The Development of Ancient Greek Naval Warfare

A Study of the Technical, Social, Historical, and Political Developments in Ancient Greek Naval Warfare until the End of The Peloponnesian War

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Introduction

In my thesis I analyze naval development in ancient Greece, spanning its earliest history in the Minoan period through the Classical period, down to the end of the Peloponnesian War. I discuss three main aspects: the technical development of shipbuilding, focusing on warships and their adaptations; the role that shipping and the navy had on the social orders of the Greeks; and finally I will discuss the historical/political conditions in Greece that were affected by naval warfare. I shall try to cover each of these topics in detail, with a combination of ancient sources, archaeological evidence, and secondary scholarly work. I shall attempt to present a selection of archaeological scholarship in order to assist my examination in order to show the changes that occurred as Greeks developed new technology and new advances in naval architecture. Specifically I shall analyze the trireme, the main warship of the Classical period, and how this ship helped to bring Athens from a small polis to the supreme naval superpower of the Mediterranean in the 5th century BCE.

Chapter I: The Technical Development of Ancient Greek Ships and Navies

The development of naval forces was integral in ancient Greek culture. Leaders and poleis depended on their warships for protection and to exert their political ambitions regarding neighboring states. As poleis advanced their technology and increased their wealth, they were able to improve their warships. This culminated in the development of the trireme, the standard warship of the Classical period. The trireme was developed based on new technology borrowed from other warships of other
Mediterranean cultures. Other nations around the Mediterranean, such as the Phoenicians and Carthaginians, had possessed much stronger navies throughout the Archaic period (750-480 BCE). The Greeks developed their warships following the lead of these states, and, with technological advances, they eventually usurped their primacy.

The earliest use of warships in Greece was for the transportation of armed men and their equipment to a battle on land.¹ The earliest representations, as seen on a terra-cotta material, depict warships with a “frying-pan” like body (Figure 1).² In such depictions, there are sometimes no oarsmen or men at all on board, but there are marks identifying that the warship was oared. Such representation shows that, at this time, in the 3rd millennium BCE, ships were already becoming large and sophisticated enough for transport of men and arms or goods across moderate distances. Shipbuilding had gone from early rafts and small boats to something more sizable and to vessels adequate for a degree of maritime enforcement and territorial protection. Although the ship, which I reproduce, was not advanced in any real military capacity, it was the beginning of a necessary understanding by early Bronze Age peoples that ships could be crucial in conflict. Several graffiti representations have also been found spanning the 2nd millennium BCE that depict similar representations (Figures 2, 3, and 4).³

By the Mycenaean period, the use of warships was already an important part of a defensive strategy.⁴ A depiction discovered at Pylos shows a ram on the front of a

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³ Casson, *Ships and Seamanship* figures 24, 25, 27.
⁴ Morrison, *Greek Oared Ships* pg 7.
warship which demonstrates specialization for warfare (Figure 5). The Mycenaeans had contributed greatly to the naval technology of this period if they were the first to utilize this weapon, since it would later be used as the main means of attack in Greek sea warfare. A vase, discovered at Asine and dating to 1200-1100 BCE also clearly shows an oared ship with a protruding ram (Figure 6).

Although we have little evidence for this period, we can clearly see the beginnings of naval technology, and the first understanding of its potential impact. The increase in early depictions of warships shows the shift towards sea-going vessels and the comprehension of their importance. From the increase in the frequency of depictions of warships on vases, we can surmise that the Mycenaeans’ dependency on them had escalated. These images also show us that at this time Greeks were using oar-propelled, one-level ships and a broad, square sail for sailing. It is unlikely that they were using the rams for ship-to-ship battles, since ferrying armed men supported the more routine land-based combat. However, they were beginning to find a way to transport men to battle sites and colonize new territories. Although ships came in different sizes, such as 20-oared or even 100-oared, the most common type was the 50-oared ship, or pentekonter.

The succeeding Geometric period (950-750 BCE) offers many more physical artifacts. During this period the remains of Greek art are more extensive, and many more depictions of ships have been discovered on pottery remains. In particular, the

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5 Casson *Ships and Seamanship* figure 28.
6 Casson *Ships and Seamanship* figure 29.
7 Homer, *The Iliad* 1.309.
9 Casson, *Ships and Seamanship* pg 44.
Dipylon group of vases, of the Late Geometric I Period (760-735 BCE) depict several funeral and war scenes. These were discovered in the Dipylon cemetery of the Kerameikos at Athens. These ships are difficult to interpret because of the distortion of scale and proportion of men to ships, but certain important details can be seen. These vases depict battle scenes, with armed men both on the ships and near them. They also show many corpses and a funeral scene (Figure 7), although they do not directly depict any naval battles. Therefore one might assume that navies were not yet capable of ship-to-ship combat. More importantly, they were still being used mainly for transportation to battle scenes.

Some of the most important details we can adduce from these scenes are the high curving stems at both the bow and stern of the ships, the elongated ram at the front of the ship under the curving stem, and the development of a second level of rowers. Later depictions in this period show an upper and lower level of oarsmen (Figures 8, 9, and 10). In this depiction it is not clear that the ship is two-leveled, but that conclusion can certainly be inferred. Although rowers are only depicted on the top of the ship, there are a series of ports running beneath them. This can be suggestive that the lower level is there, but unoccupied. Or we can surmise that the painter could not fit these rowers in because of the size of the other oarsmen, a problem of proportion which was evident throughout this period. More clearly, in two Attic pottery fragments (Figures 9 and 10) two levels of rowers are depicted. In these fragments we can see rowers portrayed in echelon order, not immediately above or below the others. Their oars also are both

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10 Morrison, *Greek Oared Ships* pg 12.
11 Morrison, *Greek Oared Ships* figure 3a.
12 Morrison, *Greek Oared Ships* figure 7d, 7e, 7f.
13 Morrison, *Greek Oared Ships* figures 7e and 7f.
extended out on the same side, so it is clear that they are not rowers on both sides of
the ship but two banks on one side. Therefore, we can clearly see that the painters are
depicting two-leveled ships, another important development in shipbuilding. This
advance enabled the Greeks to row further and faster and bring more men to battle.

In the Archaic period, important depictions come from black-figured Attic vases. The
best depiction we have is from a vase (Figure 11) by the painter Kleitias (c. 600- c.
550 BCE).\(^\text{14}\) This style of warship-depiction was copied for the rest of the sixth century.
On the vase, Kleitias shows a one-level ship with several details such as tholepins for
the oars, and lines indicating wales, broad planks for reinforcing the ship’s hull. Another
important artifact of this period (Figures 12 and 13) is the Nikosthenes Cup (c. 520- c.
510 BCE),\(^\text{15}\) which shows two ships, both with lower-decked tholepins, indicating oars,
on the lower level as well. This example shows the increasing sophistication of the
artists’ rendering, as well as how much more advanced and refined the pentekonters
were becoming. We can also see undisputed examples (Figures 14, 15, and 16) of two-
level ships,\(^\text{16}\) making this date (the 6th century) the latest possible date for their
development.

As the 5th century approached, there was an important change in naval
development, with the introduction and adoption of triremes into Greek navies. The
trireme was a warship with three levels of rowers to allow an increase in speed and
striking power. This warship developed from the two-level pentekonters. As Greeks and
other Mediterranean people increased their navies and their dependency on these

\(^\text{14}\) Morrison, *Greek Oared Ships* pg 84, figure 11a; Beazley Archive Vase Number 300000.
\(^\text{15}\) Morrison, *Greek Oared Ships* figures 15a and 15b; Beazley Archive Vase Number 301239, Louvre F123.
\(^\text{16}\) Morrison, *Greek Oared Ships* figures 19, 20a, and 20b; Beazley Archive Vase Number 479.
navies, they naturally looked for ways to improve the ships. Greek naval architects added an outrigger (Figure 17), a structure built from the side of the trireme for the uppermost rowers, above the gunwale, or top edge of the hull of the ship, in order to accommodate a third row.\textsuperscript{17} The trireme would prove to be the most valuable part of any Greek fleet, and the Athenians would take advantage of this new development to make their \textit{polis} the strongest state in the Mediterranean. The trireme was first used in Greece by the tyrant of Corinth, Periander, and then by Polycrates, the tyrant of Samos.\textsuperscript{18} I discuss their adoption and the particular uses of triremes in chapter three. During the end of the sixth century this new warship became the most capable naval weapons system in the Mediterranean.

Before getting into the details on the archaeological evidence for triremes and how they were constructed, it is important to note that no direct archaeological remains of triremes have ever been found, unlike remains of other ships, especially merchant craft. The reason for this is that the trireme had a positive buoyancy and did not sink when flooded.\textsuperscript{19} In battles between triremes, when a ship was pierced the enemy would capture or kill those soldiers who did not swim away or drown. The ship would then either be towed away and next be salvaged or destroyed, or merely drift away. Another important characteristic to note is that no depictions label ships as triremes (or \textit{trieres} in Greek), and only a few depictions at all have been discovered.\textsuperscript{20}

\begin{itemize}
\item \textsuperscript{17} Casson, \textit{Ships and Seamanship} figure 100.
\item \textsuperscript{18} Morrison, \textit{The Athenian Trireme} pg 40.
\item \textsuperscript{19} Morrison, \textit{The Athenian Trireme} pg 127.
\item \textsuperscript{20} Morrison, \textit{The Athenian Trireme} pg 128.
\end{itemize}
The most useful archaeological evidence we have are the remains of the Zea ship sheds (Figure 18) at the Athenian port of Piraeus. These remains allow us to reconstruct the dimensions of triremes. Using these, historians have estimated the approximate size of triremes to be about 115-120 feet long, about 16 feet wide and about 8½ feet tall above the waterline. The method of hull construction has been estimated based on the remains of merchant ships, such as the Kyrenia ship (Figure 19), a hull from a fourth-century merchant ship recovered off the coast of Cyprus. The other piece of solid archaeological evidence is the Athlit ram, discovered on the sea-bed at Athlit, off the coast of Israel.

