

= Kaiser @-@ class battleship =

The Kaiser class was a class of five battleships that were built in Germany prior to World War I and served in the Imperial German Navy during the war . They were the third class of German dreadnoughts , and the first to feature turbine engines and superfiring turrets . The five ships were Kaiser , Friedrich der Grosse , Kaiserin , Prinzregent Luitpold , and König Albert . As was usual for German battleships of the period , the Kaiser class mounted main guns that were smaller than those of their British rivals : 30 @. @ 5 cm (12 @. @ 0 in) , compared to the 34 @. @ 3 cm (13 @. @ 5 in) guns of the British Orion class .

All five ships saw action in the North Sea during the war ; they served together as the VI Division of the III Battle Squadron . Four were present during the Battle of Jutland ; König Albert was in dock at the time . Of the four ships that took part in the battle , only Kaiser was damaged , being struck by two heavy @-@ caliber shells . The ships also took part in Operation Albion in the Baltic Sea ; during the operation they were reorganized as the IV Battle Squadron , under the command of Vice Admiral Wilhelm Souchon .

At the end of the war , all five ships were interned at the British naval base in Scapa Flow . On 21 June 1919 , they were scuttled to prevent their seizure by the Royal Navy . The ships were subsequently raised and broken up for scrap between 1929 and 1937 .

= = Design = =

The Kaiser @-@ class ships were ordered under the same Second Naval Law as the preceding Helgoland @-@ class battleships . The law provided that the life expectancy of capital ships was to be reduced from 25 to 20 years , a measure designed to necessitate construction of newer battleships . This meant that the six Siegfried @-@ class coastal defense ships , the two Odin @-@ class coastal defense ships , as well as the four Brandenburg @-@ class battleships would have to be replaced . The five Kaisers were to replace the remaining three Siegfried @-@ class ships : Hildebrand , Heimdall , and Hagen , as well as the two Odin @-@ class ships : Odin and Ägir .

= = = General characteristics = = =

The ships of the Kaiser class were 171 @. @ 8 m (563 ft 8 in) long at the waterline , and 172 @. @ 4 m (565 ft 7 in) long overall . The ships had a beam of 29 m (95 ft 2 in) , a draft of 9 @. @ 1 m (29 ft 10 in) forward , 8 @. @ 8 m (28 ft 10 in) aft , and displaced a maximum of 27 @, @ 000 tonnes . The ships had a double bottom for 88 percent of the length of the hull and 17 watertight compartments . The ships had a crew of 41 officers and 1 @, @ 043 seamen . While serving as squadron flagship , the ships had an additional 14 officers and 80 men , and as the second command flagship , the ships were manned by another 2 officers and 23 men .

The Kaiser @-@ class ships were excellent sea boats , but were very stiff , suffering a slight loss of speed in heavy swells . They were responsive to commands from the helm ; they turned quickly initially , but suffered from severe torque at a hard rudder . With the rudder hard over , the ships would lose up to 66 percent of their speed and heel over as much as 8 degrees . The Kaiser @-@ class ships had a transverse metacentric height of 2 @. @ 59 m (8 @. @ 5 ft) .

= = = Propulsion = = =

The Kaiser @-@ class ships were the first German battleships to be powered by turbines . They used turbines from several different manufacturers as the Reichsmarineamt and German shipyards attempted to find an alternative to a Parsons turbine monopoly . Nevertheless , Kaiser and Kaiserin were both equipped with three sets of Parsons turbines . Friedrich der Grosse had three sets of AEG @-@ Curtis turbines , while König Albert was powered by Schichau turbines . The turbines drove three @-@ bladed screws that were 3 @. @ 75 m (12 @. @ 3 ft) in diameter , providing a design speed of 21 knots (39 km / h ; 24 mph) . The ships had two rudders .

Prinzregent Luitpold was equipped with two sets of Parsons turbines on the outer shafts . It was intended that a single 12 000 bhp Germania 6 cylinder 2 stroke diesel engine would drive the center shaft . However , the diesel power plant was not ready in time to be installed in Prinzregent Luitpold , so the ship sailed with only two shafts . On trials , Prinzregent Luitpold was approximately one half knot slower than her sisters .

