

Thalassocracy in the Hellenic world: from ancient to the modern times and future

Abstract

The term “thalassocracy,” of Greek origin, refers to sea power. It is believed that the term was invented to describe the dominance of the Greek world, which has a long tradition in shipping and maritime trade, dating back to the first appearances of the civilization. It is now well accepted and clearly documented by findings of archaeologists and historians that Minoans dominated large areas of the Mediterranean Sea, especially during the Bronze Age. Later, other powers demonstrated their ability to control the sea lanes, until today. The Greek tradition in maritime trade and the capabilities of the Greek ship-owners and their fleet continued throughout the centuries and had a very important role in the Greek revolution against the Ottomans in terms of both available funds and war operations at sea. Today, the Greek-owned fleet is one of the largest in the world and its role in world trade is of great interest. The focus of this paper is a brief review of the evolution of sea rule in the Greek world from the earliest traces of history to the modern era, with comments on the relationship between thalassocracy and sustainability and the future of sea trade.

Keywords: Hellenic World and history, sustainability, distillation, desalination, Navigation, Sea Trade, Sea Power

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Prolegomena

The sea is the heart of our planet. Water covers more than two-thirds of the Earth's surface and is very important for our lives not only because it is an important source of food, but also because it is a major means of transporting goods and people. Implicitly it provides jobs, entertainment, health, and sailing.¹ The marine environment is also important for the quality of our lives due to the important influence of the sea physical parameters and their changes on global and local weather. The biodiversity in the sea is an important feature controlling the quality of our environment and its sustainability and maintaining it at an acceptable level is of profound importance for the future of humanity. For all these reasons, the United Nations proclaimed the current decade as the ‘Decade for Ocean Science for Sustainable Development.’²

Focusing on the sea as a means of transportation of goods and people is of great importance for the establishment of a maritime power that could enforce its dominance over a short or a large area. The term “Thalassocracy,” derived from the Greek language which translates to “rule of the sea,” was first used by the Ancient Greek historians to describe the type of government that was set up by the Minoan civilization, which depended on its navy for its power^{3,4} has also been used by others as a general term to characterize states and/or nations that control or have dominion over a large expanse of sea or have a naval supremacy either in a commercial or military sense. Alpers⁵ has defined thalassocracy as a state with primarily maritime realms, an empire at sea, or a seaborne empire. Important ancient thalassocracies include the Greek, Syrian, and Egyptian civilizations.⁶

The purpose of this paper is to present a brief review of thalassocracy over the years, with specific reference to states and nations related to the Hellenic world that have been recognized as sea-powers. It will be shown that the history of the relationship of the Hellenic world with the sea can be characterized as Thalassocracy during many periods of the world history including the modern era, where shipping is a major factor of the world economy. Finally, the role of the Greek ship owners and their fleet in modern years as well as their perspectives for the future will also be analyzed.

The paper is organized as follows: after this introductory section, distinct historical periods of thalassocracy from prehistoric to the present time are presented from a geographical and chronological perspective, including some notes on various types of technology used in shipping and naval forces. The basic periods considered in this article are: Prehistoric to Medieval times, Early to Mid-Modern times and Contemporary times. Emerging trends and future challenges for thalassocracy related primarily to shipping, are discussed in the section following the presentation of the historical facts. Concluding observations and remarks and presented in last section: Epilogue.

Thalassocracy in prehistoric to medieval times (ca 3,200 BC-I,400 AD)

The evolution of thalassocracy in prehistoric to medieval times is divided into three time periods Prehistoric, Historical, and Medieval to highlight the different civilizations ascendancy to power. During Prehistoric times, the Minoan thalassocracy was dominant and is analyzed separately. Reference to the thalassocracy in the Iron Age is also made. The Historical times are characterized mainly by the Archaic, Classical, Hellenistic, and Roman periods.

The Minoan thalassocracy (ca 3200-I 100 BC)

This prehistoric period in Hellenic World is characterized mainly by the Minoan civilization. The Minoan civilization is remarkable for its large and ornate “palaces”, up to four floors high, with intricate hydraulic networks and murals. The first Minoans are believed to be mainly descended from Neolithic people, who probably migrated thousands of years earlier, between ca 10000–8000 BC from the Levant region, located in the eastern Mediterranean which today includes Israel and the West Bank, Jordan, Syria and part of southern Turkey.⁷

However, as most modern historians agree, the Minoans were also people of the sea. They were mercantile people who were engaged in significant overseas trade, and at the peak of their civilization may well have had a dominant position in international trade in the Mediterranean region. The Minoan period is characterized by

extensive trade between the settlements in Crete, the Aegean, and the Mediterranean, especially in the East. Through merchants and their artists, the cultural influence of the Minoans reached beyond Crete to the Cyclades, Egypt, Cyprus, the Levant, and Anatolia. Some of the most remarkable Minoan works of art are preserved in the town of Akrotiri on the island of Santorini, which was destroyed by the eruption of its volcano. In addition, based on the findings from important colonies at Thera, Kythera, Melos, Keos, Aigina, Rhodes, Miletus, and others mostly in the area of the Aegean Sea nearest to Crete it is evident that Minoans built up a sea empire or “thalassocracy”.⁸ Sophisticated ships with different decoration suggesting stratification are shown in Minoan fresco from Aegean Akrotiri (Figure 1). A sailing vessel loaded with goods for trade is shown in center of the fresco.



