

= Bremen @-@ class cruiser =

The Bremen class was a group of seven light cruisers built for the Imperial German Navy in the early 1900s . The seven ships , Bremen , Hamburg , Berlin , Lübeck , München , Leipzig , and Danzig , were an improvement upon the previous Gazelle class . They were significantly larger than the earlier class , and were faster and better armored . Like the Gazelles , they were armed with a main battery of ten 10 @. @ 5 cm SK L / 40 guns and a pair of torpedo tubes .

The ships of the Bremen class served in a variety of roles , from overseas cruiser to fleet scout to training ship . Bremen and Leipzig were deployed to the American and Asian stations , respectively , while the other five ships remained in German waters with the High Seas Fleet . At the outbreak of World War I in August 1914 , Leipzig was in the Pacific Ocean in the East Asia Squadron ; she saw action at the Battle of Coronel in November and was sunk a month later at the Battle of the Falkland Islands . Bremen was sunk by a Russian mine in December 1915 , but the other five ships of the class survived the war .

Three of the surviving ships , Lübeck , München , and Danzig , were seized by Britain as war prizes after the end of the war and sold for scrapping . The other two ships , Hamburg and Berlin , were used as training cruisers through the 1920s . They were converted into barracks ships in the mid @-@ 1930s , a role they filled for a decade ; in 1944 , Hamburg was sunk by British bombers and later broken up for scrap , while Berlin was scuttled in deep water after the end of World War II to dispose of a load of chemical weapons .

= = Design = =

The 1898 Naval Law authorized the construction of 30 new light cruisers by 1904 ; the Gazelle @-@ class cruiser filled the requirements for the first ten vessels. The design for the Bremen class was an improved version of the preceding Gazelle class , the improvements chiefly being in size and speed . To accommodate the more powerful propulsion system , a third funnel was added . The armored deck was also thickened significantly . The fourth ship of the class , Lübeck , was fitted with steam turbines , so the quality of turbine engines could be compared with otherwise identical vessels . The Bremen class was followed by the Königsberg class , which was very similar to the Bremens , including the same armament . And like the Bremens , one ship of the class , Stettin , was equipped with turbine engines while the rest had traditional triple @-@ expansion engine .

= = = General characteristics = = =

The Bremen @-@ class ships were 110 @. @ 6 meters (362 ft 10 in) long at the waterline and 111 @. @ 1 m (364 ft 6 in) long overall . They had a beam of 13 @. @ 3 m (44 ft) and a draft of 5 @. @ 28 to 5 @. @ 68 m (17 @. @ 3 to 18 @. @ 6 ft) forward . They displaced 3 @, @ 278 metric tons (3 @, @ 226 long tons) as designed and between 3 @, @ 652 to 3 @, @ 816 t (3 @, @ 594 to 3 @, @ 756 long tons ; 4 @, @ 026 to 4 @, @ 206 short tons) at full combat load . The ships ' hulls were constructed with transverse and longitudinal steel frames , and incorporated twelve watertight compartments . The hulls also had a double bottom that ran for 56 percent of the length of the hull .

All seven ships were good sea boats , but they were crank and rolled up to twenty degrees . They were also very wet at high speeds and suffered from a slight weather helm . Nevertheless , the ships turned tightly and were very maneuverable . In a hard turn , their speed fell up to 35 percent . They had a transverse metacentric height of .58 to .61 m (1 ft 11 in to 2 ft 0 in) . The ships had a standard crew of fourteen officers and between 274 and 287 enlisted men , though later in their careers , these figures increased to 19 and 330 , respectively . The Bremen @-@ class ships carried a number of smaller boats , including one picket boat , one pinnace , two cutters , two yawls , and one dinghy .

= = = Machinery = = =

With the exception of Lübeck , the ships ' propulsion system consisted of two triple @-@ expansion engines , designed to give 9 @,@ 863 indicated horsepower (7 @,@ 355 kW) for a top speed of 22 knots (41 km / h ; 25 mph) . Lübeck was instead fitted with a pair of Parsons steam turbines , rated at 11 @,@ 343 shaft horsepower (8 @,@ 458 kW) and a top speed of 22 @.@ 5 knots (41 @.@ 7 km / h ; 25 @.@ 9 mph) , though all seven ships exceeded these speeds on trials . All seven ships had ten coal @-@ fired Marine @-@ type water @-@ tube boilers , which were trunked into three funnels amidships . The ships carried up to 860 tonnes (850 long tons) of coal , which gave the first three ships a range of 4 @,@ 270 nautical miles (7 @,@ 910 km ; 4 @,@ 910 mi) at 12 knots (22 km / h ; 14 mph) ; Lübeck 's less efficient turbine engines cut her cruising radius to 3 @,@ 800 nmi (7 @,@ 000 km ; 4 @,@ 400 mi) , while the last three ships of the class had a longer range , at 4 @,@ 690 nmi (8 @,@ 690 km ; 5 @,@ 400 mi) . Bremen and Hamburg had three generators that produced a total output of 111 kilowatts at 110 volts ; the rest of the ships had two generators rated at 90 kilowatts at the same voltage .

