Mediterranean Seafarers in Transition

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Mediterranean Seafarers in Transition

Maritime Labour, Communities, Shipping and the Challenge of Industrialization 1850s–1920s

Edited by

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Cover illustration: *Crew of an unknown Spanish sailing vessel. Circa 1914* (Courtesy of the Maritime Museum of Barcelona).

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Introduction

Apostolos Delis

The long nineteenth century marked people's everyday life in Europe and beyond through the many structural changes occurring at every level, be it political, economic, social, technological, or institutional. The transition from sail to steam and the industrialization of shipping and shipbuilding, were among the main phenomena that primarily took place, affecting traditional sectors such as wooden shipbuilding, maritime trade, and the economy of the sailing ship, as well as the auxiliary trades. The advent of steam navigation introduced new types of professions both on board and ashore, and a new type of organization for shipping enterprises. It also introduced a new type of business organization, which was more demanding in terms of capital, management, and labour. Steam navigation companies needed agents and offices in ports, and a type of staff previously unknown to the shipping industry. Working with new materials and processing methods necessitated new knowledge from new types of professions, including engineers, boilermakers and so on, which led to industrialized shipbuilding. This industrialization also affected port cities, and led to the necessity of technological change in infrastructures. Thanks to the regularity that only steamers could offer, the introduction of passenger shipping transformed the lifestyle of ordinary people, and linked many previously distant places in a sustained manner. All these processes influenced sailors, their families, and others outside shipping, altering the rhythms and patterns of their everyday life.

Mediterranean Seafarers in Transition explores the transition from sail to steam navigation and its effects on seafaring populations and maritime transport systems in the Mediterranean and the Black Sea between the 1850s and the 1920s. More specifically the research focuses on three broad but interlinked axes of analysis, namely: i) maritime labour; ii) maritime communities; and iii) the cargo and passenger shipping business, aiming to provide a comprehensive approach to the subject. The advent of steamship navigation revolutionized people's lives on a global scale and brought about structural changes, with an important impact on the means and modes of transport, the organization of business and labour, and on communication. In the Mediterranean, this phenomenon had strong repercussions on seafaring labour practices, on the socio-economic fabric of the maritime communities, and on the evolution of the shipping business. However, there is no comprehensive picture of

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the manifold transformations that the transition to steam roused in this sea region, despite the importance of the Mediterranean in the world economy over the modern and contemporary era. The transition from sail to steam in the Mediterranean and the Black Sea has received very little attention by current scholarship. In most of the few existing cases where it does appear, the transition is approached from the national perspective and without embracing in the discussion the multiple above-mentioned aspects of the phenomenon.[1] The transition to steam is also markedly understudied in literature concerning other geographical areas. In fact, most of the works devoted to Europe and North America deal exclusively either with the age of sail or with the advent of steam and the developments on modern shipping.[2] The works of Gopalan Balachandran on Indian seafarers in the period of globalization (1870–1945) and of Enríc Garcia Domingo on Spanish sailors are perhaps among the very few, if not the only, examples dealing with the transition from sail to steam in seafaring labour.[3] Therefore, so far, there is no work to treat the subject of the transition from sail to steam in a transnational and comparative way nor in a

1 Paolo Frascani (ed.) *A vela e a vapore. Economie, culture e istituzioni del mare nell' Italia dell'Ottocento* (Rome: Donzelli, 2001); Gelina Harlaftis, *A History of Greek-Owned shipping. The Making of an International Tramp Fleet, 1830 to the Present Day* (London and New York, 1996); Vasilis Kardasis, *Από του ιστίου εις τον ατμόν. Ελληνική Εμπορική Ναυτιλία (1858–1914)* [*From Sail to Steam. The Greek Merchant Marine (1858–1914)*] (Athens: ETBA, 1993); Santiago Riera i Tuèbols, *Dels velers als vapors* (Barcelona: Associació d'Enginyers Industrials de Catalunya, 1993).

2 Lewis R. Fischer (ed.) *The Market for Seamen in the Age of Sail* (Research in Maritime History 7) (St. John's Newfoundland: International Maritime Economic History Association, 1994); Maria Fusaro, Bernard Allaire, Richard Blakemore and Tijl Vanneste (eds.) *Law, Labour, and Empire. Comparative Perspectives on Seafarers, c. 1500–1800* (London: Routledge, 2015); Paul C. van Royen, Jaap R. Brujin and Jan Lucassen (eds.) *"Those Emblems of Hell"? European Sailors and the Maritime Labour Market. 1570–1870. Research in Maritime History no. 13* (St. John's Newfoundland: International Maritime Economic History Association, 1997); Daniel Vickers with Vince Walsh, *Young Men and the Sea: Yankee Seafarers in the Age of Sail* (New Haven, Conn.; London: Yale University Press, 2007); Richard W. Unger (ed.) *Shipping and Economic Growth, 1350–1850* (Leiden: BRILL 2011); Rosemary Ommer and Panting E. Gerald (eds.) *Working Men Who Got Wet: Proceedings of the Fourth Conference of the Atlantic Canada Shipping Project, July 24–July 26, 1980* (St. John's Newfoundland, 1980); Richard Gorski (ed.), *Maritime Labour: Contributions to the History of Work at Sea, 1500–2000* (Amsterdam: Aksant Academic Pub 2007); Tony Lane, *The Merchant Seamen's War* (Manchester: Manchester University Press 1990); Eric Sager, *Seafaring Labour: the Merchant Marine of Atlantic Canada, 1820–1914* (Kingston: McGill-Queen's University Press, 1989); Eric Sager, *Ships and Memories: Merchant Seafarers in Canada's Age of Steam* (Vancouver: UBC Press, 1993).

3 Gopalan Balachandran, *Globalizing Labour? Indian Seafarers and World Shipping, c. 1870–1945* (New Delhi: Oxford University Press, 2012); Enríc García Domingo, *El mundo del trabajo en la marina mercante española (1834–1914)* (Barcelona: Edicions de la Universitat de Barcelona; Icaria Editorial, 2017).

comprehensive approach. *Mediterranean Seafarers in Transition* instead examines the aforementioned axes of analysis of labour, communities, and shipping through the comparative dimension of the Mediterranean and Black Sea maritime loci and its people. It spans from Barcelona and the Spanish Levant coasts, to Marseilles and the Provençal ports, to Genoa and the Ligurian littoral communities, east to Trieste and the Dalmatian coasts, and the islands and coastal communities of the Ionian and Aegean seas up to Odessa, the informal maritime capital port of the Black Sea. The research also encompasses a variety of topics on these three axes of analysis: on seafaring labour from deck to engine and catering crews, dockworkers and fishermen, old and new hierarchies, wages and the welfare system; on maritime communities from industrialized ports and neighbourhoods to resilient sailing ship maritime communities in a profoundly changing world economically as well as politically, with great repercussions; and on the shipping business, from shipowners of merchant sailing ships to joint stock companies of passenger shipping, and to tramp steam shipping firms.

Mediterranean Seafarers in Transition is also innovative in many ways. Firstly, because it addresses the question of the transition from sail to steam in both aspects of seafaring life, at sea and ashore, in a dual perspective never explored before by Mediterranean maritime history. Secondly because it connects the eastern and western Mediterranean, thus far studied almost independently of each other, providing a comparative analysis by enhancing the historiographical dialogue, and ultimately bringing to light very interesting results on common processes, practices, mechanisms, norms, and customs of Mediterranean seafaring, which up to now were considered as national or local particularities. Thirdly, because it investigates important questions and topics of maritime labour, communities, and shipping, that have so far remained understudied or fully unexplored by the current historiography. Fourthly, because research of some of these relatively unexplored topics or questions have been enabled here by new and innovative methodological processes and tools through interdisciplinary cooperation and interaction with informatics science.

Mediterranean Seafarers in Transition is a book that concerns the results of the above-mentioned ERC STG research project SeaLiT.[4] Research was carried out through a variety of primary and secondary sources written in wide-ranging languages, including Spanish (Castilian and Catalan), French, Italian, Greek, Ottoman, Russian, German, and English. The main part of the research was based on primary sources not previously utilized and studied. The

4 ERC Starting Grant 2016 "*Seafaring Lives in Transition*, Mediterranean Maritime Labour and Shipping, 1850s–1920s (SeaLiT)": http://www.sealitproject.eu/.

types of sources explored encompass lists and registries of the seafaring labour force, namely crew lists, payrolls, and maritime workers registries, including shore labourers like shipyard personnel or dockworkers. Demographic sources, like population censuses, civil registers, or death registers comprise another category of sources concerning population data useful for port and community analysis, which can also be combined with the seafaring labour data for cross-reference and more holistic comprehension of *Mediterranean Seafarers*. Business records, like account books, yearly balance sheets, annual company reports, letters, and ship logbooks compose another broad category of sources that enable the examination of single ship performance, namely voyage turnover, costs, freight rates and profits, as well as of the entire shipping firm. Port and ship registries are another type of source that enables us to investigate different issues regarding changes in maritime and ship technology, merchant fleet evolution and development, as well as trends in shipping specialization (long distance trade, coastal trade, and fishing).[5] All these sources about people, ports and communities, ships and shipping firms, are processed through various stages in the systems created by the CCI/ICS/FORTH group, who are partners in the project. Three applications, "Research Space", "Ship Voyages" and "Ship Operation Services" provide to historians the instruments to create queries that enable a thorough and detailed analysis.[6] The results of the queries from these applications do not just offer answers or hints to the questions, but actively contribute to the explanation of historical questions, and are organically amalgamated in the narrative (especially in chapters 1, 7, 8, 9, 12 and 13). The methodology followed in this book combines the quantitative results and qualitative conclusions from the above-mentioned digital instruments with other qualitative evidence resulting from non-processed material (newspapers, memoirs, minutes of the assembly of a company's shareholders). This combination is pervasive in all chapters, and offers a comprehensive interpretation of the trends shown in the numbers, behind which there is an effort to catch the reality, the contemporary views and mentalities of the people experiencing the effects of the transition from sail to steam. Another main methodological approach of the book is the combination of macro and micro-historical analyses. Especially in chapters 1, 8, 9, and 13, both approaches are harmoniously integrated into the narrative; the examined macro-historical

5 Apostolos Delis, "Seafaring lives at the crossroads of Mediterranean maritime history," *International Journal of Maritime History*, no. 32.2 (May 2020): 469–72.

6 http://83.212.107.202:10315/resource/mpp:Start; https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html; https://isl.ics.forth.gr/FastCatTeam/templates/ship_chandlers.html.

trends on the effects of the transition are enhanced by micro historical examples of *Mediterranean Seafarers*. However, one of the most important contributions of this book is its comparative dimension. The examination of a broad set of similar questions from case studies of different areas and countries of the Mediterranean and the Black Sea offers a more complete and deeper understanding of the effects of this revolutionary phenomenon, the transition to steam navigation.

The transition from sail to steam for the labour at sea is analysed through case studies from Spain, Italy, and Greece, all of them understudied regions in this regard. While for Spain the monograph of Enríc Garcia Domingo stands as the only comprehensive contribution on Spanish maritime labour in the nineteenth century, in the two other countries the historiography of the subject is almost non-existent.[7] Luca Lo Basso, the most prolific author on seafaring labour in the Italian states, concentrates mostly on the pre-industrial period,[8] while in Greece the only studies on the subject concern the inter-war and Second World War period.[9] In this book, Domingo, Lo Basso, and Alkiviadis Kapokakis (chapters 1 to 3) examine common questions on the evolution of Mediterranean maritime labour in the period of the industrialization of ships and shipping, such as the institutional framework, the assessment of maritime population, the changes in the professions, labour conditions, wages, the new hierarchies on board, as well as trade unionism. The analysis of the above-mentioned cases reveals another neglected dimension of Mediterranean maritime labour: the obligatory registration of all maritime professions (including all those involved in shipping, shipbuilding, fishing, and the related industries) by the naval or state authorities. In the case of Spain, France, and Italy it was the navy that demanded this procedure in order to control and administer a necessary pool of manpower. In Greece, this

7 García Domingo, *El mundo del trabajo*.

8 Luca Lo Basso, *La vita quotidiana dei marittimi Genovesi nel XVIII secolo* (Roma: Carocci Editore, 2016); Idem, *Capitani, corsari e armatori. I mestieri e le culture del mare dalla tratta degli schiavi a Garibaldi* (Genova: Città del silenzio, 2011); Idem., *Uomini da remo: galee e galeotti del Mediterraneo in età moderna* (Milano: Selene Edizioni, 2004).

9 Vassilis Skountis "Ναυτική εργασία και ελληνικό κράτος. Τάσεις εκσυγχρονισμού στο μεσοπόλεμο" ["Maritime Labour and Greek State. Modernization Efforts during the Interwar Period"] (PhD diss., Ionian University, 2018); Gelina Harlaftis, "Η ακμή του ναυτεργατικού κινήματος της 'Ελευθέρας Ελλάδος' στη διάρκεια του Β΄ Παγκόσμιου Πολέμου" [The heyday of the seafaring labour movement in 'Free Greece' during the Second World War], in *Ιστορία της Ελλάδος του 20ου αιώνα. Β΄Παγκόσμιος Πόλεμος 1940–45,* Κατοχή-Αντίσταση [*The History of Greece in the 20th Century. Second World War 1940–45, Occupation-Resistance*], Vol. Γ1, ed. Christos Hadziiossif (Athens: Vivliorama, 2007), 261–83.

registration was not intended for military use, and was placed under the jurisdiction of the Ministry of the Merchant Marine. It is interesting to see how these institutions, in some countries—like Spain and France, where they dated back to the *ancien regime*—staggered and were even abolished, as in Spain, due to industrialization and the liberalization policies of the second half of the nineteenth century. In Greece however, in contrast, they were instituted as an instrument of the modernization of the sea worker's registration and control. Another almost unexplored topic is that of the welfare and pension system of sea workers in the Mediterranean. *Mediterranean Seafarers in Transition* opens the discussion on this highly important subject by examining the transition from the guilds and the mutual aid societies of the pre-industrial period, to the established state-created and administered worker's pension and insurance funds. The creation of such institutions was a priority for the modern state in both of the examined cases: in the Kingdom of Sardinia and then in the unified Italy (Andrea Zappia in chapter 4); and in the Greek Kingdom (Kapokakis in chapter 3). In fact, the political class of the most advanced pre-unitary Italian state, which had created such a fund already in 1816 (albeit more akin to a mutual aid society's aims and structure), took care to establish this welfare system in Italian territory as soon as unification took place. In Greece, the Seamen's Pension Fund, founded in 1861, stands as one of the oldest seafaring workers' pension funds in the world (in the modern sense of the social welfare system), being still active today and retaining its name, aims, and structure. The analysis of maritime labour, however, takes into consideration not only sailors—namely captains, officers, seamen, engineers, stokers, and other ranks on board the ships—but also categories of maritime workers outside long-distance shipping, like dockworkers (Jordi Ibarz in chapter 5) and fishermen (Daniel Muntané in chapter 6). Jordi Ibarz analyses the great transformations in the handling of cargo at one of the biggest Mediterranean ports, Barcelona, with its extended links to oceanic trade, namely: the political and economic context of liberalization and industrialization that affected the guild system in the middle of the nineteenth century; the new modes of control of the production; the process of modernization at the end of the century; and the effects on the status of dockworkers. Daniel Muntané explains a similar process in the case of fishermen on the Spanish Levant, starting however from the end of the guild system and analysing the formation of fishermen associations and the union movement in parallel with the modernization of the fishing fleet and of fishing techniques.

The examination of maritime communities is based on a selection of case studies across the Mediterranean, which so far have been either totally unexplored (Ottoman Chania, Barceloneta, Camogli) or occasionally touched by

studies written exclusively in the national language (Galaxidi, La Ciotat).[10] These selected places were chosen not only based on existing research, but also because they represent significant, as well of diverse, character case studies of maritime communities in which the transition to steam had a different impact. Barceloneta (Eduard Page Campos in chapter 7), a neighbourhood on the edge of the big port of Barcelona, with its own distinctive maritime character since the middle of the eighteenth century, also experienced the great transformations resulting from the industrialization of shipping and shipbuilding that affected the occupations, and consequently the demography and socio-economic life, of its population. La Ciotat in Provence (Kalliopi Vasilaki in chapter 8), a small seaport with a great tradition of sailing ships, became the first great industrial shipbuilding complex of France, transforming a traditional maritime community into an industrial district and company town, with drastic and lasting demographic and socio-economic effects.[11] In Camogli and Galaxidi (Leonardo Scavino in chapter 9 and Katerina Galani in chapter 10), small but vibrant maritime communities with a large number of long distance sailings ships in their registry, remained faithful to the tradition of sail up to the time when steamships dominated most of the trade routes. Scavino shows how, after decades of profitable trading with the Black Sea and then with the Atlantic and Pacific oceans, Camogli seafarers in the twilight of the sailing ship era left the community either to work on foreign ships or to immigrate to the nearby large port of Genoa, or to South America, along with other Ligurians at that time. In Galaxidi, a similar pattern was followed. Galaxidi, one of the most important Greek maritime communities and the second-most successful shipyard in Greece with established links on Black Sea routes, lost its eminence during the transition to steam. As Galani explains, the Galaxidiots tried to invest in steamships but failed, and continued their seafaring tradition working on other Greek steamships and emigrated to the growing first port of Greece, Piraeus, to build new socio-economic relations and hierarchies in a developing urban environment. Last but not least, Ottoman Chania in Crete (Petros Kastrinakis in chapter 11) offers an exemplary case of a maritime community of a growing port that was dominated by Muslims. This

10 Efthymios N. Gourgouris, *Το Γαλαξίδι στον καιρό των καραβιών* [*Galaxidi in the Age of* (*Sailing*) *Ships*] (Athens: Association of Galaxidiots, 2001); Yves Laget, *Notre histoire de la construction navale à La Ciotat des origines à 1855: des origines aux Messageries Nationales* (La Ciotat: Association Joseph Edouard Vence, 2012); Jean-Marie Tripodi, "La compagnie de navigation des Messageries Maritimes et les chantiers de constructions navale de La Ciotat, 1852–1916" (MA diss., Université de Provence, 1982).

11 Clemens Zimmerman (ed.) *Industrial Cities. History and Future* (Interdisciplinary Urban Research 2) (Frankfurt am Main: Campus Verlag, 2013).

Muslim maritime population did not make the transition to steam, but also struggled to remain in Crete due to political circumstances, while, in parallel to this, foreign actors came into the port of Chania as part of the international steamship communication circuit.

In shipping, the transition to steam is examined through two branches: the cargo and passenger shipping. In cargo or tramp shipping the focus is given to two neglected subjects: ship operation and navigation (Delis, chapters 12 and 13). Despite the large amount of work devoted to tramp shipping, research has focused mostly on the strategy, structure, and network of the shipping business, on the types of trade and markets the shipping firms were involved in, and other aspects, but not on ship operation. This latter fundamental aspect, examining the day-to-day working of the ship namely routes and cargoes, the running or operational costs, the accounting system, the ship's performance and profitability that determine the state of progress of the shipping business—have attracted very limited attention; the only works found are by Gordon Boyce.[12] Very much related to ship operation is the subject of navigation, namely the trade routes, the navigation patterns, the duration, and the condition of the voyage, including the events at sea and ashore, and how all these factors were affected or evolved from sailing ships to steamers. Irrespective of the high importance of this topic, still no research has been done on it within maritime history scholarship. The only works that touch on the subject are those of climatologists based on thorough investigations of sailing ship logbooks, who, while searching for evidence for the past climate, also managed to contribute to other aspects of the history of navigation.[13]

12 Gordon Boyce, "Edward Bates and Sons, 1897–1915: recession and recovery," *International Journal of Maritime History*, no. 23.1 (June 2011): 13–50; and Idem, *The Growth and Dissolution of a Large-Scale Business Enterprise: The Furness Interest, 1892–1919. Research in Maritime History 49* (St. John's Newfoundland: International Maritime Economic History Association, 2012).