Figure 1 Each Minoan ship procession from Aegean Akrotiri (ca 1500 BC) meticulously painted and full of intricate detail, Dolphins jumping out of the water and scenes of ancient lands and villages.⁹

Evidence of the Minoan thalassocracy can also be found in writings by ancient historians. Translated from the Greek text, Thucydides writes that “*Minos (a king of Crete), according to tradition, was the first to acquire a navy, and dominate most of the Mediterranean Sea.*” Thucydides also writes that Minos with his navy conquered the islands of the Cyclades, established a colony in most of them and in due course expelled the Carians and the Phoenicians, known as the first pirates, and installed his sons as rulers.¹⁰ He also notes that Minos eliminated piracy, which was endemic, from the Mediterranean sea area so that the goods could move more safely.¹¹

What was the role of the Minoan thalassocracy in maintaining peace during this period? Arthur Evans who excavated Knossos, makes reference to this period as the *Pax Minoica* or ‘Minoan



Figure 2 Modern reconstruction of a Minoan ship (Photo from the Archeological Museum of Gortys, taken by A. N. Angelakis).

In addition, in 1926–27, the Archaeologist S. Marinatos was the first to excavate the coastal area and found that it may have been a Minoan Shipyard. In his research, it was reported that the area of the

‘*peace*’, as cities needed no walls. Like *Pax Romana*, such a peace, if it existed, would have been the product of military strength rather than pacifism.¹²

Referring to wars worldwide (including those related to water conflicts) before ca 1000 BC, and especially during the Bronze Age (ca 3200-1100 BC) (http://en.wikipedia.org/wiki/List_of_wars_before_1000), most of them occurred in Mediterranean region where the Minoan civilization was dominant for almost two millennia. Some notable conflicts are: (a) Sumerians, of the Lagash city, in the early Dynastic period were fighting against the cities of Ur, Uruk, Larsa, Akshak, Umma, and others (ca 2500 BC); (b) During the early Dynastic period, Sumerians, of the Umma city, were fighting against the cities of Lagash, Ur, Uruk, Larsa, Kish, Nippur, and others (ca 2294-2230 BC); (c) From ca 1800 to 1750 BC several wars took place between: (i) Sumerians (Larsa) against the cities of Babylon, Der, Uruk, and Isin, (ii) Babylonians against Elamites and Sumerians (Larsa) and (iii) Babylonians against Elamites; (d) From ca 1750-1500 BC several wars took place between the Assyrians and Hittites against Babylonians, Hurrians, and Amorites in the region; and (e) From ca 1500 to ca 1250 BC Egyptians were at war with Libyans, Persians, Phoenicians, and others.¹³

It is very interesting to note that in none these wars were the Minoans involved militarily directly or indirectly. Minoans, known as sea people, acted as intermediates trying to impose peace.¹⁴ Many times, peace was achieved by the process of marketing products between the warring parties indicating that Minoans were a true thalassocracy in Mediterranean.

The Minoan ships

Based on the relevant seal stone illustrations (stones with carved engravings), Marinatos classified the Minoan ships (Figure 2) into a series of different types.¹⁵ In the years that followed, other relevant seal stones have been discovered. Thus, L. Basch¹⁶ had at his disposal 101 seal stones and classified the ships that are depicted in them in classes that, more or less, correspond to the types identified by Marinatos.¹⁶ In particular, Basch¹⁶ identified the following types of ships: “bird” ship, Cycladic type ship, ship symmetrically curved in the shape of a “crescent moon”, ship with moving parts, and ships with symmetrical angles and plans. It should also be noted that there is not a visible waterline, and that all the ships appear to be floating over the sea.¹⁷ Similarly, the frieze of the fleet in Thira with Minoan ships was reported by Muge and Loukovikas.¹⁸

shipyard was excavated to the depth of the bay, from where porphyry rock was mined from a large rectangular cavity.¹⁹ Also, another example of painting Minoan ship, as part of Fresco in “Akrotiri”, Thera and another clay type from Kazaphani Cyprus are shown in Figure 3.

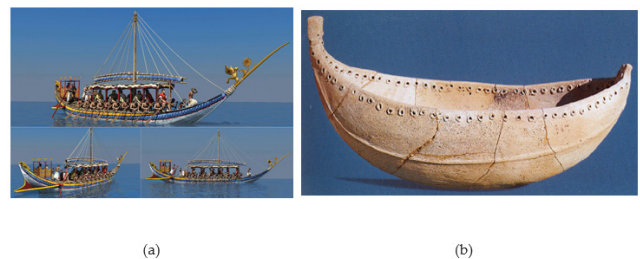


Figure 3 Other examples of Minoan ships: (a) Awesome computer reconstruction of a Type IV medium size Minoan ship always based on the Thera fresco representations and (b) a Clay model of a boat of Plain White Handmade ware, from Kazaphani Cyprus dated around 1350 BC (from).²⁰

Another important underwater discovery from the Bronze Age is the “Uluburun Shipwreck,” a ship similar to the Greco-Roman vessels of a later time “.¹⁸ The shipwreck was found at the bottom of the eastern coast of Uluburun (a Great Cape), in the Antalya region of southwestern Turkey, in the summer of 1982 by Mehmed Çakir, a local sponge diver from Yalıkavak, a village near Bodrum.²¹ This shipwreck is significant because it contained one of the most interesting assemblages of artifacts found in the Mediterranean Sea. Included in the cargo were ingots of copper and tin, Canaanite jars, glass ingots, and a variety of other goods used for trading throughout the Mediterranean region.²¹

Early distillation techniques: a parallel development

A parallel event that also contributed to the development of the Minoan thalassocracy was the development distillation techniques. The ability to obtain drinking water from sea water allowed the Greek fleet to travel great distances without the need for stopping at intermediate ports.

