

= Brazilian ironclad Barroso =

The Brazilian ironclad Barroso was an armoured gunboat built for the Brazilian Navy during the Paraguayan War in the mid 1860s . Barroso bombarded Paraguayan fortifications in 1866 and 1867 a number of times before she participated in the Passagem de Humaitá in February 1868 . Afterwards the ship provided fire support for the army for the rest of the war . She was assigned to the Mato Grosso Flotilla after the war . Barroso was decommissioned in 1882 , but was not scrapped until 1937 .

= = Design and description = =

Barroso was designed to meet the need of the Brazilian Navy for a small , simple , shallow draft armored ship capable of withstanding heavy fire . The ship is best characterized as a central battery design because the casemate did not extend the length of the ship . A bronze ram , 1 @ 8 meters (5 ft 11 in) long , was fitted . The hull was sheathed with Muntz metal to reduce biofouling . For sea passages the ship 's free board could be increased to 1 @ 7 meters (5 ft 7 in) by use of removable bulwarks 1 @ 1 meters (3 ft 7 in) high . On riverine operations , the bulkwarks and the ship 's masts were usually removed .

The ship measured 61 @ 44 meters (201 ft 7 in) long overall , with a beam of 10 @ 97 meters (36 ft 0 in) and had a mean draft of 2 @ 74 meters (9 ft 0 in) . Barosso normally displaced 980 metric tons (960 long tons) and 1 @ 354 metric tons (1 @ 333 long tons) at deep load . Her crew numbered 149 officers and men .

= = = Propulsion = = =

Barroso had a single John Penn & Sons 2 @ cylinder steam engine driving a single 2 @ bladed propeller . Her engine was powered by two tubular boilers . The engine produced a total of 420 indicated horsepower (310 kW) which gave the ship a maximum speed of 9 knots (17 km / h ; 10 mph) . The ship 's funnel was mounted directly in front of her casemate . Barroso carried enough coal for six days ' steaming .

= = = Armament = = =

Barroso mounted one 120 @ pounder Whitworth and two 70 @ pounder Whitworth rifled muzzle loaders , two 68 @ pounder and two 12 @ pounder smoothbore guns in her casemate . To minimize the possibility of shells or splinters entering the casemate through the gun ports they were as small as possible , allowing only a 24 ° -arc of fire for each gun . The rectangular , 9 @ 8 @ meter (32 ft 2 in) casemate had two gun ports on each side as well as the front and rear .

The 7 @ inch (178 mm) shell of the 120 @ pounder gun weighed 151 pounds (68 @ 5 kg) while the gun itself weighed 16 @ 660 pounds (7 @ 556 @ 8 kg) . 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) . The 7 @ 9 @ inch (201 mm) solid shot of the 68 @ pounder gun weighed approximately 68 pounds (30 @ 8 kg) while the gun itself weighed 10 @ 640 pounds (4 @ 826 @ 2 kg) . The gun had a range of 3 @ 200 yards (2 @ 900 m) at an elevation of 12 ° . The exact type of 12 @ pounder gun is not known . All of the guns could fire both solid shot and explosive shells .

= = = Armor = = =

The hull of Barroso was made from three layers of wood , each 203 millimeters (8 @ 0 in) thick . The ship had a complete wrought iron waterline belt , 1 @ 52 meters (5 @ 0 ft) high . It had a maximum thickness of 102 millimeters (4 in) covering the machinery and magazines , 51 millimeters (2 in) elsewhere . The curved deck , as well as the roof of the casemate , was armoured

with 12 @.@ 7 millimeters (0 @.@ 5 in) of wrought iron . The casemate was protected by 102 millimetres of armour on all four sides , backed by 609 millimeters (24 @.@ 0 in) of wood capped with a 102 mm layer of peroba hardwood .

= = Service = =

Barroso was laid down at the Arsenal de Marinha da Côte in Rio de Janeiro on 21 February 1865 . She was launched on 4 November 1865 and completed on 11 January 1866 . On 26 ? 28 March 1866 she bombarded the Paraguayan fortifications at Curupaity where she was hit 20 times , but not significantly damaged . The ship bombarded Curuzu Fort , downstream of Curupaity , on 1 September in company with the ironclads Rio de Janeiro , Brasil , Lima Barros , Tamandaré , and the monitor Bahia . The ships bombarded Curupaity again on 4 September and Barroso was hit four more times . On 22 September the Allied army attempted to storm the fortifications at Curupaity , supported by fire from the Brazilian ironclads , but was rebuffed with heavy losses . Between 24 and 29 December Barroso , Tamandaré , Brasil , and 11 gunboats bombarded Curuzu Fort again .

The Brazilians broke through the river defences at Curupaity during daylight on 15 August 1867 with Barroso , Tamanadaré , and eight other ironclads . The ships were hit 256 times , but not seriously damaged , and only suffered 10 killed and 22 wounded . They repeated the operation again on 9 September . On 19 February 1868 six Brazilian ironclads , including Barroso , sailed past Humaitá at night . Three Pará @-@ class river monitors , Rio Grande , Alagoas 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 . Barroso continued upstream with the other undamaged ships and they bombarded Asunción on 24 February . On 23 March Rio Grande and Barroso sank the steamer Igurey and both ships were boarded by Paraguayan soldiers on the evening of 9 July , although they managed to repel the boarders .

After the war the ship served with the Mato Grosso Flotilla and was decommissioned in 1882 . However , Barroso was not scrapped until 1937 .