13 Ricardo García-Herrera, Phil Jones, Dennis Wheeler, Gunther Können, and Maria Rosario Prieto, "CLIWOC: Climatology of the World's Oceans, 1750–1850," *Climatic Change*, no. 73 (November 2005): 1–12; David Barriopedro, David Gallego, M. Carmen Alvarez-Castro, Cristina Peña-Ortiz, Susana M. Barbosa, "Witnessing North Atlantic westerlies variability from ships' logbooks (1685–2008)," *Climatic Dynamics*, no. 43 (2014): 939–55; Ricardo García-Herrera, David Barriopedro, David Gallego, Javier Mellado-Cano, Dennis Wheeler, Clive Wilkinson, "Understanding weather and climate of the last 300 years from ships' logbooks," *WIREs Climatic Change*, no. 9 (2018): e544, https://doi.org/10.1002/wcc.544; Clive Wilkinson, *British logbooks in UK Archives, 17th–19th Centuries. A Survey of the Range, Selection And Suitability of British Logbooks and Related Documents for Climatic Research* (Climatic Research Unit Research Publication 12); Dennis Wheeler, "Understanding seventeenth century ships' logbooks: an exercise in historical climatology," *Journal for Maritime Research*, no. 6.1 (March 2004): 21–36 Dennis Wheeler, "The weather vocabulary

Passenger shipping is an extensively researched subject, especially for British, North American, as well as North European companies. However, the Mediterranean and Black Sea steamship companies are not so well-explored, and whatever exists is written in national languages.[14] The novelty of *Mediterranean Seafarers in Transition* on this subject is first the study of three very important passenger steam navigation companies of the area who so far have been neglected: Austrian Lloyd, the Russian Steamship Navigation and Trading Company, and the Hellenic Steam Navigation Company. These companies represent relevant attention-grabbing cases for studying comparisons in public policy in the modernization of seaborne communications. They are connected with the expansive aspirations of two empires, the Hapsburg Monarchy and the Russian, and a small newly-created kingdom, Greece. The analysis of these case studies aims to bring forward the discussion of the role of the state in supporting and establishing steam navigation in the Mediterranean and the Black Sea, and to bring out comparisons with British, American, and French companies.[15] Delis in chapter 14 analyses the role of the state and the

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of an eighteenth century mariner: the log books of Nicholas Pocock," *Weather*, no. 50 (1995): 298–304.

14 Except of the work of Ronald E. Coons, *Steamships, Statesmen, and Bureaucrats: Austrian Policy towards the Steam Navigation Company of the Austrian Lloyd 1836–1848* (Veröffentlichungen des Instituts für europäische Geschichte Mainz 74) (Wiesbaden: Franz Steiner Verlag, 1975), the rest are written in national languages: Marie-Francoise Berneron-Couvenhes, *Les Messageries Maritimes. L'essor d'une grande compagnie de navigation française 1851–1894* (Paris: PUPS, 2007); Martin Rodrigo Y Alharilla, *La marina mercante de vapor en Barcelona* (*1834–1914*) (Barcelona: Museu Maritim de Barcelona, 2017); Giuseppe Stefani, *Il Lloyd Triestino: contributo alla storia italiana della navigazione marittima* [*1836–1936*] (Verona: Mondadori, 1938); Konstantinos Papathanassopoulos, Εταιρεία Ελληνικής Ατμοπλοΐας (*1855–72*). *Τα αδιέξοδα του προστατευτισμού* [*The Hellenic Steam Navigation Company* (*1855–72*). *The Impasse of Protectionism*] (Athens: Cultural Foundation of the National Bank, 1988); Vasilis Kardasis, *Από του ιστίου εις τον ατμόν. Ελληνική Εμπορική Ναυτιλία* (*1858–1914*) [*From Sail to Steam. The Greek Merchant Marine* (*1858–1914*)] (Athens: ETBA, 1993); M.N. Baryshnikov, "Русское Общество Пароходства и Торговли: учреждение, функционирование, перспективы развития (1856–1864 гг.)" ["The Russian Steam Navigation and Trading Company: establishment, operation and prospects of development (1856–1864)"], Экономическая История [*Economic History*], no. 13.2 (2015): 106–130.

15 The research on this topic is extensive; indicatively, see Robert G. Greenhill, "British Shipping and Latin America, 1840–1930: the Royal Mail Steam Packet Company" (PhD diss., University of Exeter, 1971); Freda Harcourt, "British oceanic mail contracts in the age of steam 1838–1914," *The Journal of Transport History*, no. 9.1 (1988): 1–18; Eadem, *Flagships of Imperialism. The P&O Company and the Politics of Empire from its Origins to 1867* (Manchester and New York: Manchester University Press, 2006); Berneron-Couvenhes, *Les Messageries Maritimes*; John G.B. Hutchins, *The American Maritime Industries and Public Policy, 1789–1914, an Economic History* (New York: Russell & Russell, 1941).

contribution of the Hellenic Steam Navigation Company in the modernization of Greece's seaborne communications, by examining the fleet, the lines, and the economic performance of the company, in combination with the comparative international context of other contemporary steam navigation companies. Matteo Barbano in chapter 15, in a similar tune, shows how Austrian Lloyd expanded in terms of fleet and lines in parallel with a growing dependency on state support and control. Anna Sydorenko in chapter 16 offers a quite different story, by investigating a totally understudied subject, that of the Russian Steamship Navigation and Trading Company. Her work tells the story of the efforts of the state in the foundation of a steamship company that gradually expanded by promoting the commercial interests of the shareholders, while at the same time maintaining the support of the state.

This extended research project across the Mediterranean has been supported and expanded, for the first time to my knowledge, by an interdisciplinary cooperation between historians and IT engineers (Fafalios et al., chapter 17). The contribution by informatics in *Mediterranean Seafarers in Transition* is not only limited to the building of tools for the insertion and processing of the data, but goes beyond this, by opening up a cooperative interaction for the better understanding, use, and analysis of historical metadata.[16] This constitutes a new path in historical research, which, through innovative interdisciplinary methods, offers new points of view, fresh approaches, and original ways to comprehend historical questions. These innovative ways become very clear with certain questions in particular, like the analysis of navigation patterns through the Ship Voyages visualization maps (chapter 13), or the combination of a macro and micro-historical approach to the data concerning the numbers of sailors and their individual careers through the Research Space platform (chapters 1, 7, 8, 9).[17]

Mediterranean Seafarers in Transition investigates new or neglected topics, introduces novel methods and approaches, and inaugurates new discussions in maritime history. Ship operation and navigation, sea workers' welfare systems, state policy and steam navigation companies in the Mediterranean and Black Sea, are among these topics that may expand out to further research, not only within the history of the "inner sea" but also beyond. Further research using the new tools and methods created in the project also await researchers

16 Kostas Petrakis, Georgios Samaritakis, Thomas Kalesios, Enric García Domingo, Apostolos Delis, Yannis Tzitzikas, Martin Doerr, and Pavlos Fafalios, "Digitizing, curating and visualizing archival sources of maritime history: the case of ship logbooks of the nineteenth and twentieth centuries," *Drassana*, no. 28 (March 2021): 60–87.

17 http://rs.sealitproject.eu/resource/mpp:Start.

who are willing to explore aspects of seafaring labour, ships and fleets, demographic and occupational questions on the maritime population, and shipping firm economics (routes, cargoes, costs, profits). Comparative studies on common questions across different countries may also profit from the theoretical background and the empirical evidence of the book. New discussions have already begun on past research on specific aspects of certain subjects, like the history of navigation,[18] which continues at present with the engaged scholars and may develop further in cooperative terms. Similarly, other subjects of the book also encourage the opening of an academic dialogue, like the worker's welfare state or trade unionism, the transformation of seafaring societies, or structural changes in shipping management. Above all, it is the creation of a new conceptual framework on the transition from sail to steam navigation that can play a constructive role in the exploration of other *Seafaring Lives* in the Mediterranean and Black Sea, as well as in different societies and in other parts of the world.

18 Petrakis et al., "Digitizing, curating and visualizing," 82–85.

PART 1

Maritime Labour

CHAPTER 1

The Impact of Mechanisation on Spanish Maritime Labour (1834–1914): From Seamen to Sea Workers

Enric García-Domingo

1 Introduction

On 3 July 1849 the full-rigged ship *Antonieta* sailed her first journey from Barcelona to Cuba, a commonplace trip for the Spanish merchant marine at this time. The ship was a medium-sized vessel (of 455 tons), average in colonial trade. The crew was comprised of nineteen men including the shipmaster, almost all of them fellow countrymen, some even with kinship links. First port destinations were Matanzas (Cuba) and Veracruz (Mexico), and the trip would last for months, dependent on market opportunities, or the will of the shipmaster.[1] This picture indicates a world with limited contact with industrialisation, leaving aside the occasional contact with steamers. Although sailing ships, apparently, still ruled the waves, and men continued to work as their parents and grandparents had done so before them, this picture was misleading. Only a few years earlier, in 1834, a regular steam line had been established between Barcelona and Palma de Mallorca; and just as the keel of the *Antonieta* was laid, the metalworking workshop of *Talleres Nuevo Vulcano* was constructed in Barcelona, part of a factory dedicated to serve a newly born steamship fleet.[2]

This chapter focuses on some clear changes that industrialisation brought about to Spanish seafaring lives in a process that was already irreversible by 1890, and virtually complete by 1914. The argument is that the researcher can trace some of the milestones that led seamen from the profession of artisan to industrial worker. The study uses the terms "industrialisation" and "mechanisation" interchangeably to refer to the slow process that took place at sea and caused significant ruptures in the form of work and life, which had remained practically unchanged for centuries. Industrialisation is not a mere

1 *Fragata Antonieta. Compilación de documentos realizada por Cayetano Solá Nieto*. Photocopy of the original manuscript, pendant register. Museu Marítim de Barcelona (hereafter MMB).

2 Joan Alemany, *Shipbuilding and Repair in Industrial Barcelona: Talleres Nuevo Vulcano* (Barcelona: Museu Marítim de Barcelona & Marina Barcelona 92, 2019).

technological process,[3] but also a profound change in peoples' lives. Labour relationships were transformed in almost every field in the locations where industrialisation took place. In the Spanish shipping industry labour force, changes can be observed in several ways, but this chapter will concentrate on the most significant transformations. Evidence for such, can be found in sources such as crew lists, accounting books, or even legislation. The analysis will engage in a close micro-historical approach.

2 Mechanisation of the Spanish Merchant Marine

Maritime labour has received some attention in the last few decades, both in qualitative and quantitative analyses, especially for the eighteenth and nineteenth centuries. In general, these studies focus on the world of sailing ships, even at the frontier of industrialisation.[4] In the Spanish case, the impact of industrialisation on maritime labour has been analysed in relation to general characteristics.[5] Using unpublished primary sources—principally crew lists and crew account books—it is possible to further our knowledge of the huge transformations that steam (and iron) shipbuilding brought about in maritime labour, by adopting a micro-historical analysis. Through representative cases (a small domestic coastal trading sailing ship; a barque in ocean-going trade; a

3 For a useful description of the process of technological change, see Denis Griffiths, *Steam at Sea. Two Centuries of Steam-Powered Ship* (London: Conway Maritime Press, 1997). See also Charles K. Harley, "The shift from sailing ships to steamships, 1850–1890: a study in technological change and its diffusion," in *Essays on a Mature Economy: Britain after 1840*, ed. Deirdre McCloskey (London: Routledge, 2013), 215–234.

4 Lewis R. Fischer and Helge W. Nordvik, "Salaries of the sea: maritime wages in Stavanger, 1892–1914," in *Stavanger Museum Arbok 1987*, (Stavanger: Stavanger Maritime Museum, 1988), 103–32; Lewis R. Fischer, "Around the rim: seaman's wages in North Sea ports, 1863–1900," in *The North Sea. Twelve Essays on Social History of Maritime Labour*, eds. Lewis R. Fischer, Harald Hamre, Poul Holm and Jaap R. Bruijn (Stavanger: Stavanger Maritime Museum & The Association of North Sea Societies, 1992), 59–78; Lewis R. Fischer, *The Market for Seamen in the Age of Sail. Research in Maritime History no. 7*, (Liverpool: Liverpool University Press, 1994); Jelle Van Lottum & Jan Luiten van Zanden, "Labour productivity and human capital in the European, maritime sector of the eighteenth century," *Explorations in Economic History*, no. 53 (2014): 83–100. Also important are collective volumes, such as Paul C. van Royen, Jaap R. Brujin and Jan Lucassen (eds.) *"Those Emblems of Hell"? European Sailors and the Maritime Labour Market. 1570–1870. Research in Maritime History no. 13* (St. John's Newfoundland: International Maritime Economic History Association, 1997); Richard Gorski (ed.) *Maritime Labour: Contributions to the History of Work at Sea, 1500–2000* (Amsterdam: Amsterdam University Press 2007).

5 Enric Garcia-Domingo, *El mundo del trabajo en la marina mercante española, 1834–1914* (Barcelona: Universitat de Barcelona & Icaria Editorial, 2017).

tramping coastal steamer; and a passenger steamship) the analysis will explore the reality of maritime workers in different labour contexts. With regards to the geographical range, the study will focus on the Spanish Mediterranean coast, mainly the territory included in the naval Department of Cartagena, which included the coast of Catalonia, Valencia, Murcia, and the Balearic Islands.

2.1 *A Fleet Undergoing a Fast and Strong Transformation*

On 22 November 1868, as part of a liberalisation process of maritime activities, the Spanish government issued two decrees that had a direct impact on the process of mechanisation. Those legal changes initiated a process, which eliminated the flag-differential duty (a protective mechanism for the national fleet), and liberalised the importation of vessels, amongst other factors. It opened the door to the multiplication of the steam fleet in Spain. Spanish shipping companies rejuvenated the fleet by the purchase of newly constructed, and second-hand foreign ships. Jesus Ma. Valdaliso has confirmed that Spain was one of the European countries where the consolidation of new technology was carried out rapidly, based on the percentage of steamers in the total Spanish tonnage.[6] A series of historical statistics (shown in Table 1.1) confirms this leap, and the steady growth of the Spanish fleet during this period of change.

Within the Spanish sailing fleet, relatively small, square-sail types of vessels abounded: the *corbeta* (barque), *bergantín* (brig), *bergantín goleta* (brigantine), *polacras* (polacres), *polacra goleta* (schooner-polacre), *laudes* (lateen rigging boats) or gaff sail ships such as the *pailebotes* (schooners) or *balandras* (cutter). All were frequently overmanned. In general terms, in foreign fleets, the same number of men were proportionally employed on larger types of vessels, mostly barques and full-rigged ships, in which a greater volume of cargo was moved. Laureano Figuerola, former Minister of Finance, defended (in 1883) the hypothesis that foreign ships were more cost-effective, with about six-times less expensive freights and five-times less crew than their Spanish equivalents. Accordingly, and taking as an example the period 1870–76, the figures to consider are as follows: In European trade, a Spanish vessel with fifteen men carried 3.9 tons per man, whilst a foreign ship with eleven men carried 19.6 tons per man. In transatlantic trade, numbers were slightly different: Spanish vessels employing eighteen men carried 7.7 tons per man, while foreign vessels

6 Jesus Maria Valdaliso, *Los navieros vascos y la Marina mercante en España, 1860–1935. Una historia económica* (Bilbao: Instituto Vasco de Administración Pública, 1991), 33–58; Jesus Maria Valdaliso, "Entre el mercado y el Estado: la Marina mercante y el transporte marítimo en España en los siglos XIX y XX," *Transportes, Servicios y Telecomunicaciones. Revista de Historia*, no. 1 (2001): 55–79.

TABLE 1.1 Evolution of the Spanish merchant fleet (1860–1914)

Year	Sailing ships		Steamers		Total	
	units	103 GRT	units	103 GRT	Units	103 GRT
1860	1,352	271.1	28	8.8	1,380	279.9
1888	1,326	211.9	432	393.1	1,758	605.0
1890	1,238	195.4	415	411.1	1,653	606.5
1895	1,229	197.2	491	493.4	1,720	690.6
1901	546	95.2	514	678.1	1,060	773.2
1910	305	47.6	550	697.9	855	745.5
1914	236	33.0	625	844.3	861	877.3

SOURCE: GÓMEZ A. MENDOZA AND SAN E. RAMÓN, "TRANSPORTES Y COMUNICACIONES," IN *ESTADÍSTICAS HISTÓRICAS DE ESPAÑA*, EDS. ALBERT CARRERAS DE ODRIOZOLA AND XAVIER TAFUNELL SAMBOLA (MADRID: CRÍTICA & FUNDACIÓN BBV, 2007), 545. ONLY VESSELS OVER 50 TONS ARE CONSIDERED. 103 GRT REFERS TO THOUSANDS OF GROSS REGISTERED TONS

employing eleven men carried 26.1 tons.[7] The obvious conclusion was that the Spanish sailing fleet was uncompetitive.

Each new steamship replaced several disappearing sailing ships. A contemporary politician calculated that a small-sized steamship transported the same amount of cargo in a year, as ten brigs would in the same period.[8] As steamers grew in tonnage to 4,000 or 5,000 tons, ratios increased, and the productivity of steam ships became peerless. In sailing ships, wages represented almost 40% of overhead expenses, while in steamers the proportion was reduced to about 15%, even with an increase in the number of men required on board.[9]

7 Laureano Figuerola, *Información sobre las consecuencias que ha producido la supresión del Derecho Diferencial de Bandera y sobre las valoraciones y clasificaciones de los tejidos de lana, formada con arreglo a los artículos 20 y 29 de la ley de Presupuesto de año de 1878–79, por la Comisión Especial Arancelaria creada por Real Decreto de 8 de septiembre de 1878, vol. 3: Industria Lanera y Naviera. Discusión y aprobación de los dictámenes* (Madrid: Imprenta de Manuel Minuesa de los Ríos, 1883).

8 Joaquín Costa. *Marina española o la cuestión de la escuadra* (Madrid: Biblioteca Costa, 1913), 10–11.

9 Calculation for Greek ships is in Apostolos Delis, "Ship operation in transition: Greek cargo sailing ships and steamers, 1860s–1910s," in the present volume. We can assume that this proportion is not a national feature but rather a common pattern within the international shipping industry.

2.2 *The Workforce*

As a rough estimate, in the early 1860s, when industrialisation was beginning to consolidate, the Spanish maritime workforce consisted of approximately 81,000 men.[10] By 1914, the figures declined to approximately 32,000 men.[11] The Spanish maritime workforce was almost totally national; the share of foreign workers was limited both by legislative dispositions, and by the fact that foreigners were generally not interested in being hired by Spanish ships, except for temporary opportunities in colonial ports.[12]

With regards the geographic origin of the workforce, the analysis can see certain tendencies in the distribution of recruitment ports and areas that supplied more men. A sample from six ships in the domestic coastal tramp trade shows differences between sailing ships and steamships.[13] In the case of sailing ships, peasant relationships can be confirmed. In the crew list of the *laud Alfredo* (a lateen-rigged boat), men originated in Benicarló, San Carlos de la Rápita,[14] and Tortosa, all nearby towns. In the crew list of the laud *Estrella*, men were from Santa Pola, Villajoyosa, Málaga, and Águilas. In the crew list of the schooner-polacre *Catalán*, there were subjects from Vinaroz and San Carlos de la Rápita, including one from Valencia. Finally, in the crew list of the laud *Teresina*, information is available for men employed in different time periods, mostly from Vinaroz, Tortosa, Benicarló and San Carlos de la Rápita, while there were a few from

10 *Proyecto de ordenanza para el régimen y gobierno de las Matrículas de mar: formulado por la Comisión especial nombrada de Real Orden y presentado por su presidente, el de la Junta Consultiva de la Armada* (Madrid: Imprenta de Luis Palacios, 1864).