E. Hirschfeld²² noted that: “*We should not under-estimate how ‘joined up’ the ancient world was. For instance, the late Bronze Age shipwreck carried a remarkable assortment of international goods*”. The Minoan ships especially those of late time appears to be well developed and were equivalent to the Graeco–Roman vessels. In addition, it appears that Minoans had probably implemented water distillation for thousands of years by boiling the seawater the freshwater is evaporate and separate from the salt.²³ The first written indication about the desalination of seawater via the boiling process is reported by Alexander of Aphrodisias in ca 200 AD illustrated of boiling saltwater in a brass vessel and suspended large sponge to absorb the evaporated water.²⁴

During historical times, the Greek philosopher Aristotle (384–322 BC) recognized that the water phase might be changed, and the exchange of energy in his relative work that has been published and pointed out that saltwater could become sweet by turning vapor, but it does not turn back to saltwater again when it condenses.²³ He reported that a suitable wax vessel, when submerged in seawater for a long time, holds potable water and filters the salt as: “... *saltwater is being mixed with something else is an evident not only from what was said but by whether someone after building a wax-vessel, put in the sea while having tie around the orifice in such a manner as not to be poured into the seawater. This (water), thus coming in through the wax-vessel walls, is drinkable (water), such that the separated soil substances (from the water) with filtration, so what makes the water salty is mixing (with something else)...*” (Meteorologia, Book B’). Today, in many locations, desalination technologies, including distillation, have become the critical component in ensuring long-term water resources sustainability.²³

The relationship of Thalassocracy to sustainability in the bronze age

During the Bronze Age, the Minoan civilization was able to contribute significantly to human, social, economic, and environmental sustainability throughout the Mediterranean Region. Contributions to sustainability resulted from two contemporaneous developments: (a) the evolution the Minoan ships which made the Minoan thalassocracy, and a long period of peace, possible and (b) the simultaneous progression of the Minoan scientific, engineering, technological, and cultural advancements.²⁵ Angelakis et al.²⁵ have presented a more comprehensive discussion of the relationship of thalassocracy and sustainability in the Bronze Age.

Thalassocracy in the iron age (ca 1200-750 BC)

Thucydides (Book 1, chapter 4) and several others ancient Greek historians considered early Greek history as a succession of thalassocracies, starting with the mythical figure of Minos in Crete. The period from ca 1200-750 BC is known as the Iron or Dark Age because little information is known about events of this period. During the Iron Age, Greek thalassocracy is not well documented.

The Minoans were followed by the Phoenicians which were great thalassocrates. However, Phoenicia, was never politically unified, was often under foreign rule, did not effectively retain control of its colonies, and never used colonies as footholds of conquest.²⁶ The greatest Phoenician colony, Carthage, itself came rather closer to a thalassocracy, retaining control of colonies in the Western Mediterranean and then, under Hamilcar Barca, undertaking the conquest and development of Spain as a Carthaginian imperial possession.²⁶ The Phoenician culture originated in the Eastern Mediterranean region of the Levant (Southern Syria, Lebanon and Northern Israel). The Phoenician culture lasted from about the 2nd millennium BC until it ended in 146 BC, when the Carthage was destroyed.²⁷

Thalassocracy in the Archaic, classical, Hellenistic, and roman periods (ca 750 BC-476 AD)

During the Archaic period (ca 750-480 BC), Minoan technologies including navigation appear to be have been developed by Homer’s time (ca 8th century BC), which also included other writers such as Hesiod (ca 750-660 BC), an ancient Greek poet, some Presocratics (writers before Socrates), and some Lyric Poets. Thalassocracy was again growing in Classical period, as it is referred in the Homeric poetry and other writings.²⁸

Minoan technologies, including hydraulics and navigation, were mainly exported to the mainland in later periods of the Greek civilizations in the Classical, Hellenistic, and Roman (ca 480 BC-476 AD) periods. During the Classical and Hellenistic period, both Herodotus (ca 484 – 425 BC) and Thucydides (ca 460-400 BC) reported that the thalassocracy of Minos was viewed as a prehistoric precedent for the historical thalassocracy mainly during the Athenian Empire in the 5th century BC.²⁸ This Athenian connection will figure prominently as discussed below.

In general, Greece exhibited the same characteristics as the Phoenician civilizations. In the beginning the Greek states founded colonies, but later no longer retained or controlled them. However, the Athenians, with their sea power established, in 480, the League of Delos, also known as the Delian League, an association of Greek city-states²⁹ (Figure 4). The league was formed as a defensive confederation, to oppose the Persian invasion of a Greece. All of the confederation members made proportional monetary contributions to the common defense. The contributions were kept at the Temple of Apollo on the island of Delos.²⁶ Hence the name of the League. The League continued after the Persians were defeated. But because of the status of Athens as the predominant member, Pericles wanted to move the Treasury of the League from Delos in Athens. Pericles did this even no other members of the League agreed. Athenians then began spending the money for its own purposes, including monumental works of art and architecture. Contributions of League members became in effect Tribute paid to Athens. Thereafter the League became the “Athenian Empire”, as the historians now refer to the period. However, such terminology is anachronistic and it is not appropriate. The “Empire of Athens”, with more or less unwilling participants, depended wholly on the ability of Athens to maintain naval supremacy in the Aegean Sea.²⁶ Without naval supremacy Athens would be powerless.³⁰



Figure 4 Other examples of Minoan ships: (a) paintings of Minoan ships, as parts of Fresco in “Akrotiri”, Thera and (b) a potential model of a ship adapted from the Thera Fresco that further provided insights of the reconstruction.²²

The concept of Thalassocracy becomes clear in the writings of Herodotus as he distinguishes sea-power from land-power and writes of the need to counter the Phoenician thalassocracy by developing a Greek “empire of the sea”. According to Herodotus, Polycrates (574-522 BC), the tyrant of Samos, was the first to conceive the concept of an empire of the sea, although it could have been Minos of Crete, if in fact he existed, who had the mastery of the Aegean at an earlier time.³¹

