

= Cyclops @-@ class monitor =

The Cyclops class monitor was a group of four ironclad breastwork monitors built for the Royal Navy during the 1870s . They were slightly modified versions of the Cerberus @-@ class monitors . The ships were ordered to satisfy demands for local defence during the war scare of 1870 , but the pace of construction slowed down tremendously as the perceived threat of war declined . The Cyclops @-@ class monitors spent most of their careers in reserve and were finally sold off in 1903 .

= = Design and description = =

The immediate reason why these ships were ordered was for local coast defence during the war scare during the Franco @-@ Prussian War of 1870 , but they were chosen for several other reasons . They were small and cheap , and their shallow draft was thought to limit them to defensive operations , which appealed to economy and defence @-@ minded Members of Parliament . The Admiralty , however , envisioned them attacking shallow @-@ water ports that larger ironclads could not enter and operating in the shallow waters of the Baltic Sea .

The ships used the basic design of the Cerberus @-@ class breastwork monitors to reduce design and construction time . Their hulls were completed very quickly , but the pace of building reduced as the likelihood of their immediate use diminished . They were delivered to the Royal dockyards in 1872 and commissioned for fitting out , but a number of years elapsed before that process was completed as little sense of urgency remained .

The ships had an length between perpendiculars of 225 feet (68 @. @ 6 m) , a beam of 45 feet (13 @. @ 7 m) , and a draught of 16 feet 3 inches (4 @. @ 95 m) at deep load . They displaced 3 @, @ 480 long tons (3 @, @ 540 t) . Their crew consisted of 156 officers and men .

The Cyclops @-@ class ships and other ships of her type were described by Admiral George Alexander Ballard as being like " full @-@ armoured knights riding on donkeys , easy to avoid but bad to close with . " While not unfit to face heavy weather their decks were frequently awash in even a moderate sea . Their accommodations were rated the worst in the fleet , referred to by ordinary seamen as " ratholes with tinned air " .

= = = Propulsion = = =

The Cyclops @-@ class ships had two steam engines , each driving a single 12 @-@ foot (3 @. @ 7 m) propeller . Cyclops and Hydra had 4 @-@ cylinder inverted compound steam engines made by John Elder that had a working pressure of 60 psi (414 kPa ; 4 kgf / cm²) . The engines produced a total of 1 @, @ 472 ? 1 @, @ 528 indicated horsepower (1 @, @ 098 ? 1 @, @ 139 kW) on sea trials which gave the ships a maximum speed around 11 knots (20 km / h ; 13 mph) . The engines used by Hecate and Gorgon were built by Ravenhill and were simple horizontal 4 @-@ cylinder direct acting steam engines . Their working pressure was 34 psi (234 kPa ; 2 kgf / cm²) and they produced a total of 1 @, @ 579 ? 1 @, @ 709 indicated horsepower (1 @, @ 177 ? 1 @, @ 274 kW) for about the same speed . The first pair of ships carried 250 long tons (250 t) of coal while the second pair carried 270 long tons (270 t) . This was enough to steam 3 @, @ 000 nmi (5 @, @ 600 km ; 3 @, @ 500 mi) at 10 kn (19 km / h ; 12 mph) .

= = = Armament = = =

The ships mounted a pair of 10 @-@ inch rifled muzzle @-@ loading guns in each turret . The shell of the 10 @-@ inch (254 mm) gun weighed 407 pounds (184 @. @ 6 kg) while the gun itself weighed 18 long tons (18 t) . The gun had a muzzle velocity of 1 @, @ 365 ft / s (416 m / s) and was credited with the ability to penetrate a nominal 12 @. @ 9 in (330 mm) of wrought iron armour at the muzzle . The guns could fire both solid shot and explosive shells . They were mounted on compound pivoting carriages that used hydraulic jacks to elevate and depress the guns .

== Armour ==

The Cyclops class ships had a complete waterline belt of wrought iron that was 8 inches (203 mm) thick amidships and thinned to 6 inches (152 mm) at the ends . The superstructure and conning tower was fully armoured , the reason it was called a breastwork , with 8 ? 9 inches (203 ? 229 mm) of wrought iron . The gun turrets had 10 inches on their faces and nine inches on the sides and rear . All of the vertical armour was backed by 9 ? 11 inches (229 ? 279 mm) of teak . The decks were 1 @. 5 inches (38 @. 1 mm) thick .

== Construction ==

Each of the ships was towed to Devonport from the builders in 1872 . They were commissioned and placed into reserve until finally completed .

== Refit ==

Although a recommendation had been made while the ships were still under construction to extend the superstructure out to the sides of the ship to improve their stability and habitability , this was not acted upon until they were refitted during the 1880s . This refit also strengthened the breastwork and upper decks , added another watertight bulkhead as well as a false keel . Four quick @-@ firing 3 @-@ pounder Hotchkiss guns were added on the breastwork for torpedo boat defence as well as five machine guns and several searchlights . This increased their crew to approximately 191 men and added 80 long tons (81 t) to their displacement .

== Service ==

HMS Gorgon was the first ship completed and she served as tender to HMS Cambridge , the gunnery school ship at Devonport , from 1874 to 1877 . All four ships were commissioned between April and August 1878 during the war scare during the Russo @-@ Turkish War for service with Admiral Sir Cooper Key 's Particular Service Squadron in Portland Harbour . She resumed her duties as tender to HMS Cambridge until she was refitted in 1888 ? 89 . All four of the ships of the class participated in the annual fleet manoeuvres in 1887 , 1889 ? 90 and 1892 ; in between times they were in Fleet Reserve . HMS Gorgon , like all of her sisters , was placed on the non @-@ effective list in 1901 and sold in 1903 for £ 8 @, @ 400 .

HMS Hydra was the next ship to be completed . After her service with the Particular Service Squadron she was paid off at Sheerness and served as tender to HMS Duncan . The ship was refitted in 1888 ? 89 and was in Fleet Reserve at Chatham until 1901 .

HMS Cyclops , the lead ship of the class , was the third ship to be completed . She was placed in 1st Reserve after her completion . The ship was paid off at Chatham in August 1878 and refitted in 1887 ? 89 .

HMS Hecate was the fourth and final ship of the class to be completed . She paid off at Devonport after her service with the Particular Service Squadron . The ship was refitted in 1885 ? 86 and was placed into reserve at Devonport afterwards .