11 Félix Escalas, "La Marina mercante española," in *Lecciones del VIII Curso Internacional de Expansión Comercial, celebrado en Barcelona del 27 de julio al 12 de agosto de 1914*, (Barcelona: Imprenta Moderna de Guinart y Pujolar, 1915), 420–421.

12 A different case is the one of the "Filipinos", or "Manilos" (literally, "Manila-men"), who were Spanish subjects between the sixteenth century and 1898: Garcia-Domingo, *El mundo del trabajo*, 132–137. It is frequent to find "filipinos" in relevant sources: three men on the barque *India* (1890); one man on the brigantine *Alfredo* (1874); three men on the schooner-polacre *Cronómetro* (1878); etc.

13 Laud *Estrella*, port of register Santa Pola (1861–1863), (Archivo General de Marina D. Álvaro de Bazán (hereafter AGMAB), 1178); polacre-schooner *Catalán*, port of register Vinaroz (1878–1890), Archivo Naval de Cartagena (hereafter ANC) YM (a) CL1; laud *Teresina*, port of register Vinaroz (1881–1890), ANC YM IV V L1; steamship *Alcira*, port of register Valencia, (1897–1900), ANC YM IV (a) VL1; laud *Alfredo*, port of register Vinaroz (1905–1910), ANC Y IV (a) VL1; and steamship *Carlos*, port of register Barcelona (1903–1905), ANC YM IV (a) VL (6).

14 In this work geographical names are always presented in the Spanish form (for example San Carlos instead of Sant Carles, Vinaroz instead of Vinarós, etc.). In the original sources, the official documents, Catalan was not permitted.

disperse locations such as Barcelona, Algeciras, Palma, Valencia, or Tarragona. For small steamers, the crew's origins followed a similar pattern. On the steamship *Alcira* the largest group of seamen came from Valencia, some from Villajoyosa and Benidorm, and the rest from Barcelona, while some were of unidentifiable origin, nevertheless, most were from the Spanish Levant. A further example of a small steamer, *Carlos*, follows this trend, with seamen from Altea, Denia Benidorm, Barcelona, and the Balearic Islands, as well as from other northern Spanish ports.

In the case of sailing ships, a local labour market is evident: there is a short distance of 14 miles between Benicarló and San Carlos de la Rápita, or 4 miles between Vinaroz and Benicarló. It will become clearer later that on larger ships, such as liners, this trend will change, with a nation-wide labour market evident. A clear theme is the progressive disappearance of Catalan people from the merchant marine, most likely in parallel with the expansion of industrialisation ashore since Catalonia was at this time the so-called "factory of Spain". However, although Barcelona was a recruiting centre, only approximately 3% of seamen in the examined crew lists were Barcelona-born.

It is also evident that gender issues are relevant here, that is, the first women to become part of a crew on a Spanish ship were stewardesses working on passenger ships around the 1880s. Research on the first women who worked on board Spanish ships are beginning to appear in literature.[15]

2.3 *The Labour Markets*

Industrialisation also had a significant impact on labour markets; these were divided according to the three categories of shipping services that arose from the advent of steam: tramp shipping, cargo/liner shipping, and passenger shipping. We can find these services in both coastal and ocean-going trade, with features that are beyond the scope of this work.

Within the period studied, any traffic between ports under Spanish sovereignty (together with Portuguese and Moroccan ports), were considered domestic or short coastal trade. From the fiscal point of view, even trade with the American colonies was considered in some periods "coastal trade". Long coastal trade referred to foreign ports at short or medium distances, including all Mediterranean and Black Sea shores, British Isles, the North Sea, and

15 Irene Arenas, "Aproximació al treball de les dones en alta mar. Les primeres treballadores de la Compañía Trasatlántica, SA (1880–1940)," *Drassana, revista del Museu Marítim de Barcelona*, no. 25 (2017): 29–48. To articulate the scarce information available for the Spanish scenario, it is useful to consult works such as Sari Mäenpää, "Galley news: catering personnel on British passenger liners, 1860–1938," *International Journal of Maritime History*, no. 12.1 (June 2000): 243–260.

the Baltic Sea. The Atlantic African coast, up to Cap Blanc (in the present-day Mauritania) was also considered to be in this category. In the Mediterranean, the analysis found a significant labour sub-market, a triangle between Málaga—Orán—Port Vendres, subdivided into small areas. The high-seas trade covered the routes between Spanish ports and the rest of the world. Long distance navigation was linked mainly with colonial trade until 1898, when the last colonies were lost (apart from some North African territories and Equatorial Guinea). Oceanic trade was a traditional labour market for sailing ships, something that was in slow, but relentless decline, albeit with a surprisingly high level of resilience. Simultaneously, steamers (especially passenger ships), continued to increase their share of oceanic trade. The speed, regularity, improved size, and quality of passenger steamships created a new market for seamen. Steam packets that maintained links with the Hispano-American ports (including the continuous flow of emigrants to South and Central America) created job opportunities on board ships operated by companies such as the *Compañía Trasatlántica Española*, *Vapores del Marqués de Campo*, *Línea de Vapores Pinillos Izquierdo*, or the *Línea de Vapores Ybarra*. Of course, tramp steamers also had their share of the Spanish shipping industry.

Other minor labour sub-markets should also be considered during the transition from sail to steam. For seamen, larger ports, such as Barcelona, Tarragona, Valencia, and others, offered job opportunities in different services, such as the manning and handling of tugs, dredgers, floating cranes, etc.[16] Consideration should also be given to additional labour markets, such as fishing or river traffic (though this was almost insignificant, and only meaningful on the Ebro), and the Navy.

An interesting point to be highlighted is the role of certain ports as hiring places and local labour markets. Ports, such as Barcelona, Valencia, Cádiz, Cartagena, etc., acted as nodes of smaller areas of influence, and as hiring ports. There was an entire division of labour between maritime centres and minor ports. The study has focused on the case of Barcelona, which, since the

16 Enric Garcia-Domingo, "Les autres travailleurs portuaires: la flotte et les services de carénage de la Junta de Obras du port de Barcelone (1870–1930)," in *Les outils de l'activite portuaire maritime en Europe Mediterraneenne et Atlantique XVII^e^–XX^e^ siecle*, eds. Fabien Bartolotti, Gilbert Buti, Xavier Daumalin, and Olivier Raveux. (Aix en Provence: PUPS, 2021), 115–129; Enric Garcia-Domingo, "El Servicio de Explotación de la Junta de Obras del Puerto de Barcelona (1870–1930). Máquinas y hombres en el puerto industrial de Barcelona," in *Patrimoni portuari i de les indústries vinculades als ports: XI Jornades d'Arqueologia Industrial de Catalunya, Museu del Port de Tarragona 21–23 de novembre de 2019* (Terrassa/Tarragona: Associació del Museu de la Ciència i de la Tècnica de Catalunya & Museu de la Ciència i de la Tècnica de Catalunya & Museu del Port de Tarragona: Port de Tarragona, 2020), 329–337.

mid-nineteenth century, was an important maritime labour market, characterised interestingly, by the absence of sailors born in the city. With regards the Catalan coast, the failure of smaller ports with large sailing fleets to adapt to industrialisation, and subsequently absorbed by a nearby larger port, should also be considered. This was the case with Lloret, El Masnou, or Vilassar, among others; small ports with strong traditions in wooden shipbuilding and sail shipping, which did not make the transition to steam, and whose fleets disappeared between 1870–80.[17]

3 A Micro-Historical Approach through New Sources

The analysis can also consider the impact of mechanisation using what is known of labour on board ships of different types, especially those moving around the port of Barcelona in the last quarter of the nineteenth century. Different types of ships, even different types of seafaring, coexisted for decades in the same seas. We consider that the examples used in this analysis are representative of their categories, so it is possible to compare the features of the crew, in connection with the ship as a work centre.

A first example is that of the laud *San Antonio*, a wooden lateen-rigged boat, of 21 tons and 15 meters long, built in Vinaroz, in the north of Valencia, in 1860. The *laudes* (*llaguts* in Catalan) were the workhorses of coastal trade (see figure 1.1 below).

The *San Antonio* carried agricultural products or small manufactured goods and returned with ballast from Barcelona. On one occasion, upon entering the port of Barcelona in 1900, following a trip from Vinaroz (her port base), the boat consisted of a crew of five (a *patrón* and five sailors), who originated from the surrounding villages of Vinaroz and Benicarló. The *San Antonio* frequently crossed paths with other slightly larger coasters such as sloops or schooners, as well as steamers, but whilst larger Spanish sailing ships were devoted to American trade, coastal trade was the kingdom of small gaff-rigged ships and of an extensive fleet of laudes. Some small and barely industrialised ports, such as Denia, Sagunto, Castellón, San Carlos de la Rápita, San Feliu de Guíxols, and Águilas, prolonged the life of sailing ships in coastal trade.

17 Agustí María Vilà Galí, *La marina mercant de Lloret de Mar: Segles XVIII i XIX* (Lloret de Mar: Ajuntament de Lloret de Mar, 1992). A similar case for Italian sailing fleets can be found in Leonardo Scavino, "The Mediterranean Maritime Community of Camogli: Evolution and Transformation in the Age of Transition from Sail to Steam (1850s–1910s)" (PhD diss., University of Genoa, 2020).

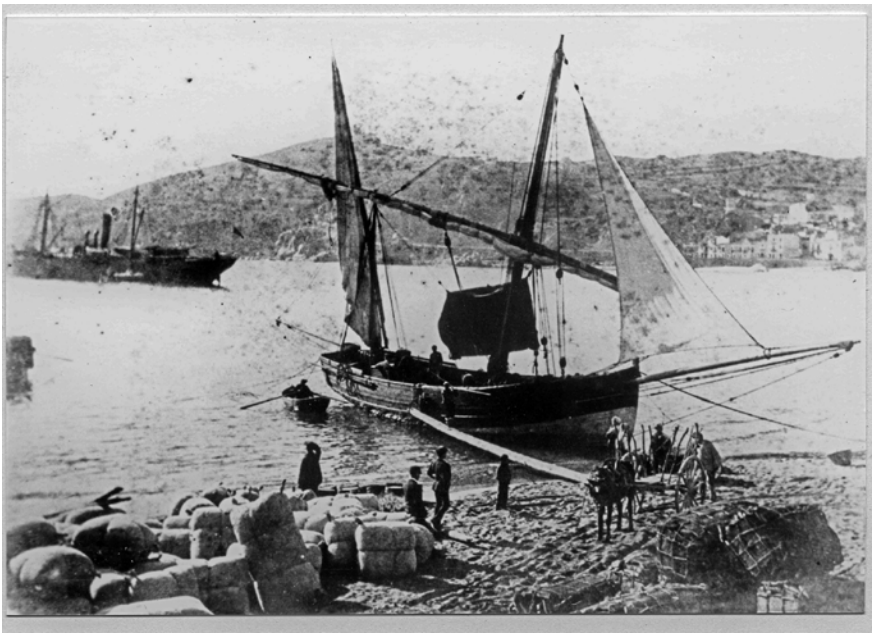


FIGURE 1.1 Catalan *laud* loading cargo
SOURCE: MARITIME MUSEUM OF BARCELONA

Though steamers gained ground during the last quarter of the twentieth century, tall ships were still reluctant to disappear, as a witness of an old-world resisting industrialisation. One example is the barque *Habana*—an ocean-going sailing ship—which left Barcelona on 20 October 1892 bound for Cuba.[18] The *Habana* (685 tons) was a wooden vessel built in 1868, in Blanes (Catalonia), as a full-rigged ship, but refitted in 1883 as a barque (see figure 1.2 below).

The analysis does not have information about cargo. However, her captain was entitled to decide the route and duration of the trip, so destination ports were uncertain, and there was no clear calendar; for example, the crew did not know where they would be after six months, or even a year. Upon leaving port, the crew consisted of fourteen men including the captain, most of them from Catalan towns, however, in consecutive trips, the study finds men of different origins, including "manilos" or "filipinos", men from the Balearic Islands or Valencia, and sometimes, foreign seamen registered in American ports.

In the same waters, in 1897–98, the small coastal tramp steamship *Alcira* (1,060 tons), built in Glasgow in 1878, moving between Málaga and Liorna,

18 Arxiu Històric de Vilassar de Mar de Mar (hereafter AHVM), archival fond of the Sust family, no. 25309. Accounting book, barque *Habana*. Crew Agreement of 20 October 1892.

FIGURE 1.2 The barque *Habana*
SOURCE: MARITIME MUSEUM OF BARCELONA

carried goods that were common in this traffic: wine, rice, empty wine casks, and general manufactured goods. This micro-world was an arc of ports that included Málaga, Torre del Mar, Adra, Almeria, Alicante, Denia, Cullera, Valencia, Vinaroz, Tarragona, Barcelona, Cette, Port Vendres, Marseilles, Toulon, Nice, Genoa, and Livorno. The crew consisted of 24 men, including the shipmaster, and followed the typical pattern found previously, in sailing ships: sixteen men from Valencia, six from Villajoyosa, one from Mallorca, and one from Águilas.[19]

Finally, the steamship *Barcelona* (2,304 tons), perfectly represents the transition between two worlds: a steel hull with iron masts, barque rigging, and a compound engine of a nominal 300 hp. The ship was built in 1876 at Blackwall, England, and in ways, symbolised the end of the industrialisation process. The ship's lines were that of a sailing ship, but it already incorporated all the latest maritime technology, and pointed towards a future without sails. However, the *Barcelona* maintained a full rigging and sail plan, and in the few pictures available, appears with sails unfolded, which were used as an auxiliary propelling

19 ANC, *YM IV (a) VL1*.

force, as in many steamships of that period.[20] The ship was employed in the subsidised mail service from Barcelona to Manila (beginning and ending in Liverpool),[21] with general cargo and passengers (mainly troops).

On board, the *Barcelona* crew originated from many parts of the Spanish coast and included some members from interior territories. In a crew list from 1883, among the 96 workers enlisted, the study finds two foreigners (two Scottish men as first and second engineer), with the remainder, Spanish.[22] Almost every Spanish coastal region is represented (with even one man from Fernando Poo, a Spanish territory in West Africa), with Galicia, Valencia, and Andalusia being the most common origin. Only two men from the Bilbao area were employed on board, while only two Catalans were enlisted as officers.[23] The virtual disappearance of Catalan seamen, leaving aside those who were licensed as deck officers or ship engineers, is of particular note. The only woman on board, a stewardess, came from Málaga. One unexplored topic is the case of Asian or African workers embarked upon Spanish steamers, an equivalent to the British lascars.[24] Occasionally, they are listed as "Arabs, firemen and trimmers", with no names or salaries provided (for instance on board the liner *España*, on the Marqués de Campo line). The need to maintain fully operative engine rooms in a hot climate, and the recruitment of non-European

20 See Basil Greenhill and Peter Allington, "Sail-Assist and the Steamship", In *The Advent of the Steam. The Merchant Steamship before 1900. Conway's History of the Ship*, ed. Robert Gardiner, (London: Conway Maritime Press, 1993): 146–156.

21 The ship, in a round trip of three months, visited Manila, Singapore, Hong-Kong, Galle, Aden, Suez, and Port Said, followed by Barcelona, Valencia, Cartagena, Cádiz, Vigo, La Coruña, and Liverpool.

22 The presence of foreign engineers was common in this company, as it was in the *Compañía Trasatlántica*, the rival shipping line. See Enric Garcia-Domingo, *El mundo del trabajo*, 322–327; Enric Garcia-Domingo, "Engine drivers or engineers: ship's engineers in the Spanish merchant navy (1834–1893)," *Journal of Mediterranean Studies*, no. 19.2 (2010): 249–27.

23 This is a pattern that we can find in other places. See Enric García-Domingo and Jordi Ibarz, "Los historiales de personal de la Compañía Trasatlántica para el estudio de la historia de la movilidad marítima, 1893–1912," in *En Cádiz: del Floreciente S.XVIII al Port of the Future del S.XXI*, eds. María Vázquez Fariñas, Luis López Molina, and Teresa Pontón Aricha (Madrid: Dykinson, 2018), 81–97.

24 Jonathan Hyslop, "Steamship empire: Asian, African and British Sailors in the merchant marine c. 1880–1945," *Journal of Asian and African Studies*, no. 44.2 (2009): 49–67; Gopalan Balachandran, *Globalizing Labour? Indian Seafarers and World Shipping, c. 1870–1945* (New Delhi: Oxford University Press India, 2012); Dean Broughton, "Unfortunate Strangers: Lascars in the British Maritime World c. 1849–1912" (PhD diss., Victoria University, 2018); Lars Amenda, "Between southern China and the North Sea: Maritime Labour and the Chinese migration in continental Europe, 1890–1950," in *Asian Migrants in Europe: Transcultural Connections*, eds. Sylvia Hahn and Stanley Nadel (Gottingen: V&P. Unipress, 2014), 59–66.

1-Cádiz	5-Adra	9-Santa Pola	13-Denia	17-Vinaroz	21-Barcelona	25-Cadaqués
2-Algeciras	6-Almeria	10-Alicante	14-Cullera	18-San Carlos de la Rápita	22-Masnou	26-Port Vendres
3-Málaga	7-Águilas	11-Villajoyosa	15-Valencia	19-Tortosa	23-Vilassar de Mar	27-Cette
4-Torre del mar	8-Cartagena	12-Benidorm	16-Benicarló	20-Tarragona	24-Lloret	28-Palma

MAP 1.1 Mediterranean ports and naval department of Cartagena (shaded area)

workers (who were supposedly more resistant, and considered dispensable) is another aspect of industrialisation at sea.

3.1 *Changes in Work Environment*

The changes in labour conditions on board in the transition from sail to steam had a great impact on the spatial subdivision of the working environment, and consequently on the behaviour of the men, their social relationships, and even their conflicts and struggles. With an increase in size, ships became large floating factories, like buildings with different floors, where the space was divided into different levels and sections (decks, holds, between-deck spaces, engine room, boilers, bunkers, etc.), in a complex micro-geography that favoured the segmentation of the crew. The spatial coordinates shifted from the fore and aft axis in sailing vessels, to the up and down axis within steamers, so the new distribution clearly reshaped the perception of seafaring in the industrial era. The jump from sailing ships to steamers can be compared to the jump from

small street workshops to large factory complexes, with different buildings and floors. Living on a sailing ship meant working in a group where everyone knew each other (to some extent), and where contact was constantly maintained. However, living in a steamer meant joining a crowded workplace where it was difficult to maintain continuous relationships with anyone, the seamen were part of a complex environment that was often barely comprehensible, and where they moved from deck to deck through stairs and corridors, akin to a labyrinth. It is easy to imagine that certain feelings of proletarianization grew among the crew. As Fricke recalled, the result was a lack of effective ties and communal support.[25]

Obviously, the crew of a sailing boat, represented by the smaller *San Antonio*, were not affected by spatial segregation, and did not experience this feeling of being on a floating factory. For them, industrialisation passed them by. In the case of the barque *Habana*, the spatial distribution was still the traditional fore-and-aft, with the master and the petty officers at the poop, and the ranks at the forecastle. Since a large amount of the work was completed in relation to the rigging, it was not a perfectly horizontal world either. The crew of the small steam ship *Alcira* lived midway between the floating factory represented by the *Barcelona*, and the old-style living arrangements of the *Habana*. The 24 men most likely knew each other, albeit superficially, but the environment was fully industrial, an iron hull divided into compartments and "territories". The liner *Barcelona* is a clear example of the idea of a floating factory, a model that reached the greatest expression with huge passenger ships, such as the *Reina Victoria Eugenia*, seen in the figure 1.3 below.