Steam was provided by 16 Schulz Thornycroft boilers , except in Prinzregent Luitpold , which had only 14 boilers . Hollow grates were fitted to the boilers between 1916 and 1917 . The three shaft ships carried 3 600 metric tons of coal , which enabled a maximum range of 7 900 nautical miles (14 600 km ; 9 100 mi) at a cruising speed of 12 knots (22 km / h ; 14 mph) . Prinzregent Luitpold carried a reduced bunkerage ? 3 200 metric tons ? but was designed to carry 400 tons of oil for the diesel engine . On diesel power alone , Prinzregent Luitpold would have had a range of 2 000 nautical miles at 12 knots .

Electrical power was provided by four double turbo generators and two diesel generators . They produced a total output of 1 800 kilowatts at 225 volts .

== = Armament == =

The Kaiser class ships each carried ten 30 5 cm (12 0 in) SK L / 50 guns mounted in five twin turrets . One turret was mounted fore , two were mounted en echelon amidships , and the fourth and fifth turrets were mounted in a superfiring pair aft . The guns were supplied with a total of 860 shells , for 86 rounds per gun . The shells were 894 lb (406 kg) , and were fired at a muzzle velocity of 854 meters per second (2 805 feet per second) . The guns were placed in Drh LC / 1909 mountings , which were very similar to the older LC / 1908 gun mounts used in the preceding Helgoland class ships . The mountings were initially capable of depression to ? 8 degrees and elevation to 13 5 degrees . At maximum elevation , the guns had a range of up to 16 299 m (17 825 yd) . The mountings were later modified to depress to ? 5 5 degrees and elevate to 16 degrees . This extended the maximum range of 20 400 m (22 300 yd) .

The ships had a secondary battery of fourteen 15 cm (5 9 in) SK L / 45 quick firing guns , each mounted in casemates . The guns each had a supply of one hundred and sixty 99 9 lb (45 3 kg) shells , for a total of 2240 . Firing at a muzzle velocity of 835 m / s (2 740 ft / s) , the guns could hit targets at a distance 13 500 m (14 800 yd) , and after modifications in 1915 , the range was extended to 16 800 m (18 400 yd) . The ships were also equipped with eight 8 8 cm (3 5 in) SK L / 45 guns . They were eventually rearmed with four 8 8 cm L / 45 Flak guns , two of which were later removed . As was customary for capital ships of the period , the Kaiser class ships were armed with five 50 cm (20 in) submerged torpedo tubes . One was mounted in the bow , while the other four were placed on the broadside , two on each flank of the ship .

== = Armor == =

As with all major contemporary German warships , the Kaiser class ships were protected by Krupp cemented steel armor . The deck armor ranged in thickness , from 10 cm (3 9 in) in more critical areas of the ship , down to 6 cm (2 4 in) in less important areas . The armored belt was 35 cm (14 in) thick in the central citadel , and tapered down to 18 cm (7 1 in) forward and 12 cm (4 7 in) aft . Behind the armored belt , the ships had a torpedo bulkhead 4 cm (1 6 in) thick . The forward conning tower had sides that were 40 cm (16 in) thick and the roof was 15 cm (5 9 in) thick . The aft conning tower was significantly less well armored ; the sides were 20 cm (7 9 in) thick , and the roof was only 5 cm (2 0 in) thick . The main battery turrets were protected by 30 cm of armor on the sides and 22 cm (8 7 in) of armor on the roofs . The 15 cm guns had 17 cm (6 7 in) of armor plating on their mounts , and 8 cm (3 1 in) on their gun shields .

= = Construction = =

Kaiser , the name ship of the class , was laid down at the Kaiserliche Werft Kiel in December 1909 under construction number 35 . The ship was launched on 22 March 1911 , and commissioned into the High Seas Fleet on 1 August 1912 . Friedrich der Grosse followed on 26 January 1910 , at the AG Vulcan shipyard in Hamburg . She was launched on 10 June 1911 and commissioned as the flagship of the High Seas Fleet on 15 October 1912 . Kaiserin , the third ship of the class , was laid down in the Howaldtswerke in Kiel in November 1910 . She was launched on 11 November 1911 , and commissioned on 14 May 1913 .

