to that employed on the Brandenburgs .

= = = General characteristics = = =

The Kaiser Friedrich III @-@ class ships were 120 @.@ 9 meters (396 ft 8 in) long at the waterline and 125 @.@ 3 m (411 ft 1 in) overall . They had a beam of 20 @.@ 4 m (66 ft 11 in) and a draft of 7 @.@ 8.9 m (25 ft 11 in) forward and 8 @.@ 25 m (27 ft 1 in) aft . The ships displaced 11 @,@ 785 metric tons (11 @,@ 599 long tons) at full load . Transverse and longitudinal steel frames were used to build the hulls for the Kaiser Friedrich III @-@ class ships . Steel hull plates were riveted to the frame . The hull contained twelve watertight compartments and a double bottom that ran for 70 percent of the hull .

The German navy regarded them as excellent sea vessels . They had a tight turning circle and were very responsive . The ships rolled up to 15 ° and had a roll period of 12 seconds . They suffered only minor speed loss in heavy seas , but up to 40 percent with the rudder hard over . Their metacentric height was between .917 to 1 @.@ 18 m (3 ft 0 @.@ 1 in to 3 ft 10 @.@ 5 in) . The ships carried a number of smaller boats , including two picket boats , two launches , one pinnace , two cutters , two yawls , and two dinghies . The crew numbered 39 officers and 612 enlisted men . When serving as a squadron flagship , a ship had its crew augmented by another 12 officers and between 51 to 63 enlisted men .

= = = Machinery = = =

The Kaiser Friedrich III class battleships were powered by three 3 cylinder vertical triple expansion engines that drove three screws . Kaiser Friedrich III , Kaiser Barbarossa , and Kaiser Wilhelm der Grosse were equipped with three 3 bladed screws that were 4 @ 5 m (14 ft 9 in) in diameter . Kaiser Karl der Grosse and Kaiser Wilhelm II were equipped with two of the 3 bladed screws on the outer shafts and a four bladed screw that was 4 @ 2 m (13 ft 9 in) in diameter on the center shaft . Kaiser Friedrich III had four Thornycroft and eight cylindrical boilers ; Kaiser Wilhelm II had a similar arrangement , except the Thornycroft boilers were replaced by Marine type boilers . Kaiser Wilhelm der Grosse was equipped with four Marine and six cylindrical boilers , while Kaiser Barbarossa had four Thornycroft and six cylindrical boilers . Kaiser Karl der Grosse had two Marine boilers , two Marine double boilers , and six cylindrical boilers .

The powerplants were rated at 13 @ 000 metric horsepower (12 @ 822 ihp ; 9 @ 561 kW) , but on trials could produce up to 13 @ 950 PS (13 @ 760 ihp ; 10 @ 260 kW) . This generated a top speed of 17 @ 5 knots (32 @ 4 km / h ; 20 @ 1 mph) . The ships carried 650 metric tons (640 long tons ; 720 short tons) of coal , although the use of additional spaces within the ships increased fuel capacity to 1 @ 070 metric tons (1 @ 050 long tons ; 1 @ 180 short tons) . This provided a maximum range of 3 @ 420 nautical miles (6 @ 330 km ; 3 @ 940 mi) at a cruising speed of 10 knots (19 km / h ; 12 mph) . Electrical power was supplied by five 320 kW 74 Volt generators in Kaiser Friedrich III and Kaiser Wilhelm II , and four 240 kW 74 V generators in the other three ships .

== = Armament == =

The ships ' armament consisted of a main battery of four 24 cm (9 @ 4 in) SK L / 40 guns in twin gun turrets , one fore and one aft of the central superstructure . The guns were mounted in Drh.L. C / 98 turrets , which allowed elevation to 30 ° and depression to ? 5 ° . At maximum elevation , the guns could hit targets out to 16 @ 900 meters (18 @ 500 yd) . The guns fired 140 @ kilogram (310 lb) shells at a muzzle velocity of 690 m / s (2 @ 263 ft / s) . They had a rate of fire of three to four shots per minute . Each gun was supplied with 75 shells , for a total of 300 .

Secondary armament included eighteen 15 cm (5 @ 9 inch) SK L / 40 guns ; six were emplaced in single turrets amidships and twelve were mounted in MPL casemates . These guns fired armor @ piercing shells at a rate of 4 ? 5 per minute . The ships carried 120 shells per gun , for a total of 2 @ 160 rounds total . The guns could depress to ? 7 degrees and elevate to 20 degrees , for a maximum range of 13 @ 700 m (14 @ 990 yd) . They were manually elevated and trained .

The ships also carried twelve 8 @ 8 cm (3 @ 45 in) SK L / 30 quick @ firing guns , also mounted in casemates . These guns were supplied with between 170 and 250 shells per gun . These guns fired 13 @ 8 kg (30 @ 4 lb) at a muzzle velocity of 590 m / s (1 @ 936 ft / s) . Their rate of fire was approximately 15 shells per minute ; the guns could engage targets out to 10 @ 500 m (11 @ 480 yd) . The gun mounts were manually operated . The ships ' gun armament was rounded out by twelve machine guns .