= = = Armament and armor = = =

The ships of the class were armed with ten 10 @.@ 5 cm SK L / 40 guns in single mounts . Two were placed side by side forward on the forecastle , six were located amidships , three on either side , and two were placed side by side aft . The guns could engage targets out to 12 @,@ 200 m (40 @,@ 000 ft) . They were supplied with 1 @,@ 500 rounds of ammunition , for 150 shells per gun . Later in their careers , Bremen and Lübeck had two 15 cm SK L / 45 guns installed in place of the two forward and two rear 10 @.@ 5 cm guns . They retained the six broadside 10 @.@ 5 cm guns . All seven ships were also equipped with two 45 cm (17 @.@ 7 in) torpedo tubes with five torpedoes . These tubes were submerged in the hull on the broadside . Lübeck later had a pair of 50 cm (20 in) torpedo tubes installed in deck mounts , with four torpedoes .

Armor protection for the members of the class consisted of two layers of steel with one layer of Krupp armor . The ships were protected by an armored deck that was up to 80 millimeters (3 @.@ 1 in) thick . Sloped armor 50 mm (2 @.@ 0 in) thick gave some measure of vertical protection , coupled with the coal bunkers . The conning tower had 100 mm (3 @.@ 9 in) thick sides and a 20 mm (0 @.@ 79 in) thick roof . The ships ' guns were protected by 50 mm thick shields .

= = Construction = =

The seven ships of the Bremen class were built between 1902 and 1907 , at various German dockyards , including private firms and government shipyards .

= = Service history = =

The ships of the Bremen class served in a variety of roles throughout their careers . Bremen and Leipzig served abroad from 1905 to 1914 ; the former returned to Germany shortly before the outbreak of World War I , and the latter remained with the East Asia Squadron . Hamburg , Berlin , Lübeck , and Danzig served in the reconnaissance forces of the High Seas Fleet after they entered service . München meanwhile was used as a torpedo test ship during her pre @-@ war service . All seven of the ships saw action during the First World War , though only Bremen and Leipzig was lost during the conflict .

Danzig was present during the Battle of Heligoland Bight in August 1914 , but did not directly engage the British ships . She did , however , rescue survivors from the sinking cruiser Ariadne . Hamburg was present for the raid on Scarborough , Hartlepool and Whitby in December 1914 , where she briefly encountered ? but did not engage ? British light forces . Only one ship , München , saw action at the Battle of Jutland on 31 May and 1 June 1916 , where she was hit by five medium @-@ caliber shells and moderately damaged . Three of the ships , Bremen , Lübeck , and Danzig , saw action against Imperial Russian forces in the Baltic Sea during the war , including during the assault on Libau and the Battle of the Gulf of Riga in 1915 and during Operation Albion in 1917 .

Bremen struck Russian mines in December 1915 and sank with the majority of her crew going down with her . Leipzig , still overseas at the start of the war , saw action at the Battles of Coronel and Falkland Islands in late 1914 . At the former , she engaged the British cruiser HMS Glasgow , and at the latter , was sunk by Glasgow and HMS Cornwall .

Berlin was withdrawn from service in 1916 and disarmed . München was badly damaged by a British mine in October 1916 , and thereafter decommissioned for use as a barracks ship . Hamburg was also used as barracks ship later in the war , and Leipzig became a training ship in 1917 . Danzig was the last ship to leave active service , in late 1917 . Of the five surviving ships , Berlin and Hamburg were retained by the newly reorganized Reichsmarine as training ships . The remaining three , Lübeck , München , and Danzig , were surrendered as war prizes to the United Kingdom , which sold them for scrapping in the early 1920s . Hamburg and Berlin soldiered on as training cruisers into the late 1920s and early 1930s ; by the mid @-@ 1930s , they had again been converted into floating barracks . Hamburg was sunk by British bombers in 1944 , and later raised and broken up for scrap in 1949 . Berlin survived World War II and was loaded with chemical weapons and scuttled in the Skaggerak after the war to dispose of the munitions .