The biggest problem with the history of the trireme is the lack of historical documents and physical evidence. In studying its history, many early historians never bothered to explore the construction of the ship. When historians of the fifth century AD tried to establish its construction, since it had already been out of date and forgotten by that point, they naturally had assumed that it was a three-level warship. However, in the early sixteenth century historians looked to their own ships, and could not readily comprehend how a three or more leveled ship would be able to function, and rethought its design. This led to hundreds of years of debate and attempts at configuration, and only in the last half century has it been clearly established. One ancient historian, J.S. Morrison, combined the efforts of countless other researchers and was able to reconstruct a full size replica, which then carried out several summer sea-trials in order

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21 Morrison, The Athenian Trireme figure 9 pg 6.  
22 Casson, Ships and Seamanship pg 82.  
23 Morrison, The Athenian Trireme figure 5 pg xxii.  
to attempt to answer other practical questions that historians have been trying to solve for hundreds of years.

To reconstruct the trireme, it was first necessary to understand every facet of its construction. The most important aspect, and most troublesome, was the accommodation of the oarsmen. The oarsmen were named at each level; the *thranite* oarsmen rowed through an outrigger at the top level, followed by the *zugioi* who rowed through a gunwale or through oarports, and finally the *thalamioi* at the bottom level, who rowed through oar-ports about 18 inches above the waterline, creating the need for a leather bag to keep out the sea’s waters.\(^{25}\) We can base the order of the rowers and their positioning on two artifacts, the Lenormant relief (Figure 20)\(^ {26}\) and the Talos vase (Figure 21).\(^ {27}\) The Lenormant relief shows the middle of a trireme, with three clear levels of oars coming out at different angles. Morrison draws out the correct interpretation (Figure 22), and it can be matched with the artifact to distinguish clearly the three separate levels of rowers.\(^ {28}\) The Talos vase, however, is less clear in analysis. In this depiction, men are drawn out of proportion to the ship and no oars are included, although we can see the oarports. Morrison offers his interpretation (Figure 23) where these oars would fit, and based on this hypothesis we can see again the three distinct levels for oarsmen.\(^ {29}\) Based on these studies, Morrison was able to provide a firm basis for the theory that the trireme had three levels of rowers.

\(^{26}\) Morrison, *Greek Oared Ships* figure 24.
\(^{27}\) Morrison, *Greek Oared Ships* figure 26a; Beazley Archive Vase Number 217518.
\(^{28}\) Morrison, *The Athenian Trireme*, pg 139 figure 36.
\(^{29}\) Morrison, *The Athenian Trireme*, pg 147 figure 41b.
The deck of the trireme was narrow, since its aim was speed, not transportation. Eventually, the Athenians would only take a few hoplites (heavy infantrymen) on the decks of their triremes so that their maneuverability was intact. Also, having men stationed and moving around the deck might jeopardize the balance of the ship and make rowing much more difficult. Even during battle when some men were stationed for throwing javelins, they were taught to do this from a sitting position.\textsuperscript{30} Another very important element of the trireme was the outrigger. This part of the warship was important because the steering oars, as well as the oars of the \textit{thranites} ran through here. Morrison asserts that it was the structure of the outrigger that made it possible to add a third row of oarsmen, attributing the development from \textit{pentekonters} to triremes to this adaptation.\textsuperscript{31} The other most significant feature of the ship was the \textit{embolus}, or ram. The rams were made of bronze and attached to a protruding plank at the front of the ship. The ram was used in battle to disable other ships, and the Athenians in particular were very adept at maneuvering their ships in battle to utilize this weapon and win naval battles.

Following his study of all the parts of the trireme, Morrison and his associates worked on the fundamentals of the reconstruction of the ship. They attempted to work with the same materials that the ancient Greeks possessed, and attempted to calculate the positioning and weights necessary of all the aspects of the ship. After they finished their design, created a model of their plan, and felt they were capable of creating a full sized reconstruction, they began the physical construction of the ship. This was followed by a series of sea trials on their ship, the \textit{Olympias}, in order to judge the feasibility of

\textsuperscript{30} Morrison, \textit{The Athenian Trireme}, pg 160.
\textsuperscript{31} Morrison, \textit{The Athenian Trireme}, pg 163.
various hypotheses as well as to see whether some of the ancient accounts of speed, maneuverability, and the like were plausible (or perhaps merely exaggerations).

The ship was built by the Hellenic Navy with assistance from the Trireme Trust, a group headed by Morrison, with a final cost of “well over a million US dollars at 1987 prices.” As part of the experiments with this reconstruction, the crew attempted some of the maneuvers well known from Herodotus and Thucydides. At first their attempts at rowing backwards, crucial after ramming into an enemy ship, proved fruitless. However, with more practice backing water became more feasible, to the point where they were able to back out in less than 20 seconds. Another problem Morrison addresses is that of commanding the crew. It is well attested that triremes were controlled by a *keleustes*, or “exhorter.” However, in modern times, experiments using megaphones were unsuccessful, and the modern investigators were forced to install a speaker system throughout the new ship. The nature of ancient methods of communication was, therefore, unable to be determined, and attempts at utilizing an *aulos*, a replica of an ancient double-reeded flute, were also unsuccessful. Attempting to use the sails was also difficult because it presented a safety issue that the mast could not be sufficiently attached to the beams and floors of the ship, because of the desire to follow the ancient depiction of the trireme. However, when they were utilized they proved to be helpful, and when combined with rowing they allowed for more speed and power for the ship. I shall discuss the findings associated with the experiences of the oarsmen in my second chapter. Overall the reconstruction of the *Olympias* settled once and for all the debate

33 Morrison, *The Athenian Trireme*, pg 249.
34 Morrison, *The Athenian Trireme*, pg 256.
about the design of the trireme, and answered many other questions about its feasibility and construction. It also solidified the evidence that could only have been surmised from the few archaeological remains that had been found.

The development of warships up to the trireme was important for its eventual development. We can discern the construction of ships and the technical development mostly from archaeological sources. This is obligatory since their development had already been forgotten by the fifth century AD, and we have no written evidence such as representations of designs or accounts of construction methods. Modern historians have had to surmise their own ideas about the development of ancient warships, and as we have found more evidence and come up with new hypotheses, we have been able to reconstruct the development of ancient warships. Warships were mandatory for any polis and essential for its survival and for any aspired rise to power. The Athenians were most capable of harnessing and advancing this technology, and were rewarded with a naval hegemony. In my next chapter I will discuss the social associations of navies in ancient Greece and will revisit the Olympias trials to discuss what was learned regarding the crew, a set of revelations that we unfortunately cannot learn directly from any archaeological evidence.
Chapter II: The Significance of Shipbuilding in Ancient Greek Societies

In the ancient Mediterranean, ships were important commercially, socially, and militarily. In this chapter I will discuss particularly the relationship of military ships to the lives of the ancient Greeks, and also discuss how ships were important for the economies of this ancient society. Since Greece was heavily involved with many other Mediterranean societies, the Greeks were dependant on ships to expand their trading capabilities, as well as to conduct colonization of other territories in order to increase their own stock of goods. From the beginnings of trade in Greece in Minoan Crete leading up to the domination of the Aegean by the Athenians, shipping dominated the lives of the ancient Greeks.

Early in the history of the Mediterranean, trade was spread by the Minoan civilization of Crete. Since the Minoans had no other trading partners via land (Crete is, after all, an island not accessible by small rafts or by swimming), they had to develop ships capable of reaching lands like Egypt or Phoenicia for goods. Archaeological evidence shows that Crete was involved in trade with the Egyptians as early as 2700 BCE.\textsuperscript{35} Minoan pottery has also been found in places as far a field as Syria, Asia Minor, Sicily and Macedonia.\textsuperscript{36} Although some of these items certainly traveled thence in stages over the course of their existence, enough artifacts have been found that it is safe to assume they were reaching these locales by direct transfer.

\textsuperscript{35} Casson, \textit{The Ancient Mariners}, pg 18.
\textsuperscript{36} Casson, \textit{The Ancient Mariners}, pg 19.
This was the beginning of European international trade. The circulation of goods by these early civilizations would lead to an economic growth that would allow the Minoans to build the grand palace structures that have been uncovered on Crete. From the remaining artifacts, we are able to assess that the Minoans had a flourishing culture with goods from around the known world of the Near East. Eventually, however, their reach into Greece led to their downfall as they were overrun by the mainland Greeks, known as the Mycenaeans, who came to dominate Crete. The Mycenaeans, adopting the trade routes and culture from the Minoans, continued this trend of international trade to expand their own economic interests.

For these early periods we do not have literary accounts of how shipping affected the people of these cultures. They did not leave any records of the details of their daily lives, so that we can only speculate. We do know about the prevalence of pirates and raiders on coastal communities and merchantmen from Thucydides. I describe his references to the use of navies against pirates in my next chapter. However it is important to note that piracy was a way of life in ancient times. Many people were poor and living desolately, and so piracy was not a bad lifestyle for many people. Piracy offered them some chance of adventure and riches, while the life of toiling away on a farm or being subjected to the whims of a ruler offered little opportunity for improvement or social mobility.

Following the Dark Age of Greece in which much communication and many cultural contacts broke down, the Archaic period (beginning around 750 BCE) saw a

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rise in overseas colonization and a return to international trade. Greek poleis, in search of new sources of raw materials, sent ships of colonists and merchantmen to promising locations to establish new trading posts among the local inhabitants, as well as to create a permanent port for returning goods to the metropolis, or home city-state, to which the colony continued to hold strong ties, although maintaining a notion of independence was still important. Since many people during this period were poverty-stricken and devoid of landholdings, the opportunity to start over somewhere new must have been enticing. A good example of a mix of colonists is Rhegium, on the Strait of Messina. This colony was made up of one tenth of the population of Chalcis as well as political exiles from southern Greece. Fortunately for these Greeks, unlike the first colonists in America, these areas had already been scouted by sailors from the metropolis to ensure the safety of the new settlers. Colonies were integral for developing poleis. During this time the seas were still not safe, since there was no state powerful enough to field a large fleet. According to Wallinga, “sea-powers of the Archaic period chiefly consisted of privately owned ships,” and were forced to carry arms for protection from pirates. In fact, by 490 Athenian sea-power amounted up to (at least) 50 ships.

