naval warfare in ancient Greece

In the earliest centuries of Greek history (ca. 1600–700 BCE), warships served primarily as troop transports—the troops in question were the oarsmen, who would leave their benches to go ashore as infantry. Eventually the sea itself became the scene of fighting, as defending states learned to send out ships to oppose an oncoming enemy fleet on the water. The historian Thucydides (1) writes that the earliest remembered sea battle was fought in about 664 BCE between the navies of two Greek states, Corinth and Corcyra. Thucydides mentions another early naval battle, around 600 BCE, between Phocaean Greeks and Carthaginians in the western Mediterranean.

Such early sea fights, tactically crude, were probably conducted as infantry battles on water—that is, the opposing fleets would crowd together, allowing boarding parties of spearmen to fight it out hand to hand. But naval warfare was changed by two developments around 700–430 BCE: the invention and gradual spread of the superior Greek warship type known as the trireme; and the acceptance of ramming tactics over boarding tactics, as a more effective way to destroy the enemy without sustaining harm oneself. The famous Greek sea battles of the 400s BCE—such as the Battle of Salamis (1) (480 BCE)—featured trireme warships maneuvering to ram and sink the enemy.

The trireme was invented in response to a specific challenge: how to fit as many oarsmen as possible into a vessel that would still be seaworthy. Throughout Greek history, the oar was the main power source for any warship. Most war vessels carried one midship mast, capable of hoisting a single square sail; but the mast was not always used and typically could be removed. The oarsmen powered the ship through battle and in passage through contrary winds or calms.

The more oarsmen, the greater the power—up to a point. The practical limit in length for an undecked wooden ship is about 100 feet; beyond that, the hull is liable to break apart. In a simple ship design, this 100-foot limit confined the total number of rowers to about 50—whence the Greek term pentekontoros, or penteconter, meaning a 50-oared, single-leveled vessel. Images in vase paintings and other surviving art show penteconters as resembling Viking longboats, with the oarsmen seated along one level in the open air. There was no deck—that is, no layer of planking across the hull's top. The rowers sat in double file—two men side by side on each bench, each man handling his own oar, which projected out (left or right) through thole-pins above the gunwale.

Around 900–700 BCE, Greek shipwrights—probably copying Phoenician designs—learned to fit more oarsmen into a 100-foot hull. They did so by laying the benches at two different levels (still without any deck) and providing oarports below the gunwales for the lower row of oars.

This two-leveled type of Greek warship is known by modern scholars as the bireme. But the real breakthrough came around 700 BCE, with the Greeks' development of a three-leveled warship (again, probably based on a Phoenician model). This was the ship that the Greeks called the trieres (three-rowing or three-fitted) and that is now called the trireme—the ancient Greek warship par excellence.

However, the trireme caught on slowly. Penteconters, cheaper and easier to build, were still being used by some Greek states as late as the Persian Wars (490–479 BCE). The universal change to trireme navies came after 479 BCE.

A trireme typically carried 160 to 170 oarsmen, far more than prior designs could hold. The oars emerged in three rows on each side—one above the gunwale and two below. The added power meant greater speed, hence greater maneuverability in battle. The ample power also meant that triremes could take on more weight; therefore, they carried such array as partial decking fore and aft, vertical defensive screens, and an overhead central catwalk running the length of the vessel. These structures created room for a contingent of archers and hoplites, who did not row but served purely as ship's soldiers, to aim projectiles in battle and fend off enemy boarding attempts. By the time of the Peloponnesian War, the number of shipboard hoplites had settled at 10. Including crew, officers, and soldiers, the trireme might carry 215 men in all.

With its partial decking, the trireme hull could be built to about 120 feet long. The design was narrow, with a width at the gunwales of only 12 to 16 feet. There was scant room for passengers or any cargo aside from drinking water—most food supplies had to come from shore or from supply ships. A trireme had no accommodations for eating or resting. Confined
to their crowded benches, the crew could not easily spend a night at sea; to cook and sleep, they had to camp ashore every night.

This basic restriction applied to all ancient warships and influenced all Greek naval strategy. A navy could conduct operations only within range of a friendly harbor or beaching place. To fight an offensive naval war, a state would have to create and maintain forward naval bases (as Sparta did against Athenian interests in western Asia Minor in the later Peloponnesian War, 413–404 BCE). Relatedly, naval blockades of enemy harbors tended to be faulty, since fleets could not ride off the coast day and night. Ramming tactics favored the faster and more skillful ship or fleet. The Greek ship's ram was a wooden post—sheathed in bronze, often styled as a boar's head—jutting forward of the prow at water level. The challenge in ramming was to avoid a head-on collision (which could sink both ships) and instead strike the enemy vessel abeam or astern. The classic ramming maneuver was called diekplous, "going through and out." When two opposing fleets moved to battle, each side would typically deploy in rows abreast. In diekplous, a fleet would suddenly shift from row-abreast to single-file formation, with ships prow to stern, and then veer inward, perhaps by squadrons, to penetrate the enemy's row-abreast formation. Proceeding through the enemy line, the attackers would come around to ram from behind.