König Albert was laid down at Schichau in Danzig on 17 July 1910 , and launched on 27 April 1912 . She was commissioned into the fleet on 31 July 1913 . Prinzregent Luitpold , the last ship of the class , was laid down in January 1911 at the Germaniawerft shipyard in Kiel . The ship was launched on 17 February 1912 and commissioned on 19 August 1913 .

= = = Ships = = =

= = Service history = =

= = = Pre @-@ war = = =

In 1913 ? 1914 two Kaiser @-@ class ships , Kaiser and König Albert took part in a major overseas tour to South America and South Africa . The cruise was designed to demonstrate German power projection , as well as to test the reliability of the new turbine engines on long @-@ range operations . Both ships had returned to the German bases in the North Sea by the outbreak of World War I.

= = = World War I = = =

= = = = Raid on Scarborough , Hartlepool and Whitby = = = =

The first major operation of the war in which the Kaiser @-@ class ships participated was the raid on Scarborough , Hartlepool and Whitby on 15 ? 16 December 1914 . The raid was primarily conducted by the battlecruisers of the I Scouting Group . The Kaiser @-@ class ships , along with the Nassau , Helgoland , and König classes steamed in distant support of Franz von Hipper 's battlecruisers . Friedrich von Ingenohl , the commander of the High Seas Fleet , decided to take up station approximately in the center of the North Sea , about 130 miles east of Scarborough .

The Royal Navy , which had recently received the German code books captured from the beached cruiser Magdeburg , was aware that an operation was taking place , but uncertain as to where the Germans would strike . Therefore , the Admiralty ordered David Beatty 's 1st Battlecruiser Squadron , the six battleships of the 2nd Battle Squadron , and a number of cruisers and destroyers to attempt to intercept the German battlecruisers . However , Beatty 's task force nearly ran headlong into the entire High Seas Fleet . At 6 : 20 , Beatty 's destroyer screen came into contact with the German torpedo boat V155 . This began a confused 2 @-@ hour battle between the British destroyers and the German cruiser and destroyer screen , frequently at very close range . At the time of the first encounter , the Kaiser @-@ class battleships were less than 10 miles away from the 6 British dreadnoughts ; this was well within firing range , but in the darkness , neither British nor German admirals were aware of the composition of their opponents ' fleets . Admiral Ingenohl , loathe to disobey the Kaiser 's order to not risk the battlefleet without his express approval , concluded that his forces were engaging the screen of the entire Grand Fleet , and so 10 minutes after the first contact , he ordered a turn to port on a south @-@ east course . Continued attacks delayed the turn , but by 6 : 42 , it had been carried out . For about 40 minutes , the two fleets were steaming on a

parallel course . At 7 : 20 , Ingenohl ordered a further turn to port , which put his ships on a course for German waters .

= = = = Bombardment of Yarmouth and Lowestoft = = = =

The Kaiser @-@ class ships took part in another raid on the English coast , again as support for the German battlecruiser force in the I Scouting Group . The battlecruisers left the Jade Estuary at 10 : 55 on 24 April 1916 , and the rest of the High Seas Fleet followed at 13 : 40 . The battlecruiser Seydlitz struck a mine while en route to the target , and had to withdraw . The other battlecruisers bombarded the town of Lowestoft largely without incident , but during the approach to Yarmouth , they encountered the British cruisers of the Harwich Force . A short artillery duel ensued before the Harwich Force withdrew . Reports of British submarines in the area prompted the retreat of the I Scouting Group . At this point , Admiral Reinhard Scheer , who had been warned of the sortie of the Grand Fleet from its base in Scapa Flow , also withdrew to safer German waters .