Polycrates recruited a navy of 1,000 archers and a 100 penteconters (an ancient fifty oar Greek galley in use since the archaic period). This navy became the most powerful in the Greek world. Herodotus (Book 3, chapter 122) writes that Polycrates was the first Greek ruler to understand the importance of sea power and Thucydides (1.13.6) includes him in his list of thalassocracies in the Aegean Sea. The development and nature of Polycrates’ navy is debated. Some scholars have conceived of his penteconters as powerful warships that were operated in accordance with Polycrates’ command.³² Other scholars consider this picture anachronistic; they consider the pentekonters as trading and raiding vessels that were owned individually by Samian aristocrats, who were essentially autonomous pirates only loosely controlled by Polycrates and the Samian state.³³ In addition, Polycrates is said to have commissioned a new type of ship called the Samaina, a multi-decked ship with two banks of oars, apparently a merchant galley designed for the rapid transport of goods or troops.³⁴ In the Hellenistic and Roman eras, major developments were made in hydraulics, navigation, construction, and operation of ships which made it possible to build larger ships that enhanced sea power.³⁵

Naval ships and sea wars in the classical and Hellenistic periods

Thalassocracy is a type of state whose power is exercised mainly at sea and focuses on shipping.⁵ Formal naval powers seldom had power over the continental powers, even in the mainland where they were based. Historically such states were in antiquity the Phoenicians with Tiro and Sidon (both located in modern day Lebanon) and later Carthage, or later during the Middle Ages and the Renaissance the naval and merchant forces of Venice and Genoa, and later the colonial European powers of the empire and the empire of Portugal.³⁶

Discussing thalassocracy, it should be noted that the first historical evidence of the use of naval ships in war among nations is also pertinent

to the Greek history. Ancient descriptions of the Persian Wars were the first involving large-scale naval operations, not just sophisticated fleet engagements with dozens of triremes (war galley with three rows of oars on each side), and combined land-sea operations. It seems unlikely that these operations and the ships involved were the product of a single generation; most likely the period of evolution and experimentation in naval ships and their armaments was simply not recorded by history.³⁷

It is worthwhile at this point to summarize the naval campaigns related to the Persian Wars to underline the importance of thalassocracy in the evolution of a war at that time. After some initial battles, while subjugating the Greeks of the Ionian coast, the Persians were determined to invade Greece. Themistocles of Athens estimated that the Greeks would be outnumbered by the Persians on land, but that Athenians could protect themselves by building a fleet (the famous “wooden walls”), using the profits of the silver mines at Laurium to finance them.

The first Persian campaign, in 492 BC, was aborted because the fleet was lost in a storm, but the second, in 490 BC, captured islands in the Aegean Sea before landing on the mainland near Marathon. Attacks by the Greek armies repulsed the Persians.³⁸

The third Persian campaign under Xerxes I of Persia in 480 BC, followed the pattern of the previous campaign in marching the army via the Hellespont while the fleet paralleled in the opened sea. Near Artemisium, in the narrow channel between the mainland and the island of Euboea, the Greek fleet held off multiple assaults by the Persians. However, on land at Thermopylae the Greeks forced, and the Athens evacuated its population to the nearby Salamis Island.³⁹

The ensuing battle of Salamis was one of the decisive naval engagements in history. Themistocles trapped the Persians in a channel too narrow to bring their greater naval forces to bear and attacked them vigorously on September 22 of 480 BC.⁴⁰ In the end, the Persians lost 200 ships as compared to the Greeks who lost 40 ships (Figure 6). Aeschylus wrote a play about the defeat, “The Persians”. It was performed in a Greek theatre a few years after the battle. It is the oldest known surviving play. At the end, although Xerxes still had a stronger naval force than that of Greeks, he nevertheless withdrew. The Persians returned to Asia Minor, leaving the Greeks their freedom. The battle of Salamis was the most important conflict and as it was the beginning of the end of the second Persian invasion in Greece.



Figure 5 The epic battle of Salamis between Greek and Persian naval forces.



Figure 6 The port and fleet of Genoa in the early 14th century.⁴³

Medieval times (ca 476-1,400 AD)

The early Middle Age (ca 500–1000 AD) witnessed multiple thalassocracies, large and small, often land-based empires which controlled areas of the sea, the most important of them being the Republic of Venice, the Republic of Genoa and the Republic of Pisa. They were known as maritime republics, controlling trade and territories in the Mediterranean Sea for centuries. These contacts were not only commercial, but also cultural and artistic. They also had an essential role in the Crusades.⁴¹

The naval context was changed in 1204 with the Venetian conquest of Constantinople with the aid of northern crusaders. Formerly the Byzantine Empire and thalassocracy became Latin Christian and dominant naval power and an unstable ally of Venice.⁴² The maritime republic committed to creating its own thalassocracy. In 1204 marked the birth of the Venetian maritime empire with stations in the eastern Mediterranean. It had already emerged among Italian port towns, especially over access to lucrative trade opportunities in the Levant and Black Sea. In addition, competition over commerce drove the naval policy of the maritime republics and other neighboring states.⁴² The port and fleet of Genoa in the early 14th century is shown in Figure 6.⁴³

Thalassocracy in early to mid-modern times (ca 1400- 1900 AD)

Four periods stand out in the early to mid-modern times: the events of the Venetian period, the Ottoman Empire, Unrest in the latter part of the 18th century and the Greek revolution and the war of independence. The relationship of thalassocracy to sustainability during this period is also reviewed

Venetian period (ca 1205-1789)

During the Venetian period the city state of Venice established a thalassocracy. It dominated trade on the Mediterranean Sea, including commerce between Europe and North Africa, as well as Asia. The Venetian navy was used in the Crusades, most notably in the Fourth Crusade. However, Venice perceived Rome as an enemy and maintained high levels of religious and ideological independence personified by the patriarch of Venice and a highly developed independent publishing industry that served as a haven from Catholic censorship for many centuries.⁴⁴ Venice achieved territorial conquests along the Adriatic Sea including Ionian Islands. It became home to

an extremely wealthy merchant class, who patronized renowned art and architecture along the city's lagoons.⁴⁵ Venetian merchants were influential financiers in Europe and of course Crete and Ionian island.