Although the oarsmen were the most important members of the ship, there were various specialized roles onboard the ship. The best evidence we have of the crews of ancient ships applies to the triremes of the Classical period, especially from the

38 Graham, Colony and Mother City in Ancient Greece, pg 8.
39 Graham, Colony and Mother City in Ancient Greece, pg 22.
40 Graham, Colony and Mother City in Ancient Greece, pg 5.
41 Casson, The Ancient Mariners, pg 67.
42 Strabo, Geography 6.1.6.
43 Wallinga, Ships and Sea Power, pg 17.
44 Wallinga, Ships and Sea Power, pg 18.
information provided by the Decree of Themistocles, which I discuss later in my thesis. In the Persian Wars, the trireme consisted of two hundred men. The trireme was fitted with a trierarch, huperesia, epibatoi, nautoi, and archers. I will discuss each of these positions in detail, as well as their roles and responsibilities. The Athenian fleets in the battles with the Persians were manned by citizens and resident aliens, called metics. Later, in the Peloponnesian War, it appears that Athens had attracted many foreign skilled sailors as metics, probably through their superior naval strength. Slaves appear not to have been used in fleets, at least in Athens, in normal circumstances in the fifth century.

The designated leader on a trireme was the trierarch, or sea-captain. This role was filled by an upper-class Athenian and according to the decree he was expected to provide for the ship, which he was assigned by lot. Later in the fifth and fourth centuries trierarchs drew lots for hulls, gear, and a crew, but were expected to carry full financial responsibility to maintain the ship and crew as well as hold responsibility for any loss or damage to the trireme. Although the trierarch was the financial backer of the warship, much of the burden of tactics and planning fell on the strategoi or generals of the Athenians.

Immediately following the trierarch in civic rank were the epibatai, or marines. They were enrolled from the citizens between twenty and thirty years of age. The epibatai were extremely important to Greek naval tactics. Although it may be believed

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45 Meiggs-Lewis no 23 according to Morrison pg 108.
46 Morrison, The Athenian Trireme, pg 107.
47 Morrison, Greek Oared Ships pg 257; Old Oligarch, Constitution of the Athenians 1.12.
48 Morrison, Greek Oared Ships pg 258.
50 IG 2² 1951.79-82.
that with the use of new ramming tactics and other maneuvers the efficiency of the marines would decrease. However, their significance did not decline considerably.\footnote{Jordan, \textit{The Athenian Navy in the Classical Period} pg 189.}

Boromir Jordan, in his study on the Athenian navy in the Classical period, argues that the importance of marines depended on the strategy for each engagement.\footnote{Jordan, \textit{The Athenian Navy in the Classical Period} pg 191.} For example, they played a large role in the battle of Cyzicus.\footnote{Diodorus Siculus, \textit{Library} 13.50-51.} Marines were able to engage enemy ships by boarding them and fighting on board. This was imperative for naval warfare, especially battles in which the fighting came down to hand-to-hand deck fighting. In the battle of Salamis, the Greek ships were “heavier.”\footnote{Herodotus, 8.60A.} Jordan asserts that this means that the warships were heavier because the Greeks hoped to overcome the superior numbers of the Persians by having “heavier and sturdier ships, which could provide platforms for…the \textit{epibatai}.\footnote{Jordan, \textit{The Athenian Navy in the Classical Period} pg 186.}” The Greeks, in this battle, were dependant on the marines, as well as their maneuvers and tactics, for victory. The significance of the marines can also be seen in Herodotus when Themistocles addresses the gathered forces, and Herodotus specifically points out that he had assembled the \textit{epibatai}.\footnote{Herodotus, 8.83.} The marines were essentially sea-going hoplites,\footnote{Jordan, \textit{The Athenian Navy in the Classical Period} pg 195.} certainly coming at this time from the hoplite census class and not from the men already on board the ships. Jordan cites a passage in Thucydides\footnote{Thucydides, 6.43.} where he states that an Athenian armed force aboard a fleet of warships consisted of 1500 hoplites and 700 \textit{thetes}, a separate census class, serving
as *epibatai*. Jordan argues that by explicitly mentioning the *thetes* in this passage, Thucydides is making us aware that they were not part of the regular marine force.\(^{59}\)

Along with the *epibatai* are the archers assigned to each ship. They numbered between two and four.\(^{60}\) The archers provided the ship’s missiles and used them against the opposing forces.\(^{61}\) Javelin men were also used in some battles, when the fighting was expected to be in close combat.\(^{62}\) Although they did not play a large role in the Persian Wars, after the war’s conclusion Athens established a standing force of 1600 archers.\(^{63}\) The arrows were efficient enough to kill officers and men of the opposing ships. Not only would the range and velocity of the arrows be enough to kill the enemy, but if fired while the ship was closing in on a target, the arrow’s velocity would increase with the rapidly moving ship.\(^{64}\)

To assist the *trierarch* in commanding the ship, there was a group of petty officers, who were included in the *huperesia*, along with the *epibatai* and archers; this whole group was made up of thirty men. The petty officers were essentially the assistants of the *trierarch*, and thus numbered sixteen. According to inscriptions, we can identify six of these men: the helmsman (*kybernetes*), boatswain or rowing master (*keleustes*), the purser (*pentekontarchos*), bow officer (*prorates*), shipwright (*naupegos*),

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62 Thucydides, 7.62.2.
and piper (auletes). These men all held important positions on the ship and were essential for the operations of the ship to be successful.

The kybernetes, or helmsman, was equal to a master in a modern ship, and ranked between the trierarch and epibatai. He was in charge of navigation under oar and was immediately in charge of the crew. Every other officer, except for the trierarch, received their orders from him. The helmsmen were so trusted, that even Alcibiades, as Athenian general during the Peloponnesian War, left his helmsman in charge of an entire squadron. The prorates, or bow officer, was ranked immediately below the kybernetes. His main duty was to serve as the “eyes of the ship.” He had to alert the crew if the ship was headed towards any obstacles, such as cliffs, rocks, or shallows. He was essentially the assistant to the kybernetes.

It was the responsibility of the boatswain to spread the helmsman’s orders to the oarsmen. He also was the foreman during the preparation of the ship for sea. The most difficult job of the boatswain was certainly during battle. In order to maintain discipline and tactical maneuvers, the boatswain needed to get orders to the oarsmen in the midst of the confusion of battle. This could certainly prove to be very difficult, and certainly led to confusion on many occasions. However it was of the utmost importance that he succeed. He was essentially in charge of the rowers in every function.

The piper was enrolled to assist the boatswain. He may have been used during battle; although this is not specified anywhere and the sounds of the flute may not have

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65 Morrison, The Athenian Trireme pg 111; IG II² 1951.
66 Jordan, The Athenian Navy in the Classical Period pg 139.
67 Xenophon Hellenica 1.5.11; Plutarch, Alcibiades 36.1-2.
69 Jordan, The Athenian Navy in the Classical Period pg 144.
even been loud enough to be heard over the din. However over the course of an especially long and difficult haul, the piper was almost certainly used to keep the rhythm of the oarsmen.\textsuperscript{70} The *naupegos*, or onboard shipwright, was important, since these ancient ships were not as technically advanced as later vessels and problems certainly came up on many instances. The smallest problem with the ship’s structure could turn into a huge disruption for the oarsmen, jeopardizing the entire rhythm of the crew. The remaining attested member of the *huperesia* is more obscure. The *pentekontarchos*, based on his name “leader of the fifty”, was clearly important. However, his personal duties are obscure, since his title only seems to relate to him as leading a *pentekonter*. Therefore we might assume that this title carried over from the previous generation of warships, and carried the same duties (of which we are unfortunately unclear). Jordan surmises that his main role in the fourth century was as a paymaster.\textsuperscript{71}

Finally, the most important men in regards to the success of the ship were the *nautai*, or oarsmen. The survival of the ship depended entirely on their shoulders. They needed to be disciplined, well-trained, confident, and resilient. Oarsmen can be categorized as Athenian citizens or foreigners.\textsuperscript{72} In the beginning of the 5th century, the oarsmen certainly were not as well-trained as they were by the time of the Peloponnesian War. By this juncture, Athens had had time to train its oarsmen rigorously and to prepare them for combat.\textsuperscript{73} These years also gave them ample opportunity to gain experience in battle, something that certainly came up in maintaining control of the Delian League.

\textsuperscript{70} Plutarch, *Alcibiades* 32.2.  
\textsuperscript{71} Jordan, *The Athenian Navy in the Classical Period* pg 149.  
\textsuperscript{72} Morrison, *The Athenian Trireme* pg 115.  
\textsuperscript{73} Old Oligarch, *Constitution of the Athenians* 1.19-20; Plutarch, *Pericles* 11.4.
Learning how to row properly was certainly not an easy skill to acquire, and it took years of training and difficult practice to achieve. This is proven by the results of the reconstruction of the trireme *Olympias*. Many of the timed trials did not match ancient results, and this may be owed to the fact that modern sailors are not as well trained as the Athenians were. Modern volunteers had a difficult task since this activity was the livelihood of the Athenian rowers. One of the biggest problems with the reconstruction trials is that we are unable to test properly some hypotheses, because we do not have the exact same circumstances as in the ancient world. It is impossible to recreate a life of preparation for rowing a trireme, and especially under the conditions under which Athenian oarsmen functioned. However, we are able to make some generalizations of what was possible from the modern sea trials. For instance, although the times were not the same as ancient historians state, we can determine a maximum attainable speed.

Based on the reconstruction, we are able to understand some of the minor points of trireme operation as well. For instance during the trials there was a huge problem with hearing the leader, and it often threw off the timing of the oarsmen. This problem had been attested even in ancient times, and there was no conceivable remediation for Morrison and his crew without bringing in modern technology. We can well understand the density of the oarsmen in the ship, and the need for close connections with their companions owing to the cramped conditions. Another major problem was with rowing; both the timing and setting the angles of the oars. However, this is possibly our modern inexperience, a condition that was certainly not a problem to the well-trained ancients.
Obviously, crew morale was also very important, since this was a terribly difficult job and not having all members working together could throw off the entire ship.

Seafaring in ancient Greece had huge effects on the populace and their social roles. With the gradual rise to power of *poleis*, their dependency on their navies and on shipping increased extravagantly. Therefore, the role that the navy and commercial sailing played in the lives of the people was great. The navy offered political and economic opportunities for Greeks from the Mycenaean period up to the great naval hegemony of the Athenians and their allies in the Delian League. On account of the increase in specialization of the navy, there were many specific vocations for Greek sailors, which I have exemplified in the positions on the triremes.