= = = = Battle of Jutland = = = =

Four of the ships participated in the fleet sortie that resulted in the battle of Jutland on 31 May ? 1 June 1916 . The operation was a repeat of earlier plans that intended to draw out a portion of the Grand Fleet and destroy it . Kaiser , Kaiserin , Prinzregent Luitpold , and Friedrich der Grosse , Scheer 's flagship , made up the VI Division of the III Battle Squadron . The III Battle Squadron was the first of three battleship units ; however , the König @-@ class battleships of the V Division , III Battle Squadron were the vanguard of the fleet . Directly astern of the Kaiser @-@ class ships were the Helgoland and Nassau @-@ class battleships of the I Battle Squadron ; in the rear guard were the elderly Deutschland @-@ class pre @-@ dreadnoughts of the II Battle Squadron .

Shortly before 16 : 00 CET , the battlecruisers of I Scouting Group encountered the British 1st Battlecruiser Squadron , under the command of David Beatty . The opposing ships began an artillery duel that saw the destruction of Indefatigable , shortly after 17 : 00 , and Queen Mary , less than a half an hour later . By this time , the German battlecruisers were steaming south in order to draw the British ships towards the main body of the High Seas Fleet . At 17 : 30 , König , the leading German battleship , spotted both the I Scouting Group and the 1st Battlecruiser Squadron approaching . The German battlecruisers were steaming down to starboard , while the British ships steamed to port . At 17 : 45 , Scheer ordered a two @-@ point turn to port to bring his ships closer to the British battlecruisers . Shortly thereafter the order was given to commence firing ; the Kaiser @-@ class ships , with the exception of Prinzregent Luitpold , were not yet within range to engage the British battlecruisers . Prinzregent Luitpold managed to fire eight salvos at 22 @,@ 300 ? 21 @,@ 300 yards (20 @,@ 400 ? 19 @,@ 500 m) before the range again widened sufficiently to prevent further firing . In the meantime , Kaiser and Friedrich der Grosse , along with the battleships of II Battle Squadron , were within range of the British 2nd Light Cruiser Squadron . However , the massed fire from the ten battleships interfered with accurate spotting , and after only a few salvos fire was largely ceased .

At around 19 : 00 , the cruiser Wiesbaden , which had earlier been disabled , was coming under attack from British light forces , and so Scheer ordered his ships to turn in order to cover an attempt to bring the ship under tow . At 19 : 05 , the British armored cruisers Defence and Warrior began firing on the crippled Wiesbaden . However , by 19 : 15 , Hipper 's battlecruisers and the battleships of III Battle Squadron appeared on the scene , and began to hammer the British ships at a range of less than 8 @,@ 000 yards . Kaiser and three König @-@ class battleships concentrated their fire on the two cruisers until one of Defence 's magazines was detonated , which caused a massive explosion that destroyed the ship . Warrior , badly damaged and afire , managed to limp northward towards the Queen Elizabeth @-@ class battleships of the 5th Battle Squadron .

While Warrior was retreating northward under the cover of her own smoke , the battleship Warspite came too close to her sister Valiant , and had to turn to starboard in order to avoid collision . At that moment , a shell from Kaiser struck Warspite 's steering gear and jammed them , temporarily

leaving the ship only able to steam in a large circle . Friedrich der Grosse , König , two Nassau and three Helgoland @-@ class battleships fired on Warspite for a period of about 20 minutes ; Warspite was hit 11 times before the Germans lost sight of her . Because her steering gear could not be adequately repaired , Warspite was forced to withdraw from the battle ; her absence prompted the Germans to believe they had sunk her .

Upon returning to the Jade estuary , the Nassau @-@ class battleships Nassau , Westfalen , and Posen and the Helgoland @-@ class battleships Helgoland and Thüringen took up guard duties in the outer roadstead . Kaiser , Kaiserin , and Prinzregent Luitpold , largely undamaged during the battle , took up defensive positions outside the Wilhelmshaven locks . The other capital ships ? those that were still in fighting condition ? had their fuel and ammunition stocks replenished .

During the battle , Kaiser had fired 224 heavy battery and 41 secondary battery shells ; Kaiserin fired 160 and 135 respectively , Prinzregent Luitpold fired 169 and 106 respectively , and Friedrich der Grosse fired 72 and 151 shells , respectively . Kaiser was hit twice by heavy @-@ caliber shells during the battle , the only ship of the class to have been hit ; however the ship only suffered a single wounded casualty .