The ottoman empire

The Ottoman Empire expanded from a land-based region to dominate the Eastern Mediterranean and to expand into the Indian Ocean as a thalassocracy from the 15th century AD.⁴⁶ In general, the Ottoman, Safavid, and Mughal Empires were all traditional land-based powers, although the Ottomans dominated the Mediterranean Sea for a time with their strong navy. The Safavid and Mughal Empires had strong armies, but no navies to speak of and both had inland capital cities.⁴⁷

During that period of the Ottoman occupation over the Greek territory, Greeks continued their tradition of being brave and smart thalassocrates. They were considered to be excellent ship-builders (καρφομαραγκοί) and they were very much wanted in both Venetian and Ottoman shipyards (καρναγία). In addition they were forward-thinking merchants. They took advantage of the long period of peace between Ottomans and Venetians and thereafter of the Kioutsouk Kainartzi treaty terminating the 1st Russian-Turkish war, to develop and begin their domination over the sea trade.

At that time, many Greeks who originally were crews in ships owned by big sea powers of the time (Venetians, French) and, sometime in corsair ships, used their own capital gained from their involvement in ship-building and trade to buy or build own ships and thus become owners of a significant fleet that was occupied in the transport of goods of every type within the Mediterranean Sea.

Unsettled times in the latter part of the 18th century

By the end of the 18th century, a great portion of the grain trade between the ports of the Black Sea and the Mediterranean ports was dominated by ships owned by Greeks. During the period between 1792 and 1806, the number of Greek Ships occupied in the Black sea trade was 993.⁴⁸

The same period is marked by massive conflicts in the Mediterranean Sea that resulted in the gradual reduction of the superiority of the French fleet in this area and the raise of the English thalassocracy. The Greeks, neutral during this period, increased their portion in grain trade, which gave them much power. By the end of the Napoleon wars (1815), the Greeks had doubled the size of their fleet.⁴⁸

Greek ships sailed at that time all over Eastern Mediterranean and the ports of Kerkyra, Zakynthos, Argostoli, Patras, Preveza became very important as local trade stations along with the big ports of Constantinople, Thessaloniki, Smyrni and Alessandria which were also stations between land and sea trade. In parallel the islands of the Aegean Sea played dominant role in the ship trade and started a new tradition of "Greek thalassocracy" with basic centers Psara, Samos, Kassos and Patmos in the eastern Aegean Sea and Ydra and Spetses in the western Aegean Sea.

The Greek revolution

When the Greek revolution started in 1821, the Greek ship-owners had already made a fortune and owned a big fleet of ships, mainly for trade, but also ready to be transformed into battle ships, from one part due to the fear of pirate ships that forced them to take all the measures needed to ensure safe transportation of goods and protect their property, but also because some of them were actual engaged in corsair missions (<https://www.ageofempires.com/history/phoenician-culture/>) (Figure 7).



Figure 7 Model of the Chebeck (Mystiko) type of ship mainly owned by ship owners from Psara during the Greek war of independence that started in 1821 (Photo from Maritime Museum of Crete).

The relationship of Thalassocracy to sustainability in early to mid-modern times

During the Venetian and Ottoman periods, the relationship of thalassocracy to sustainability can best be described as the transfer of goods, services, and culture between Europe, North African, and Asia. Extending thalassocracy to Africa and Asia brought about the exchange of new cultural ideas, art, agricultural crops, and systems of governance, all of which contributed to the human condition. The exchange of ship building techniques and skills furthered the transfer of knowledge and led to economic sustainability.

During the latter part of this period, both trade and naval conflict were common. Greek shipping was expanded during this period, with the trade in foodstuffs (e.g., grain) leading the way. Unfortunately, naval conflicts during this period tended to reduce cultural exchanges that were common in the previous time period.⁴⁹ With travel by railroad becoming more common in the latter half of the 19th century, the role of thalassocracy in the transfer of human and social cultural sustainability began to diminish.

Thalassocracy in Contemporary Times (1900 AD-present)

Themes discussed in this section include the limits of thalassocracy in terms of naval power, the modern concept of thalassocracy, the current position of the Greek fleet in world commerce, an overview of the current Greek naval fleet, the current relationship of thalassocracy to sustainability, and the renaissance in underwater exploration through improvements in technology.

The limits of Thalassocracy

The World War I revealed the limits of Thalassocracy in a way that had not been anticipated in history. Both the British and the German armies expected victory over each other by destroying fleets that supplied each camp. However, for fear of losing the war, both armies resorted to developing armies that could fight on land and not sea. Weak labor force participation as in the case of Saudi Arabia has also exposed the fragility of the Thalassocracy. Countries failing to unite their colonies have always been at risk of failing to hold on to the Thalassocracy powers.

In Greece, the Ottoman fleet appeared on December 3, 1912, and Koundouriotis (1855–1935), a Greek ship owner and politician, gave an impassioned speech to the Greek Fleet as well as a signal to the enemy, which shows the chaotic difference in both morale and leadership and in which not a single syllable is unnecessary. He said *“By the power of God and the wishes of the King and in the name of the Righteous, I sail with unwavering momentum and with the conviction of victory against the enemy of the Nation”*.

