

= Illinois @-@ class battleship =

The Illinois @-@ class was a group of three pre @-@ dreadnought battleships of the United States Navy commissioned at the beginning of the 20th century . The three ships , Illinois , Alabama , and Wisconsin , were built between 1896 and 1901 . They were transitional ships ; they incorporated advances over preceding designs , including the first modern gun turrets for the main battery , and new rapid @-@ firing secondary guns , but they were also the last American battleships to feature dated technologies like fire @-@ tube boilers and Harvey armor . They were armed with a main battery of four 13 @-@ inch (330 mm) guns in two twin turrets , supported by a secondary battery of fourteen 6 in (150 mm) guns . The ships had a designed speed of 16 knots (30 km / h ; 18 mph) , though they exceeded that speed by a significant margin .

The three ships served in a variety of roles and locations throughout their career . Illinois served with the North Atlantic Squadron and the European Squadron early in her career , while Wisconsin served as the flagship of the Pacific Fleet and then in the Asiatic Fleet . Illinois and Alabama started the cruise of the Great White Fleet in December 1907 from the east coast of the United States , though by the time they had rounded South America and stopped in California , Alabama was forced to leave the fleet due to machinery problems . Wisconsin joined the fleet there and continued on with it to the conclusion of its tour in February 1909 . All three ships were modernized in 1909 and served in the Atlantic Fleet for a short time .

By 1912 , all three ships had been reduced to the reserve fleet and were primarily employed as training ships . They continued in this role during World War I , training men to operate the machinery of warships and transports for the war effort . They were all decommissioned by 1920 . Illinois was loaned to the New York Naval Militia and was converted into a floating arsenal . Renamed Prairie State in 1941 , she was eventually sold for scrapping in 1956 . Wisconsin was broken up for scrap in 1922 , while Alabama was expended as a target ship in September 1921 in bombing tests with the US Army Air Service .

= = Design = =

Design work on what became the Illinois class began on 25 March 1896 , when Rear Admiral J. G. Walker convened a board to consider future battleship designs . At this time , the only modern battleship in service was the low @-@ freeboard Indiana ; the high @-@ freeboard battleship Iowa and the low @-@ freeboard Kearsarge class were under construction . As the Navy had little experience with modern battleships , the question settled on whether to repeat one of the low @-@ freeboard designs , which were suitable for coast defense , to build another Iowa , or to request a new design altogether . The Walker Board determined that another coastal battleship design would be imprudent , since the United States had long coastlines and therefore the new ships would need to have better seakeeping qualities than the Indiana or Kearsarge designs .

War games conducted by the fleet led the board to specify a draft of no more than 23 feet (7 @-@ 0 m) to allow the ships to enter the comparatively shallow ports of the Gulf Coast . This limitation had a significant effect on the design ; to meet it , weight would have to be kept to a minimum , which prevented copying the Iowa design outright , unless the main armament was reduced from 13 @-@ inch (330 mm) to 12 in (300 mm) guns . The board was unwilling to make that concession , and so a new design would be required . In addition , the board had determined that the 8 in (200 mm) secondary gun was unnecessary , since though it could penetrate the thinner casemate armor on enemy battleships , it could not deliver a high @-@ explosive shell through the armor . Instead , the board decided that a new 6 in (150 mm) rapid @-@ firing gun would be superior . It would also simplify the ammunition supply , since there would be only one secondary caliber .

The board determined that the armor layout of the Kearsarge design was sufficient and adopted it without change for the new ships . They did discard the superposed turrets of the Kearsarges , though , by mounting most of the secondary guns in a battery amidships . A new turret design for the main battery was adopted ; instead of the old , round Monitor @-@ style turrets of earlier ships , the Illinois design featured a balanced turret with sloped armor on the face . Since it was balanced ,

it would prevent the ship from listing when the battery was trained to either broadside , as was the case with the Indianas . The US Congress authorized three new battleships on 10 June 1896 ; the Bureau of Construction and Repair issued its requests for tenders from the various American shipbuilding companies twelve days later . Contracts for the new ships , to be named Illinois , Alabama , and Wisconsin , were awarded on 28 August .