Chapter III: The Historical and Political Usage of Navies in Ancient Greece

Up To the Persian Wars

Ships in ancient Greece were the lifeline of any community, and the basis of any leader’s military ambitions. They allowed people to exchange goods, cultural data to be shared, and power to be attained. Throughout the history of ancient Greece control of the seas was contributory to any political aspirations of a *polis*, or city-state, and its leaders. The strongest *polis* in the history of the ancient Greek city-states was Athens, and Athenian power and hegemony was based upon their naval capacities. Athens in the Classical period offers a great example of how Classical warships were used to gain political power and accumulate resources. Athens was able to create and maintain
hegemony by using its navy to dominate Greece, the nearby islands, and the coast of Asia Minor. Under leaders such as Themistocles and Pericles, Athens was able to flourish until its defeat by Sparta at the end of the Peloponnesian War.

In the earlier periods, ships had enabled the colonization of Greeks throughout the Mediterranean. Ships were used by early leaders to reach new lands and to spread trade as far across the Mediterranean as possible. By building up naval strength, Greek societies were able to flourish, especially because of the new trade possibilities with advanced cultures such as Egypt. Thucydides, in his *History of the Peloponnesian War*, gives the best account of the earliest known naval usages. He ascribes the first naval power to Minos, king of Crete during the Bronze Age.74 Bronze Age Crete had several commercial ties around the Mediterranean. The development of the interior of the island, in particular the construction of large palace complexes, along with archeological remains discovered from overseas territories, certainly points towards a commercial trading network of some complexity. In the Early Bronze Age, Crete had ties to northern Africa, in particular Egypt.75 Egyptian pottery and jewelry has been discovered at sites around Crete, including at Knossos. Although it can be argued that these items came to Crete through secondhand trade, the number of artifacts postulates that regular trading contact took place between Egypt and Crete.76 There are also some findings of artifacts from the Levant, although they are less prominent and, therefore, we cannot assume that a consistent trade route was in place between these two nations. The greatest amount of overseas trade took place in the Aegean. Crete imported many goods,

74 Thucydides, 1.4.
especially vases, from Cycladic locales such as Melos. Thucydides also tells us about the piracy problems in the sea at the time, and that the Minoan navy was a force against them. However, many modern scholars dispute this fact. Hornblower asserts that Thucydides is merely assuming the Minoan naval police force based on epic legends and tradition from his own time. Thucydides points us to this fact when he says “ὡν ἀκοῇ ἱσμεν,” literally “to whom tradition ascribes.” Modern scholars disagree with Thucydides, claiming that there was no organized police force in the Aegean before the Persian Wars. However, it is still evident that ships were already increasingly becoming an integral part of the lives of Greeks.

In the literary tradition, the next great naval power would come during the time of Homer. During this period, the Mycenaeans overtook the Minoans, claiming their technology for themselves and usurping the Minoan holdings. It was during this time that the great Trojan War was believed to have taken place, as described by Homer. For Thucydides, bringing an army to Troy, let alone defeating the great walled city, was in itself a tremendous task. Thucydides was influenced by his own era in this description, and implicitly questions some of Homer's history when he says “if the evidence of Homer is accepted.” Thucydides must have believed that Agamemnon was able to build a coalition of Greeks to agree to fight Troy and to ferry their forces across the sea. He attributes Agamemnon’s influence to his large contingent of ships, so great that not only did he provide the largest amount of ships to the armada, but also

77 Branigan, The Foundations of Palatial Crete pg 185.
78 Hornblower, A Commentary on Thucydides: Volume 1 pg 18-19.
79 Thucydides, 1.4.
80 Hornblower, A Commentary on Thucydides: Volume 1 pg 19.
81 Ormerod, Piracy in the Ancient World pg 98.
82 Thucydides, 1.9.4; Hornblower A Commentary on Thucydides: Volume 1 pg 33.
provided a naval force for the Arcadians. The power of this Greek fleet, and the absence of any equal power on the seas, would allow Agamemnon and the other early chiefs to believe an attack on Troy could be successful, and they were eventually able to defeat the great city. This attack was the first recorded amphibious battle in history.

Following the Mycenaean period, there was a dark age in Greece. During this time the people lost many of their cultural skills. There was no great sea power to patrol the seas, and pirates had an influence on any ships brave enough to venture out to other Greek communities. Towards the end of this period the Phoenicians, located in modern day Lebanon, were still able to maintain trade for themselves despite the continuance of piracy on the seas. However, rather than just expand their own trade routes, the Phoenicians began setting up colonies around the coasts of various places in the Mediterranean, such as later Carthage. This trend would be followed by the newly emerging Greek city-states.

Following the Bronze Age and the Dark Age that succeeded it, many Greeks relocated together to form many of the poleis that would remain intact for the rest of ancient Greece’s history. This established the connections that would instigate Greeks to fight against other Greeks, although their history as early warring tribes already showed that this was cultural disposition. Major poleis such as Athens were forming and growing stronger, although at this time they were still in their adolescence and had no real power in the larger world. However, the expansion of colonies, mostly into Asia Minor and the islands of the Aegean, would soon increase the power of these poleis.

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83 Thucydides, 1.9.4.
Starting around 750 BCE, Greek colonization began to increase. The Greeks founded about 250 colonies in the next two hundred years in places such as Italy, the Black Sea, and on the Rhone. Not only were they developing new cities in these territories, but they were creating pockets of Greek culture around the Mediterranean that had the potential to spread to neighboring “barbarians”. They were beginning to spread Greek culture and civilization to areas with which they had previously held little contact. These colonies also helped support the mother city, and helped bring new resources to the larger trading routes. The Greeks did not pick places randomly, but they tried to select areas with strong economic possibilities. Two of the most important such colonies were founded at Syracuse and Byzantium.

The colonists also had a strong interest in reaching these new territories. Since it was a dangerous operation with a chance of serious mishap, it offered the lower classes the chance to start over with free land and new opportunities. Besides lower class Greeks, exiles or political enemies could also be offered the chance to leave the polis and start over in the new colony. Colonial undertakings were not only a state enterprise, but could also be a private venture. The tie between the mother city and colony was never completely severed, and the colonists still kept strong feelings for their metropolis. The opportunity to leave may have also been a personal choice, sometimes made just for the sheer excitement of seeing a new part of the world in a time where travel was certainly not a leisure activity. Colonies could also provide

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84 Wilson, *Ideologies of Greek Colonization* pg 27.
86 Graham, *Collected Papers on Greek Colonization* pg 27.
87 Graham, *Colony and Mother City in Ancient Greece* pg 5.
88 Graham, *Colony and Mother City in Ancient Greece* pg 8.
89 Graham, *Colony and Mother City in Ancient Greece* pg 9.
important strategic locations for establishing military garrisons, giving the mother city a reliable base in another area of the Mediterranean.  

According to Thucydides, as the Greeks began to emerge from the Dark Age, tyrannies were established around Greece. These tyrannical leaders realized the necessity of having powerful navies, and they began to fit out fleets of warships to contend with one another. The earliest two poleis to use their fleets to advance themselves under tyranny were Corinth and Miletus. Miletus, located in Asia Minor, had more colonies than any other Greek city and developed a fleet and established a foothold in the Black Sea region. The Milesians colonized heavily in the Black Sea and Sea of Marmora, which separates the Black and Aegean Seas. Miletus’ colonies dotted along the north and south coasts of the Black Sea and brought in vast new resources such as fish and wheat to increase the income of the mother city.

Thucydides attributes the beginning of naval development to Corinth, following the tradition that the first Greek triremes were built there and that a Corinthian, Ameinokles, was sent to Samos to build ships there for the Samians in either 721 or 704. Thucydides only gives us a relative date, now somewhat unclear. Thucydides tells us that Corinth was able to become so entrenched in the early naval developments because of its location. It is stationed at the lower end of an isthmus, between central Greece and the Peloponnesus, and was therefore a natural trade post. This placement

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90 Figueira, *Athens and Aigina in the Age of Imperial Colonization* pg 175.
91 Thucydides, 1.13.
92 Graham, *Colony and Mother City in Ancient Greece*, pg 98.
93 Thucydides, 1.13.2.
95 Thucydides, 1.13.3.
allowed Corinth not only to become a very wealthy *polis*, but, when sea traffic became more frequent, it gave the Corinthians a natural inclination to develop a fleet and protect their merchants and cargoes from piracy.\(^97\)

Corinth continued the trend of colonization, and because of its location being able to send ships either west through the Gulf of Corinth or east into the Aegean, the Corinthians were able to claim many advantageous locations and harbors. Perhaps the most important place they colonized was at Syracuse. Here they held one of the best harbors in the ancient Mediterranean, and it allowed them a base for trade around Sicily and southern Italy, territory far enough away from the powerful Etruscans to be attractive. Corinth was able to sail along the Strait of Messina, which separates Sicily from Italy, and trade with the Greek colonies there.\(^98\) They also had to deal with Carthage colonizing the western side of Sicily, although Corinth already held the best port on the island, and maybe in all of Italy at the time, Syracuse.

These developments allowed Corinth to increase its wealth vastly, as it now had multiple colonies and powerful trading partners. The leaders at Corinth, the Bacchiads, saw the need for colonization and the benefits it could bring.\(^99\) Corinth brought in goods such as pottery, oil, perfume, fine Egyptian wares, and heavy marble stones for building. They circled this trade around their colonies, to the Etruscans, and back to Greece. All this trade created one big problem for the Corinthians: the need to outfit two navies for each side of the isthmus. This was resolved by Periander, who originally wanted to create a canal but instead built a *diolkos*, a marine railway, over three miles

\(^{97}\) Thucydides, 1.13.5; Hornblower, *A Commentary on Thucydides* pg 45.
\(^{98}\) L. Casson, *Ancient Mariners* pg 72.
\(^{99}\) Salmon, *Wealthy Corinth* pg 93.
long, that spanned the isthmus. This paved roadway was fitted with tracks cut into stone that allowed ships to be towed across the isthmus, probably by oxen.\textsuperscript{100} This new facility allowed warships and small merchant ships to be towed across from one sea to another, while large ships sent their cargo across. Not only did this take care of Corinth’s problem with having to maintain two separate navies, but it gave them another source of income by taxing its users.\textsuperscript{101}

At this time, around 550 BCE, the Mediterranean was

“dotted with flourishing colonies. Trade routes crisscrossed the whole of the sea from Cadiz beyond the Strait of Gibraltar to the far eastern shores of the Black Sea, from the mouth of the Po to that of the Nile…A half dozen Greek states had become significant maritime powers, backing their commercial and political interests with strong navies.”\textsuperscript{102}

Wallinga also adds that at this time the \textit{poleis} of the Greek world were changing and becoming much stronger. They now had “much enlarged public funds; the fiscal institutions ensuring regular collection, new officers of the state to command, and above all to take the responsibility during actions for the maintenance of, the ships; state-owned naval yards and/or harbors. This was in itself a revolution.”\textsuperscript{103} This was “the dawn of a great age of naval warfare.”\textsuperscript{104}

With all of these massive changes came an evolution in naval shipbuilding. It is not clear where or when the exact creation of the trireme, the powerful new warship,
took place, although Thucydides, as I have previously stated, may attribute it to the Corinthians. The earliest literary evidence of a trireme was by a Greek named Hipponax, who was urging a painter, Mimnes, not to paint a snake on the side of a trireme. This passage can be dated to the second half or last third of the sixth century, BCE. The early historian Herodotus says that triremes were used in battle in Egypt, and that the Greek tyrant of Samos, Polycrates, sent some of the Samian triremes to Egypt. Wallinga asserts that it was around this moment that triremes were invented. I have discussed the history of the development of the trireme in my first chapter, so that my main point at this juncture is that they were developed at this period, and had a huge impact on naval arrangements.

