

= Königsberg @-@ class cruiser ( 1927 ) =

The Königsberg class , sometimes referred to as the K class , was a class of light cruisers of the German Reichsmarine and Kriegsmarine . The class comprised three ships named after German cities : Königsberg , Karlsruhe , and Köln , all built between 1926 and 1930 . These ships were the first of the Reichsmarine with a modern cruiser design ; their predecessor , Emden , was based on World War I @-@ era designs . They were armed with a main battery of nine 15 cm ( 5 @.@ 9 in ) guns and with twelve 50 cm ( 20 in ) torpedo tubes .

All three ships of the class were used extensively as training cruisers throughout the 1930s . They went on numerous overseas cruises and participated in the non @-@ intervention patrols during the Spanish Civil War in 1936 ? 1939 . After the outbreak of World War II in September 1939 , the three ships laid defensive minefields in the North Sea . They all saw action in Operation Weserübung , the invasion of Norway , in April 1940 ; Königsberg was damaged by Norwegian coastal guns outside Bergen and sunk by British bombers the following day . Karlsruhe was sunk by the British submarine HMS Truant ; only Köln survived the attack on Norway .

After returning to Germany , Köln operated Flettner Fl 282 helicopters as an experiment . She provided gunfire support to German ground forces during Operation Barbarossa , the invasion of the Soviet Union in 1941 , and returned to Norway in 1942 . Ultimately , she was sunk in Wilhelmshaven in March 1945 by American bombers . Her guns were still above water , which allowed her to support the defending German army against British ground forces until the final days of the war .

= = Design = =

= = = General characteristics = = =

The ships of the Königsberg class were 169 meters ( 554 ft ) long at the waterline and 174 m ( 571 ft ) long overall . They had a beam of 15 @.@ 2 m ( 50 ft ) and a maximum draft of 6 @.@ 28 m ( 20 @.@ 6 ft ) . They had a design displacement of 6 @,@ 750 metric tons ( 6 @,@ 640 long tons ; 7 @,@ 440 short tons ) and a standard displacement , as defined by the Washington Naval Treaty , of 6 @,@ 000 long tons ( 6 @,@ 100 t ) . They displaced 7 @,@ 700 long tons ( 7 @,@ 800 t ) at full combat load . The ships ' hulls were constructed from longitudinal steel frames and incorporated extensive welding to save weight ; up to 85 percent of the hulls were welded rather than riveted . The hull was divided into nineteen watertight compartments and had a double bottom that extended for 72 percent of the length of the hull .

The Königsberg @-@ class cruisers had a standard crew of 21 officers and 493 enlisted men . This later increased to 23 officers and 588 ? 591 enlisted men , and during World War II , the crew size rose to between 820 and 850 officers and men . The ships carried a number of smaller vessels , including two picket boats , two barges , two launches , one cutter , and one dinghy . The ships were moderately good sea boats , were very cranky , and suffered from a slight lee helm . They heeled up to twenty degrees with the rudder hard over . They were nevertheless very maneuverable and lost little speed in a head sea . In a hard turn , they lost up to 20 percent speed .

In the 1930s , all three members of the class were modified to carry a pair of float planes for reconnaissance . They were equipped with an aircraft catapult to launch the planes and cranes to recover them after they landed in the water . The ships initially carried two Heinkel He 60 biplane float planes , replaced later in the decade with two Arado Ar 196 monoplane float planes . Only one aircraft could be stored on the catapult at a time ; the second plane had to be disassembled and placed in storage , and the ships did not have a hangar to store it in .

= = = Machinery = = =

Their propulsion system consisted of four steam turbines and a pair of 10 @-@ cylinder four @-@ stroke diesel engines . The turbines were split into three engine rooms , with the diesels in their own

rooms directly aft of the turbines . Steam for the turbines was provided by six Marine @-@ type double @-@ ended oil @-@ fired boilers . The engines powered a pair of three @-@ bladed screws that were 4 @.@ 1 m ( 13 ft ) wide on the first two ships and 3 @.@ 7 m ( 12 ft ) in diameter on Köln . The ships ' propulsion system provided a top speed of 32 kn ( 59 km / h ; 37 mph ) and were rated at 65 @,@ 000 shaft horsepower ( 48 @,@ 000 kW ) , though all three ships exceeded 68 @,@ 000 shp ( 51 @,@ 000 kW ) on speed trials . The ships carried 600 t ( 590 long tons ; 660 short tons ) of fuel oil as designed , but could store up to 1 @,@ 350 t ( 1 @,@ 330 long tons ; 1 @,@ 490 short tons ) . This gave them a range of approximately 5 @,@ 700 nautical miles ( 10 @,@ 600 km ; 6 @,@ 600 mi ) at 19 kn ( 35 km / h ; 22 mph ) and 7 @,@ 300 nmi ( 13 @,@ 500 km ; 8 @,@ 400 mi ) at 17 kn ( 31 km / h ; 20 mph ) . Steering was controlled by a single rudder . The ships had three turbo @-@ generators and two diesel generators for electricity ; the generators had a combined output of 540 kilowatts ( 720 hp ) at 220 Volts .

