

= Siegfried @-@ class coastal defense ship =

The Siegfried class was a group of six coastal defense ships built by the German Kaiserliche Marine (" Imperial Navy ") in the late 19th century . The ships were intended to protect the German coastline from naval attacks . The class comprised the lead ship Siegfried , along with her sisters Beowulf , Frithjof , Heimdall , Hildebrand , and Hagen . All six ships were named after Norse mythological figures . Two further vessels , the Odin class , were built to a similar design but were not identical .

The Siegfried @-@ class ships were obsolete by the outbreak of World War I , and saw only limited service in their intended role before they were withdrawn from active duty . The ships then served in a variety of secondary duties , including barracks ships , target ships , and in the case of Beowulf , an icebreaker in the Baltic Sea . All six ships were struck from the naval register on 17 June 1919 , days before the Treaty of Versailles was signed . Five of the ships were sold for scrapping immediately after they were struck from the register , but Frithjof was purchased by a shipping company , and converted into a freighter . She served in this capacity until she too was scrapped in 1930 .

= = Design = =

= = = General characteristics = = =

The ships of the Siegfried class were 76 @.@ 40 meters (250 ft 8 in) long at the waterline and 79 m (259 ft 2 in) long overall . The ships had a beam of 14 @.@ 90 m (48 ft 11 in) and a draft of between 5 @.@ 51 m (18 ft 1 in) forward and 5 @.@ 74 m (18 ft 10 in) aft . All six ships were heavily rebuilt , each undergoing refits at various times between 1898 and 1904 . During the rebuilding , the ships were lengthened , to 84 @.@ 80 m (278 ft 3 in) at the waterline and 86 @.@ 13 m (282 ft 7 in) overall . The ships ' beams remained the same , but their draft was slightly decreased , to 5 @.@ 45 m (17 ft 11 in) forward and 5 @.@ 47 m (17 ft 11 in) aft . The ships had a designed displacement of 3 @,@ 500 metric tons (3 @,@ 400 long tons ; 3 @,@ 900 short tons) , and a maximum displacement of 3 @,@ 741 t (3 @,@ 682 long tons) . After the reconstruction , the displacement was increased to between 4 @,@ 000 to 4 @,@ 436 t (3 @,@ 937 to 4 @,@ 366 long tons) , depending on the ship .

The ships used transverse and longitudinal steel frames in the hull . They had eight watertight compartments and a double bottom that ran for 60 % of the hull . After the refits , one more watertight compartment was added . The ships were described as good sea boats ; they had gentle motion and were very responsive to commands from the helm . The ships lost significant speed in heavy seas , however . The ships had a crew of 20 officers and 256 enlisted men , with an additional 6 officers and 22 men when serving as a flagship . The refit increased crew requirements , to an additional 31 sailors normally , and the extra flagship crew increased to 9 officers and 34 men . The ships carried a number of smaller boats , including one picket boat , one pinnace , two cutters , one yawl , and one dinghy .

= = = Propulsion = = =

The ships were powered by two sets of 3 @-@ cylinder triple expansion engines , each in its own engine room . These engines drove a pair of three @-@ bladed screws that were 3 @.@ 50 m (11 ft 6 in) in diameter . The ships had eight marine type boilers , with the exception of Hagen , which was equipped with eight Thornycroft boilers . The ships had similar maximum speeds , with Beowulf the fastest at 15 @.@ 1 knots (28 @.@ 0 km / h ; 17 @.@ 4 mph) and Heimdall the slowest at 14 @.@ 6 knots (27 @.@ 0 km / h ; 16 @.@ 8 mph) . Each ship had three electric generators that provided between 29 ? 26 kilowatts at 67 volts . The ships stored up to 220 t (220 long tons ; 240 short tons) of coal and 220 t (220 long tons ; 240 short tons) of fuel oil , which enabled a range of

1 @, @ 490 nautical miles (2 @, @ 760 km ; 1 @, @ 710 mi) at a cruising speed of 10 knots (19 km / h ; 12 mph) . At 14 knots (26 km / h ; 16 mph) , the ships could only steam 740 nmi (1 @, @ 370 km ; 850 mi) . With the refit , fuel bunkering was more than doubled , to 580 t (570 long tons ; 640 short tons) of coal and 500 t (490 long tons ; 550 short tons) of oil . This dramatically increased the sailing range , to 3 @, @ 400 nmi (6 @, @ 300 km ; 3 @, @ 900 mi) at 10 knots and 1 @, @ 940 nmi (3 @, @ 590 km ; 2 @, @ 230 mi) at 14 knots .

== = Armament == =

The ships ' primary armament consisted of three 24 @-@ centimetre (9 @. @ 4 in) K L / 35 guns . In an arrangement very unusual for such large guns , two of which were mounted in a pair of MPL C / 88 turrets forward side @-@ by @-@ side , while the third was mounted in a single turret aft . The guns could train 150 degrees to either side of the centerline , and depress to ? 4 degrees and elevate to 25 degrees . This enabled a maximum range of 13 @, @ 000 m (43 @, @ 000 ft) . The guns had an ammunition storage of 204 rounds , or 68 shells per gun . The guns had a rate of fire of around 2 shells per minute . The 1895 design for the armor @-@ piercing shell weighed 140 kg (310 lb) .

The ships also had a secondary battery of eight 8 @. @ 8 cm (3 @. @ 5 in) SK L / 30 guns with 1 @, @ 500 rounds of ammunition , though Siegfried only had six of these guns . After the refit , this was increased to ten 8 @. @ 8 cm guns , and the munition storage correspondingly increased to 2 @, @ 500 rounds . The 8 @. @ 8 cm gun fired a 10 kg (22 lb) projectile at a muzzle velocity of 590 m / s (1 @, @ 936 m / s) . The guns could sustain a rate of fire of approximately 15 rounds per minute . Six machine guns were temporarily fitted .