With this new evolution of warships, the replacement of older navies became the main concern of the competing powers in the Greek world. The strongest power at this time was the Persian Empire. With control over much of Asia Minor and the Middle East, the Persians had vast resources at their disposal. They also wanted to extend their power westward, into the Aegean Sea. In 500 BCE, they sent 200 triremes to Aristagoras, the tyrant of Miletus, in an attempt to subdue the island of Naxos and the other islands of the Cyclades. However, the Ionian Greeks of the coasts of Asia Minor then decided to revolt against the Persians. They took possession of their ships which had formerly been part of the Persian fleet, 300 triremes in all, and they also

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105 Hornblower, A Commentary on Thucydides: Volume 1 pg 43.
106 Thucydides, 1.13.2.
107 Morrison, The Athenian Trireme, pg 34-35.
108 Wallinga, Ships and Sea Power, pg 103.
109 Shipley, A History of Samos pg 96-97; Herodotus, 3.44.
110 Wallinga, Ships and Sea Power, pg 104.
111 Morrison, The Athenian Trireme, pg 41.
112 Wallinga, Ships and Sea Power, pg 133.
had five triremes sent from Eretria\textsuperscript{113} and 20 ‘ships’ sent from Athens.\textsuperscript{114} Wallinga asserts that these 20 ships were made up of both \textit{pentekonters} and other long vessels,\textsuperscript{115} not triremes, since Athens did not yet have any in its fleet. Their involvement would not be forgotten by the Persians.

Early in the revolt, the Ionians were fairly successful, including a defeat of the Phoenician forces, which stayed loyal to Persia, in a sea battle near Cyprus. However, Persia was able to restore its naval forces because of (in large part) the allegiances of Phoenicia, Cilicia, Egypt, and Cyprus.\textsuperscript{116} However, in 494 BCE Phoenicia had a fully restored fleet ready to face the Greek rebels at Miletus. By this time the Ionians were able to amass a fleet of 353 warships, all triremes according to Herodotus,\textsuperscript{117} with the largest contingents from Chios, Miletus, Lesbos, and Samos. Among these 353 triremes were most of the ships that had been taken back from the Greek contingents among the Persian fleet several years earlier, along with newly built additions from the Greeks. The Ionians understood the importance of strengthening their naval forces, and had put many resources into ship construction. After 496 BCE, the Persian forces were taking control of the war. They had reconquered Cyprus, along with a number of cities along the Hellespont.

The Ionian forces were placed under the command of a Greek called Dionysios of Phocaea, who Herodotus says was a strict disciplinarian. In demanding the training of the Greeks he told them “if you go on with your usual slackness and lack of discipline I

\begin{footnotes}
\item[113] Herodotus, 5.99.1.
\item[114] Thucydides, 1.14.1.
\item[115] Wallinga, \textit{Ships and Sea Power}, pg 133.
\item[116] Morrison, \textit{The Athenian Trireme}, pg 42.
\item[117] Herodotus, 6.8.2.
\end{footnotes}
shall not at all be surprised if you pay the king the penalty of rebellion.” 118 As a large group of Greeks from different regions, they were prone to disagreements. However Dionysios tried to organize and train them as well as he could. He pushed the oarsmen to practice the diekplous, which we translate into English as “breakthrough and ram.” In this maneuver, the trireme uses its ram to break through the enemy line and ram their ships bows into the side of the warship, taking it out of commission. Dionysios had them practice this routine every day for a week, but eventually their stubbornness took over and they refused to continue the hard work any longer.

Eventually the two forces met in the first great trireme battle in history at Lade. The Ionian-island forces wished for a naval battle to make the sea and trade routes safe from Persian forces and to ensure that they could supply their cities with imported food. They were also encouraged by their victory over the Phoenician fleet several years earlier, and were hoping for a repeat of that battle. The Persians were also favoring a naval battle, so they could crush the insurgents’ fleet once and for all. They were also hoping to settle the score from their earlier defeat.

At Lade the Ionians amassed 353 triremes and the Persians had a force of 600 according to Herodotus. 119 The Ionians were already outnumbered almost 2:1—however, they were counting on Dionysios’ tactics and their defensive position to even the terms of the struggle. In the battle the Persian numbers gave them too large of an edge, and they were able to defeat the Greek forces which were disunited and subverted by flight from battle. The ships in battle had used Dionysios’ ramming tactic

118 Herodotus, 6.12.
119 Herodotus, 6.8.2.
and it proved to be somewhat successful. The Chian forces fought bravely against the Phoenician ships and used the breakthrough to capture many ships, although being heavily outnumbered, but they lost many ships themselves.\textsuperscript{120} Many of the Ionian forces, such as the Samians, for their part fled when the battle looked grim. Dionysios himself fled to Sicily when he saw the battle was lost.\textsuperscript{121} The Persian King Darius had successfully restored all of Asia Minor to his kingdom, and was now setting his sights on mainland Greece.

The development of navies in the pre-Classical Age of ancient Greece shows many advances and developments that led to the first great naval age of the Western world. Warships and other ships were central to the spread of culture and civilization in these times. The earliest civilizations of the Mediterranean such as the Minoans, the Mycenaeanos, and the early \textit{poleis} depended on their shipbuilding as lifelines to the rest of the known world. Agememnon, Minos, Polycrates, and other early leaders all understood how strong navies could give them power over their neighbors and control of trade, and they utilized this opportunity. Later Greek leaders would also realize how vital a navy was, and they would follow in the footsteps of these early leaders to garner control and build their own nations strengths.

\textsuperscript{120} Herodotus, 6.15.
\textsuperscript{121} Herodotus, 6.17.
Chapter IV: The Historical and Political Usage of Navies in Ancient Greece
During the Persian Wars and The Peloponnesian War

As we explore the Classical Age of Ancient Greece, the importance of naval warfare becomes more prominent and crucial for political history. In my previous chapter, I wrote about the beginnings of naval warfare, and how the earliest civilizations in the eastern Mediterranean had a growing dependence on navies for the needs of their communities and later poleis. I have already discussed how early leaders developed a navy for their home cities and how they were able to exploit this powerful force, a phenomenon that will reappear in the rest of Greek history. The leading men of this period, such as Themistocles, Xerxes, Pericles, and Lysander, also utilized navies to gain power and, in some cases, build up a dominating hegemony encompassing nearby cities and people.

The two wars I will be discussing in this period were also the most famous confrontations of Greek history. The Persian Wars, which took place at the beginning of the 5th century BCE, remain as one of the most inspiring stories of the Greeks and their resiliency. They faced the most menacing force in the known world; an empire which encompassed much of the Middle East and other territories in eastern Europe. The Persians had amassed this empire on the basis of many strengths, and their vastly superior resources, especially of available manpower, gave them solid prospects for success.

Following the Ionian revolt in Asia Minor, and King Darius’ reclamation of his holdings in Asia Minor, there was a change in the Persians’ appraisal of tactics against
mainland Greece. Although the expeditionary force of Darius was famously defeated at the Battle of Marathon in 490 BCE by mainly Athenian forces, and he was unable to invade Greece again because of revolts in Persian holdings\(^\text{122}\) (most notably Egypt\(^\text{123}\)), his son, Xerxes, would reignite this program of conquest nearly ten years later. The Battle of Marathon held a huge significance for the Greeks. By defeating the Persian forces on land, they could now reasonably depend on their superior tactics and techniques, despite having far less resources and manpower. Although the first invasion by the Persians could not be resisted at sea, Xerxes’ invasion with its combination of his naval and land-based forces demanded both land and maritime strategies for resistance.

In the years between the Persian invasions, the Greeks had time to prepare for another wave of attacks. At this time a man began to rise in power in Athens called Themistocles. He would prove to be one of the most outstanding and clever men in the storied history of the \textit{polis}. Themistocles believed in the need for a strong Athenian navy, and when the Athenians struck a rich stream of silver in their mines at Laurion, he used his political prowess to convince the \textit{dēmos} to build a new fleet. The people were divided over whether they should use this money to help themselves directly or build up their armaments. Themistocles was opposed by Aristides,\(^\text{124}\) who was supported by the aristocracy and seemed to have been holding out for further subsidization of the people. However, Themistocles reminded the Athenians of their ongoing war with Aegina, a nearby island, and the need for a strong naval force to keep them at bay. Following

\(^{122}\) Herodotus, 7.2.
\(^{123}\) Herodotus, 7.3.
\(^{124}\) Wallinga, \textit{Xerxes Greek Adventure} pg 156.
Aristides’ *ostracism*, a general vote in which the loser was exiled, Themistocles won the debate and the construction of a new naval force of triremes was put in progress.\(^{125}\) Themistocles’ Naval Bill, one of the major events before the Persian forces of Xerxes and Greece met, had now been passed.