#### == = Armament == =

The ships were armed with nine 15 cm SK C / 25 guns mounted in three triple gun turrets . One turret was located forward , and two were placed in a superfiring pair aft . The rear gun turrets were offset to increase their arc of fire . They were supplied with 1 @,@ 080 rounds of ammunition , for 120 shells per gun . As built , the ships were also equipped with two 8 @.@ 8 cm SK L / 45 anti @-@ aircraft guns in single mounts ; they had 400 rounds of ammunition each . The Königsberg class also carried four triple torpedo tube mounts located amidships ; they were supplied with twenty @-@ four 50 cm ( 20 in ) torpedoes , though these were replaced with 53 @.@ 3 cm ( 21 @.@ 0 in ) models by 1940 . The ships were also capable of carrying 120 naval mines .

The ships ' anti @-@ aircraft batteries were revised and improved throughout the course of their careers . The original single @-@ mounted 8 @.@ 8 cm guns were replaced with twin mounts for the new 8 @.@ 8 cm SK C / 32 guns and a third twin mount was also installed , bringing the number of guns to six . Eight 3 @.@ 7 cm SK C / 30 guns were installed in the mid @-@ 1930s and up to eight 2 cm Flak 30 guns were also added . Köln , the only ship to survive to the end of the war , was ultimately armed with eight 3 @.@ 7 cm and eighteen 2 cm guns , though provisions had been made to mount up to ten and twenty @-@ four guns of the two calibers , respectively .

#### == = Armor == =

The ships were protected by an armored deck that was 40 mm ( 1 @.@ 6 in ) thick amidships and tapered down to 20 mm ( 0 @.@ 79 in ) on either end . They had an armored belt that was 50 mm ( 2 @.@ 0 in ) thick and capped with 70 mm ( 2 @.@ 8 in ) thick bulkheads on either end of the belt . Underwater protection consisted of a 15 mm ( 0 @.@ 59 in ) torpedo bulkhead and a 20 mm collision bulkhead . The conning tower had 100 mm ( 3 @.@ 9 in ) sides and a 30 mm ( 1 @.@ 2 in ) roof . The ships ' gun turrets had 30 mm faces and 20 mm roofs , sides , and rears . The barbettes for the turrets were also 30 mm thick . Karlsruhe was later fitted with increased armor protection , consisting of a 10 to 14 mm ( 0 @.@ 39 to 0 @.@ 55 in ) outer plating that consisted of the new Wotan weich steel , and an upper deck that was 16 mm ( 0 @.@ 63 in ) , also Wotan weich .

#### == = Construction == =

#### == = Service history == =

All three ships of the Königsberg class served as training cruisers for naval cadets throughout the 1930s . They conducted numerous cruises in European waters , and both Karlsruhe and Köln traveled to other continents . They were all modified throughout the decade , and had their anti @-@ aircraft armament repeatedly improved , along with other alterations . The three ships took part in the non @-@ intervention patrols during the Spanish Civil War in 1936 ? 1939 , and after the

outbreak of World War II in September 1939 , they laid a series of defensive minefields in the North Sea .

The three ships then participated in Operation Weserübung , the invasion of Norway , in April 1940 . Königsberg and Köln were assigned to the assault on Bergen , while Karlsruhe joined the attack on Kristiansand . Königsberg came under heavy fire from a 21 cm ( 8 @. @ 3 in ) battery outside Bergen , and was badly damaged ; after the port was captured , she moved into harbor for temporary repairs . She was ordered to return to Germany , but was attacked the next morning by British bombers and hit by at least five bombs . She sank slowly enough for the majority of her crew to escape ; there were only eighteen men killed in the attack .

Karlsruhe meanwhile suppressed Norwegian coastal guns outside Kristiansand and successfully landed her contingent of ground troops . After Karlsruhe left port , the British submarine HMS Truant attacked the German cruiser and hit her with a pair of torpedoes . The torpedo hits knocked out Karlsruhe 's power and thus prevented her crew from pumping out the water that was rapidly flooding the ship . Her crew was taken off by an escorting torpedo boat , which then fired a pair of torpedoes into the stricken cruiser to ensure she sank quickly .

Köln was the only ship of the class to survive the operations off Norway . After returning to Germany , she was modified to serve as a testbed for the Flettner Fl 282 helicopter . She thereafter served in the Baltic , providing gunfire support to advancing German troops in 1941 . In mid 1942 , she returned to Norwegian waters , and unsuccessfully attempted to attack Convoy PQ 18 along with several other German warships . She was then ordered back to Germany , where she served in a variety of roles , including training ship and convoy escort , before again returning to Norway . She was damaged by British bombers in December 1944 and forced to return to Germany for repairs . While in dock in Wilhelmshaven in March 1945 , she was attacked and sunk by American heavy bombers . She sank on an even keel , with her guns still above water , which permitted their use against advancing British forces until the final days of the war .