The ships were also equipped with four 35 cm (14 in) torpedo tubes . One tube was mounted in the stern in an above @-@ water swivel mount , two were placed laterally , also above water , and the fourth was in the bow . The torpedo tubes were supplied with a total of 10 torpedoes . After the refit , the stern and lateral tubes were replaced with 45 cm (18 in) weapons , but the lateral torpedo tubes were submerged . They had 8 torpedoes between them . The bow tube was retained , but also moved below the waterline ; it had three torpedoes .

== = Armor == =

The ships ' armor consisted of compound steel for the first three ships and Krupp armor for the last three , coupled with teak . The upper section of the main armored belt was 240 millimeters (9 @. @ 4 in) thick in the central portion of the ship and reduced to 180 mm (7 @. @ 1 in) at either end . This was mounted on 330 mm (13 in) of timber . The lower section of the belt was 140 mm (5 @. @ 5 in) thick in the central area , and 100 mm (3 @. @ 9 in) on the bow and stern . This portion of the armored belt was mounted on 290 mm (11 in) of timber . The main armored deck was 30 mm (1 @. @ 2 in) thick , though on Hagen and Heimdall this was increased to 50 mm (2 @. @ 0 in) . The conning tower had a roof that was 30 mm (1 @. @ 2 in) thick and sides that were 80 mm (3 @. @ 1 in) thick ; the armor protection on the conning tower sides was also increased on Hagen and Heimdall , to 160 mm (6 @. @ 3 in) .

== = Construction == =

The six ships of the Siegfried class were built by a combination of private and government shipyards . Siegfried was laid down at the Germaniawerft dockyard in Kiel in 1888 . The ship was ordered as the coast defense ship " O " under construction number 44 . She was launched on 10 August 1889 and commissioned into the fleet on 29 April 1890 . Beowulf was built at AG Weser in Bremen from 1890 to 1892 . She had been ordered as " P " , under construction number 100 . Beowulf was launched on 8 November 1890 and commissioned on 1 April 1892 . Frithjof was also built at AG Weser , under construction number 101 and the provisional name " Q " . She was launched on 21 July 1891 and commissioned into active service on 23 February 1893 .

Heimdall , Hildebrand , and Hagen were all built at Imperial Navy dockyards , with Heimdall at the Kaiserliche Werft Wilhelmshaven and the latter two at the Kaiserliche Werft Kiel . Heimdall was laid down in 1891 under construction number 14 and the provisional name " U " ; she was launched on 27 July 1892 and commissioned on 7 April 1894 . Hildebrand and Hagen were ordered as " R " and " S " , respectively . Hildebrand was laid down in 1890 , launched on 6 August 1892 , and commissioned on 28 October 1893 . Hagen , the last ship of the class , was laid down in 1891 , launched on 21 October 1893 , and completed on 2 October 1894 .

= = Service history = =

The ships of the Siegfried class saw only limited service in their intended roles . The revolutions in capital ship building in the first decade of the 20th century rapidly made these ships obsolete . The Second Naval Law , passed on 27 March 1908 , reduced the service life of all capital ships from 25 years to 20 years . This meant that the Siegfried @-@ class ships , along with a number of other vessels , were to be replaced as soon as possible . Siegfried , Beowulf , and Frithjof were replaced by the Helgoland @-@ class battleships Helgoland , Thüringen , and Oldenburg . Heimdall , Hildebrand , and Hagen were replaced by the Kaiser @-@ class battleships Kaiser , Friedrich der Grosse , and Kaiserin , respectively .

As the new battleships were intended for offensive operations , the Siegfried class was still retained for coast defense duties . The ships served in this capacity through the start of World War I , until they were withdrawn from active service in 1915 . Afterward , all six ships served in a variety of secondary roles , primarily as barracks ships . All six ships were struck from the naval register on 17 June 1919 , shortly before the Treaty of Versailles , which ended the First World War , was signed . Siegfried was a barracks ship in Wilhelmshaven from 1916 . She was intended to be rebuilt as a salvage ship , but this plan was abandoned and the vessel was sold to H. Peters , Wewelsfleth in 1919 for 425 @,@ 000 marks . She was broken up in 1920 in Kiel . Beowulf served as a target ship for U @-@ boats from 1916 to 1918 , when she transitioned to ice @-@ breaking duty in the Baltic Sea . Frithjof was a barracks ship in Danzig after 1916 . Following her removal from navy service , she was sold to A Bernstein in Hamburg . She was rebuilt as a freighter by Deutsche Werke , and served in this capacity until she was broken up in 1930 . She was the longest serving Siegfried @-@ class ship .

Heimdall was a barracks ship for the crews of U @-@ boats and the Ems coast defense flotilla based in Emden . Like Siegfried , Heimdall was intended to be reconstructed as a salvage ship , and this was likewise abandoned . She was broken up for scrap metal in 1921 . Hildebrand was a barracks ship in Windau after she was removed from active duty . She was sold to a Dutch ship @-@ breaking firm in 1919 , but while en route to the scrapyard , she became grounded on the Dutch coast . The wreck was blown up in 1933 , and eventually scrapped in situ . Hagen was a barracks ship in Libau , Danzig , and Warnemünde during the remainder of World War I. She was sold for scrapping to Norddeutsche Tiefbauges after the end of the war .