According to Herodotus, the Athenians constructed 200 triremes,\(^{126}\) although this number is disputed by some scholars.\(^{127}\) Nonetheless, the Athenians began construction on a new fleet and we can assume that they now had the most up-to-date and advanced naval force in the Mediterranean because of the works of their skilled craftsmen. The Athenians had new advances in technology at their disposal, triremes were well-known to them by this time, and with the large amount of money from Laurion available for shipbuilding, they had money set aside for the construction of their fleet. They would need this advantage in order to defeat the Persian forces. When the Greeks realized that Xerxes was planning another invasion of Greece, they redoubled their efforts to be as prepared as possible by building more ships and training for his invasion.\(^{128}\) In light of the threat from Xerxes, the Greeks agreed to put aside any outstanding disagreements, such as the war between Athens and Aegina, and combine forces. This process culminated in the creation of the Hellenic League, which met at Corinth in 481 BCE.\(^{129}\) Thirty-one *poleis*, headed by Sparta, united to face the Persians. At this time the Athenians went to Delphi, the site of the ancient oracle of Apollo. Here,
they were told to rely on their “wooden walls” to survive.\textsuperscript{130} In a separate embassy the Spartans were told that they faced defeat or the death of a king.\textsuperscript{131} The Spartans’ prophecy was eventually fulfilled when King Leonidas was later killed in the famous last stand at Thermopylae. Themistocles, proving his tenacity to make his own terms, took the Delphic oracle to mean that the Athenians should rely on their naval force and convinced his fellow citizens.

The Persian forces, on the other hand, were truly frightening in size: Herodotus gives their numbers at 1,207 triremes, as well as 3,000 other ships.\textsuperscript{132} Some modern historians disagree with this figure, and with Herodotus’ figure of their army being numbered in the millions. Wallinga asserts that their naval fleet may have been as many as 900 triremes,\textsuperscript{133} and certainly no less than 600.\textsuperscript{134} In any case, they greatly outnumbered the Greek fleet by a large margin. The Persians began their advance in 481. Their means of attack were a massive land force supplied by their navy, so that they made sure to always keep the navy nearby. Xerxes’ army was heavily dependent on the fleet for supplies,\textsuperscript{135} so any loss of contact would be devastating. Xerxes moved his forces to Aphetai, across from Artemision on the northern tip of the island of Euboea, where the Greek naval force was stationed.\textsuperscript{136}

\begin{footnotesize}
\begin{enumerate}
\item Herodotus, 7.141.
\item Pomeroy et al, \textit{Ancient Greece} pg 194.
\item Herodotus, 7.89-99.
\item Wallinga, \textit{Xerxes’ Greek Adventure} pg 34.
\item Wallinga, \textit{Xerxes’ Greek Adventure} pg 45.
\item Morrison, \textit{The Athenian Trireme} pg 51.
\item Herodotus, 7.193.
\end{enumerate}
\end{footnotesize}
When the Greeks saw the size of the Persian fleet at Artemisium, they were tempted to withdraw southward. However, Themistocles was able to convince the Greeks to maintain their position and face the Persians. Inasmuch as the Persians had superior numbers, they sent 200 triremes south, east of Euboea, to cut off the Greeks line of retreat, instead of immediately engaging battle. The Greeks decided to attack late in the day in order to keep the battle short and hopefully damage as many Persian ships as possible before their superior numbers brought the Persians victory. In a lengthy war of attrition the Greeks would eventually be forced to succumb and be overrun. If they could use their superior tactics to their advantage, they may be able to escape with little damage.

These actions show us the development of tactics by Themistocles. He knew that he had to turn things in favor of his naval forces if he wanted to have any hope of winning the struggle. By attacking later in the day, Themistocles limited the amount of fighting that could take place. This cut down the Persians’ superior numbers, since they would not be able to continue to bring in new ships, since the battle would eventually succumb to darkness. Also, by attacking the Persians, Themistocles was fighting on his own terms and dictating the conditions of battle. Themistocles main goal in this battle was to show the Greeks that they could face the Persians in battle and survive, if not come out victorious. His confidence is evident from the conversation recorded in Plutarch between Themistocles and Eurybiades, the Spartan commander, in which

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137 Morrison, *The Athenian Trireme* pg 53; Herodotus, 8.4.
Themistocles convinced him all the Greeks needed to stay and fight.\textsuperscript{138} It would also show Xerxes what he was up against.

The Greeks had 271 triremes at this battle.\textsuperscript{139} The Persians, with faster ships according to Herodotus,\textsuperscript{140} tried to outflank the Greek fleet. In response to this, the Greeks made a circle with their ships, bows facing outward to protect themselves. This formation was obviously defensive; they prevented the Persian ships from getting behind their fleet and ramming them at their vulnerable points. The Greeks were learning from the prior mistakes made at Lade, where the Persians were able to separate the Greek forces and rout them or convince them to flee. However, this position also gave the Greeks an opportunity to attack the Persian forces. Leaving the sides of their ships unprotected, the Persian triremes were quickly struck by Athenian rams when they attacked. As the Greeks had planned, the oncoming fall of night ended the battle prematurely for the Persians, and they were unable to utilize their superior numbers to crush the Greeks in open battle.\textsuperscript{141}

This utilization of superior tactics shows the Greeks’ understanding of their position. They knew they could not face Xerxes’ fleet on equal terms or they would be completely annihilated. Their only hopes lay in the tactics of their commanders and the disposition of their soldiers and oarsmen. In preparation for battle, these Greeks were much more prepared and willing than the oarsmen of the Ionian revolt, who were ready to quit after a mere week’s worth of hard training. These men were more resilient and

\textsuperscript{138} Plutarch, \textit{Themistocles} 11.2-5.
\textsuperscript{139} Morrison, \textit{The Athenian Trireme} pg 54.
\textsuperscript{140} Herodotus, 8.10.1.
\textsuperscript{141} Morrison, \textit{The Athenian Trireme} pg 54.
diligent in their training and comprehension of battle tactics, and this was the only chance the Greeks had in facing far superior forces. If they were to defeat the Persians and maintain their independence from Xerxes, they would need to continue this pattern of action.

The following day, the Greeks received good news. The force of two hundred triremes which had been sent by Xerxes to guard the escape route had been annihilated by a summer storm, which crashed them onto the rocks at Cape Sepias off the coast of Euboea. The Greeks could only have taken this as a sign from the gods that they were being aided by supernatural forces. The next morning they were sent more good news: 53 triremes were sent to the rest of the fleet, presumably the ships constructed from Themistocles’ Naval Bill. Their forces now numbered 324 triremes, while the Persian fleet was reduced by the battle of the previous day and the loss of their second force.

Next in the second day of fighting, the Greeks again came out late in the day and faced a Cilician squadron, gaining some success before retreating when night fell once again. The next day, the Persians attacked in a “sickle-shaped” formation. The Greeks waited until the Persians were near the beach, then took the initiative and attacked. In the battle, both sides took heavy casualties and eventually both sides retreated. The third day of fighting proved to be indecisive, and that night the Greeks learned of the fall of the Spartans at Thermopylae. Following this news, they decided to

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142 Herodotus, 7,188. 
143 Herodotus, 7,189. 
144 Herodotus, 8.14. 
146 Morrison, *The Athenian Trireme* pg 55.
abandon Euboea and Attica, the territory surrounding Athens, and retreat south, allowing the Persians to take Athens, which was abandoned by Themistocles and the Athenians for the time being. The Greek forces then sailed to Salamis to regroup and plan for the next Persian advance.

These two events, the loss at Artemisium and the defeat of the Spartan-led force at Thermopylae, could have led to the downfall of the Greeks. Things were certainly looking dim, and the Persians held the upper hand both in number and positioning. The Persians now held control of central Greece, and they still had a strong naval force to maintain their army. The Persians easily marched into Athens, taking the virtually abandoned city and surrounding area of Attica. The Greeks would need their heralded leader, Themistocles, to come up with an ingenious plan in the next attack, or they would be crushed and become subjected to Xerxes and the Persians. Luckily for the Hellenic League, Themistocles still had some tricks up his sleeve.

The Greek forces were now regrouped at Salamis, near the Athenian port of Piraeus. The Greek fleet consisted of 378 warships because of the involvement of other Greeks who provided more ships led by the Spartan Eurybiades. The Persians had around 1,000 warships, consisting of triremes and other warships. The Persians therefore outnumbered the Greek ships by at least two to one. Since the Persians had far superior numbers, it was once again up to Themistocles to try and give the Greeks a tactical advantage, and he did not fail his countrymen. The Greeks were positioned with

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147 Morrison, The Athenian Trireme pg 55.
148 Herodotus, 8.48; Morrison, The Athenian Trireme pg 56.
149 Herodotus, 8.46.
150 Morrison, The Athenian Trireme pg 57.
their backs to the beaches of Salamis in narrow straits. Themistocles made sure that by positioning the Greek forces here, the superior numbers of the Persians would once again be rendered indifferent.\footnote{Wallinga, Xerxes’ Greek Adventure pg 61.} Aside from positioning, Themistocles used another clever tactic against the Persians.

Before the Persians attacked, Themistocles sent his children’s tutor, Sikinnos, to Xerxes. Serving as a double agent for Themistocles, he pretended to be a turncoat, which Xerxes could certainly believe based on the grim outlook for the Greeks. Sikinnos told Xerxes that the Greeks planned to withdraw to the Isthmus of Corinth, where the Spartans were hastily building a blockade to keep the Persian land forces from reaching the Peloponnesus, through the Megarian Strait around Salamis. Xerxes took Sikinnos’ word, and sent one of his four main detachments to guard the outlet on the other side of the island. He also sent another fleet to guard the southward edge of the island in case the Greeks abandoned their ships and tried to flee on smaller, faster boats.\footnote{Herodotus, 8.75.}

Themistocles’ message has long been treated as being the single most important tactical move, one that gave the Greeks a fighting chance. However not all modern historians agree. HT Wallinga, in his book Xerxes’ Greek Adventure: the Naval Perspective, disagrees that Themistocles had anything to do with Xerxes’ decision. Wallinga asserts that the Persians were already forced to position their fleet tightly because of the constricting nature of the straits, and that it had already been understood by both sides that the Greeks would take a defensive position.\footnote{Wallinga, Xerxes’ Greek Adventure pg 68-70.} Wallinga also states that the Persians sent the Egyptian fleet, which had been strongest in the fighting at
Artemisium, to blockade the back/escape route. Although this may seem startling, Xerxes was entrusting the most important part of his mission, to capture any escapees, to this important force. He still outnumbered the Greeks by many ships, and if they were to attempt to escape through the Megarian Strait, he would need his best forces to hold them up or defeat them. Xerxes wanted to make sure that no Greek ships would escape the battle and reignite the struggle after this battle. He desired to destroy their fleet and completely subjugate the Greeks, the goal which his father had been unable to accomplish.

