

= Brummer @-@ class cruiser =

The Brummer class consisted of two light mine @-@ laying cruisers built for the Imperial German Navy in World War I : SMS Brummer and SMS Bremse . When the war broke out , the Germans had only two older mine @-@ laying cruisers . Although most German cruisers were fitted for mine @-@ laying , a need for fast specialized ships existed . The Imperial Russian Navy had ordered a set of steam turbines for the Borodino @-@ class battlecruiser Navarin from the AG Vulcan shipyard in Stettin . This machinery was confiscated on the outbreak of war and used for these ships . Both vessels were built by AG Vulcan .

The two ships laid a series of minefields during their career , though their most significant success came in October 1917 , when they attacked a British convoy to Norway . They sank two escorting destroyers and nine of the twelve merchant ships from the convoy . They escaped back to Germany without damage . The two ships were interned at Scapa Flow after the end of the war , and were subsequently scuttled by their crews on 21 June 1919 . Brummer was sunk in deep water and was never raised , but Bremse was brought up in 1929 and broken up for scrap in 1932 ? 1933 .

= = Design and construction = =

In 1914 , AG Vulcan in Stettin was building two sets of high @-@ powered steam turbines for the Russian Navy for use in their new battlecruiser Navarin , then under construction in Russia . After the outbreak of World War I in August 1914 , which saw Germany and Russia on opposing sides , the German government seized the turbines . At that time , the Kaiserliche Marine possessed only two cruisers equipped for mine @-@ laying operations , the cruisers Nautilus and Albatross . The Kaiserliche Marine ordered AG Vulcan to split Navarin 's propulsion system in half and to design a pair of cruiser hulls around the engines . The ships were to be fast mine @-@ layers , capable of mining an area under cover of darkness and quickly returning to port before they could be intercepted . They were designed to resemble the British Arethusa class cruisers to aid in their ability to operate off the British coast .

Design work on the ships was completed quickly in 1914 . Brummer was laid down at the AG Vulcan shipyard in Stettin in early 1915 . Work proceeded quickly , and the ship was launched on 11 December 1915 . After the completion of fitting @-@ out work , the ship was commissioned into the High Seas Fleet on 2 April 1916 . Bremse followed her sister the same year at AG Vulcan . She was launched on 11 March 1916 and completed in less than four months ; the ship was commissioned into the fleet on 1 July 1916 . During construction , the shape of their bow and its resemblance to British cruisers was covered by sheet metal .

= = General characteristics = = =

Brummer and Bremse were 135 meters ( 443 ft ) long at the waterline and 140 @.@ 40 m ( 460 ft 8 in ) long overall . They had a beam of 13 @.@ 20 m ( 43 ft 4 in ) and a draft of 6 m ( 19 ft 8 in ) forward and 5 @.@ 88 m ( 19 ft 3 in ) aft . The ships had a designed displacement of 4 @,@ 385 metric tons ( 4 @,@ 316 long tons ) , and at full combat load , they displaced 5 @,@ 856 t ( 5 @,@ 764 long tons ) . Their hulls were built with longitudinal steel frames . The hulls were divided into twenty @-@ one watertight compartments and incorporated a double bottom that extended for forty @-@ four percent of the length of the keel . Brummer differed slightly , as she had a row of portholes amidships that her sister Bremse did not have .

Brummer and Bremse were fitted with masts similar to the British Arethusa @-@ class cruisers , and similarly to the British ships , the masts could be lowered and stored on the superstructure deck . Their bow was also modeled on the Arethusa @-@ class ships to further disguise the vessels . The ships had a complement of 16 officers and 293 enlisted men . They carried several smaller vessels , including one picket boat , one barge , and two dinghies . The German Navy regarded the ships as excellent sea boats , having gentle motion . The ships were highly maneuverable and had a tight turning radius , and only lost slight speed in a head sea . In hard turns , they lost up to sixty

percent speed . They were very crank , however .

#### == Machinery ==

The two ships ' propulsion systems consisted of two turbines powered by two coal @-@ fired Marine Doppelkessel double @-@ ended boilers and four oil @-@ fired Öl @-@ Marine double @-@ ended boilers . The turbines drove a pair of three @-@ bladed screws , which were 3 @. @ 20 m ( 10 ft 6 in ) in diameter . The engines were rated at 33 @, @ 000 shaft horsepower ( 25 @, @ 000 kW ) for a top speed of 28 knots ( 52 km / h ; 32 mph ) . On trials , Brummer reached 42 @, @ 797 shp ( 31 @, @ 914 kW ) while Bremse made 47 @, @ 748 shp ( 35 @, @ 606 kW ) ; they averaged a top speed of 30 @. @ 2 knots ( 55 @. @ 9 km / h ; 34 @. @ 8 mph ) with a light load . The ships were capable of speeds up to 34 knots ( 63 km / h ; 39 mph ) , though only in short bursts .