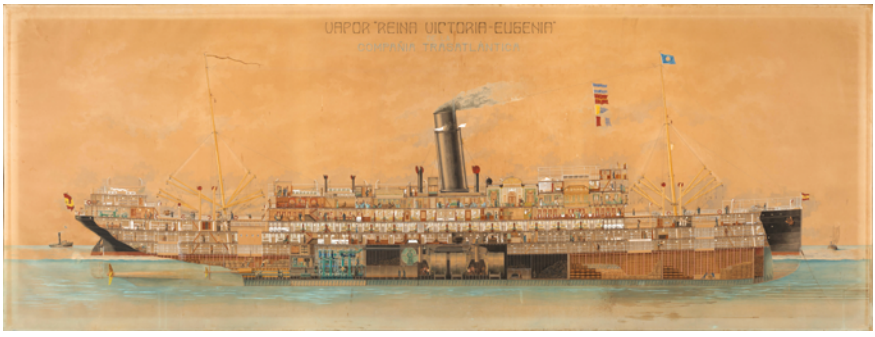


FIGURE 1.3 The passenger steamship *Reina Victoria Eugenia*
SOURCE: MARITIME MUSEUM OF BARCELONA

25 Peter H. Fricke, "Seafarer and community," in *Seafarer and Community. Towards a Social Understanding of Seafaring*, ed. Peter H. Fricke (London: Croom Helm, 1973), 5–6.

3.2 *Labour Intensity versus Productivity*

One of the more powerful effects of industrialisation on the merchant marine was increased productivity. A plethora of factors allowed this change in the shipping business,[26] for example, steamers with tight schedules, larger vessels, ports with mechanical gear to load and unload more rapidly, efficient connections with railroad and interior markets, etc. As for vessels carrying passengers and mail, like the *Barcelona*, with inevitably strict schedules, having little or no cargo to handle, they could achieve remarkably faster turn-around times. In this way they could undertake more voyages in a year. The analysis can reconstruct, by gathering data from various scattered documents, an approximate schedule of eight round voyages between Liverpool and Manila.[27] The line covered a route with regular calls at Liverpool, Vigo, La Coruña, Cádiz, Cartagena, Valencia, Barcelona, Port Saïd, Suez, Aden, Galle, Singapore, Hong-Kong, and Manila, making the same stops on the return voyage. Occasionally, it stopped at Port Mahón, in the island of Minorca, for quarantine. The schedule was similar for every ship employed on the same line, and this is enough to perceive the intensity of activity, non-stop from port to port, working as a factory. Leaving aside time in port or time at sea, the ship's timetable is remarkably like that of a train and is clearly a rather different pattern from the traditional sailing ship, which was dependant on wind, and slower in-port operations. It is clear the impact that these changes would have on both the body of the workforce, and upon the personal and family life of men and women employed at sea.[28] This intensification led directly to a perception of an "industrialised" work life, which affected both communities and individuals. Men on board the *Habana*

26 For example: Jari Ojala, "Productivity and technological change in eighteenth- and nineteenth-century sea transport: a case study of sailing ship efficiency in Kokkola, Finland, 1721–1913," *International Journal of Maritime History*, no. 9.1 (1997): 93–123; Jan Lucassen and Richard Unger, "Labour productivity in ocean shipping, 1450–1875," *International Journal of Maritime History*, no. 12.2 (December 2000): 127–141; Aimee Chin, Chinhui Juhn, and Peter Thompson, *Technical Change and the Wage Structure During the Second Industrial Revolution: Evidence from the Merchant Marine, 1865–1912* (National Bureau of Economic Research Paper Series, Working paper 10728) (Cambridge, MA: September 2004). Notable exceptions are Eric W. Sager, *Seafaring Labour: the Merchant Marine of Atlantic Canada 1820–1914* (Montreal & Kingston: McGill-Queen's University Press, 1989); Eric W. Sager, *Ships and Memories. Merchant Seafarers in Canada's Age of Steam* (Vancouver: UBC Press, 1993); Yrjö Kaikuiainen, *Sailing into Twilight: Finnish Shipping in an Age of Transport Revolution, 1860–1914* (Helsinki: SHS, 1991).

27 Arxiu Històric Escoles Pies de Catalunya (hereafter AHEPC.) Archival fond Antoni Borrell, boxes 1–5, and general inventory.

28 Jan Lucassen and Richard Unger, "Labour productivity," 127–141; Yrjö Kaukiainen, *Sailing into Twilight*, 102–119; Jari Ojala, "Productivity change in eighteenth century Finnish shipping," in *Shipping and Economic Growth 1350–1850*, ed. Richard R. Unger (Leiden: Brill, 2011), 167–188.

and the *San Antonio* escaped this feeling. Men on board the *Alcira* were, again, in a midway house, for the intensity of tramp services were, in general, lower than that of liners.

A micro-historical approach indicates considerable differences between sail and steam, as shown in Table 1.2. Crew lists indicate that sailing ships, in general, had longer periods in port than steamers; they spent approximately half of the time sailing, and the other half docked in ports. In comparison, steamers spent two-thirds of their time at sea. It is not clear how much time in port was devoted to ship repairs and maintenance. Moreover, in sailing vessels the crew usually did the loading and unloading, whilst steamers depended on local dockworkers, so time spent handling cargo demanded different rhythms. Nevertheless, these changes in timing are indications of the intensification of work, and of changes in the shipping business.

TABLE 1.2 Proportion days at sea/days at port

Type of ship	Name	Total days	Days at port	Days at sea	% of days at port	% of days at sea
Barque	*Olimpia*	453	202	251	44.6	55.4
Brig	*Eolo*	710	423	287	59.6	40.4
Brig	*Magin*	470	213	257	45.3	54.7
Polacre	*Silencio*	403	203	200	50.4	49.6
Brig	*Principe*	511	306	205	59.9	40.1
Brig	*Esperanza*	561	256	305	45.6	54.4
Brig	*Maria Rosa*	4,859	2,387	2,472	49.1	50.9
Steamship	*Alicante*	192	39	153	20.3	79.7
Steamship	*Marsella*	109	29	80	26.6	73.4
Steamship	*Duero*	1,235	591	644	47.9	52.1
Steamship	*Marsella*	243	53	190	21.8	78.2
Brigantine	*Lloret*	7,616	3,619	3,997	47.5	52.5
Barque	*Catalina*	3,257	1,392	1,865	42.7	57.3
Steamship	*Ciudad Condal*	645	256	389	39.7	60.3
Laud	*San Antonio*	1,611	1,118	493	69.4	30.6
Steamship	*Carlos*	653	500	153	76.6	23.4
Pailebot (schooner)	*Pepe*	981	523	458	53.3	46.7
Laud	*Concha*	2,884	1,57	1,314	54.4	45.6

SOURCE: ARCHIVO NAVAL DE CARTAGENA (HEREAFTER ANC): YM IV A C L3; C L4; V L4; V L5; V L11; V L13. ARCHIVO GENERAL DE MARINA D. ÁLVARO DE BAZÁN (HEREAFTER AGMAB): CG 1178; CG 1180; 7167–1; 7167–2; 7167–3

3.3 *Occupations: Crews in a Slow Transition*

Professional posts were few on sailing ships, and this fact remained unaltered for centuries, however, industrialisation brought about long-lasting changes. Firstly, the number of occupations increased, and diversified; secondly, some traditional categories changed; thirdly, new professions connected to the engine room appeared; and fourthly, catering crews increased in number and complexity. The increased numbers of occupations, and the categories within (based on levels of responsibility and skills), including the appearance of a new complex organisation on board, was a clear indication of industrialisation.

Clear differences are evident when comparisons are made between sailing ships and steam ships. For instance, on the brig *Eolo*, the study finds only seven different occupations: master; mate; cook; able seaman; ordinary seaman; and boy. Occasionally, there was a carpenter or steward, but generally, a sailing ship required approximately ten different occupations or levels of specialisation.[29] However, the small steamer *Carlos* required ten different positions on board: master; mate; boatswain; able seaman; first and second engineer; fireman; cook; cook's boy; and waiter. As ships grew in complexity, more professional occupational profiles were required on board.[30] The passenger liner *Barcelona* had 34 different occupations, and almost 50 years later, the liner *Alfonso XII* required 69 distinct ranks.[31] The various professions were formed into categories that placed each man (or woman) in a precise ship location, with limitations to duties, and clear boundaries regarding tasks on board. The structure of wages also reflected this organisational model. An opposite case can be found from the laud *San Antonio*, which had only a skipper, and three to five sailors. The role of skipper was closer to that of boatswain than that of mate. In addition, the skipper was often the total or partial owner of the boat.

On board the barque, *Habana*, the analysis finds the traditional professions of the age of sail: shipmaster; mate; boatswain; carpenter; cook; steward; and able and ordinary seaman. Occasionally, a cook and/or a carpenter is present, but often, it does not seem to relate to the type or dimensions of the ship, or the type of voyage; perhaps it related to the condition of the ship, and the requirement to maintain seaworthiness. Changes are notable if examination is made of liners such as the *Barcelona*. Her crew list is a rich catalogue of professional categories and salaries.[32] This analysis presents a synthesis of categories

29 AGMAB, Departamento de Cartagena, CG 1178.

30 ANC, YM IV a VL (6).

31 AGMAB. Archival fond of the *Capitanía Marítima de Ferrol. Capitanía del Puerto de La Coruña*, s/n. 1929.

32 Processed data from a list of crew members belonging to various vessels of the *Vapores del Marqués de Campo* line with similar characteristics (*España, Viñuelas*, *Manila*, *Asia*, and *Esperanza*).

and nominal wages using data from the *Compañía Trasatlántica Española*, the most important shipping company in Spain at this time. The numbers in Table 1.3 are a useful reference point for information on the Spanish steam merchant marine of the last decades of the nineteenth century. The great fragmentation of trades, professional categories, and wages on board, invite a comparison between similar categories in each department.

TABLE 1.3 Categories and average nominal wages in the *Compañía Trasatlántica Española* for the period 1880–1890 (in pesetas/month)

Deck	**Wage**	**Engine room**	**Wage**	**Catering**	**Wage**
Shipmaster	600	Chief Engineer	500 plus bonus	Steward	250
First Officer	400	Second Engineer	350	Second Steward	125
Second Officer	300	Third Engineer	250	Head Cook	250
Third Officer	250	Fourth Engineer	200	Cook Mate	150
Doctor	200	Engine Room Storekeeper	110	Third Cook	100
Chaplain	200	Head Fireman/	110	Cook's Assistant	60
Purser	250	Greaser	110	Dessert Baker	100
Second Purser	100	Fireman	100	Baker	125
First Boatswain	175	Coal-Trimmer	80	First Steward's Storekeeper	100
Second Boatswain	125	Donkeyman	225	Second Steward's Storekeeper	60
Ship's Carpenter	125			Butcher	100
Cadet	90			Cattle Caretaker	100
Storekeeper	90			Linen Keeper	60
Wachtmen Corporal	90			Stewardess	60
First-rate Seaman/ Able Seaman	90			First-class Head Waiter	80
Second-rate Seaman/ Ordinary Seaman	80			Waiter	60
Third-rate Seaman	65			Captain's Waiter	60
Watchman	80			Waiter	60
Practitioner	50			Second Class Head Waiter	40

TABLE 1.3 Categories and nominal wages in the *Compañía Trasatlántica Española* (*cont.*)

Deck	Wage	Engine room	Wage	Catering	Wage
Boy	30			Officer's Waiter	60
				Third Class Head Waiter	60
				Second Class Waiter	50
				Engineer's Waiter	50
				Rank Waiter	50
				Auxiliary Waiters	40
				Galley Boy	40
				Toilet Boy	20

SOURCE: PROCESSED DATA FROM THE COMPAÑIA TRASATLÁNTICA ARCHIVE (MUSEU MARÍTIM DE BARCELONA)

It is significant that the traditional Spanish word for able seaman (*compañero*) survived for a long time on steamers. In some of the crew lists of the *Vapores del Marqués de Campo* company, the term is common. The resistance of tradition at sea is well-known, but in this instance, perhaps the fact that steamers retained sails for decades, as auxiliary equipment, was the reason for this persistence. It should be noted that between the 1870s and 1890s steamships retained their sails. For instance, in 1880, in the crew list of the *Comillas*, a steamer of the *Compañía Trasatlántica*, a *gaviero* (top sail man) can still be found.[33] Ultimately, *compañeros* vanished at the same time as sails.

Technological changes also altered the proportion of professionals on board. Eric W. Sager stated that in Atlantic Canadian sailing vessels, over 60% of crews consisted of able seamen or ordinary seamen, which was reduced to one-third of the crew, in steamers.[34] Other academics indicate similar data for British ships: able-bodied and ordinary seamen declined from 77% on sail ships, to 27% on steam ships.[35] Spanish sources permit an approximation of proportions between deck, engine room, and catering. The case of the

33 MMB-Archive (MMB-A), archival fond of the *Compañía Trasatlántica. 2.2.1/29, Vapor Comillas*.

34 Eric W. Sager, *Seafaring Labour*, 247.

35 Chin, Juhn, and Thompson, *Technical Change*, 12.

Barcelona indicates a similar proportion: deck, 43; engine room, 28; and catering, 35. Of course, in passenger ships, catering staff increased in proportion to the number of passengers on board. The division between officers and other ranks remained around 25% officers, and 75% lower ranks.[36]

Alternatively, if considering the crew lists of the liner *Barcelona*, professions related to the catering industry had a particularly relevant role. In February 1884, for instance, the Barcelona carried 73 first-class travellers (including eleven children), fourteen second-class, six third-class (including a child), and 36 soldiers; 128 passengers in all. Nominally, the ship could carry 346 people, however, since it was on the Philippines' route, the volume of passengers was smaller compared to the numbers involved on American routes. To cater to both passengers and the crew, the analysis finds an interesting variety of categories and salaries in the catering department. For example, the ship employed not only cooks of different levels, bakers, butchers, etc., but also a wide range of stewards depending on the location in which they served, for example: smoking rooms; the bar; captain's cabin; officers' cabins; engineers' cabins; first-class, second-class, and third-class cabins, etc. Among this category, the first females can be found working on board, assisting women and children on their voyage to Manila.

3.4 *Wages: Industrialisation and Remuneration*

Remuneration is a key factor to understand the complexity of a crew in transition. In the laud *San Antonio*, as in most small coastal boats, crews were paid through shares of the profit. In the crew list of the laud *Rosita*, as that of the *San Antonio*, it is possible to find an example that seems common in the Mediterranean fleet: after paying the expenses of the ship, and the maintenance of the crew, the rest of the freight would be divided in the following way: 50% for the ship owner, and the remaining 50% for the crew. The crew received their share as follows: one-and-a-half shares to the *patrón*, and one share for each sailor.[37] On a larger sailing ship, trades were the old and well-known traditional variety, with a limited salary scale. It is not known the captain's income in the barque *Habana*, however, the remaining salaries, from highest to lowest, were as follows (in pesetas): 150 for the mate; 130 for the boatswain; 100 for the carpenter; 65 for the steward; 65 for able seamen; and 55 for ordinary seamen. There were no engine room staff, and the catering crew was limited to a cook.

36 We can find a similar proportion in Gelina Harlaftis, *A History of Greek-Owned Shipping. The Making of an International Tramp Fleet: 1830 to the Present Day* (London: Routledge, 1995), 209.

37 ANC, *Comandancia de Marina de Barcelona*, C-47 L-256 (*1918–1920*).

As the ship was not carrying passengers, certain professions were unnecessary, such as waiters, doctors, or chaplains. It is not possible to provide information of wages on the *Alcira*, however, the study can use a similar case, another tramp steamship, the *Duero*, owned by the *Linea de Vapores Tintoré* Company. The amounts for the period 1877–80 are as follows (in pesetas): mate, 208; third mate, 156; boatswain, 130; steward, 130; carpenter, 93; able seaman, 72; ordinary seaman, 62; and trimmer, 72. The salaries of engineers and firemen are not included in the crew list because they had a private agreement with the ship-owner.[38] An estimation of wages on board the *Barcelona* using the examples from the *Compañia Trasatlántica* are shown in Table 1.3.

One element to consider is the crew-maintenance cost, which is part of the non-monetised salary of the crew, and which also informs the researcher of social differences. In the case of the liner *Barcelona*, it is expressed in the daily amounts for food (in pesetas): 4 for officers (including the doctor, and the chaplain); 3 for the boatswain, carpenters (and respective trainees); and 2.5 for trimmers and sailors.[39] In the case of the *Habana*, the agreement stated that "food will be given according to use and custom in Catalan sailing ships and no wine or liquor will be given during the trip." Information is not available to quantify money designated for crew maintenance, however, it is known that, for example, in 1879, it was common to spend 2.5 pesetas/day for officers, and 1.5 pesetas/day for sailors and firemen.[40] Finally, in the case of the *San Antonio*, victuals were charged to each crewman, although sometimes the expenses were subtracted from total benefits before working out share values.

3.5 *From Seafarers to Sea Workers*

Seamen in the age of sail had an extensive knowledge and control over almost the entire work process on board. Workers on a sailing ship were like craftsmen who completed a good voyage through a process that they knew and

38 AGMAB, *Navegación Mercantil, Roles*, 1180.

39 Purely for comparative purposes, the cost for victualling the passengers were as follows: 7.5 first-class passengers, 5.5 second-class passengers, 3.5 third-class passengers and 2.5 soldiers and sailors embarked as passengers.

40 *Información sobre las consecuencias que ha producido la supresión del Derecho Diferencial de Bandera y sobre las valoraciones y clasificaciones de los tejidos de lana, formada con arreglo a los artículos 20 y 29 de la ley de Presupuesto de año de 1878–79, por la Comisión Especial Arancelaria creada por Real Decreto de 8 de septiembre de 1878*, vol. 1: *Derecho diferencial de bandera*. Respuesta de José Ricart Giralt, presidente del Centro Naval Español (Madrid: Imprenta de Manuel Minuesa de los Ríos, 1879), 103–104.

controlled in whole or in part.[41] In a steam ship, seamen were dependent, and no longer fully controlled the vessel, simply due to the presence of highly complex machinery. They became workers, who produced a voyage through a process they knew little about, and which they did not control in any way. Sailors had been the backbone of the sailing ship, but aboard steamships they lost this central role. As Jonathan Hyslop states, seamen bemoaned the loss of control over their work, as the artisanal features of sailing ship labour were lost.[42]

There was a leap from handling a sailing ship, to serving a steamer ship. Working on board was now different, linked to new skills and requirements, such as the handling of cargo rigging, winches, and mechanical gears.[43] On a steamer each man had to perform a greater and more varied number of tasks; namely, he required greater abilities, and therefore, was paid accordingly. Thus, there was no decline in skills amongst seamen. According to Fischer and Nordvik,[44] wages on sailing ships remained stable, while on steamers salaries were higher.[45] This fact proves that shipowners were willing to offer higher wages to men they considered as skilled workers. The wages comparison in Table 1.4 confirms this trend in the Spanish context:

TABLE 1.4 Comparison of nominal wages between sail and steam ships (in pesetas/month), 1878–1895

Rank	SFA	BD	NC	C	H	IL	B
Shipmaster	150	–	–	234	–	600	600
Mate/First officer	–	130 to 140	166	156	260	250	400
Steward	65	–	–	–	156	250	250
Bosun	130	114 to 125	125	114	182	175	175
Cook	100	88 to 99	99	94	156	200	250
Carpenter	95	–	99	–	–	125	125
Able seaman	65	68 to 78	68 to 73	68 to 73	156	80	90

41 "Sail provided the satisfaction of developing a skill and cooperating with other workers": Jonathan Hyslop, "British steamship workers, c. 1875–1945: precarious before precarity," *Labour History*, no. 116 (May 2019): 15.

42 Hyslop, "British steamship workers," 27.

43 Garcia-Domingo, *El mundo del trabajo*, 207–221.

44 Lewis Ross Fischer, "Around the rim," 59–78; Fischer and Nordvik, "Salaries of the sea".

45 It is important to consider those elements that cannot be monetised, such as better food, better hygiene, and better accommodation, etc.