Wallinga does, however, credit Themistocles with the early deployment of the Persian fleet. Xerxes sent out his troops the night before, whether at sunset or midnight, in order to reach the Greeks early in the morning the next day. According to Themistocles’ message, the Persians believed they would find many Greeks demoralized or attempting to flee. However, Themistocles had brought the Persians on the battlefield of his choosing, at a time when the Greeks, many of whom may well have been considering such actions, were fully rested and ready for battle. Themistocles’ two goals had been achieved: the Persian fleet was divided, and they attacked with tired rowers, unprepared for a full day of battle.

When the two sides were prepared for battle, the Greeks sailed out to meet the Persian fleet in the narrow straits (Map 1). The Greek formation spanned the narrowest part of the single channel, which is about 1200 meters wide. According to J.S. Morrison, only 80 triremes could fit abreast across the channel at this width. By entering into

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154 Morrison, The Athenian Trireme pg 58.
155 Morrison, The Athenian Trireme pg 59.
the straits, the Greeks were able to minimize the effect of the Persians’ superior numbers. The Persians, who had far superior numbers, were perhaps too overconfident on this account. The Persians were probably expecting the Greeks to attempt to retreat at Artemisium they were able to escape because the task force sent to guard their escape route was destroyed by a storm. However, the Persians had not fully understood from their prior experiences in battle with the Greeks that their adversaries had superior tactics and were quite willing to face them.

The two main ancient sources for this battle differ on the exact operations of battle. Aeschylus, who probably took part in the battle himself,\textsuperscript{156} says that the Persians first only heard the Greek fleet and were unable to see them because of an island, probably the island of H. Georgios, which the Greek fleet was hiding behind in the Strait of Salamis:

\begin{quote} 
Night began to wane, yet the fleet of the Hellenes in no way attempted to put forth by stealth. When, however, radiant Day with her white horses shone over all the land, a loud cheer like a song of triumph first rang out from the Hellenes, and, at the same instant, clear from the island crags, an echo returned an answering cry. Terror fell on all the barbarians, balked of their purpose; for then the Hellenes chanted their solemn paean, not as in flight, but as men rushing to the onset with the courage of gallant hearts.\textsuperscript{157}
\end{quote}

The Greek fleet then sailed around the Persians and surrounded them.\textsuperscript{158}

In Herodotus’ view, which was arguably shaped by Persian accounts, the Persians were the first to attack since the Greeks had their backs to the shoreline, and

\textsuperscript{156} Morrison, The Athenian Trireme, pg 59.
\textsuperscript{157} Aeschylus, Persians lines 384-394.
\textsuperscript{158} Wallinga, Xerxes Greek Adventure, pg 115-117; Aeschylus Persians 417.
the Persians were advancing on the Greek fleet.\textsuperscript{159} Notwithstanding, the fighting commenced and would last the entire day. In the battle, the Greek’s superior tactics, using the diekplous maneuver to infiltrate the Persian fleet, proved to outweigh the Persians superior numbers. The diekplous was “the battle maneuver by which ships pulled through a gap made in the line-abreast formation of an enemy fleet, more generally the gap in a line of ships through which it is possible for other ships to pass.”\textsuperscript{160} This allowed other ships in the fleet to surround smaller groups of enemy ships and disable them. The Persian ships were “thrown into confusion,”\textsuperscript{161} and although the Greeks took some casualties, they overcame the Persian forces.\textsuperscript{162} Xerxes watched his naval force get destroyed and decided to abandon Greece, leaving his army to march out through Europe back to Persia.\textsuperscript{163} The Greeks had managed to defeat the strongest military force in the known world, despite being heavily outnumbered. The tactics learned in this war would continue to be employed in the following years.

Following the Persian Wars, Athens became one of the leading states in the Mediterranean. As Athens continued its growth, it needed to maintain money to maintain its fleet; the same fleet which had defended Greece from the Persians. In the fifty years following the Persian Wars Athens built up the Delian League. This organization was based on a number of poleis under Athens’ political influence and was administered by Athens and maintained by the Athenian navy. The Athenians forcibly sustained the alliances of the Delian League and forced all members to pay tribute to

\textsuperscript{159} Wallinga, 	extit{Xerxes Greek Adventure}, pg 122-123.
\textsuperscript{160} Morrison, 	extit{The Athenian Trireme} pg 290.
\textsuperscript{161} Morrison, 	extit{The Athenian Trireme} pg 60.
\textsuperscript{162} Herodotus, 8.86, 8.88-90.
\textsuperscript{163} Herodotus, 8.97-98.
the League, insisting it was for the maintenance of the fleet and protection from various enemies, including Persia. The first polis to be subjugated in such a way was Naxos, for their failure to pay tribute and ships, and their refusal to follow Athens in war. The Athenians used this fifty-year period to advance their naval capabilities, construct the Long Walls that connected Athens to its main port, Piraeus, and advance the military capabilities of its members. Oarsmen and other sailors could improve tactics and, more significantly, Athens was able to build up its fleet on an unparalleled scale. They were now unrivalled in the Mediterranean, and used this strength to become a very strong state.

In 433, Corinth and her island colony of Corcyra were engaged in a dispute that turned into a naval conflict. In a battle at Leukimne, Corcyra defeated a Corinthian fleet and destroyed fifteen of their ships. The Corinthians then turned their attention to building up a stronger force of triremes, while the Athenians agreed to a defensive alliance with the Corcyreans. The opposing two sides eventually met near the Sybota islands (Map 2) in 433. In the first day of battle, the two sides fought, as Thucydides’ called it, “the old-fashioned way.” Instead of using ramming tactics and sinking the enemies’ ships, both the Corinthians and Corcyreans attempted to board and attack each other’s ships with marines. Eventually the Athenians were forced to intervene, although it was then too late and the Corinthians were victorious. The next day, the Corinthians and Athenian-backed Corcyreans met again near Corcyra, but the
Corinthians fled to return home. The outcome of the battle was disputed, with both sides claiming victory.

This battle shows us that, although the technology was becoming more advanced, some states were stagnant in their approach to the use of newly developing tactics. The reliance on a familiar tactic was prominent in this battle, and although the Corinthians and Corcyreans both were lackadaisical in adopting these tactics, that would have to change. This battle also helped spur the outbreak of the Peloponnesian War between Athens and Sparta, a war of Athens’ strength at sea and Sparta’s strength on land. In the battle of Sybota, the Corinthians were careful to avoid the Athenians’ involvement as best as they could. Athens naval hegemony was well known in the Mediterranean and their superiority was unlikely to be tested unless they could be distracted.

Following a defeat\textsuperscript{169} to an Athenian general, Phormio, the Spartans sent out as an advisor the brave leader Brasidas, a Spartan commander who would have a large impact in the Archidamian War. The Peloponnesian fleet consisted of 77 warships, while Phormio, based out of Naupaktos, only had twenty.\textsuperscript{170} Unlike Themistocles in the Battle of Salamis in 480, Phormio was hoping to fight in open waters (Map 3). With his superiorly trained oarsmen and faster, better warships, he held the upper hand. Cnemus, the head commander of the fleet and Brasidas, meanwhile, were confident that their superior numbers and courage would compensate for the Athenians greater naval skills.

\textsuperscript{169} Thucydides, 2.83. \textsuperscript{170} Morrison, The Athenian Trireme pg 73, Thucydides, 2.90.
The two sides anchored off opposing promontories from each other, Phormio unable to risk attacking a larger force, the Peloponnesians too weary from the previous defeat.171 Before the battle, Phormio explained the tactical situation to his men,

“As to the battle, it shall not be, if I can help it, in the strait, nor will I sail in there at all; seeing that in a contest between a number of clumsily managed vessels and a small, fast, well-handled squadron, want of sea room is an undoubted disadvantage. One cannot run down an enemy properly without having a sight of him a good way off, nor can one retire at need when pressed; one can neither break the line nor return upon his rear, the proper tactics for a fast sailor; but the naval action necessarily becomes a land one, in which numbers must decide the matter.”172

In this description, Phormio clearly understands the capabilities of his force. Although Themistocles had chosen to take on a superior force in confined quarters, he did not have the superior ships that Phormio did in this battle.173 Phormio’s men have already defeated the Peloponnesian force and know they are capable of another victory.

Although Phormio wanted to avoid battle in the confined gulf, he had to defend Naupaktus, which lay on the northern coast of the Gulf of Corinth, and where it seemed the Peloponnesian fleet was headed.174 The next day the Spartans moved inward, and he was forced to follow. As the Peloponnesians sailed, four abreast, Phormio’s forces sailed single file to keep pace with them, guarding the northern coast.175 When Cnemus and Brasidas saw this, they immediately bore down on them and attacked. The first eleven of Phormio’s ships were able to escape, although the rest were driven on shore, and the Athenians who did not escape by swimming away were cut down. The

171 Thucydides, 2.86.5; Hornblower, A Commentary on Thucydides: Volume 1, pg 367.
172 Thucydides, 2.89.8.
173 Hornblower, A Commentary on Thucydides: Volume 1, pg 368-9.
174 Morrison, The Athenian Trireme, pg 75.
175 Thucydides, 2.90.1-4.
Peloponnesians towed away as many ships as they could, although the land forces were able to rescue a few, but not man them.\textsuperscript{176}

The Peloponnesians had managed to disable nine of Phormio’s twenty triremes, but the battle was not yet over. The Athenian ships managed to get back to the harbor of Naupaktos and prepare for battle.\textsuperscript{177} The Spartans, in their pursuit, had become scattered and lost their formation. As they came to the harbor, they were already singing the paean on their victory. One Leucadian ship sailed far ahead of the rest of the Peloponnesian fleet, and attempted to attack an Athenian ship which had fallen behind. However, when the Leucadians neared the Athenians, the ship circled around a merchantman in the harbor, and quickly disabled the Leucadians.\textsuperscript{178} This sudden turn of events produced elation for the Athenians and disbelief for the Peloponnesians. The Peloponnesians panicked. Some dropped their oars, while others ran aground in the shallows due to their ignorance of the harbor.\textsuperscript{179}

Seeing this, the Athenians made an offensive attack on the Peloponnesians, who immediately fled back to the Panormus promontory, where they had set out from earlier that day. Phormio pursued them and took six of their ships, while also managing to regain the ships the Peloponnesians had begun to take.\textsuperscript{180} Phormio displayed the tactics that made Athens so formidable— they were willing to face superior numbers and use their own superior seamanship and tactics to overcome their enemies, despite being outnumbered. The Athenians took advantage of every opportunity given to them.