The fleets met at 09:00 in the morning and the short naval battle of Elli began. It would not be an exaggeration to adopt the view that the Greek flagship fought only the Ottoman fleet, since, taking advantage of its superiority mainly in speed, it forced the Turkish ships to flee erratically and seek protection.⁵⁰

Koundouriotis was criticized for his daring action because he exposed the Greek armored cruiser “AVEROF” (Figure 8) to the cannons and torpedoes of an entire fleet and at the moment during the pursuit of the enemy fleet and the machine guns of the coastal Turkish fortress of Elli. But he caused such panic that his opponents lost all cohesion. On January 5, 1913, another failed exit of the rival fleet followed.⁵⁰



Figure 8 The battleship AVEROF from the Greek Navy: Its role in the Balkan wars and what its glorious history teaches us about what we live today. The AVEROF is now a museum.

Eleftherios Venizelos (a Greek statesman and leader) made his mark when he said goodbye to the fleet in the bay of Faliro beach on October 5, 1912, with the famous phrase: *“The homeland deserves from you not just to die for it. That would be the least. Worthy to win. And you will win. I’m overconfident!”*

Evolution of Thalassocracy in the modern era

Greece is a unique example regarding its commercial fleet. It is a small country in the eastern corner of the Mediterranean, with many islands and a long shoreline. Its population is rather small, limited to a few million inhabitants. However, as already stated, it succeeded in the difficult and demanding conditions mainly during the last century. At the same time, it has built and operated one of the largest commercial fleets on a global level, competing with economic giants of the time such as Japan, the USA, Britain and Norway.

The phenomenal growth of the Greek shipping industry in the post-war period can easily be demonstrated based on the available quantitative data. In 1938, just before the outbreak of the 2nd World War, the Greek-owned fleet reached a total deadweight tonnage (dwt) of 1.8 million tons. In 1949, a few years after the end of the 2nd War,

the dwt of the fleet increased to 2.4 million register tons (2.83 m³), to reach in 1976 the astonishing figures of 50.6 million register tons, with the Greek ship-owners emerging as the most powerful players in the field of global shipping industry.⁵¹

It is worth mentioning that even today, in the middle of the second decade of a new century, the 21st, the Greek-owned fleet remains the largest in the world both in terms of total dwt and in terms of displacement capacity, although it has fewer ships in absolute terms as compared to China or Japan. Indicatively, Greek ship-owners at the end of 2014, as is the case today, remained first in tankers (1,217), second in dry bulk carriers (1,878) and second also in liquefied natural gas carriers.⁵¹

Today, thalassocracy is mainly associated with the power of a nation expressed through its position in the sea-trade. Naval ships are still important of course as an additional measure to ensure security and peace in some region, but economy and transportation of goods is considered the main factor in considering the strength of some country in controlling sea-routes. In this respect, Greek merchandise fleet has been considered as the world's leading power in the commercial sea-trade. Thus, the term "thalassocracy" is still valid, describing accurately the role of Greece in the global trade, as sea-trade is by far the major component in the transportation of products world-wide.

What is the consequence of this new "thalassocracy" in the Greek economy? According to the data provided by the Bank of Greece, the income from maritime transport services during the period 2015–2021 exceeded an average of 13 billion €/yr, which is equivalent to 7.5% of the Gross National Product and corresponds to 41% of the total income from all types of services.⁵² The net income represented 30% of the deficit from goods balance. It is obvious that the maritime cluster is a dynamic and dynamic component of the Greek economy.

The current position of the Greek fleet in world commercial fleet

The annual report of the Hellenic ship-owners Association for the period 2020–2021 revealed interesting facts about the evolution of the Greek-owned fleet. According to the published data, Greece remains the largest shipping power in the world. With a fleet of 4,901 ships, Greek ship-owners control 19.42% of the world's dwt.⁵³ It is interesting to note that according to the most recent data⁵⁴ the number of Greek ships has risen to 5,514 representing approximately 21 % of the world fleet in terms of dwt. Greece remains a great maritime power with the increase of the Greek fleet to be of the order of 45.8% since 2014 and 7.4% since 2019 a remarkable achievement given the Covid-19 pandemic concerns during this period.

Currently, the Greek-owned fleet represents 59% of the European Union fleet (2020 data). It is noticeable that the country ranked second in the EU owned fleet is Germany representing 14.58% of the European Union fleet. From the statistics of the International Union for Marine Insurance (IUMI), the Greek-owned ships represented in 2021 the 17% of the world fleet, while China represents 15%, and Japan 12%. Other countries that share in the world fleet include Germany 4%, United States 4% and Korea 4%.⁵⁵

In total, "Greeks" control 31.78% of the world's tanker fleet, 25.4% of the global dry bulk fleet, 22.35% of the world's liquefied natural gas (LNG / LPG) fleet, 15.60% of the world's chemical and petroleum products transport fleet, and 9.33% of the global container fleet.⁵⁴

In addition, more than 90% of the transportation capacity of the Greek fleet is used for the international trade, being by far the

greater transportation fleet worldwide. This statistic is considered a very important fact in what concerns the role of Greece in ensuring a proper supply chain especially after the new evolutions, following the Russian invasion in Ukraine and its consequences to the world trade. Greece will play again a leading role in world trade as the 90% of wood products produced worldwide are transported through maritime routes.

Left for the end, a brief note on the Greek naval fleet. As already noted, the naval ships play an important role in securing an environment of peace and stability, which of course is necessary for all aspects of life, including the smooth evolution of the trade and the further social development. Greece has invested a lot in the creation and maintenance of a modern fleet of naval ships. A recent example is the agreement for the acquisition of 3(4) Bellhara Frigates from France.⁵⁶ This ship is considered among the most efficient in both surface and subsurface naval war.