Because the diekplous required sea room, a commander wishing to defend against this tactic could seek to offer battle inside a confined area—as the Greeks did at Salamis, against a superior Persian fleet. A way to equalize terms further was to try to compel a battle of boarding tactics—as the Syracusans did in their three victories over the Athenians inside Syracuse's harbor (414–413 BCE). A commander intent on boarding tactics might outfit his ships beforehand with raised platforms to hold more soldiers. Generally, the superior-skilled fleets in Greek naval history sought to force battle on the open sea, where there was room for ramming by diekplous.

A fleet's skill and speed depended on crews' training and ships' maintenance (since wooden hulls need periodic drying out, caulking, etc.). The top Greek naval power of the 400s–early 300s BCE was the city of Athens, with its standing fleet of 200 triremes (ca. 431 BCE) and its elaborate shipbuilding and drydocking facilities at Piraeus. The creator of this navy was the Athenian statesman Themistokles, ca. 488 BCE. The heir to Themistokles' program was the statesman Perikles (active around 462–429 BCE). Unlike many Greek states that employed foreign mercenary oarsmen, Athens employed its lower-income citizens as rowers. This military reliance on large number of poorer citizens effectively increased their political power in the democracy.

Athens aside, the important navies in Greek history down to the late 300s BCE belonged to Corinth, Corcyra, Samos, Phocaea, Aegina, Chios, Lesbos, and Syracuse. Sparta, not originally a sea power, developed a navy with Persian funding in order to defeat Athens in the Peloponnesian War. Among non-Greek peoples, the Phoenicians (ruled by Persia by the mid-500s BCE) were the Greeks' most dangerous enemies at sea. Farther west, the Greeks' naval opponents included the Etruscans and those Phoenician colonists, the Carthaginians. New navies and naval tactics arose in the later 300s BCE. Partly as a result of Alexander the Great's studious contact with powerful Phoenician fleets (332 BCE), Greek shipwrights began building warships larger than the trireme. There are types called "four-rowing" (teteres), "five-rowing" (penteres), and others, eventually up to "16," and even "30" and "40." Modern scholars believe that these names describe three-leveled ships containing multiple oarsmen per oar at one or more levels. The "five" type, usually called the quinquereme, may have employed two men per oar on the upper two rows, with one man per oar on the lowest row. The quinquereme was favored by Greek and Roman navies of the Hellenistic Age (300–150 BCE).

The late 300s–200s BCE saw two Hellenistic empires battling for control of the eastern Mediterranean—Ptolemaic Egypt and the dynasty of Antigonus (1) (based first in Asia Minor, then in Macedon). The best-known sea battle of this era is also called the Battle of Salamis, fought near a different Salamis, on the island of Cyprus, in 306 BCE. There a fleet of 108 warships under Antigonus's son Demetrius Poliorcetes destroyed 140 ships of Ptolemy (1). This era also saw the rise of Rhodes as a naval and mercantile power.

Ramming remained the primary battle tactic, but a more remote means of attack emerged in the form of shipborne catapults, shooting arrows. Too bulky for a trireme or quinquereme, a catapult might be fitted onto a merchant ship or onto two warships lashed together. Historians report the first use of such naval artillery at Alexander the Great's siege of Tyre. Demetrius Poliorcetes used naval arrow-cannons in his Battle of Cyprian Salamis and at his siege of Rhodes (305–304 BCE). Later navies of the Hellenistic era probably also employed rock-throwing catapults.

The deadly use of fire against wooden ships is at least as old as the Peloponnesian War, when the Syracusans sent out a fire-ship against Athenian vessels in Syracuse harbor (413 BCE). Later, around 190 BCE, Rhodian warships carried firepots—containers of pitch, set ablaze and then slung by long poles onto nearby enemy ships. But the more fiendish tactic...
of shooting burning naphtha ("Greek fire") across the water at enemy vessels was not invented until the late 600s CE, by the medieval Byzantines.

In the second half of the 200s BCE, naval control of the Mediterranean was won by the Romans, who had copied and adapted the designs and tactics of Hellenistic and Carthaginian navies.

Further Information


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