= Hector @-@ class ironclad =

The Hector @-@ class ironclads were a pair of armoured frigates built for the Royal Navy (RN) in the 1860s . Hector was completed in 1864 and assigned to the Channel Fleet until she began a refit in 1867 . Valiant 's builder went bankrupt and delayed her launching by a year . The ship then had to wait almost another five years to receive her guns and be commissioned . Both ships were assigned to the Reserve Fleet from 1868 until they were paid off in 1885 ? 86 . They were mobilized during the Russo @-@ Turkish War of 1877 ? 78 , but saw no action . They were hulked in the late 1890s and assigned to shore establishments . Hector was scrapped in 1905 , but Valiant was converted into a floating oil tank in 1926 until she was sold for scrap in 1956 .

= = Design and description = =

The Hector @-@ class ironclads , like their immediate predecessors , the Defence class , were designed as smaller and cheaper versions of the Warrior @-@ class armoured frigates . They were modified versions of the Defence class with additional armour and more powerful engines .
The ships were 280 feet 2 inches (85 @.@ 4 m) long between perpendiculars , had a beam of 56 feet 5 inches (17 @.@ 2 m) and a draft of 26 feet 2 inches (8 @.@ 0 m) . They were 300 long tons (300 t) overweight and displaced 7 @,@ 000 long tons (7 @,@ 100 t) . The hull was subdivided by watertight transverse bulkheads into 92 compartments and had a double bottom underneath the engine and boiler rooms . The ships were designed with a very low centre of gravity and had a metacentric height of 4 feet 6 inches (1 @.@ 4 m) . While handy in manoeuvring they rolled quite badly . The ships had a crew of 530 officers and enlisted men .

= = = Propulsion = = =

Each of the Hector @-@ class ships had one 2 @-@ cylinder horizontal return connecting @-@ rod steam engine driving a single 18 @-@ foot (5 @.@ 5 m) propeller . Six boilers provided steam to the engine at a working pressure of 22 ? 25 psi (152 ? 172 kPa ; 2 ? 2 kgf / cm2) . The engine produced a total of 3 @,@ 256 ? 3 @,@ 560 indicated horsepower (2 @,@ 428 ? 2 @,@ 655 kW) . During her sea trials on 23 February 1864 , Hector had a maximum speed of 12 @.@ 36 knots (22 @.@ 89 km / h ; 14 @.@ 22 mph) and Valiant made 12 @.@ 65 knots (23 @.@ 43 km / h ; 14 @.@ 56 mph) on 18 September 1865 . The ships carried only 450 long tons (460 t) of coal because they were overweight , enough to steam 800 nautical miles (1 @,@ 500 km ; 920 mi) at full speed .
The armoured frigates were barque @-@ rigged and had a sail area of 24 @,@ 500 square feet (2 @,@ 276 m2) . Their funnel was semi @-@ retractable to reduce wind resistance while under sail alone . They was designed to allow their propeller to be hoisted up into the stern of the ship to reduce drag while under sail , but the hoisting gear was never fitted on either ship .

= = = Armament = = =

The armament of the Hector @-@ class ships was intended to be 32 smoothbore , muzzle @-@ loading 68 @-@ pounder guns , 15 on each side on the main deck and one each fore and aft as chase guns on the upper deck . This was modified during Hector 's construction to four rifled 110 @-@ pounder breech @-@ loading guns mounted on the upper deck and twenty @-@ four 68 @-@ pounders on the broadside . Valiant , due to the delays in her construction and a shortage of guns , never received any of these guns . The breech @-@ loading guns were a new design from Armstrong and much was hoped for them . To partially alleviate their overweight condition the ships were not fully armed and only received four 110 @-@ pounders on the upper deck and twenty 68 @-@ pounders on the main deck behind armour . Firing tests carried out in September 1861 against an armoured target , however , proved that the 110 @-@ pounder was inferior to the 68 @-@ pounder smoothbore gun in armour penetration and repeated incidents of breech explosions during

the Battles for Shimonoseki and the Bombardment of Kagoshima in 1863 ? 64 caused the navy to withdraw the gun from service shortly afterwards .