Shipping has a secure future, as it is the largest industry in the world and projections are already reaching 2100. Young people need to be actively recruited to the field. The new generation is the one to which the secret of Greek seamanship must be passed. "We have land and homeland when we have ships and sea" (Herodotus). Without young people the Greek Shipping have no future, we have no ships, we have no sea, and therefore we have no homeland.

In general, the events in the history of Thalassocracy in the 20th and 21st century can be described as: With naval arms races (especially between Germany and Britain) and the end of colonialism and the granting of independence to these colonies, European thalassocracies, which had controlled the world's oceans for centuries, ceased to be.

The relationship of Thalassocracy to sustainability in contemporary times

With the development of many new ways to transfer human, social, and cultural information, the relationship of thalassocracy to sustainability in contemporary times, is primarily related to the transfer of goods and services. For example, suspending or delaying grain deliveries to Africa affects human sustainability. Supply chain disruptions which affect all types of goods impacts economic sustainability. Energy sustainability, an aspect of environmental sustainability, is reflected in the design of new ships as discussed in the following section. Modern sustainability in ship design also has parallels in history of thalassocracy. Ships in the past evolved to enhance their mobility and capacity to improve their economic sustainability.

Emerging trends and future issues and challenges for Thalassocracy

Because the concept of thalassocracy is still evolving in the 21st century, it is appropriate to consider the future in term of emerging trends, future issues, and challenges.

Future trends and challenges

Today the Greek maritime industry faces both operational problems and challenges, which co-exist. Important issues that Greek ship-owners must consider in their plans for the further development of the Greek fleet and the position of Greece in the world maritime community are considered below.

A critically important factor that will determine the future of the shipping is associated with the expected income from sea-trade following the combined effect of the Pandemic due to the Covid-19

and the Russian invasion in Ukraine.⁵⁷ Covid-19 caused a disturbance of the supply chains which was partly due to the extremely strict restraints against Covid-19 that were originated in China. However, according to international analysts the maritime trade will return to the pre-pandemic levels⁵⁸ with the tankers being the branch to recover more quickly.

Further, the retardation of the World economy as a result of the Russian invasion in Ukraine is expected to have a severe effect in the world trade due to the world recession, which is necessarily associated with the reduction of the demand of wood products and the crisis in fuel trade which might result in a provisional retardation of the recovery of the tankers fleet, predicted without taking into account the war.⁵⁹

At the same time, the National Organizations including the European Commission, and the International Maritime Organization (IMO) are demanding that the ships contribute to the establishment of a new “green era” which means less harmful components in the air (less carbon dioxide and Green House Gas (GHG) emissions - the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers - STCW) and less water pollution including noise (Marine Strategic Framework Directive).⁶⁰

Because of concerns with the emission of harmful gas from the ship propulsion systems, new alternative fuels must be developed and used for ship propulsion. If the propulsion systems are of conventional design, extended modifications will be required for existing ships to comply with the new regulations. These modifications include the installment of fuel cleaning devices in the ships and further modifications to allow for the consumption of alternative fuels which are considered environmental friendly, including LNG, ammonia, and hydrogen compounds. It is notable that 60 % of the new ships are able to utilize alternative fuels. Hybrid propulsion is also under consideration and electric driven ships are under construction. Issues, such as the cessation of CO₂ emissions, have been the focus of discussions between international shipping representatives at Posidonia Web Forums Week, which took place from October 21 to November 3, 2020 through a variety of digital platforms.⁶¹

Currently about 80 % of the world's trade is accounted for by the ocean shipping industry.⁶² The corresponding greenhouse gas emissions from ocean shipping are estimated to be 2.9 % of the world's total greenhouse gas emissions.⁶³ If significant reductions are to be made in the shipping industry's greenhouse gas emissions and environmental pollution, changes will need to be made to: (a) the design of ships, including methods of propulsion and pollution control and (b) existing inefficient ground logistic operating systems for meeting consumer and industry demands for goods. Worldwide, the shipping industry has been straddled with inefficient port and ground support systems. For example, container ships should not be anchored for days or weeks waiting to be unloaded and loaded. Strategies must be developed to meet consumer and industry demand, taking into account supply chain logistics. Further discussion of this subject is beyond the scope of this paper. Another recent concern is geopolitical instability. For example, if shipping through the Suez Canal is disrupted by the action of the Houthis at the entrance to the Red Sea (ca 2023–24), the cost, energy, and CO₂ emissions associated with having to ship around the Cape of Good Hope will add 20 to 25 % to each of these factors. Unfortunately, the increased CO₂ emissions may offset the savings made through improved ship designs.

The Greek ship-owners are ready for this situation as they have invested continuously in new energy efficient ships. Of course there are challenges that must be considered in what strategy to follow, as

there is still uncertainty in the efficiency and the availability of new fuels, especially after the fuel crisis due to the Russian invasion in Ukraine. On the other hand, the average age of the Greek commercial fleet is now around 10 years, below the world average which is 10.28 years. New ships with a total of 17.3 dwt are under construction now and more than one third of the tankers under construction will be delivered to Greek ship-owners.⁶⁴

In addition, in Greece, the continuous investments increase the size of its naval fleet even during the pandemic time of Covid-19 from 2019-2021 time.⁶⁴ Also according to Petrofin's analysis, the Greek-owned fleet is expected to continue its upward trend this year, but also in 2023 in all sectors.⁶⁵

New technologies

Apart from the concerns expressed above, new ships are changing in terms of their technical specifications. New ships are much larger and the expanded capacity offers a comparative advantage in terms of their operating costs compared to those of smaller capacity. Finally, technology will help reduce operating costs. With technology, shipping companies' management has a great deal of information in great detail to measure efficiency and cost so that the necessary changes can be made in a timely and effective manner.⁶⁶

This trend has a significance effect in sustainability of the sea-trade and the sea-routes will continue to be the main paths of the exchange of goods and raw materials to cover the needs of every part of the world. The countries and/or companies wishing to remain in the leading group of the thalassocracy and keep their role in the sustainability of the maritime communications should adopt all the innovations suggested to improve the efficiency of the naval fleets.