\textsuperscript{176} Thucydides, 2.90.5-6.  
\textsuperscript{177} Thucydides, 2.91.1.  
\textsuperscript{178} Thucydides, 2.91.2-3.  
\textsuperscript{179} Thucydides, 2.91.4.  
\textsuperscript{180} Thucydides, 2.92.1-2.
Although they lost nearly half their force, they rallied when the Peloponnesians became overconfident. Phormio knew the capabilities of the ships he commanded, and how their speed could effectively be used to overcome a fleet who did not know how to handle these weapons.

After the first part of the Peloponnesian War, known as the Archidamian War, the Athenians and Spartans agreed on the Peace of Nicias in 421 BCE. During this time Athens chose to expand her influence into Sicily, planning an invasion of the powerful city-state of Syracuse. In this debacle, Athens suffered several defeats through the mismanagement of its generals and improved performance of the enemy forces. In a turning point naval battle of this expedition, the Athenians were forced to fight their adversaries inside the harbor of Syracuse. In this battle, the Athenian ships were cramped in tight space and unable to maneuver, leading to their defeat. Athens was routed and forced to surrender, leading to a shameful return to Attica and a loss of much manpower, which Sparta would take advantage of in upcoming battles.

Following the defeat in Sicily, the Peloponnesians had a newfound resiliency to reengage Athens on the seas. With help from Tissaphernes, the Persian satrap of Asia Minor, the Spartans had a newly built fleet ready to face Athens. The first meeting came at Cynossema (Map 4) in 411 BCE, a narrow strait near the Chersonese. Following a series of movements around the straits, the two sides eventually opposed each other off the coast of the Cynossema promontory. The Athenian fleet, led by Thrasybulus and Thrasyllus, numbered 76 triremes and was opposed by the

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181 Thucydides, 6.1.
182 Thucydides, 7.52.
183 Morrison, The Athenian Trireme pg 81.
Peloponnesian fleet, led by Mindarus, of 86 triremes. Thucydides describes the battle arrangement in specific detail. Each side extended their flanks along the even coast, with the Athenian fleets’ back to the promontory. Mindarus’ plan was to use his right wing, which held his fastest ships, to contain the Athenian left wing, led by Thrasybulus, and keep them from sailing out of the straits into open sea. Mindarus then wanted to drive the Athenian center onto the coast of the promontory, which extended behind them. Mindarus had chosen this location to hope to limit the Athenian maneuverability. When Mindarus attempted to circle the Athenian right wing, they responded by extending their line to the right. However, this thinned out their center, and also caused them to lose sight of their left wing, which was unable to be seen past the promontory.

Although the Peloponnesians were successful in driving the Athenian center onto the shore of the promontory, instead of aiding their wings they engaged them on land. Other Peloponnesian forces scattered in pursuit of the Athenians, and fell into disorder. Although Thrasybulus and Thrasyllus were unable to aid their center, and Thrasyllus unable to even see that they were being routed, they continued to fight and managed to defeat the ships opposing them. Each commander led their wing to encircle the enemy ships and rout them with a double periplous maneuver. They then focused on the scattered Peloponnesian middle and put them to flight as well. Although this was not a huge victory, it brought a morale boost to the Athenian spirits after the

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184 Thucydides, 8.104.2.
185 Thucydides, 8.104.1-5.
186 Morrison, The Athenian Trireme, pg 82.
187 Hornblower, A Commentary on Thucydides: Volume 3, pg 1048.
188 Thucydides, 8.104.4.
189 Thucydides, 8.105.1-2.
190 Thucydides, 8.105.3.
disaster in Syracuse.\textsuperscript{191} The next year, 410 BCE, the Athenian general Alcibiades returned and led another Athenian victory over the Spartans at Cyzicus; it seemed that things were turning in their favor.

In 406 BCE the two sides would meet in the final major naval battle of the war. Under Sparta’s new naval commander, Lysander, they rebuilt their fleet to 170 ships,\textsuperscript{192} with money from the Persians.\textsuperscript{193} Alcibiades, meanwhile, was replaced by Conon,\textsuperscript{194} while Lysander was replaced by Callicratidas when his term expired.\textsuperscript{195} The two sides met for battle at Arginousae (Map 5), the Athenians having a fleet of 143 ships, matched by the Spartan fleet of 120,\textsuperscript{196} in what Diodorus calls “the greatest sea battle on record of Greeks against Greeks.”\textsuperscript{197} In the battle, although the Peloponnesians were outnumbered, Callicratidas refused to retreat because, as he said, “Sparta would fare none the worse if he were killed, but flight would be a disgrace.”\textsuperscript{198}

Xenophon tells us that the Athenians stationed their fleet in groupings of 10-15 ships, each proceeding behind the next.\textsuperscript{199} They did this to prevent a breakthrough in their lines. The Peloponnesians were stationed in single file, since they hoped to use a \textit{diekplous} maneuver to break through the Athenian line.\textsuperscript{200} Athens was preparing a defensive stance by stacking their lines to avoid the \textit{diekplous}. Neither ancient source, Xenophon or Diodorus Siculus, goes into much detail of the battle. Xenophon merely

\textsuperscript{191} Thucydides, 8.106.1-2.
\textsuperscript{192} Morrison, \textit{The Athenian Trireme}, pg 88.
\textsuperscript{193} Xenophon, \textit{Hellenica} 1.5.1-3.
\textsuperscript{194} Xenophon, \textit{Hellenica} 1.5.18.
\textsuperscript{195} Xenophon, \textit{Hellenica} 1.6.1.
\textsuperscript{196} Morrison, \textit{The Athenian Trireme} pg 89.
\textsuperscript{197} Diodorus Siculus, \textit{Library} 13.98.5.
\textsuperscript{198} Xenophon, \textit{Hellenica} 1.6.32.
\textsuperscript{199} Xenophon, \textit{Hellenica} 1.6.29.
\textsuperscript{200} Xenophon, \textit{Hellenica}, 1.6.31.
tells us “they fell into fighting, and fought for a long time, their ships at first in close order and afterwards scattered.” Diodorus only tells us that the men were eager for battle, and then begins to recant the fate of Callicratidas, which was the turning point of the battle.

Callicratidas led the fighting for the Peloponnesians, disabling an Athenian trireme led by the general Lysias and attacking other ships. Diodorus then states that he attacked the trireme of the Athenian general Pericles, the son of the famous statesman Pericles, and his ship became stuck. Pericles’ marines then boarded his ship and finally killed Callicratidas. Xenophon’s account differs, telling us that Callicratidas fell overboard when his ship rammed an enemy. Following Callicratidas’ death, the Peloponnesian right fell into disarray and they fled.

After this defeat, the Spartans decided to put Lysander back in charge. He had been in charge of the navy previously, and was reinstated when things were looking sour. Lysander, using the money of Cyrus of Persia, quickly rebuilt the Spartan fleet and used it to attack Athens’ allies at several points around the Aegean. The two sides eventually met at Aegospotomi. At first, they came out for several days but refused battle, until one day Lysander followed the Athenians back to their camp and attacked while they were beached and unprepared for battle. Lysander completely demolished

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201 Xenophon, Hellenica, 1.6.33.
202 Diodorus Siculus, Library 13.98.3.
203 Diodorus Siculus, Library, 13.98.3-5.
204 Xenophon, Hellenica, 1.6.33.
205 Diodorus Siculus, 13.98.5-6.
206 Diodorus Siculus, Library 13.104.3-4.
207 Diodorus Siculus, Library 13.105.2.
208 Diodorus Siculus, Library 13.106.
the Athenian fleet, only the general Conon managed to escape with a small contingent. Lysander had effectively ended the war.

Conclusion

In conclusion, the development of shipping in ancient Greece can be seen as the main force of their rise to power and ability to become the first great civilization of the western world. The Greek culture laid the foundations for many other great civilizations, and their own developments and achievements still have a huge impact on our world today. From a naval perspective, they perfected some of the first naval tactics and paved the way for future developments in the Roman Empire. Although good evidence on many of their skills and innovations does not survive, by analyzing archaeological evidence I have tried to reconstruct the development of small vessels into triremes. I have also discussed the specifics of shipping in their society and shown how integral it was to their society.

During this period, the navies of Ancient Greece were the basis of the civilization. The Greeks used the trireme in battle, against the Persians and against other Greeks, in a very effective manner. We can see how they developed new maneuvers and tactics, and how the Athenians in particular were able to advance naval warfare. The leaders of this period clearly depended on the navies of their community to advance their political might. In the case of the Athenians, it was the basis of their entire hegemony. By
studying the different battles, I am hoping to show that naval warfare was going through a rapidly developing period; navies were becoming more advanced and more central to the success of a state.

Lastly, my analysis of the usage of navies for political means has shown the development of tactics and military power in ancient Greece. With the spread out placement of many *poleis* on various islands of the Aegean and the Mediterranean, shipping played a huge role. Ancient Greek states were largely dependent on the seas, and the need for a strong navy cannot be stressed enough. I have shown how leaders have repeatedly relied on their warships to maintain their independence, and to take control of other states that were not as powerful. By utilizing their strengths and using superior tactics, the Greeks were able to defeat the strongest empire in the world, Persia, and eventually fight in some of the biggest naval battles in ancient history, although they were against other Greeks.

**Bibliography**


Figure 1. Casson, *Ships and Seamanship*. Figure 22.

Figure 2. Casson, *Ships and Seamanship*. Figure 24.

Figure 3. Casson, *Ships and Seamanship*. Figure 25.
Figure 4. Casson, *Ships and Seamanship*. Figure 27.

Figure 5. Casson, *Ships and Seamanship*. Figure 28.

Figure 6. Cason, *Ships and Seamanship*. Figure 29.
Figure 7. Morrison, *Greek Oared Ships*. Figure 3a.

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Figure 9. Morrison, *Greek Oared Ships*. Figure 7e.
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Figure 18. Morrison, *The Athenian Trireme*. Figure 9.
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Figure 20. Morrison, *Grek Oared Ships*. Figure 24.
Figure 21. Morrison, *Greek Oared Ships*. Figure 26a.

Figure 22. Morrison, *The Athenian Trireme*. Figure 36.
Figure 23. Morrison, *The Athenian Trireme*. Figure 41b.

Figure 24. Morrison, *The Athenian Trireme*. Figure 29. The disposition of the fleets at the battle of Arginusae.