== General characteristics and machinery ==

The ships of the Illinois class were 368 feet (112 m) long at the waterline and 374 ft (114 m) long overall . They had a beam of 72 ft 3 in (22 @. @ 02 m) and a draft of 23 ft 6 in (7 @. @ 16 m) . They displaced 11 @, @ 565 long tons (11 @, @ 751 t) as designed and up to 12 @, @ 250 long tons (12 @, @ 450 t) at full load . As built , they were fitted with heavy military masts , but these were replaced by cage masts in 1909 . They had a crew of 40 officers and 496 enlisted men . The crew increased to 690 ? 713 later in her career . Steering was controlled with a single rudder , and the ships had a turning radius of 362 yards (331 m) at a speed of 12 knots (22 km / h ; 14 mph) . The ships ' transverse metacentric height was 2 @. @ 7 feet (0 @. @ 82 m) .

The ships were powered by two @- @ shaft triple @- @ expansion steam engines rated at 16 @, @ 000 indicated horsepower (12 @, @ 000 kW) . Steam was provided by eight coal @- @ fired fire @- @ tube boilers that were trunked into a pair of funnels that were arranged side @- @ by @- @ side . They were the last ships of the US Navy to use fire @- @ tube boilers ; subsequent designs changed to more efficient and lighter water @- @ tube boilers . The engines generating a top speed of 16 knots (30 km / h ; 18 mph) , though they exceeded their rated performance on trials , with Illinois reaching 17 @. @ 45 knots (32 @. @ 32 km / h ; 20 @. @ 08 mph) on 12 @, @ 757 ihp (9 @, @ 513 kW) . The ships could store up to 1 @, @ 270 long tons (1 @, @ 290 t) of coal , which allowed them to steam for 4 @, @ 190 nautical miles (7 @, @ 760 km ; 4 @, @ 820 mi) at a cruising speed of 10 knots (19 km / h ; 12 mph) .

== Armament ==

The ships were armed with a main battery of four 13 in (330 mm) / 35 caliber guns guns in two twin gun turrets on the centerline , one forward and aft . These guns fired a 1 @, @ 130 @- @ pound (510 kg) shell with a 500 lb (230 kg) brown powder charge , though this was replaced with a 180 lb (82 kg) smokeless powder charge , which produced a muzzle velocity of 2 @, @ 000 feet per second (610 m / s) . The gun had a range of 12 @, @ 500 yards (11 @, @ 400 m) , though Navy regulations prescribed opening fire at 8 @, @ 000 yards (7 @, @ 300 m) ; even this was beyond the range at which gunners at the time could reliably hit . At a range of 2 @, @ 000 yards (1 @, @ 800 m) , the shells could penetrate 20 inches (510 mm) of steel . The gun was slow @- @ firing , requiring 320 seconds between shots . The guns were mounted in Mark IV turrets , which had a range of elevation of 15 degrees to -5 degrees . The turrets required the guns to return to 2 degrees for loading . Ammunition storage was 60 shells per gun .

The secondary battery consisted of fourteen 6 in (152 mm) / 40 caliber Mark IV guns , which were placed in casemates in the hull . They fired a 105 lb (48 kg) shell at a muzzle velocity of 2 @, @ 150 ft / s (660 m / s) . For close @- @ range defense against torpedo boats , they carried sixteen 57 mm (2 @. @ 2 in) 6 @- @ pounder guns mounted in casemates along the side of the hull and six 37 mm (1 @. @ 5 in) 1 @- @ pounder guns . These guns fired 6 @. @ 03 lb (2 @. @ 74 kg) and 1 @. @ 088 lb (0 @. @ 494 kg) shells , respectively . As was standard for capital ships of the period , the Illinois class carried four 18 in (460 mm) torpedo tubes in above @- @ water , hull mounted torpedo launchers . They were initially equipped with the Mark II whitehead design , which carried a 140 pounds (64 kg) warhead and had a range of 800 yards (730 m) at a speed of 27 knots (50 km / h ; 31 mph) .