= = = Operation Albion = = =

In early September 1917 , following the German conquest of the Russian port of Riga , the German navy decided to expunge the Russian naval forces that still held the Gulf of Riga . To this end , the Admiralstab (the Navy High Command) planned an operation in the Moonsund archipelago , particularly targeting the Russian gun batteries on the Sworbe peninsula of Ösel . On 18 September , the order was issued for a joint Army @-@ Navy operation to capture Ösel and Moon islands ; the primary naval component was to comprise the flagship , Moltke , along with the III Battle Squadron of the High Seas Fleet . The V Division included the four Königs , and was by this time augmented with the new battleship Bayern . The VI Division consisted of the five Kaiser @-@ class battleships . Along with nine light cruisers , three torpedo boat flotillas , and dozens of mine warfare ships , the entire force numbered some 300 ships , and was supported by over 100 aircraft and six zeppelins . The invasion force amounted to approximately 24 @,@ 600 officers and enlisted men . Opposing the Germans were the old Russian pre @-@ dreadnoughts Slava and Tsarevitch , the armored cruisers Bayan , Admiral Makarov , and Diana , 26 destroyers , several torpedo boats and gunboats , and a garrison on Ösel of some 14 @,@ 000 men with shore batteries .

The operation began on 12 October , when the Kaiser @-@ class battleships engaged the batteries on the Sworbe peninsula . Simultaneously , Moltke , Bayern , and the Königs began firing on the Russian shore batteries at Tagga Bay . Stiff Russian resistance in the Kassar Wick , the entrance to Moon Sound , slowed the German advance . On 14 October , Kaiser was detached from the bombardment force to deal with the Russian destroyers holding up the German minesweepers . Under the cover of Kaiser 's 30 @.@ 5 cm guns , the German torpedo boats dashed into the Sound . During the ensuing clash , the Russian destroyer Grom was disabled and eventually sunk .

The Russian 30 @.@ 5 cm shore batteries at Zerel remained a significant problem , and so while Kaiser was disrupting the Russian destroyers , Kaiserin , König Albert , and Friedrich der Grosse bombarded Zerel at ranges of between 7 @.@ 5 and 12 @.@ 5 miles . Russian counter @-@ fire proved accurate , and so the German dreadnoughts were forced to continually alter course to avoid being hit . The attack lasted only about an hour , due to fears of mines and submarines . The following morning , two König @-@ class battleships were sent into Moon Sound to destroy the Russian ships stationed there . König sank the pre @-@ dreadnought Slava , while Kronprinz forced the withdrawal of the remaining warships . By 20 October , the naval operations were effectively over ; the Russian ships had been destroyed or forced to withdraw , and the German army attained its objectives .

= = = Fate = = =

Following the capitulation of Germany in November 1918 , the High Seas Fleet , under the

command of Rear Admiral Ludwig von Reuter , was interned in the British naval base in Scapa Flow . The fleet remained in captivity during the negotiations that ultimately produced the Versailles Treaty . It became apparent to Reuter that the British intended to seize the German ships on 21 June , which was the deadline for Germany to have signed the peace treaty . Unaware that the deadline had been extended to the 23rd , Reuter ordered his ships be sunk . On the morning of 21 June , the British fleet left Scapa Flow to conduct training maneuvers ; at 10 : 00 Reuter transmitted the order to his ships .

Friedrich der Grosse was the first ship of the fleet to be scuttled , sinking at 12 : 16 . She was raised on 29 April 1937 and towed to Rosyth for scrapping . The ship 's bell was returned to Germany in 1965 , and is currently in the Fleet Headquarters in Glücksburg . König Albert followed at 12 : 54 , the second ship of the fleet to sink . The ship was later raised on 31 July 1935 and broken up in Rosyth over the following year . Kaiser sank at 13 : 25 , and was raised for scrapping on 20 March 1929 ; breaking work was conducted in Rosyth by 1930 . Prinzregent Luitpold sank five minutes later , at 13 : 30 . She too was raised , on 9 July 1931 , and broken up in Rosyth . Kaiserin , the last ship of the class to be sunk , slipped beneath the surface at 14 : 00 . She was raised on 14 May 1936 , and broken up that year in Rosyth .