Coal storage was 300 t ( 300 long tons ; 330 short tons ) as designed , though up to 600 t ( 590 long tons ; 660 short tons ) could be carried . Fuel oil was initially 500 t ( 490 long tons ; 550 short tons ) , and could be similarly increased to 1 @, @ 000 t ( 980 long tons ; 1 @, @ 100 short tons ) . At a cruising speed of 12 kn ( 22 km / h ; 14 mph ) , the ships could steam for 5 @, @ 800 nautical miles ( 10 @, @ 700 km ; 6 @, @ 700 mi ) . At a higher speed of 25 kn ( 46 km / h ; 29 mph ) , the range fell considerably , to 1 @, @ 200 nmi ( 2 @, @ 200 km ; 1 @, @ 400 mi ) . Electrical power was provided by two turbo generators and one diesel generator . Steering was controlled by a single , large rudder .

#### == Armament and armor ==

The ships were armed with four 15 cm SK L / 45 guns in single pedestal mounts ; all four were placed on the centerline so all four guns could fire on the broadside . One was placed forward on the forecastle , a second was located between the first and second funnel and two were arranged in a superfiring pair aft . These guns fired a 45 @. @ 3 @-@ kilogram ( 100 lb ) shell at a muzzle velocity of 840 meters per second ( 2 @, @ 800 ft / s ) . The guns had a maximum elevation of 30 degrees , which allowed them to engage targets out to 17 @, @ 600 m ( 57 @, @ 742 ft 9 in ) . They were supplied with 600 rounds of ammunition , for 150 shells per gun . Brummer and Bremse also carried two 8 @. @ 8 cm ( 3 @. @ 5 in ) L / 45 anti @-@ aircraft guns mounted on the centerline astern of the funnels . These guns fired a 10 kg ( 22 lb ) shells at a muzzle velocity of 750 to 770 m / s ( 2 @, @ 500 to 2 @, @ 500 ft / s ) . The ships were also equipped with a pair of 50 cm ( 19 @. @ 7 in ) torpedo tubes with four torpedoes in a swivel mount amidships . Designed as mine @-@ layers , they carried up to 450 mines , depending on the type . Two rails ran down the main deck to the stern to allow the mines to be dropped behind the ship .

The Brummer @-@ class cruisers ' armor was fabricated from Krupp cemented steel . The ships were protected by a waterline armored belt that was 40 mm ( 1 @. @ 6 in ) thick amidships ; the bow and stern were not armored . The deck was covered with 15 mm ( 0 @. @ 59 in ) thick armor plate . Gun shields 50 mm ( 2 @. @ 0 in ) thick protected the 15 cm gun battery crews . The conning tower had 100 mm ( 3 @. @ 9 in ) thick sides and a 20 mm ( 0 @. @ 79 in ) thick roof . Atop the conning tower was the bridge , which included a splinter @-@ proof chart house . All three funnels were equipped with a steel glacis for splinter protection .

#### == Service ==

After their commissioning , Brummer and Bremse served with the High Seas Fleet , including on a sortie into the North Sea in October 1916 . The ships laid a minefield off Norderney in January 1917 and guarded minesweepers between March and May that year . In October 1917 , Admiral Reinhard Scheer sent the two ships to attack a British convoy to Norway to divert forces protecting convoys in the Atlantic . Scheer chose Brummer and Bremse because of their high speed and large radius of action . Shortly after dawn on 17 October , the two cruisers attacked the convoy , which consisted of twelve merchant ships , two destroyers , and two armed trawlers . The German ships quickly sank

the escorting destroyers and nine of the twelve cargo vessels . The British Admiralty was not informed of the attack until Brummer and Bremse were safely steaming back to Germany .

Along with the most modern units of the High Seas Fleet , Brummer and Bremse were included in the ships specified for internment at Scapa Flow by the victorious Allied powers . The ships steamed out of Germany on 21 November 1918 in single file , commanded by Rear Admiral Ludwig von Reuter . Reuter believed that the British intended to seize the German ships on 21 June 1919 , and so he ordered the ships to be sunk at the next opportunity . On the morning of 21 June , the British fleet left Scapa Flow to conduct training maneuvers , and at 11 : 20 Reuter transmitted the order to scuttle his ships . Brummer sank at 13 : 05 ; she was never raised for scrapping and remains on the bottom of Scapa Flow . Bremse sank at 14 : 30 and was ultimately raised on 27 November 1929 and broken up for scrap in 1932 ? 1933 in Lyness .