TABLE 1.4 Comparison of nominal wages between sail and steam ships (*cont.*)

Rank	SFA	BD	NC	C	H	IL	B
Ordinary seaman	55	57 to 68	57 to 62	57 to 62	–	70	80

SOURCE: SFA-*SAN FRANCISCO DE PAULA*, SAIL, 1889 (MUSEU MARÍTIM DE BARCELONA (HEREAFTER MMB)-COLLECTIONS (PENDING REGISTER NUMBER); BD-*BELLA DOLORES*, SAIL, 1883 (MMB-COLLECTIONS, 132D); NC-*NUEVO COPÉRNICO*, SAIL, 1879 (ARXIU HISTÒRIC DE VILASSAR DE MAR (HEREAFTER AHVM), 35871); C-*CRONÓMETRO*, SAIL, 1879 (MMB-COLLECTIONS, 303D); H-*HUMBERTO*, STEAM, 1895 (AGMAB, NAVEGACIÓN MERCANTIL, 7167-1); IL-*ISLA DE LUZÓN*, STEAM, 1892 (MMB-ARCHIVE, ARCHIVAL FOND OF THE COMPAÑÍA TRASATLÁNTICA, 2.2.1/10.15); B-*BARCELONA*, STEAM, 1884 (ARXIU HISTÒRIC ESCOLES PIES DE CATALUNYA (HEREAFTER AHEPC), ARCHIVAL FOND OF ANTONI BORRELL, BOX NO. 5)

Industrialisation introduced to the sea a concept already used on land: the proletariat. This is borne out in new categories of ranks that appear in the engine room, especially firemen and coal trimmers, perhaps the first to consider themselves proletarians. The engine room was an industrial hell: trimmers and firemen were in constant danger of being burned by the furnaces, crushed by sliding coal, choked by dust, smoke, and fume, or overcome by heat exhaustion.[46] In addition, the ranks of deck and catering staff also saw themselves as proletarians. Overcoming physical and mental barriers, such ranks acted together as sea workers (*obreros del mar*), using an entirely new expression in the sector, outside the tradition of an essentially conservative world, where names had deep and meaningful roots.[47] One of the consequences of the radical transformation of labour relations, was the appearance of new forms of resistance and bargaining through new-born trade unions, as part of a labour movement in response to the changes and tensions now generated, especially in relation to large shipping companies. The fact that Spanish seamen and firemen acted in coordinated trade unions, for example, *La Naval, Sociedad de Obreros Fogoneros y Marineros de Barcelona* (founded in 1912 and

46 Hyslop, "Steamship empire," 56.

47 In Spanish, *obrero* connotes proletarian, versus *trabajador*, which also means worker, but without the class-based connotation. Thank-you to Dr. von Briesen for his remark on this matter.

probably inspired by the British *National Seamen's and Firemen's Union*), is an indication of a new class identity.[48]

Other intangible factors, such as the physical environment of metal-hulled steamships undoubtedly had a significant role in the building of this image: it was a world of machinery, pipes, measuring devices, dark spaces at different levels, fire and coal, a world subservient to the dictatorship of schedules, with little or no room for personal initiative. The assimilation between the experience of the steamship and the idea of the factory was obvious. Sailing was a clean and silent world, and the rhythm was set by the wind, capricious and variable, and not by an engine that seemed to never stop at sea or in port; there were also now previously unknown factors at sea, such as noise and vibration, dirt from grease and soot, etc. Smells and sounds in sailing ships switched to odours and noises on steamers, an irrational input that undoubtedly altered the perception of life on board: industrialisation stank and sounded awful. Of course, life on board sailing ships had not been as romantic as literature or cinema depicted either, as opposed to the new age of steam, but a certain sense of loss should be admitted.[49] Seafarers found their sense of identity and their social cohesion undermined by technological change, and these environmental factors should not be neglected in the perceptions of the workplace as a factory, and in the worker himself as a proletarian.

Another significant change was the irruption of "land" workers on board ships (in the engine-room, or in catering services): steam navigation separated jobs from traditional skills and made the division between land and sea smaller. Traditional and invisible bonds between crew members and the long-lived sea culture were slowly diluted, with the increasing number of *terrestres* (workers from land-based jobs) on board with no sentimental or familiar links to the sea. Around 80–100% of the men working in the engine room came from Spanish inland provinces.[50] In the case of the *Barcelona* as an example, in the crew consists of 95 members, 44 were *inscritos* (seamen registered in the *Inscripción Marítima*), and 51 were registered as *terrestres*. Though

48 Arxiu Històric de la Cambra Oficial de Comerç, Indústria i Navegació de Barcelona (hereafter AHCOCINB). Registro de Asociaciones, libro 4. Expediente 7.281, de 9 de octubre de 1912. Enric Garcia-Domingo, "De 'gente de mar' a 'obreros del mar'. Los inicios de la reivindicación obrera en la marina mercante española (1870–1914)," *Historia Social*, no. 83 (2015): 73–90.

49 See Richard D. Foulke, "Life in the dying world of sail, 1870–1910," *Journal of British Studies*, no. 3.1 (November 1963): 105–136.

50 García-Domingo and Ibarz, "Los historiales de personal," 90–91.

some *inscritos* signed on board as non-maritime, *terrestres* were never assigned seamen professions.[51]

The loss of a professional identity had special significance for boatswains. The transformation/degradation of their role is a clear indication of industrialisation at sea. In Spanish sailing ships they were traditionally considered to be petty officers, namely officers, although low in rank. On the early steamers (where rigging was still essential) they still maintained their worth; but as sail ships slowly disappeared, they fell into the category of seamen, though at the highest level. They were no longer considered officers in any respect. Thus, when the *Compañía Trasatlántica* published its regulations for deck ratings in 1915, boatswains were included among able seamen, ordinary seamen, and watchmen.

The impact of changes in seafaring may be symbolised by the shipmaster. He learned the trade as a boy on sailing ships and therefore knew all the secrets of traditional seafaring. However, on board a steamer, it was impossible for a shipmaster to control or even to understand, in detail, all the processes. Shipmasters were supposedly able to control everything on board a sailing ship, but this experience was not to be repeated on steamships.[52] The dependence on the chief engineer had an evident symbolic significance. Looking back, in 1850, the captain of the full-rigged ship *Antonieta* acted as an empowered ship master, and senior executive of a floating company.[53] In comparison, captains worked as salaried employees for large shipping companies by the end of the 1920s, the difference is clear. The master of the *Antonieta*, was probably a man relatively close to the crew, who personally signed the crew agreements, kept the accounting books, and paid the men. He represented the owners as the executive manager of the enterprise, and he had a certain decision-making power as regards the ports to visit, the cargo to take, the duration of the trip, etc. Some decades later, a captain had become a mid-level employee working for a salary. If he worked for a large shipping company his name would be on

51 AHEPC, archival fond Antoni Borrell, box no. 5. Barcelona. manifiesto de tripulación (1883).

52 Enric Garcia-Domingo: "Losing professional identity? Deck officers in the Spanish merchant marine, 1868–1914," *International Journal of Maritime History*, no. 26.3 (2014): 451–471.

53 Valerie Burton, "The making of a nineteenth-century profession: shipmasters and the British shipping industry," *Journal of the Canadian Historical Association/Revue de la Societé historique du Canada*, no. 1.1 (1990): 116–117; Enric Garcia-Domingo, "Losing professional identity?"; Apostolos Delis, "Le role du capitaine et la figure du 'directeur' de navires dans la marine à voile à Syra au milieu du XIX^{é} siècle," in *Entrepreneurs des mers. Capitaines et mariniers du XVI^{e} a XIX siècle*, eds. Gilbert Buti, Luca lo Basso and Olivier Raveaux (Paris: Riveneuve Editions, 2017).

the *escalafón*: a list of names by order, mainly, of seniority, waiting to occupy their place. Officers had lost their individuality and had few opportunities to assert themselves. They were unknown employees of distant and anonymous company shareholders. Aspects, previously considered vital, such as technical expertise or commercial skills, were now irrelevant. Frequently, shipmasters who had commanded sailing ships, and were well-considered and fully recognised, were now required to apply for a position in large steamship companies as Third, Fourth or even Fifth Officers, a scenario, far from their old positions. It is easy to imagine that feelings of demotion and demoralisation would have existed during this transition period.

To summarise, captains became totally disconnected from maritime business and decision-making, and became diluted within a huge workforce, without their personal or professional values, nor retaining the social value that they enjoyed less than a century before. As a professional seaman wrote, "now [the poor captains] have been dressed as City Hall ushers or stage actors: with a lot of gold in their cuffs, but no gold in their pockets."[54]

4 Conclusions

This chapter examined some aspects of industrialisation in the Spanish merchant marine. The focus has been on the workforce and their transition from craftsmen on board sailing ships, to sea workers on board steamships. Industrialisation is a long and complex process with multiple possible approaches, so by using the data from representative ships, it has been possible to have a more detailed view of the Spanish context.

In Spain, industrialisation took place at a rapid pace within the merchant marine. During the last quarter of the nineteenth century, the steam fleet coexisted with a large fleet of sailing ships, most of them relatively small square-rigged vessels, generally overmanned in comparison with foreign fleets, to which the Spanish sailing fleet was uncompetitive, but resilient. This coexistence, through the decades, of different modes of technology, labour relations, and shipping management, is remarkable.

The workforce was almost totally Spanish (including men born in Cuba until 1898); the share of foreigners was limited both by legislative dispositions, and by the fact that foreigners were rarely interested in being hired by

54 José Ricart Giralt, "Los capitanes de la Marina mercante," *El Mundo Naval Ilustrado*, February 28, 1901, 87–90. See also Víctor María Concas, "Miseria con galones dorados," *El Mundo Naval Ilustrado*, December, 20, 1900, 538.

Spanish ships. Their geographic origin changed with industrialisation, a process that slowly diluted the traditional bonds of the peasantry. An important point is the progressive disappearance of Catalan people from the merchant marine, probably in parallel with the expansion of industrialisation ashore, mainly as Catalonia was at this time known as the so-called "factory of Spain". Simultaneously, another consequence of technological change was the failure of small ports with big sailing ship fleets, to adapt to industrialisation. This led to absorption by nearby large ports.

Professional categories were few on sailing ships and remained unaltered for centuries as part of the traditional professional landscape, but industrialisation brought long-lasting changes. The rise in the number of different occupations and categories (based on several levels of responsibility, and skills) and the complex new organisation on board, is a clear indication of industrialisation. Transitional differences are clear when examples of Spanish vessels are compared, from the seven different occupations on board the brig *Eolo*, to the sixty-nine positions on board the liner *Alfonso XII*. These different professions were scaled into categories that placed each man (or woman) in a precise location, with limitations placed on their duties, and clear boundaries regarding their tasks on board.

In this chapter, the analysis has considered aspects of the impact of industrialisation on seafarer lives. To have a clear view of these transformations, the study focused on topics to which changes were clearly visible. Firstly, the work environment changed when small sailing ships became complicated floating factories. Secondly, technological improvements brought about an intensification of labour. Thirdly, the size and characteristics of a ship's crew changed. Fourthly, the structure of wages reflected changes in the organisational model. And finally, seafarers now became sea workers in a new industrial world. Each topic provides evidence of definitive changes in the life of a seafarer.

At the end of this process, seamen, especially those within the new engine room category (especially firemen and coal trimmers), now considered themselves to be proletarians. However, in general terms, seafarers had moved from the artisanal seaman of the age of sail, to a fully industrialised worker once the transition to steam was complete.

CHAPTER 2

The Evolution of Maritime Labour in Italy in the Age of Transition: 1880–1920

Luca Lo Basso

1 Introduction

The opening of the Suez Canal in 1869 marked a watershed moment between the worlds of sail and steam-powered navigation. Yet, almost everywhere, the transition to the new technology was still rather drawn out. In 1880, 75% of transport still took place by sail, with such vessels being considered more convenient, especially for particular commodities. The 1880s were thus decisive in the transition to steam: ships became larger in size and were built in iron and steel. More significantly, the advent of the triple expansion engine, together with the production of lighter hulls, significantly reduced the need for coal, minimising the space taken up by fuel on board and allowing for the loading of a greater quantity of commodities. In this way, late-century steamers began to cover long routes in shorter times and with less ports of call for supplies. In general, the technological development of maritime transport marked the blossoming of world trade, which continued to grow at a steady rate until the outbreak of the First World War.[1]

Along with the expansion of marine traffic came the growth of both the costs and dimensions of steamships. These expenses could only be sustainable through considerable investments, which only large shipping lines could afford, with the financial support of banks. Small marine entrepreneurs, who had contributed so greatly to the Golden Age of Sail, no longer had a place in the new economy. This had enormous repercussions on the economy of coastal communities, and on the entire industry of maritime labour in general, which was increasingly undergoing profound changes.

1 Steven C. Topik and Allen Wells, "Filiere di prodotto in un economia globale," in *Storia del Mondo, I mercati e le guerre mondiali 1870–1945*, vol. 5, ed. Emily S. Rosenberg, (Torino: Einaudi, 2012), 730–733.

2 The Transition from Sail to Steam and the Italian Merchant Marine

In those years, the development of the merchant marine of the new-born Kingdom of Italy was closely tied to the growth of the port of Genoa and of the Ligurian fleet,[2] as well as the new large shipping lines' commitment to the colonial project, as in the case of Rubattino who, in November 1869, favoured the agreement for an Italian presence in Assab, in the southern Red Sea. Rubattino's enthusiasm for the armament of steamers, however, did not prevent the growth of sailing ships in the marine, which reached its apex in 1870 before beginning to decrease.[3]

According to Edoardo Pantano—a member of parliament as well as the *Commissione Reale per i servizi marittimi*, established on 13 September 1902—in 1870, the Italian merchant fleet was fifth in terms of shipping tonnage, being preceded only by England, the USA, Norway, and France. The number of steamers, however, was so low that in the tonnage of steamships Italy found itself below Germany and Austria-Hungary. According to Pantano, while other countries transformed and mechanised their merchant navies, Italian shipyards remained anchored to the production of sailing ships, with large financial groups still investing too little capital. In 1880, Italy had only 80,000 tons of steamers, as opposed to the 3,000,000 possessed by England. The Kingdom was alarmed by this delay, and on 24 March 1881 it passed a law promoting a parliamentary inquiry on the sector, which will be discussed below with regards to maritime labour. The data gathered through the inquiry, especially thanks to the work of Paolo Boselli, pushed the Italian state to invest in the armament sector, financing companies with construction and shipping premiums. The law of 6 December 1885 pushed the Kingdom to spend 150 million lire on its marine between 1885 and 1896, although this did not produce great results.[4] In fact, the official data shows an overall decrease in shipping, which went from a tonnage of 999,196 in 1880 to 765,281 in 1896. On the other hand, the number of steamships had increased, with many becoming larger, faster and more trustworthy. Although the marine started to grow again thanks to the transportation of emigrants in the 1890s, it had nonetheless declined to sixth position in the world rankings, now surpassed by Germany. At the beginning

2 Giorgio Doria, *Investimenti e sviluppo economico a Genova alla vigilia della Prima Guerra Mondiale*, 2 vols. (Milano: Pantarei, 2008).

3 Francesco Surdich, "I viaggi, i commerci, le colonie: radici locali dell'iniziativa espansionistica," in *Storia d'Italia, La Liguria*, ed. Antonio Gibelli and Paride Rugafiori, (Torino: Einaudi, 1994), 456–509.

4 Archivio Storico della Camera dei Deputati (hereafter ASCD), *Legislatura XIX*, Sessione Unica, vol. 616, n. 97.

of the new century, the Italian fleet was still made up of too many sailing ships, many of which were old and of poor quality, while according to Lloyd's register, Italian steamers formed only 2.5% of the world's steamships. In 1904, Pantano reported that Italy did not possess any transatlantic ships exceeding 7,000 tons in gross tonnage, while the average cruise speed of Italian steamers was 11.2 knots and the average age was sixteen years, compared, for example, to the German average of 7.1 years.[5]

In short, in spite of all its efforts in the early years of the Kingdom of Italy, the merchant marine was unable to undergo the rapid transformation experienced by other navies in the world. This was largely due to the persisting preference for sailing, due to its poor ability to find the capital necessary to arm new powerful and expensive steamers. As Ludovica De Courten has noted, "from the very beginning, the transformation of shipping was hampered by the lack of capital willing to flow to the maritime industry and from the lack of a spirit of partnership, since the transformation required large, suitably coordinated means given by the elevated cost of steamships and their higher operating expenses".[6]

The vast majority of Italian shipowners were slow to keep up with steam technology. There were, however, exceptions to the rule, most notably the *Navigazione Generale Italiana* (NGI), founded on 23 July 1881 through the merger of the old and famous companies of Raffaele Rubattino and that of Ignazio and Vincenzo Florio.[7] The new colossus of Italian shipping managed to take over large proportions of the foreign as well as Italian market. This was in large part possible thanks to the aforementioned subsidy laws of 1885 and 1896, which were to the detriment of smaller shipowners who continued to invest in the traditional shipbuilding methods of the *ancien regime*. The enormous investment of the Italian state thus favoured NGI not so much in the subsidised routes, which remained rather undeveloped, but in the free routes, in which the company managed to prevail over others with the help of public aid. Francesco Crispi, the Italian prime minister, who saw the development of

5 *Atti della Commissione Reale per i servizi marittimi, Relazione generale*, vol. 1 (Imola: Editore Galeati, 1906), 11–20.

6 Ludovica De Courten, *La Marina mercantile italiana nella politica di espansione (1860–1914)* (Roma: Bulzoni, 1989), 44.

7 Maurizio Eliseo and Paolo Piccione, *Transatlantici. Storia delle grandi navi passeggeri italiane* (Genova: Tormena, 2001), 10–29; Giorgio Doria, *Debiti e navi. La compagnia di Rubattino 1839–1881* (Genova, Marietti, 1990); Orazio Cancila, *I Florio. Storia di una dinastia imprenditoriale* (Soveria Mannelli: Rubbettino, 2019).

NGI as a useful support for his expansionist and colonialist foreign policy, was particularly responsible for the government support.[8]

The limited and drawn-out growth of the Italian merchant fleet, in spite of all legislative efforts, was due in part to the extreme fragmentation of the public institutions which administered it. Up until the Sonnino-Bettolo law of 2 January 1910, which unified almost all authorities under the *Ministero della Marina*, the administration of the merchant marine had had a very troubled history.