Greek ship-owners are well aware of these facts; they have to invest in larger ships and take all the necessary measures to ensure that the Greek fleet will meet all the modern challenges and requirements. Thus, it is expected that they will quickly be adjusted to the new situation bring the Greek shipping once more in a healthy and productive industry.

Piraeus a global shipping center

Finally, Athens and its port Piraeus have returned to the top as a global shipping center according to Leading Maritime Cities 2022 by DNV Classification Society and consulting firm Menon Economics, which focuses on cities that play a leading role in the global shipping economy. Piraeus is considered as a major shipping center, as it is the operating base of many shipping companies representing a large part of the world merchant fleet, with their headquarters their infrastructure in financial and legal services situated there. In effect, investments in new technologies related to shipping (maritime technology) fleet development and sea trade trends are decided in Piraeus. At the same time the port infrastructure and logistics have been improved especially after the acquisition of the two thirds of the port shares by the Chinese company COSCO resulting in the raise of the port attractiveness and competitiveness.⁶⁷ Piraeus has now become one of the most important transshipment hubs in the Mediterranean.

Posidonia is the largest maritime forum and exhibition worldwide and is held every second year in the port of Piraeus. All the major companies around the globe gather in Piraeus to present and discuss recent developments in ship-building, sea-trade and the managements of the fleets. This gathering is an additional indication that Greece is recognized, as the leading country in ship related business, marking once more the status of Greece as thalassocracy.⁵⁹

Epilogue

Ancient Greeks first used the word thalassocracy to describe the government of the Minoan civilization, whose power depended on its navy.⁴ Herodotus distinguishes sea-power from land-power and spoke of the need to counter the Phoenician thalassocracy by developing a Greek “empire of the sea”.³¹

In Greece the role and the importance of the sea was much known since the Bronze Age. The wise explorer of Knossos, Arthur Evans, having diagnosed the radiation of Minoan Crete, foresaw the way of Minoan penetration in the Aegean and the Eastern Mediterranean, which of course was based on the Minoan navy and the trading posts that were established.⁶⁸

It's certainly possible that during the Bronze Age Cretans possessed a large fleet and were able to control the seas. Their influence is clearly noticeable at Akrotiri on Thera, as well as many other sites, and Minoan-style frescoes have even been found as far afield as the city of Avaris in Egypt.⁶⁹

Unfortunately, the Minoans left few traces or evidence of the importance of the sea. However, many Historians and other researchers are convinced that the Minoans, as a maritime civilization, were able to establish an authority over the sea.⁶⁸ It is noteworthy that the Minoan sailors were probably the first to produce drinking water from seawater which allowed them to travel long distances.²³

The extensive trading activities of the Minoans, which often brought them into contact with the more advanced peoples of the wider region, resulted in advances in communication and technology. At that time the only form of communication was through navigation. Without absolutely clear indications, it is considered certain that the Minoans also possessed meteorological knowledge, which was absolutely useful to them for agricultural practices and of course for navigation.

At that time Minoans were keen seafarers who established colonies as far away as possible and exploited the local copper mines. Also, their cities were unprotected without walls, because their naval power was so great that no enemy dared threaten them. As a result, peace reigned on the Crete and Aegean islands.

Shipping is one of the most competitive and profitable economic sectors in the world, especially considering that water covers about 71% of the earth's surface. Also, maritime transport is a key means of conducting world trade and the dependence and interdependence of different economic powers - countries - within the international economic system. For Greece and the Greek economy, shipping is one of the main drivers of growth since the Aegean Bronze Age and early Archaic times until today, while the contribution and presence of Greek ship-owners in international events is remarkable, so that Greek shipping is among the strongest forces on a global scale.

Competent bodies have been set up at both domestic and European and international levels to conduct maritime trade and to ensure smooth cooperation and compliance with market rules between the contracting nations. Due to the nature of the globalized economic system, these organizations have a decisive influence on the formulation of maritime policies and are involved in and monitor the trade relations that develop between the contracting nations. The effects of the global market by individual actors can only bring about changes, sometimes positive and sometimes negative, in the international maritime trade and formulate new rules governing its conduct by the states, creating new data for global shipping.

Finally, it should be noted that: by studying the past we learn about the present and the future. Reference is made to a range of activities including maritime defense and protection, maritime and coastal tourism and cruising, underwater archeology, fisheries and aquaculture, marine renewable energy, green transport and green ports. The harmonious coexistence of all of these and related activities requires the development of a sustainable world-wide ecosystem. Modern day shipping will play a key role in reaching this goal, as it has done throughout history.

This paper is closed with a relevant short poem on “By the Sea”:⁷⁰

I will stay by the sea to open
a horizon in the depths of the soul
and a fire in my chest I will close
to have a return sign
in an Ithaca that I will have to return to
on a journey of a lifetime.
I fear the wrath of Poseidon
I'm afraid of the winds of anger
I get cold as a monk in the winter
but I love you and I have somewhere to catch.
Embroider a sheet to lay it
when i come back to lie down together.
At a glance you went through to feel
to bring the savagery to the soul
And if I sleep, give me your hug
Do not ask me, they have no end or beginning.

Author contributions

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