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 muzzle velocity of 1 @,@ 579 ft / s (481 m / s) and had a range of 3 @,@ 200 yards (2 @,@ 900 m) at an elevation of 12 ° . The 7 @-@ inch (178 mm) shell of the 110 @-@ pounder Armstrong breech @-@ loader weighed 107 ? 110 pounds (48 @.@ 5 ? 49 @.@ 9 kg) . It had a muzzle velocity of 1 @,@ 150 ft / s (350 m / s) and , at an elevation of 11 @.@ 25 ° , a maximum range of 4 @,@ 000 yards (3 @,@ 700 m) . The 110 @-@ pounder gun weighed 9 @,@ 520 pounds (4 @,@ 318 @.@ 2 kg) . All of the guns could fire both solid shot and explosive shells .

Hector was rearmed during her 1867 ? 68 refit with sixteen 7 @-@ inch and two 8 @-@ inch (203 mm) rifled muzzle @-@ loading guns . Valiant received these guns as her initial armament . The two 8 @-@ inch guns were mounted on the quarterdeck where they could be fought in all weathers and four 7 @-@ inch guns were also fitted on the upper deck . The remaining twelve 7 @-@ inch guns were carried on the main deck . The shell of the 15 @-@ calibre 8 @-@ inch gun weighed 175 pounds (79 @.@ 4 kg) while the gun itself weighed 9 long tons (9 @.@ 1 t) . It had a muzzle velocity of 1 @,@ 410 ft / s (430 m / s) and was credited with the ability to penetrate 9 @.@ 6 inches (244 mm) of wrought iron armour at the muzzle . The 16 @-@ calibre 7 @-@ inch gun weighed 6 @.@ 5 long tons (6 @.@ 6 t) and fired a 112 pounds (50 @.@ 8 kg) shell . It was credited with the nominal ability to penetrate 7 @.@ 7 @-@ inch (196 mm) armour .

= = = Armour = = =

The Hector @-@ class ships had a wrought iron waterline armour belt , 4 @.@ 5 inches (114 mm) thick , that covered 216 feet (65 @.@ 8 m) amidships and left the bow and stern unprotected . To protect against raking fire the belt was closed off by 4 @.@ 5 @-@ inch transverse bulkheads at each end at lower deck level . The armour extended to 5 feet 8 inches (1 @.@ 7 m) below the waterline . The main deck was protected by a strake of armour that ran the full length of the ship . Amidships , it was 4 @.@ 5 @-@ inch thick for a length of 216 feet and tapered to a thickness of 2 @.@ 5 inches (64 mm) to the ends of the ship . The armour was backed by 18 inches (460 mm) of teak . The lack of armour at the stern meant that the steering gear was very vulnerable .

= = Ships = =

= = Construction and service = =

Whilst Valiant was under construction , Westwood , Baillie went bankrupt in November 1861 and their shipyard was taken over by the Thames Ironworks . This delayed her launching by about a year and a shortage of muzzle @-@ loading guns delayed her completion by nearly five years . Hector , in contrast , served with the Channel Fleet from commissioning until 1867 , when she was paid off to be re @-@ armed and to refit . She formed part of the Southern Reserve Fleet between 1868 until 1886 much like Valiant 's service as the First Reserve guard ship in Southern Ireland after her commissioning , where she remained until 1885 . Both ships did little of significance until they were assigned to the Particular Service Squadron , commanded by Admiral Geoffrey Hornby , from June to August 1878 during the Russian war scare during the Russo @-@ Turkish War .

Hector was assigned as Queen Victoria 's guard ship nearly every summer during this period when the Queen and her family , were in residence in Osborne House on the Isle of Wight . She was paid off at Portsmouth in 1886 and remained there until 1900 when she briefly became part of the HMS Vernon torpedo school as a store hulk . Hector became the first British warship to have wireless telegraphy installed when she conducted the first trials of the new equipment for the Royal Navy .

Valiant was paid off in 1885 , and she was assigned to the HMS Indus stoker training establishment

in 1897 , briefly losing her name , before being renamed as Indus IV in 1904 . The ship was converted to a kite balloon storeship in 1915 , during World War I , and her name was changed to HMS Valiant III . She was offered for sale in 1922 , but there were no takers so the ship was converted into a floating oil tank in 1926 and towed to Hamoaze .