With the unification of Italy, responsibilities for this matter had been delegated to the *Ministero della Marina*, which, according to the royal decree of 4 August 1861 n. 167, had established three divisions (*bagni, polizia della navigazione e sanità marittima; iscrizione marittima; materiale e tasse*), which later became part of the *Direzione Generale della marina mercantile* with royal decree n. 1963 of 26 July 1863, adding maritime health to its name. Later, in 1865, it was renamed the *Direzione Generale della marina mercantile e bagni penali*, but in 1886 the *bagni penali* were transferred to the control of the *Ministero dell'Interno*. Finally, with the royal decree of 26 April 1875, the establishment of the *Direzione Generale della marina mercantile* was reformulated and divided into two divisions (named VII and VIII). At the same time, however, many authorities related to the merchant fleet were subdivided into other ministries: subsidised lines, for example, fell under the protection of the *Ministero delle Poste e dei Telegrafi*, later named the *Ministero delle Comunicazioni*, which included within it an *Ispettorato per i servizi postali e commerciali marittimi*. The latter, in turn, was also part of the *Ministero dei Lavori Pubblici*. Other authorities fell under the aegis of the *Ministero degli Esteri*, while still others were under the control of the *Ministero dell'Agricoltura, Industria e Commercio*. Furthermore, the picture was complicated by the fact that everything relating to the customs regime, maritime taxes, and state concessions fell under the *Ministero della Finanza*. After 1880, many people pushed for a concentration of powers under a single ministry, while many others, including Francesco Saverio Nitti, held that the merchant marine should not be under the control of the military. Finally, 1885 saw the establishment of the *Consiglio Superiore della Marina mercantile*, tasked with instructing all practices aiming to propose legislative interventions in favour of the shipping world. This important state organ was partially resized in 1898, only to be reconstituted in 1905. At a peripheral level

8 Giuseppe Barone, "Lo stato e la Marina mercantile in Italia (1881–1914)," *Studi Storici*, no. 15.3 (July–September 1974), 633–640; Fulvio Cammarano, *Storia dell'Italia liberale* (Roma-Bari: Laterza, 2011), 80–132; Archivio Centrale dello Stato (hereafter ACS), *Ministero delle Comunicazioni, Direzione Generale Marina Mercantile, Ispettorato Servizi marittimi*, b. 276.

the *Direzione Generale* stood above the three naval departments—initially Genoa, Naples, and Ancona—as well as the port authorities (instituted by royal decree on 30 June 1861), located in the headquarters of the Italian naval divisions, of which there were 23 in 1881, growing to reach 31 in 1914.[9]

3 Seafarers of the Kingdom of Italy: Numbers and Organization

Each port authority had well-defined powers, in geographic as well as human terms. Each individual registered to a naval district belonged to the category of "seafarers" (*Gente di mare*), which referred to all of those who were subject to maritime authority, whose activity came to be regulated by the *Codice della Marina mercantile del Regno d'Italia* of 25 June 1865 (royal decree n. 2360) and by successive amendments, with particular reference to the substantial update of 24 October 1878, royal decree n. 4146.[10] The text of the first code was largely based on the *Regolamento della marina mercantile del Regno di Sardegna* of 13 January 1827, which, in turn, as far as classification and the registration of seafarers went, was based on the old ranking system of the French navy.

In the code of 1865, the Kingdom of Italy took inspiration from previous experience, and chapter I of title II, article 17, specified that "seafarers are divided into two categories: those employed in navigation and those employed in maritime crafts and industries".[11] The first category included captains and owners, sailors and cabin boys, engineers and firemen, and fishermen of the high seas. The second category, on the other hand, was comprised of shipbuilders, shipwrights and caulkers, pilots, and coastal boatmen and fishermen. In order to be registered, especially into the first category, individuals had to be at least ten years of age, vaccinated, and living in the naval division to which they belonged.

Seafarers therefore included various categories of people, whose number varied through time: while 176,491 Italians were registered in 1868, this number reached an apex of 210,267 a decade later, in large part thanks to the development of sailing, only to decrease in following years with the crisis of traditional navigation. In 1881 there were 176,335 registered individuals, making up only 0.6% of the Italian population, which numbered 28,951,546. A meagre

9 De Courten, *La Marina mercantile italiana*, 162–166; Marco Meriggi, "Le istituzioni del mare in età liberale," in *A vela e a vapore. Economie, culture e istituzioni del mare nell'Italia dell'Ottocento*, ed. Paolo Frascani (Roma: Donzelli, 2001), 247–263.

10 Maria Stella Rollandi, "«Imparare a navigare». Istruzione e marina mercantile dalla legge Casati al primo dopoguerra," in *A vela e a vapore*, 139–145.

11 *Codice per la Marina mercantile del regno d'Italia* (Torino: Stamperia Reale, 1865), 5.

TABLE 2.1 Seafarers in Italy, 1881–1914

Year	First category	Second category	Total
1881	113,216	63,119	176,335
1886	118,301	71,620	189,921
1891	122,798	92,482	215,280
1896	126,540	113,828	240,368
1901	132,148	130,506	262,654
1909	160,224	169,821	330,045
1914	189,202	216,536	405,738

SOURCE: *SULLE CONDIZIONI DELLA MARINA MERCANTILE AL 31 DICEMBRE 1881* (ROMA: FORZANI TIPOGRAFI DEL SENATO, 1882), 3–23; *SULLE CONDIZIONI DELLA MARINA MERCANTILE AL 31 DICEMBRE 1886* (ROMA-FIRENZE: TIPOGRAFIA BENCINI, 1887), 22–32; *SULLE CONDIZIONI DELLA MARINA MERCANTILE AL 31 DICEMBRE 1891* (ROMA: TIPOGRAFIA CECCHINI, 1892), 37–47; *SULLE CONDIZIONI DELLA MARINA MERCANTILE AL 31 DICEMBRE 1896* (ROMA: TIPOGRAFIA CECCHINI, 1897), 3–13; *SULLE CONDIZIONI DELLA MARINA MERCANTILE AL 31 DICEMBRE 1901* (ROMA: TIPOGRAFIA CECCHINI, 1902), 3–12; *SULLE CONDIZIONI DELLA MARINA MERCANTILE AL 31 DICEMBRE 1909* (ROMA: OFFICINA POLIGRAFICA ITALIANA, 1911), 25–36; *SULLE CONDIZIONI DELLA MARINA MERCANTILE AL 31 DICEMBRE 1914* (ROMA: OFFICINA POLIGRAFICA ITALIANA, 1916), 23–35

percentage, nonetheless destined to rise rapidly in the following years, and which in any case represented a crucial category in the development of commerce and in the maintenance of a military navy on a par with the best in the world.

If we look at sample data from the years between 1881 and 1914, the era we define as the age of the great transformation, thanks to documents published yearly by the *Direzione Generale*, titled *Sulle condizioni della Marina mercantile*, we can note a general growth in seafarer numbers, depicted in Table 2.1.

As can be seen, a notable growth took place, with a doubling of the number of seafarers in the Kingdom of Italy. This doubling was chiefly caused by the development of the second category of seafarers, which had become the majority by the early 1900s. While the category of navigating personnel grew, this was with less intensity when compared to the shipwrights, caulkers, iron workers, and especially coastal fishermen and boatmen; together, these categories grew by about three and a half times during the age of transformation. More or less in the same period, 1887–1913, engine crew (engineers and firemen) grew from 5,002 to 16,977, while the number of deck personnel remained more or less the same, indeed the latter experienced a notable decrease in the

higher ranks, whose number was closely tied to geographic origin, especially the Ligurian divisions.

In order to closely observe the changes tied to maritime labour from the middle of the nineteenth century to the first decades of the twentieth century, the Ligurian area is therefore a privileged zone of observation and analysis. In 1881, according to the official census data of that year, the Ligurian population consisted of 936,476 individuals, while the total Italian population numbered 28,951,546; Liguria therefore made up 3.2% of the total. In spite of it being a small and sparsely populated region, Liguria alone—with its four divisions of Porto Maurizio, Savona, Genoa, and Spezia—supplied 22.2% (29,113) of the Kingdom's seafarers, out of a total of 176,635 men. Only two regions of the *Mezzogiorno*, southern Italy, namely Campania and Sicily, which were far larger in size and population, could compete with Liguria in this sense: Campania, with its two divisions from Naples and Castellammare di Stabia, supplied 20.7% of seafarers; while Sicily, with its five divisions from Messina, Catania, Porto Empedocle, Palermo, and Trapani, supplied 24.8%. These three regions were the most important areas for the supply of maritime workers, and together supplied 67.7% of the entire national category. In 1881, Liguria still supplied the largest number of sailing personnel, with those registered to the first category reaching 28,524, above Campania's 25,621 and Sicily's 22,021. The latter two regions saw a strong growth in coastal fishermen registered to the second category, largely absent from the Ligurian maritime tradition. The 1881 data confirms what can be defined as a historic trend: Liguria, to quote Braudel, boasted one of the highest rates of *maritimisation* in the entire Mediterranean, as well as in Europe.[12]

By comparing the 1881 data with data from the years 1886, 1891, 1896, 1901, 1909, and 1914, we note that Liguria lost its centrality as a source of seafarers with the advancement of technological transformation, while becoming the main source of the higher ranks on deck. As the work on board of steamships changed, to the detriment of the traditional figures tied to the world of sailing, Liguria began to specialise in the supply of higher officials, who were beginning to emerge from the local nautical schools. This is confirmed by the fact that in 1886 Liguria alone provided 58% of the national seafaring population working on deck, including sailors. Of the 4,460 master mariners in the Kingdom of Italy, 2,782 were Ligurian (62.4%).

In the years of our sample we can observe a general decrease in the Ligurian presence: from 21.5% in 1891 to 18.4% in 1901, up to the final datum of 1914,

12 GIS d'histoire maritime (ed.), *La Maritimisation du monde de la préhistoire à nos jours* (Paris: PUPS, 2016).

when the percentage of seafarers from the Ligurian divisions declined to 17.4%, compared to 20.8% from Campania (which at the time also gained two further naval divisions: Torre del Greco and Salerno), and 27% from Sicily (which had the added division of Siracusa). In any case, on the eve of the Great War, Liguria continued to supply the highest number of captains (54.7%), compared to the data available on Campania (19%) and Sicily (13.7%). The same trend can be observed with relation to engineers: 41.6% of which were from Liguria, 21.5% from Sicily, and 13.3% for Campania. All of this was occurring when in fact the transition from sail to steam had already taken place: 348,959 tons of the former still existed compared to 933,156 of the latter, bearing in mind that in 1881 the tonnage of sail ships amounted to 895,359, in contrast to a mere 93,698 of steamships.[13] In Italy, too, the *ancien regime* of maritime history had waned.

4 Maritime Labour from the Modern Age to the 1881 Parliamentary Inquiry

For a long time, the recruitment of seafarers took place on a clientelistic or casual basis, and always according to a verbal contract, which took place on board, on the quays or simply in meeting places such as the inns and taverns of port cities. In many cases, more or less improvised mediators intervened between the parties, ensuring a safe embarkation in exchange for a small percentage of their client's signing bonus.[14] The orally stipulated agreement between the captain and the recruit usually provided for an advance payment, a signing bonus, which could be quite substantial depending on the type of journey. Often stipulated in front of witnesses, oral contracts were based on the nature of the route and the type of retribution offered by the captain. A secondary but significant part concerned food, drink, and perquisites which could be obtained during the journey, all of which were regulated by unwritten

13 *Sulle Condizioni della marina mercantile al 31 dicembre 1881* (Roma: Forzani Tipografi del Senato, 1882), 3–23; *Sulle Condizioni della marina mercantile al 31 dicembre 1886* (Roma-Firenze: Tipografia Bencini, 1887), 22–32; *Sulle Condizioni della marina mercantile al 31 dicembre 1891* (Roma: Tipografia Cecchini, 1892), 37–47; *Sulle Condizioni della marina mercantile al 31 dicembre 1896* (Roma: Tipografia Cecchini, 1897), 3–13; *Sulle Condizioni della marina mercantile al 31 dicembre 1901* (Roma: Tipografia Cecchini, 1902), 3–12; *Sulle Condizioni della marina mercantile al 31 dicembre 1909* (Roma: Officina Poligrafica Italiana, 1911), 25–36; *Sulle Condizioni della marina mercantile al 31 dicembre 1914* (Roma: Officina Poligrafica Italiana, 1916), 23–35.

14 Luca Lo Basso, "Gli intermediari del lavoro marittimo a Venezia tra XVII e XVIII secolo: galeotti e marinai," *Mélanges de l'École française de Rome—Italie et Méditerranée modernes et contemporaines*, no. 129.1 (2017): 57–65.

custom. Generally speaking, only three types of contracts were in use in the modern era. The first was the share system: in practice each crew member earned according to an individual share, calculated in proportion to the profits earned from the journey. The second form, common in northern Europe, provided for a lump sum payment calculated on each single journey. Last but not least was the monthly salary, calculated according to each crew member's assigned role, and increasingly prevalent on long journeys and larger ships. The latter contractual form became steadily established, increasingly subordinating the waged sailor to the will of the captains and the decisions of the owners. However, in many sectors, such as small and medium cabotage, privateering, and fishing, share-based contracts remained widespread, guaranteeing larger margins of income for weaker members of the crew, such as sailors and cabin boys. On top of all this, in any case, in the maritime world of the *ancien regime*, a substantial part of seafarers' income was based on each crew member's ability to transport a certain quantity of cargo, known in Italian as *paccottiglia*, without having to comply with customs law. While difficult to calculate, due to the fact that it was not subject to control and therefore was not recorded on the ship's documents, income from *paccottiglia* often formed the most significant part of each sailor's income, and therefore served to compensate for low wages or low profits derived from the journey.[15]

In the second half of the nineteenth century, as the maritime *ancien regime* transitioned to the contemporary age, work at sea became increasingly globalised and tied to rapid capitalist and industrial development. The wage form was imposed as the contractual basis for all seafarers in the world, barring a section of those embarked on sailing ships, smaller vessels on shorter journeys, and those on fishing ships. Wage payments, similar to those taking place in factories on land, together with processes of industrialization, increasingly subordinated sailors to capital. On large steamships especially, due in part to the introduction of new professional figures tied to machinery, proletarianisation became a growing phenomenon.[16] These vessels saw a steady growth of the wage gap between officials, headed by the captain, and the men of the lower ranks, reaching proportions which far exceeded those of the age of sail. In other words, if wages are still today calculated according to skills and marginal productivity—that is to say, based upon each worker's individual

15 Luca Lo Basso, *Gente di bordo. La vita quotidiana dei marittimi genovesi nel XVIII secolo* (Roma: Carocci, 2016), 160–161 and 164; Marcus Rediker, *Sulle tracce dei pirati. La storia affascinante della vita sui mari del '700* (Casale Monferrato: Piemme, 1996), 149–162.

16 Maria Elisabetta Tonizzi, "Lavoro e lavoratori del mare nell'età della globalizzazione," *Contemporanea*, no. 17.4 (October–December 2014): 691–701.

contributions to the enterprise he works for—it can be observed that the advent of steamships devalued the role of the sailor, who began to play a minor role in the functioning of the vessel, while also experiencing a clear loss of skills in comparison to work on sailing ships. All of this resulted in a fall in wages for a social category which therefore became marginal when compared to other professions tied to machines. In addition to this, the mass of sailors no longer formed the social basis for careers which rose to the higher rinks, as, with the advent of steam, officials began to emerge almost exclusively from nautical schools rather than through practical experience on board a ship.[17] Crews on steamships came from two separate worlds: the world of the officials, who were largely recruited from the urban bourgeois middle classes or from the sons of captains themselves, who at the end of the nineteenth century had access to education; and the world of the sailors, working class men who worked at sea out of strict necessity or in order to escape punishment on the mainland. This was a drawn-out process which would only reach completion well into the twentieth century. By taking a look at the registry of the Porto Maurizio division, starting from 1886, we can note that many of those who began as sailors or cabin boys ended their careers in more or less the same positions. This is the case with Emanuele Bonifai, born in Alassio in 1872, who first embarked on 2 June 1886 as a cabin boy, became a sailor in 1893 and ended his career at sea in 1916, still a sailor, on an Italian steamer sunk by a German submarine in Rhodes. A similar story can be found in the career of Giambattista Gandolfo, born in 1873, who embarked as a cabin boy in 1886 and ended his service as a sailor in 1905. Aboard sailing ships, however, at least some career progression was still possible. Sebastiano Cerrisano, born in 1860 in Cervo, first embarked in 1886 and was relieved of duty in 1913 with the rank of boatswain. In other cases, albeit very few, the transition from sail to steam allowed some workers in the low ranks to be promoted to the level of lower officials. Giuseppe Salvo, born in Porto Maurizio in 1872, embarked as a cabin boy on a sailing ship in 1886 and became third mate on the brigantine *Teresa* in 1896, before passing with the same rank onto the NGI steamer *Bisagno* in 1898, and ending his career in 1900, still as third mate. Lastly, in other examples, we

17 Thomas Piketty, *Il capitale nel XXI secolo*, (Milano: Bompiani, 2014), 466; Valerie Burton, "The making of a nineteenth-century profession: shipmasters and the British shipping industry," *Journal of the Canadian Historical Association*, no. 1.1 (1990): 97; Karel Davids, "Technological change and the professionalism of masters and mates in the Dutch mercantile marine, 1815–1914," *Collectanea Maritima*, no. 5 (1991): 282–303; Rodrigo de Oliveira Torres, "Handling the ship: rights and duties of masters, mates, seamen and owners of ships in nineteenth-century merchant marine," *International Journal of Maritime History*, no. 26.3 (August 2014): 587–99.

catch a glimpse of the new path to officialdom by attending nautical schools. This was the case with Carlo Vincenzo Dolce, born in Borghetto S. Spirito in 1854, who, in 1886, was second mate on a brigantine, and two years later passed with the same rank onto a small steamship, before taking leave in 1897 as mate on the NGI steamship *Domenico Balduino*.[18]

By taking a step back and observing the career data for the Genoa division from two decades earlier, we can better observe the phases of the transformation of maritime labour. For those registered at the end of the 1860s, in the world of sail, it was still possible to begin as cabin boy and end as master mariner, just as it had been in the eighteenth century. Such was the case for Giovanni Battista Marco Mango, born in Genoa on 25 April 1846, who registered as a seafarer on 6 April 1869 to embark with the lowest rank of the crew on a brigantine headed to Tabarka, Tunisia and then to Naples. After sailing for a few years on Mediterranean ships, he managed to become a mate at the beginning of 1875 and obtained his master mariner licence in the same year. Similarly, on 14 April 1869, the cabin boy Giuseppe Antonio Andrea Devillaine, born in Voltri on 14 April 1851, embarked on a sailing ship commanded by captain Maggiolo, where he pursued his career before being nominated master mariner on 10 August 1877.[19] These career progressions vanished in the transition to steam, after which seafarers began and ended their career in the same category.

In spite of the efforts of several prominent members of the shipping industry, problems related to recruitment and wages of seafarers in Italy and the rest of the world weighed heavily on the steady proletarianisation of the lower ranks, only gradually slowed down by the organisation of trade unions and by the dramatic outbreaks of social protest which took place in the first decade of the twentieth century.[20]

The *Parliamentary Inquiry of 1881–1882*—brainchild of Paolo Boselli, Member of Parliament from Savona and vice president of the inquiry's commission—offers a vivid early snapshot of the long journey which redefined labour relations in the Italian maritime sector. Established on 24 March 1881,

18 Archivio di Stato di Imperia (hereafter ASI), *Capitaneria di Porto*, *Matricole della Gente di Mare*, reg. 1.

19 Archivio di Stato di Genova (hereafter ASG), *Matricole della Gente di mare*, reg. 7, matricola 6703 e matricola 6718.

20 Leon Fink, *Sweatshops at Sea: Merchant Seamen in the World's First Globalized Industry, from 1812 to the Present* (North Carolina: University of North Carolina Press, 2011); Brad Beaven, "From jolly sailor to proletarian jack: the remaking of sailortown and the merchant seafarer in Victorian London," in *Port Towns and Urban Cultures*, eds. Brad Beaven, Karl Bell and Robert James (London: Palgrave Macmillan UK, 2016), 159–178.

the commission was to study the conditions of the merchant marine and propose any improvements which could ensure its future and development. It was made up of fifteen members: five members of the senate, five members of the chamber of deputies, and five experts nominated by royal decree. It met for the first time on 21 June 1881, and based on Boselli's proposal it proceeded to organise its research which concluded a year later, after having gathered 275 oral statements and 460 written pleadings from all businesses in the sector. The findings, in turn, were published in seven volumes.[21]

With regards to issues concerning the "moral and material conditions of seafarers", published in the third volume of the *Inquiry*, the commission highlighted the specific interests of the interviewed businesses, which focused on three major themes: wages, working hours, and the education of seafarers.