== Armor ==

All three ships were protected with Harvey armor ; they were the last ships of the US Navy to rely entirely on Harvey steel . The ships ' main armored belt was 16 @. @ 5 in (419 mm) thick over the magazines and the machinery spaces and reduced to 9 @. @ 5 in (240 mm) on the lower edge . It gradually reduced to 4 in (102 mm) toward the bow . Transverse bulkheads that were 12 in (300 mm) thick connected both ends of the central belt and the main battery barbettes . The ships ' armored deck was 2 @. @ 75 in (70 mm) thick on the flat portion , with 3 in (76 mm) thick sloped sides forward ; the sloped sides aft were 5 in (130 mm) thick . The conning tower had 10 in thick sides with a 2 in (51 mm) thick roof .

The main battery gun turrets had 14 @-@ inch (360 mm) thick faces and 3 in (76 mm) thick roofs , and the supporting barbettes had 15 in (380 mm) of armor plating on their exposed sides . The portion of the barbettes that were behind the belt armor were reduced to 10 in (250 mm) . Armor that was 6 in (150 mm) thick protected the secondary battery , and the lower half of the casemate armor was backed by coal bunkers , which increased the level of protection . Anti @-@ splinter bulkheads that were 1 @. @ 5 in (38 mm) thick were placed between each of the secondary guns to reduce the possibility of one shell from disabling multiple guns .

= = Ships in class = =

= = Service history = =

From their commissioning , Alabama and Illinois served with the North Atlantic Squadron . Both ships made visits to Europe during their early careers , and Illinois served as the flagship of the European Squadron for a short time in 1902 . She accidentally ran aground outside Oslo , Norway , in 1902 and returned to the North Atlantic Squadron in January 1903 . Wisconsin , having been built on the west coast of the United States , instead served in the Pacific Fleet as its flagship . In 1903 , she was transferred to the Asiatic Fleet , and remained there until late 1906 when she returned to California .

Illinois and Alabama steamed with the Great White Fleet on its world cruise that started in December 1907 . Wisconsin joined the fleet after it had rounded South America in July 1908 ; Alabama had to leave the fleet owing to engine damage that required repairs . Alabama was detached along with the battleship Maine ; the two ships continued the journey independently and on a greatly shortened itinerary . The rest of the ships then crossed the Pacific and stopped in Australia , the Philippines , and Japan before continuing on through the Indian Ocean . They transited the Suez Canal and toured the Mediterranean before crossing the Atlantic , arriving bank in Hampton Roads on 22 February 1909 for a naval review with President Theodore Roosevelt .

The three ships were modernized after their return in 1909 ; from 1912 , they were placed in reserve commission and employed as training ships for midshipmen from the US Naval Academy and naval militia units . They continued in this role through World War I , which the United States entered on 6 April 1917 . The ships trained engine room personnel , armed guards for merchant ships , and other specialties . Following the German surrender in November 1918 , most of the battleships of the Atlantic Fleet were used as transports to ferry American soldiers back from France . The Illinois @-@ class ships were not so employed , however , owing to their short range and small size , which would not permit sufficient additional accommodations .

The Illinois @-@ class ships served with the fleet only briefly after the war , still as training ships . By 1920 , they had all been decommissioned . Wisconsin was sold for scrapping in January 1922 and broken up for scrap . Illinois was instead converted into a floating armory for the New York Naval Militia ; renamed Prairie State in 1941 , she served in this role until 1956 , when she too was sold for scrap . Alabama met a more spectacular end as a target ship for bombing experiments conducted with the US Army Air Service in September 1921 . She was hit with several bombs , including white phosphorus weapons and 2 @, @ 000 @-@ pound (910 kg) armor @-@ piercing bombs , before eventually foundering .