

= Brazilian monitor Alagoas =

The Brazilian monitor Alagoas was the third ship of the Pará class river monitors built for the Brazilian Navy during the Paraguayan War in the late 1860s . Alagoas participated in the Passagem de Humaitá in February 1868 and provided fire support for the army for the rest of the war . The ship was assigned to the Upper Uruguay (Portuguese : Alto Uruguai) Flotilla after the war . Alagoas was transferred to Rio de Janeiro in the 1890s and participated in the Fleet Revolt of 1893 ? 94 . The ship was scrapped in 1900 .

= = Design and description = =

The Pará class monitors were designed to meet the need of the Brazilian Navy for small , shallow draft armored ships capable of withstanding heavy fire . The monitor configuration was chosen as a turreted design did not have the same problems engaging enemy ships and fortifications as did the casemate ironclads already in Brazilian service . The oblong gun turret sat on a circular platform that had a central pivot . It was rotated by four men via a system of gears ; 2 @. 25 minutes were required for a full 360 ° rotation . A bronze ram was fitted to these ships as well . The hull was sheathed with Muntz metal to reduce biofouling .

The ships measured 39 meters (127 ft 11 in) long overall , with a beam of 8 @. 54 meters (28 ft 0 in) . They had a draft between of 1 @. 51 ? 1 @. 54 meters (4 ft 11 in ? 5 ft 1 in) and displaced 500 metric tons (490 long tons) . With only 0 @. 3 meters (1 ft 0 in) of freeboard they had to be towed between Rio de Janeiro and their area of operations . Their crew numbered 43 officers and men .

= = = Propulsion = = =

The Pará class ships had two direct @-@ acting steam engines , each driving a single 1 @. 3 @-@ meter (4 ft 3 in) propeller . Their engines were powered by two tubular boilers at a working pressure of 59 psi (407 kPa ; 4 kgf / cm²) . The engines produced a total of 180 indicated horsepower (130 kW) which gave the monitors a maximum speed of 8 knots (15 km / h ; 9 @. 2 mph) in calm waters . The ships carried enough coal for one day 's steaming .

= = = Armament = = =

Alagoas carried a single 70 @-@ pounder Whitworth rifled muzzle loader (RML) in her gun turret . The 70 @-@ pounder gun had a maximum elevation of 15 ° . It had a maximum range of 5 @, 540 meters (6 @, 060 yd) . The 70 @-@ pounder gun weighed 8 @, 582 pounds (3 @, 892 @. 7 kg) and fired a 5 @. 5 @-@ inch (140 mm) shell that weighed 81 pounds (36 @. 7 kg) . Most unusually the gun 's Brazilian @-@ designed iron carriage was designed to pivot vertically at the muzzle ; this was done to minimize the size of the gunport through which splinters and shells could enter .

= = = Armor = = =

The hull of the Pará @-@ class ships was made from three layers of wood that alternated in orientation . It was 457 millimeters (18 @. 0 in) thick and was capped with a 102 @-@ millimeter (4 in) layer of peroba hardwood . The ships had a complete wrought iron waterline belt , 0 @. 91 meters (3 @. 0 ft) high . It had a maximum thickness of 102 millimeters amidships , decreasing to 76 millimeters (3 in) and 51 millimeters (2 in) at the ship 's ends . The curved deck was armored with 12 @. 7 millimeters (0 @. 5 in) of wrought iron .

The gun turret was shaped like a rectangle with rounded corners . It was built much like the hull , but the front of the turret was protected by 152 millimeters (6 in) of armor , the sides by 102 millimeters and the rear by 76 millimeters . Its roof and the exposed portions of the platform it rested

upon were protected by 12 @.@ 7 millimeters of armor . The armored pilothouse was positioned ahead of the turret .

= = Service = =

Alagoas was laid down at the Arsenal de Marinha da Côrte in Rio de Janeiro on 8 December 1866 , during the Paraguayan War , which saw Argentina and Brazil allied against Paraguay . She was launched on 29 October 1867 and completed in November 1867 . She arrived on the Paraná River in January 1868 , although her passage further north was barred by the Paraguayan fortifications at Humaitá . On 19 February 1868 , six Brazilian ironclads , including Alagoas , steamed past Humaitá at night . Alagoas and her two sister ships , Rio Grande and Pará were lashed to the larger ironclads in case any engines were disabled by the Paraguayan guns . Barroso led with Rio Grande , followed by Bahia with Alagoas and Tamandaré with Pará . The cable tying Alagoas to Bahia was severed by Paraguayan shells and the monitor drifted down below the guns . The commander of the Alagoas was ordered not to attempt to pass the guns during daylight , but disregarded this order and successfully rendezvoused with the rest of the squadron upstream of the fortifications . Both Alagoas , which had taken an estimated 200 hits , and Pará had to be beached after passing the fortress to prevent them from sinking . Alagoas was under repair at São José do Cerrito until mid @-@ March . Accompanied by Tamandaré , Alagoas bombarded and destroyed the Paraguayan artillery battery at Timbó , upstream of Humanité , on 23 March . The monitor bombarded artillery positions defending the Tebicuary River in July and again in August .

On 15 October she bombarded Angostura Fort , south of Asunción , in company with Brasil , Silvado , Pará and her sister Ceará .

After the war Alagoas was assigned to the newly formed Alto Uruguai Flotilla , based at Itaquí . In the 1880s the ship 's armament was reinforced with a pair of 11 @-@ millimeter (0 @.@ 43 in) machine guns . Alagoas was transferred to Rio de Janeiro in the 1890s and joined the rebels in the Fleet Revolt of 1893 ? 94 . Her engines had been removed by this point and she had to be towed into position to fire on the government forts . She was scrapped in 1900 .