Various voices spoke in favour of spreading education among seafarers, including those of lower rank. One of these was Enrico Cheirasco, harbourmaster of Bari, according to whom only "mandatory education could improve the moral conditions of seafarers", who in turn should receive a minimum wage decided by the state.[22] Several parties voiced their agreement with the Bari harbourmaster, including the Venice Chamber of Commerce, the "Vincenzo Bartolo" Mutual Aid Society of Palermo, and captain Giuseppe Messina Manzo of Trapani. For all of these figures, low levels of education corresponded to immoral behaviour, which promoted the detriment of the shipping industry. According to Domenico Renier, president of the fishermen's school of Chioggia, it was necessary to raise literacy levels among seafarers, and to introduce a virtuous system for the promotion of owners and captains based on moral and other merits. In addition to this, several parties all over Italy spoke in favour of an accurate reform of the retirement system based on the *casse invalidi*.[23]

Wages, however, remained the most burning question. Many respondents to the inquiry argued that there had been a significant drop in income following the transition from the share system to the monthly wage system, for the lower ranks especially. The economist Sabino Fiorese, from Bari, proposed to increase the recruitment of sailors working for shares, which had typically been used on sailing ships in the past. According to him, with this solution "the sailor does not earn a wage, or does so only in minimal proportions, enjoying

21 *Inchiesta parlamentare sulla Marina mercantile* (*1881–1882*), vol. 1 (Roma: Tipografia Eredi Botta, 1882), III–VIII.

22 *Inchiesta parlamentare sulla Marina mercantile* (*1881–1882*), vol. 3 (Roma: Tipografia Eredi Botta, 1882), 144.

23 Ibid., 167–69 and 152. In this book: Andrea Zappia, *Between Maritime Labor and Social Security in the Kingdom of Italy: the Cassa degli invalidi della Marina mercantile of Genova in the Age of Transition* (*1861–1894*).

instead a share of the profits of the journey, in addition to the right to transport his *paccottiglia* which he can sell in his motherland to make a further profit".[24] Those in agreement with this proposal included the aforementioned Domenico Renier of Chioggia and Sir Alberto Nattini of Genoa, who stressed the elimination of the customary right of *paccottiglia* as a key element in understanding the crisis of sailors' wages. All of these figures, who give us a picture of the maritime mentality of the time, saw the centuries-old traditions of the age of sail as the ideal labour regime, corrupted only by the advent of industrialization. At least in part, they were right. The gradual growth of wage labour, which excluded the lower ranks from a share of the profits, and eliminated the right of carrying *paccottiglia*, had proletarianised the lower crew members, who faced a difficult and dangerous job with shrinking remuneration. This tendency had in fact already begun in the modern era on big ships with very large crews employed on long routes. The advent of steam, with the increased tonnage and crew size that came with it, had only expanded and deepened these issues. Finally, the arrival of new professional figures on board precipitated the downfall of wages, with sailors considered increasingly unskilled and therefore paid less than others.

TABLE 2.2 Italian wages, 1871–1880 (Italian lira)

Port/Year	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880
Savona	58,49	58,8	62,18	62,21	62,54	60,09	58,01	56,31	50,44	50,33
Genova	65	65	65	65	62,5	62,5	60,55	55,5	55,5	50
Livorno	54,75	57,16	60,41	59,17	59	58	59	55	51	56
Naples	65,4	74	61,5	71,14	72,4	73,85	70,91	75,14	69,67	66,87
Castellammare di Stabia	70	71,25	70,4	70,8	67,15	66,4	66,3	65,13	65,28	65,26
Bari	34	34	37,5	34	34,08	38,83	43,16	43,16	50	57
Ancona	55,87	53,04	55,14	57,5	54,22	52,6	55,66	52,75	50	50
Venezia	50	50	50	50	50	50	50	50	50	50
Cagliari	65	60	60	60	60	60	60	55	55	50
Messina	72	70	73	73	72,25	70	69	65	63	65
Palermo	71,41	73,6	73,91	80,05	80,09	81,66	78,66	66,41	71,58	71,33

SOURCE: *INCHIESTA PARLAMENTARE SULLA MARINA MERCANTILE (1881–1882)*, VOL. 3 (ROMA: TIPOGRAFIA EREDI BOTTA, 1882), 188

24 Ibid., 145.

Many respondents spoke out in general against the low wages earned by Italian sailors. One of such voices was commander Luigi Orlando of Livorno, according to whom: "our sailors are underpaid, they get 60 or 65 lire a month, including a deduction for the *cassa invalidi*; they are often married with children and can't survive on their income".[25] All of this was coupled with a rising cost of living due to a steep rise in food prices while, according to Orlando, Italian shipowners had not adjusted their wage rates. According to data gathered by the Mutual Aid Society among seafarers in Palermo, the average salary was 75 lire, of which 5.5 lire were spent on medical expenses and on the *cassa invalidi*, 40 on food, which was usually of mediocre quality, and 15 on rent. At the end of the day, sailors ended up with only 15.5 lire in their pockets.[26] According to the Italian consul in Aleppo, the low wages worsened with the years, for as long as a sailor was young, unmarried, and lived several months on board, he managed to set aside some money, but after turning 30, when most got married and had children, the real problems began.[27]

Finally, the *Parliamentary Inquiry* stressed the issue of working hours, which in those years, as a close examination of Genoese logbooks will demonstrate, still had no limits and remained at the discretion of the companies and captains. It was pointed out that the working day in the port of Genoa could last up to 21 hours, as sailors worked to unload commodities, going "against any principle of justice and hygiene, even more so given that the sailor doesn't receive any overtime pay". According to the Mutual Aid Society of the Italian workers in Genoa, this practice put sailors "at the mercy of the more or less inhumane shipowner, who, not satisfied by his lucrative commercial transactions, speculates on the very bread earned by his crew with many privations". Finally, it was claimed "that the condition of the Italian sailor deserves to be taken into serious consideration, for its miserable remuneration as well as for the victuals and for the unbearable duration of the work, which oppress our mariner class".[28]

5 Employment Contracts, Wage Conditions and Working Hours: 1881–1906

In order to better regulate working conditions on board, at the time of embarking each crew member signed an employment contract, which specified the

25 Ibid., 161.
26 Ibid., 167–169.
27 Ibid., 181.
28 Ibid., 153–157.

length of the journey and all aspects related to tasks and duties, working hours, victuals, and life on board in general.[29] Each contract was transcribed into a dedicated register, deposited at the port authority of the ship's division and written into the ship's own logbook. This is clearly an extraordinary source, useful to better understand all aspects of maritime labour at the time of the transition from sail to steam, even if the point of view is a formal one posed by the shipowner. In order to better analyse the working conditions at the end of the nineteenth century and in the first years of the following century, we will use a number of examples from the enormous collection of logbooks produced by the division of Genoa held in the local state archive, basing ourselves on the methodological model which Paolo Frascani proposed a few years ago in his pioneering essay on sailing ships,[30] as well as the fundamental work of Maria Stella Rollandi[31] and a recent study by Carlo Stiaccini.[32]

According to the rules of procedure for the writing of logbooks of 7 December 1885, there were five types of logbooks in Italy: general and accounting; navigation; hold logbooks; inventory; and machine. Each of these had its own functions and characteristics, but logbooks of the first type are what we need to look at in order to better analyse the recruitment and working conditions of the crew. According to the regulations, this type of document was exclusively written and signed by the captain and, on rare occasions, by the first mate. Although the log was a public document, which was to be deposited with the port authority for legal purposes, it was the direct expression of the will and mentality of the captain, who compiled it as he liked, inserting or omitting information at the end to justify his position of leadership. Besides the ship's and the captain's administrative data, the log contained the employment contract of the whole crew, followed by the crew list. The captain had to record, on a daily basis: all the items which formed the ship's cargo; all the damage and injuries which took place on board; the list of advance payments conceded to the crew on the journey; everything regarding desertions, absences, deaths and births; wills drawn up at sea; every crime and penalty; all information regarding health and daily life; and all accounting and technical issues regarding the vessels, whether it was a sailing ship or a steamer.

29 Maria Stella Rollandi, "Persistenze e mutamenti. L'organizzazione del lavoro marittimo in Italia (1861–1939)," *Storia e problemi contemporanei*, no. 63 (maggio 2013): 17.

30 Paolo Frascani, "Una comunità in viaggio: dal racconto dei giornali di bordo delle navi napoletane (1861–1900)," in *A vela e a vapore*, 115–119.

31 Maria Stella Rollandi, *Lavorare sul mare. Economia e organizzazione del lavoro marittimo fra Otto e Novecento* (Genova: Società Ligure di Storia Patria, 2002).

32 Carlo Stiaccini, *Andar per mare. Storie di navi, capitani coraggiosi e migranti tra Otto e Novecento* (Torino: L'Harmattan, 2019). In the Genoa State Archives for the period 1883–1953 there are 12,039 registers, of which 1303 are general and accounting journals.

By observing a set of contracts, and comparing sailing vessels and steamers, we can note differing conditions with regards to duration, wage payments, and working hours. The length of the contract, which also took into account the possibility of the employee's military duty, varied from the most traditional journey-based contract, as in the case of the brig *Catterina G.* commanded by Filippo D'Aste, to a length of twelve months in the case of the brigantine *Edinburgh*, or even 30 months on the sailing ship *Edilio Raggio*, destined to cover the route from Genoa to New York. On sailing ships, two months of advance pay were paid out as a signing bonus, while successive payments were paid each month starting from the signing of the contract itself. Captains had a wide margin of operation in the distribution of victuals and in the concession of advance payments. On sailing vessels, contracts almost always included different conditions when the ship rounded the Cape of Good Hope or the infamous Cape Horn. In general, monthly wage rates offered captains a salary three times that of the simple sailor, as can be inferred from the case of the *Catterina G.*, destined in 1894 to cover the route between Genoa and Rio de la Plata, before returning towards northern Europe to load timber. On this vessel the captain earned a wage of 150 lire, the mate earned 95, the boatswain 75, and sailors 50, while younger cabin boys earned as little as 15 lire. There was no regulation against the practice of carrying *paccottiglia*, which therefore probably continued to at least partly compensate for the low income of the lower ranks.[33]

On the aforementioned sailing vessel *Edilio Raggio*, the pay gap was far wider, as the captain received a monthly salary of 300 lire, while a simple sailor received only 60 lire, a ratio approaching that of steamships. Working hours were almost never specified for sailing ships, and overtime pay was consequently unknown, following a system that was more typical of the *ancien regime*. Nonetheless, on the *Caterina G.*, captain d'Aste specified that "work is from six in the morning to six in the evening, both in summer and winter, barring extraordinary cases in ports", where shifts could even exceed twelve hours a day.

Employment contracts on steamships, on the other hand, appear to have been more formalised and regulated, especially on those ships belonging to large companies specialised in passenger transport, often subsidised by the state and therefore obligated to offer more standardised labour contracts. But even in this case there is a notable difference between the last two decades of the nineteenth century and the first two decades of the twentieth, when

33 ASG, *Giornali nautici*, reg. 438/1 del 1° febbraio 1894, reg. 594/1 del 30 dicembre 1890 e 602/1 del 27 marzo 1898.

crews benefitted from the new national employment contract modified by the *Commissione Reale per i servizi marittimi* in 1905 and by the *Consiglio Superiore della Marina mercantile* in 1906–07.

In the first place, hundreds of people embarked on steamships, in contrast to sailing ships whose personnel often amounted to a few dozen crew members. This fact alone meant that the two workplaces differed widely, but steamships also included new professional figures including engineers, firemen, electricians, oilers, and coalmen, among several others. Secondly, signing bonuses were rarely awarded on steamships, barring few exceptions such as the case of the *Colombo*, belonging to Sir Giacomo Cresta, which serviced the routes between Genoa and South America at the end of the 1890s, or the collier steamship *Carlo R.*, which was ready to leave Newcastle for Genoa on 27 December 1886.[34]

While wages on the *Colombo* were paid on a monthly basis, payments on passenger steamships directed to America were only made at the end of the return journey. This was done in order to avoid desertion as much as possible, given that fact the lower ranks often included people who tried to emigrate, taking advantage of employment aboard passenger ships.

By examining the employment contract of the steamship *Centro America* (5 June 1897), of the La Veloce company, we can note that in addition to the payment of wages at the end of the journey, the distribution of victuals was more standardised. Though the final word remained with the captain, there were certain perquisites for the engine crew: "half a litre of wine will be distributed to the engine crew, including at breakfast when the latter consists of cheese or saltfish". In any case, for all crew members the soup included no meat for two days of the week, and pasta on Thursdays and Sundays, except during navigation. The working day was not standardised (although it never exceeded twelve hours), but in any case all overtime had to be paid at 50 cents an hour. The *Centro America* also had an exponentially higher wage gap between officials and the lower ranks: the captain's salary was 6.6 times higher than the sailors' wage. Another innovation on these vessels, which was destined to heavily influence the internal structure of life aboard, was the fact that the chief engineer earned the same salary as the captain (400 lire). While the captain himself remained absolutely responsible for the ship, his authority was put into question for the first time in centuries. Finally, observing the wage register demonstrates a wage differentiation according to technical skills. Electricians earned 150 a month, in contrast to the more traditional figure of the boatswain, who earned only 115. Oilers earned 90 lire, the fireman 85, the

34 ASG, *Giornali nautici*, reg. 501/1 del 25 ottobre 1897 e reg. 408/1 del 27 dicembre 1886.

butcher 80 and the baker 70. Beneath the sailors (who were paid 60 lire) we find only the kitchen boys with a wage of 50 lire—high if compared to that of sailors—and cabin boys who earned a mere 25 lire a month.[35]

The same situation can be found on other steamships belonging to La Veloce at the end of the nineteenth century, such as the *Città di Milano* and the *Città di Torino*, two twin steamers with a tonnage of 2,500 each. The contract aboard these vessels was practically identical to the one discussed before, with only the addition of work shifts, which could have been extended at will by the captain, while only the engine crew had the right to an overtime pay of 60 cents an hour.[36] In all cases, as clearly specified on the contract of the *Colombo*, the ability to carry any kind of *paccottiglia* whatsoever was expressly prohibited, as was any type of commerce with the passengers on board. Wages were even lower on small merchant steamships in the Mediterranean, such as the *Eden* which weighed only 536 tons. This was true for the officials—the chief engineer earned 150 lire a month in comparison to the 400 earned on transatlantic vessels—as for the lower ranks, with sailors earning only 55 lire and cabin boys earning 20. The conditions on the contracts of these kinds of ship remained poor until the first decade of the twentieth century, as in the case of the cargo steamer *Ebe*, of 993.71 tons belonging to Francesco Chianca, which in 1902 still allowed for the termination of contracts at the whim of the captain.[37]

At the end of the 1890s, the wages of the lower ranks remained rather low. Sailors no longer paid in shares, as was the custom on sailing ships, the working day remained rather undefined, and overtime pay depended entirely on the will of the captain or other officials; only in a few cases were any bonuses paid out at all.

Article 71 of the *Codice della Marina mercantile* ordered that crews had to be made up by two-thirds of Italian nationals, but did not specify a minimum crew size. Owners therefore recruited as sparingly as possible, thus making watch keeping difficult on board the ship itself. Regarding the national composition of crews, it is worth bringing up a petition presented to the Chamber of Deputies by the Italian Federation of Seafarers in 1903. The presenters of this enlightening document denounced that "there are subsidised shipping lines which carry the Italian flag, but who give an opposite example by employing crews made up by two-thirds of foreign workers aboard several of their

35 ASG, *Giornali nautici*, reg. 448/1 del 5 giugno 1897. For a comparison with the Greek case see Apostolos Delis, "Ship Operation in Transition: Greek Cargo Sailing Ships and Steamers, 1860s–1910s", in the present volume.

36 ASG, *Giornali nautici*, reg. 479/1 del 26 aprile 1899 e reg. 482/1 del 29 ottobre 1900.

37 ASG, *Giornali nautici*, reg. 501/1 del 25 ottobre 1897, reg. 598/1 del 10 marzo 1894 e reg. 596/1 del 13 settembre 1902.

ships. These companies have justified their violation of the law with a fable according to which torrid climates are unbearable by the white races. But this excuse, which conceals malicious economies to the detriment of Italian workers, is proven to be absurd by the fact that other foreign companies, which travel on the same routes, employ white workers, including Italian workers. The latter, in terms of productivity and resistance to climate conditions, have proven to be superior to workers of the black races, who offer no advantage other than selling their labour for the vilest and lowest wage".[38] Furthermore, according to the same trade unionists, recruitment did not always take place among those people registered as the legal category of seafarer. "According to current practice", the document continued, "companies recruit workers from the port authorities who are only in possession of a document obtained from the police headquarters, and haven't officially registered as seafarers. And yet, these workers are made to work as firemen, as sailors, and other work servicing the ship, which means that any person in the crew is considered a seafarer, according to the wider meaning of the word".[39]

In spite of the flagrant abuses, observing the logbooks of the Genoa division reveals that the crews, or at least those registered officially, were Italian. For example, 650-ton vessels such as the *Catterina G.* were manned by around twelve to fifteen people, while the crews of passenger steamships were far more numerous. The aforementioned *Colombo*, for example, weighed 1,577 tons and had a crew of 58 men, of which 34 came from the division of Genoa, while others primarily came from the *Mezzogiorno* (southern Italy).[40] This is confirmed by looking at the collection of crew lists in the age of the Sardinian marine, held at the Genoa State Archives. In the last years of the Kingdom of Sardinia we can clearly see how sailing crews were still all exclusively made up of Ligurians, almost always hailing from the same location or even the same family, as was common during the *ancien regime*. On 29 January 1856, for example, the brig *Caterina*, weighing 179.70 tons and built in Varazze in 1841, had a crew of twelve people, of which ten came from Nervi, one from Genoa and one from Savona. The captain, his mate and the boatswain all came from the same family: Massone. And still, on 12 October 1860, aboard the brigantine *Aquila*, weighing 256.98 tons and commanded by captain Gio Batta Lavarello of Recco,

38 ASCD, *Petizioni a stampa*, b. 10, n. 46, *Legalità e riforme necessarie al lavoro sul mare*, Genova, 1903, 4.

39 Ibid., 5.

40 ASG, *Giornali nautici*, reg. 438/1 del 1° febbraio 1894 e reg. 501/1 del 25 ottobre 1897.

there were 25 crew members, of which only one was from Naples, while the others were primarily from Recco and Camogli.[41]

In order to construct a more accurate picture of the working conditions of seafarers, it is useful to analyse the state inspection of the NGI's 65 steamships, the report of which was presented on 23 November 1893 to the minister of Posts and Telegraphs. Conserved in the Historical Archive of the Chamber of Deputies, the thick file not only contains a technical inspection, but also a review of the crews, confronted with the company's 1888 shipping regulations.[42]

The report of the Naples commission of the inspection revealed that "the captains and other officials take good care of the nautical, maritime and commercial aspects of their work. The same cannot be said of all other aspects".[43] The inspectors reported that captains had become increasingly less important, as they did not take care of many aspects, including technical ones, related to the vessels. They had little knowledge of how the internal spaces of the ship were structured, the organisation of the hold, the types of materials present on board, and the social dynamics which existed between crew members. In this regard, the report revealed that "The men's personal hygiene, the cleanliness of their clothing and their lodgings are neglected, as nobody looks after them or cares for their decency. They are therefore often ragged and dirty". Things went better when it came to meals, of which there were three a day: "Bread and coffee are served in the morning, around midday a pasta, rice and legume soup with meat and half a litre of wine, and in the evening meat with potatoes and bread. In normal times of *salute pubblica*, meat is served three times a week and replaced in the evening with saltfish or something of the kind".[44]

On the terrible conditions of sailors' living quarters on steamships, an interesting account is given by Dr. Rosati who, writing in 1908, argued that sailing ships had superior sanitary conditions because "everyone lives outdoors and the lack of machinery allows for some space used for cabins and lodgings. There is also a lack of all those causes of fermentation and development of noxious gases which wreak havoc on steamships".[45] On steamships, by contrast, Rosati continued, "the crew's quarters are found primarily at the far end of the bow, between wells and chains, among winches and moving derricks, in close proximity to latrines and stables. It's true that sailors here also almost always live outdoors, but it's also true that not all who work on steamships

41 ASG, *Ruoli d'equipaggio*, anno 1856 e 1860.

42 ASCD, *Legislatura XVIII*, vol. 603 quater.

43 Ibid., 416r.

44 Ibid., 416v.

45 Teodorico Rosati, *Assistenza sanitaria degli emigranti e dei marinai,* (Milano: Vallardi, 1908), 305.

are authentic sailors, there being an abundance of firemen and engineers who require rest and clarity. On the larger steamships, one needs only to lean into the doorway of the crew's quarters to be apprehended by the most unpleasant feeling of stagnant and rotten air".[46] Finally, even if at the time the effects on health were virtually unknown, we must not ignore the impact of the polluting dust produced by machines, which constantly fell onto the main deck.