The ships were also armed with six 45 cm torpedo tubes , all in above @ water swivel mounts . Four tubes were mounted on the sides of the ship , another in the bow , and the last in the stern . These weapons were 5 @ 1 m (16 ft 9 in) long and carried an 87 @ 5 kg (193 lb) TNT warhead . They could be set at two speeds for different ranges . At 26 knots (48 km / h ; 30 mph) , the torpedoes had a range of 800 m (870 yd) . At an increased speed of 32 knots (59 km / h ; 37 mph) , the range was reduced to 500 m (550 yb) .

== = Armor == =

The Kaiser Friedrich III class ships were armored with steel produced by Krupp . They had an armor belt that was 300 millimeters (12 in) thick in the central portion of the hull at the waterline . It

tapered to 150 mm (5 @. @ 9 in) in the forward section and 200 mm (7 @. @ 9 in) in the rear , although the belt did not extend fully aft . The lower portion of the belt ranged in thickness from 100 to 180 mm (3 @. @ 9 to 7 @. @ 1 in) . The entire belt was backed with 250 mm (9 @. @ 8 in) of teak . The armored deck was 65 mm (2 @. @ 6 in) thick .

The conning tower was protected by armored sides that were 250 mm thick and a roof that was 30 mm (1 @. @ 2 in) thick . Each main @-@ battery turret had a 50 mm (2 @. @ 0 in) thick roof and 250 mm thick sides . The 15 cm guns mounted in turrets were protected by 150 mm thick sides and 70 mm (2 @. @ 8 in) thick gun shields . Those in the casemates also had 150 mm worth of armor protection .

= = Construction = =

Kaiser Friedrich III , the first ship of the class , was ordered from the Kaiserliche Werft Wilhelmshaven as Ersatz Preussen . She was intended to replace the old armored frigate Preussen . She was laid down in 1895 under construction number 22 . She was launched on 1 July 1896 , after which fitting out commenced ; this included the installation of the ship 's armament and the completion of the superstructure . The ship was completed and commissioned into the German fleet on 7 October 1898 . Kaiser Wilhelm II 's keel was laid in Wilhelmshaven in 1896 , also at the Kaiserliche Werft , under construction number 24 . She was ordered under the contract name Ersatz Friedrich der Grosse , to replace the armored frigate Friedrich der Grosse . Kaiser Wilhelm II was launched on 14 September 1897 and commissioned on 13 February 1900 .

Kaiser Wilhelm der Grosse was ordered under the contract name Ersatz König Wilhelm as a replacement for the obsolete König Wilhelm . Her keel was laid at the Germaniawerft dockyard under construction number 79 in 1898 . The ship was launched on 1 June 1899 and commissioned into the fleet on 5 May 1901 . The keel for Kaiser Barbarossa ? ordered as " B " , an addition to the fleet ? was laid down at the Schichau @-@ Werke in Danzig in 1898 . Her construction number was 640 . She was launched on 21 April 1900 and commissioned into the German navy on 10 June 1901 . Also in 1898 , Kaiser Karl der Grosse was laid down at the Blohm & Voss shipyard in Hamburg under construction number 136 . She was ordered as an addition to the fleet , and so was assigned the contract name " A " . The last ship of the class to be completed , Kaiser Karl der Grosse was launched on 18 October 1899 and commissioned into the fleet on 4 February 1902 .

= = = Ships = = =

= = Service history = =

When Kaiser Wilhelm II was commissioned into the fleet , she assumed the position of fleet flagship ; she held this position until 1906 . The other four ships joined her in the I Squadron of the Heimatflotte (Home Fleet) , where they remained for ten years . The five ships took part in extensive training maneuvers in September 1902 with the rest of the fleet . Throughout the maneuvers the Kaiser Friedrich III @-@ class ships operated as the opposing force , with the exception of Kaiser Wilhelm II . As the fleet flagship , Kaiser Wilhelm II hosted Wilhelm II during several of the mock engagements and served as the observation point for the senior staff .

Between 1907 and 1910 , the ships of the class were heavily rebuilt , with the exception of Kaiser Karl der Grosse . During the modernization , the ships had their superstructures cut down . Four 15 cm guns and one torpedo tube were also removed . The ships ' 8 @. @ 8 cm guns were repositioned to the upper decks where the 15 cm guns had been located . Also , the smoke stacks were lengthened .

By 1911 , the fleet was reorganized as the Hochseeflotte (High Seas Fleet) , and new dreadnought battleships were beginning to enter service . As a result , the Kaiser Friedrich III @-@ class ships were transferred to the III Squadron and then placed into reserve . In 1914 , with the outbreak of World War I , the five ships were recalled to active duty and placed in the V Squadron of

the fleet . In February 1915 , the ships were withdrawn from active service for a second time . The ships were disarmed by 1916 and transferred to secondary roles . Kaiser Wilhelm der Grosse became a torpedo training ship and Kaiser Wilhelm II became the headquarters ship for the commander of the High Seas Fleet in Wilhelmshaven . The other three ships were used as floating prisons . In 1917 , Kaiser Friedrich III was transferred to barracks ship duties in Flensburg . All of the ships , with the exception of Kaiser Wilhelm II , were stricken from the navy register on 6 December 1919 and sold for scrapping . Kaiser Wilhelm II followed on 17 March 1921 . By 1922 , all five ships had been broken up for scrap metal . The bow ornaments from Kaiser Friedrich III and Kaiser Wilhelm II are preserved at the Militärhistorisches Museum der Bundeswehr in Dresden .