The inspection commission of the naval division of Venice also revealed the hitherto undiscussed question of engine crew, reporting that the NGI, like most shipping companies, provided only two engineers for each steamship, not enough to maintain any shifts shorter than twelve hours. According to the inspectors it was necessary to have three engineers and three firemen, considering that almost all steamships had four boilers with two furnaces, and therefore briefer shifts had to be considered for this second category.[47] Dr. Rosati, too, reflected on this issue, noting that "it is striking to see certain enormous freighters with the bare minimum number of firemen and engineers, who work intensely and without interruption, attending to the fires and machines. Few men alternate working on the same arduous work, at extreme temperatures, under the pressure of torrid climates and raging seas, which makes the work even more tiring and ungrateful".[48]

6 From Institutional Interventions to Strikes: 1906–20

In 1907, the *Consiglio Superiore della Marina mercantile* finally intervened on employment contracts. At its assembly on 4 March, presided by Giovanni di Montermartini, it prepared a contract outline for subsidised companies. The council had been working on the outline throughout the course of 1906, taking up what the *Commissione per la riforma del codice* had already attempted in 1902–04. According to certain members of the council, such as Vincenzo Adelfio, a national contract for subsidised companies would have forced other companies to follow suit. Approved in its final form on 27 June 1907, the model provided for a twelve-month contract in order to tackle the practice by which companies fired crews in order to avoid paying them during months of inactivity, only to hire them again through the usual port mediators. Wages were to be paid at the end of each month and registered in the crew list attached to the contract. Victuals should be distributed according to a ministerial schedule

46 Ibid.

47 ASCD, *Legislatura XVIII*, vol. 603 quater, 426v–427r.

48 Rosati, *Assistenza sanitaria*, 306.

and, in the case of any variation due to extraordinary events, the difference would have to be paid in cash to the crew members. The ministerial provisions schedule was strongly requested by the Seafarers' Federation, and was motivated by the continuous complaints that seafarers made about the low and terrible quality of victuals. In the case of travel to zones which posed a health risk, the captain would have had to increase wages by 15%, and in case this did not take place the crew members should be able to terminate the contract without any repercussions. The working day in the ports should not exceed eight and a half hours in the winter and nine and a half hours in the summer, while every hour of overtime should be paid at 50 cents an hour. As for navigation, the advisor Agostino Crespi, who was co-director of NGI proposed a different system: shifts should not exceed twelve hours, with alternating shifts of four hours each.[49]

All the changes decided by the *Consiglio Superiore* were reflected in the drafting of employment contracts, which from then on began to be more precise and printed, rather than handwritten. We can find examples of this in the *Nord America* in 1908, a La Veloce steamship (famous for being the protagonist of the 1889 Edmondo De Amicis novel *Sull'Oceano*[50]), as well as on the Lloyd Italiano steamship *Principessa Mafalda* in 1911, and the *Regina d'Italia* owned by Marittima Italiana in 1915.

The first case reveals a number of changes compared to the same company's documents from the end of the nineteenth century. This included the introduction of advance payments on crew members' wages, the introduction of a balance to be delivered on the day of arrival in Genoa, and finally the provision of victuals, which followed a schedule deposited with the port authority. Issues regarding shift patterns and layoffs remained rather nebulous, and were still at the complete discretion of the shipping lines.[51]

The 1911 contract for the 5,087-ton steamer *Principesa Mafalda*, on the other hand, was far more innovative and articulate. While maintaining a number of traces from the recent past, such as the customary payment of wages at the end of the journey, it provided both parties with the possibility of terminating the contract at any time. The contract also included a set of precise rules on the subdivision of the working day. This followed the dictates of the *Consiglio Superiore*, as well as the agitation and protests which seafarers' unions had organised in the preceding years. Watchkeeping shifts lasted four hours, with

49 *Atti del Consiglio Superiore della Marina Mercantile*, vol. 3 (Roma: Tipografia Cecchini, 1911), 137–297.

50 Edmondo De Amicis, *Sull'Oceano* (Reggio Emilia: Diabasis, 2005).

51 ASG, *Giornali nautici*, reg. 1402/1 del novembre 1908.

changes taking place from 16:00 to 18:00 and from 18:00 to 20:00. Meanwhile, the engine crew's shifts were divided into three in order to guarantee eight hours of work and sixteen hours of rest. Electricians and labourers were not supposed to exceed ten hours of daily duty. Any overtime requested by the captain would have had to be paid between 40 and 60 cents an hour, depending on the worker's role. Lastly, holidays, including May Day, were paid as overtime.[52]

Finally, in the case of the 1915 contract of the *Regina d'Italia*, a 3,998-ton steamer belonging to *Marittima Italiana*, there was a further qualitative jump in detailing the rules regarding shifts. The engine crew, for example, was to have "shifts divided in three parts, and their work will be governed according to the type of engine and the journeys to be made, so that firemen don't need to handle more than four tons of steel in 24 hours and don't need to manage more than three furnaces. In no case should the engine crew, including the water tender, be forced to work more than eight out of 24 hours". There were also special regulations for the younger and weaker crew members, such as in the case of cabin boys under sixteen years of age, who could not be made to work for more than ten hours, nor at night. Pay scales and provisions schedules were attached to the contracts. At the same time however, there was a clear growth in the difference between the wages of officials and those of the lower ranks. For example: while sailors continued to earn a wage of 50 lire a month, captain Giorgio Groppi earned a whopping 800 lire, sixteen times as much as sailors and twice as much as steamer captains earned just fifteen years ago.[53]

The contract reforms and the improvement of living conditions on board were in part due to the intervention of the *Federazione dei lavoratori del mare*, which in the first decades of the twentieth century had brought seafarers out on strike a number of times, sometimes controversially within the public opinion of the time. The radical strength of the workers' movement had forced institutions to intervene in order to improve maritime labour, in line with what was happening in other European countries as well.

In fact, between the end of the nineteenth and the beginning of the twentieth century, the first seafarers' unions formed all over Europe. In France, for example, the *Fédération nationale des syndicats maritimes* (FNSM) was the first union experiences of the 1880s.[54] Analogously, in 1901, Italy saw the formation of the *Federazione italiana dei lavoratori del mare* (FILM), which led to the

52 ASG, *Giornali nautici*, reg. 1582/3 del 26 maggio 1911.

53 ASG, *Giornali nautici*, reg. 1635/1 dell'8 aprile 1915.

54 Ronan Viaud, *Le Syndicalisme maritime français. Les organisations, les hommes, les lutes (1890–1950)* (Rennes: PUR, 2005), 33–40.

organisation of strikes in 1906 and in 1913–14, the latter being led by the famous socialist and trade unionist captain Giuseppe Giulietti.[55]

While in the 1901 strike demands were oriented towards the issue of low wages, in 1906 the objectives went beyond wages, demanding the drafting of a new national contract for subsidised companies, first and foremost NGI.

The 1906 strike, launched on the symbolic day of 1 May, had been called by the union on 16 April. In a long document, the FILM demanded that the NGI edit its contracts, improving the entries on shifts and better regulate overtime pay, particularly on the lines between Naples and Palermo and between Naples and Tunis. Protests took place on 2 May in Naples, Palermo, and Genoa. In Naples the crews of the *Galileo*, the *Tirreno*, the *Sumatra*, and the *Umberto I* went out on strike, demanding the improvements written in the FILM's 16 April manifesto. On the same day, Crespi, the NGI director, left for Naples to try to stop the protesting sailors, most of whom came from the Palermo division. In a long document, the shipping line specified that "the ministry should know that there is no possible way, at this moment especially, to justify the reckless actions of our crews. Just in the past few days, the Board of Directors of the company has approved a set of special provisions in favour of lower ranking personnel".[56] In short, NGI was convinced that the wage conditions of its maritime employees were significantly superior to those of other international companies. The next day, in response to a letter of the *Ministero della Marina*, NGI management showed its intransigence towards the seafarers. The response spoke of the crime of mutiny, but also criticised the Ministry itself, which was accused of having done too little to support the shipping company. In fact, in a long protest document, the company attacked the government, presided over by Sidney Sonnino, and especially the Minister of Posts and Telegraphs, Alfredo Baccelli. NGI management specified in detail that the wages of all staff had risen between 1901 and 1903. For sailors, wages had risen from 54 to 65 lire a month. "Furthermore, all sailors receive overtime pay, whose rates, fixed in 1903, have almost doubled this year. If we consider wages, victuals, and overtime, a sailor today earns around 125 lire a month, not including lodging". Lastly, the company had created a special sickness relief fund, a maritime union, and had established a Sailors' House in Genoa used to assist crews awaiting embarkation. In addition to raising all monthly wages, the company had also given a share of the profits derived "from the coal economy" to the engine crew, as well as "a share on cargo freights to all deck officials". In conclusion, according to

55 ASG, *Prefettura italiana*, b. 269.

56 ACS, *Ministero delle Comunicazioni, Direzione Generale Marina Mercantile, Ispettorato Servizi marittimi*, b. 338.

NGI management "it is therefore certain that each time sailors under contract refuse *en masse* to do their work for any reason whatsoever, and especially in order to obtain changes in contract, they commit a veritable maritime crime: the crime of mutiny, which public authorities have a duty to rapidly and vigorously repress".[57]

The Navy Minister, in fact, intervened by replacing striking workers with soldiers from the war fleet, as in the case of the *Colombo*, or by replacing the entire steamer, as in Naples in the first days of June. In the latter case, 1,800 emigrants ready to depart for New York were moved from the *Sannio* to the *Italia* by means of a makeshift gangway between the two ships. On 13 June, the unrest was quelled by resolving tensions aboard the *Sannio*. In the meantime, the government had fallen and NGI took steps to dismiss or distance staff involved with the strike. The company also began pushing to withdraw from the postal service concession, aiming instead towards gaining leadership of the emigrant transport market.[58] The 1906 strike had concluded with the partial success of the FILM, which at least obtained improvements in a new contract drawn up a year after the strikes by the *Consiglio Superiore*, thanks to Crespi himself, the director of the NGI.

In fact, analogous strikes had taken place in other European countries, such as in France, where seafarers in Marseilles had mobilised against low wages in 1900, then in December 1902, and finally in May 1907. Another wave of strikes took place in 1912, with repercussions in the famous Italian strikes of 1913–14. Again to demand improved contracts, sailors working for the companies *Puglia, Sicilia, Compagnia Napoletana* and *Marittima Italiana* decided to down their tools and block the port with the ships themselves.[59] The FILM was again to lead these strikes thanks to the work of Giuseppe Giulietti, a sailor who had obtained the rank of first mate, and subsequently dedicated his time to trade unionism until taking control of the Federation in 1909 and remaining its main point of reference until 1953.[60]

57 Ibid.

58 Roberto Giulianelli, *Armatori, banche e Stato. Il credito navale in Italia dall'Unità alla prima crisi petrolifera* (Bologna: Il Mulino, 2017), 53–60.

59 ACS, *Ministero delle Comunicazioni, Direzione Generale Marina Mercantile, Ispettorato Servizi marittimi*, b. 339.

60 Guglielmo Salotti, *Giuseppe Giulietti. Il Sindacato dei Marittimi dal 1910 al 1953* (Roma: Bonacci, 1982); Francesco D'Agnano, *L'Onorevole Oceano. Storia del capitano Giuseppe Giulietti. Mare, lavoro e fede* (Genova: ERGA, 2007), 23; Gaetano Perillo and Camillo Gibelli, *Storia della Camera del lavoro di Genova: dalle origini alla Seconda Guerra Mondiale* (Roma: Editrice sindacale italiana, 1980).

Despite partial successes obtained on wages and working hours, during the Great War there were no trade union victories. It was only in 1919–20, during the Nitti government, that trade unionism would re-emerge, in a time where the maritime sector's demands made themselves heard all over the world. The International Conference of Seafarers, called by the League of Nations, was held at Palazzo San Giorgio in Genoa from 15 June to 10 July 1920. Four topics were on the agenda: working hours, employment contracts, child labour, and the writing of an International Seafarers' Charter.

The length of the working day was still an unresolved issue in the majority of the world's navies. In this sense Italy seemed to be at the vanguard, considering the state interventions of the *Consiglio Superiore della Marina mercantile* in 1906–07 and a successive *Commissione Reale* established after the war in 1919 which elaborated on a new employment contract. All officials were entitled to eight hours of work, alternated by four hours of watch and four hours of rest. For the lower ranks on deck, it was established that watchkeeping was to be divided into two shifts of four hours each, with a change from 16:00 to 18:00 and from 18:00 to 20:00. In ports, too, work could not exceed eight hours, while all overtime pay had to be paid according to the tables published by the ministry. Therefore, the Italian regulations were proposed at the assembly of the seafarers' conference, but the motion was only supported by a relative majority, not enough to be adopted by everyone. The colonial powers—which used a large number of staff originating from poor countries, who worked on board in a state of slavery—were largely opposed to the motion.[61] Giulietti spoke in favour of the eight-hour working day, defining it as a right which sailors had won by merit during the war. The government delegate, Foscolo Fedozzi, notably suggested for the first article of the Seafarers' Charter to oppose any distinction according to race or nationality, but this evoked a strong reaction on the part of the delegates of the British and Indian navies. The French delegate, on the other hand, believed that an eight-hour day would have made the crews lazy, demoralized and undisciplined. At last, it was decided that cabin boys could not be below thirteen years of age, that spaces on board should be reorganised in order to be more comfortable for the crew, and an outline was laid out for the writing of the International Seafarers' Charter.[62]

Problems related to working conditions of Italian seafarers also became a subject of discussion during the fascist period. In 1931, the regime laid down

61 Alessandro Stanziani, *Sailors, Slaves, and Immigrants. Bondage in the Indian Ocean World, 1750–1914* (New York: Palgrave Macmillan, 2014).

62 Odone Sciolla, *Conferenza internazionale dei marinai* (Genova: Libreria Editrice Moderna, 1920).

a new collective contract which was not modified until the famous strike of 8 June 1959, when crews stopped 118 Italian vessels around the world.[63] The unions' demands were still the same: better wages, better working conditions on board, a new employment contract, less exhausting shifts—at the time some ships had watches lasting fourteen hours—and better retirement conditions. The strike lasted 40 days and gave way to a long season of social protests and union victories in republican Italy, which also brought Italian sailors into a new age, oriented towards globalisation.

7 Conclusions

From the perspective of maritime labour, the transition from sail to steam in late nineteenth-century Italy represents an extraordinary observatory to assess how the underlying historical processes cannot be read through positivistic interpretations. Indeed, such transformations revealed themselves as much more complex and elaborate than expected: who among us would deny that the future lied in steam? In retrospect everything appears clear; however, in order to investigate the past, historical contextualization is imperative. With regard to maritime labour, the transition from sail to steam turned out to be problematic, cumbersome to some extent, and very much complicated, both in qualitative and chronological terms. In the Italian case, the actual transition occurred between the 1880s and the First World War, not without resistance and impositions from above. Firstly, the Italian merchant marine sought to individuate new resources to create shipping companies, through the fundamental involvement of the banking system. Secondly, the institutional framework of the merchant marine was continuously questioned and reached a stable configuration only at the beginning of the twentieth century. All these features were reflected in sea workers' labour conditions and recruitment: the transition from sail to steam did open up new professional opportunities to them, but at the expense of wage reduction and the sharpening of the inequalities between crews and officials. Afterwards, these inequalities were partially offset through advances in the field of seafarers' education and through improvements in working conditions, achieved with the support of the new maritime trade unions.

63 Giordano Bruschi, *La sfida dei marittimi ai padroni del vapore. Lo sciopero di quaranta giorni del 1959* (Genova: Fratelli Frilli, 2006).

CHAPTER 3

Aspects of Maritime Labour and Employment in the Greek Sailing and Steam-Powered Fleet, 1840–1914

Alkiviadis Kapokakis

1 Introduction

Maritime labour during the nineteenth century is often mentioned in literature by scholars of economic history as one of the traditional professional activities of the inhabitants of the Greek state, that is, after agricultural production, and itinerant work (craftsmen, small traders, etc.).[1] For many islands and coastal communities, the shipping sector was the main source of income and the main form of employment for the inhabitants. Nevertheless, the study of maritime labour in Greece is to a large extent an uncharted field of research, despite the general interest of scholars in the evolution of Greek merchant shipping.[2]

The intention therefore, with this contribution, is to highlight certain aspects of the seafarers' labour market prior to, and during the transition period from sail to steamships. The historical approach to the labour market presupposes the study of a number of issues, such as the technical needs of production, the availability of the workforce to be subject to wage labour relations, and the

1 Leda Papastefanaki, *Εργασία, Τεχνολογία και Φύλο στην Ελληνική Βιομηχανία. Η κλωστοϋφαντουργία του Πειραιά, 1870–1940* [*Labour, Technology and Gender in Greek Industry. The Textile Industry of Piraeus 1870–1940*] (Heraklion: Crete University Press, 2009), 72.

2 For Greek seamen and working conditions on Greek-owned ships during the nineteenth to twentieth century, see Gelina Harlaftis, *A History of Greek-Owned Shipping. The Making of an International Tramp Fleet, 1830 to the Present Day* (London: Routledge, 1996), 147–181, 224–242. For the role of the captain on Greek sailing ships of the nineteenth century, see Apostolos Delis, "Le rôle du capitaine et la figure du 'directeur' de navires dans la marine à voile àSyra au milieu du XIX^{e} siècle", in *Entrepreneurs des mers. Capitaines et mariniers du XVI^{e} au XIX^{e} siècle*, eds. Gilbert Buti, Luca Lo Basso, and Olivier Raveux (Paris: Riveneuve Editions, 2017), 179–191. For seamen and the role of the Greek state in the interwar period, see Vassilis Skountis, "Ναυτική Εργασία και ελληνικό κράτος. Τάσεις εκσυγχρονισμού στο μεσοπόλεμο" ["Maritime Labour and the Greek State. Modernization Trends in the Interwar Period"] (PhD diss., Ionian University, 2018). For an overview of Greek historiography on Greek Shipping, see Gelinas Harlaftis, "Greek maritime history steaming ahead," in *New Direction in Mediterranean Maritime History, Research in Maritime History, 28*, eds. Gelina Harlaftis and Carmel Vassalo, (St. John's, Newfoundland: International Economic History Association 2004), 111–124.

demographic characteristics of the population. The framework includes questions concerning the geographical boundaries of the workforce, the mobility of workers, the status of employment and remuneration, the institutional framework, and state intervention. Issues such as the adequacy or inadequacy of a skilled workforce, the transfer of technical know-how (or expertise), and technology from other countries are included in the historical study of the labour market.[3]

This paper is divided into three parts: Firstly, it attempts to analyse the origin of the maritime population. The question of origin is examined through the data of three censuses, 1861, 1879, and 1907. The censuses, notwithstanding any obvious problems or pitfalls, can provide trends for place of residence, and the mobility of the maritime population. Secondly, the research focuses on the factors that influenced the employment of the Greek fleet, both during the period of the sailing fleet (1840–70), and the transition to steamships (1880–1914). This section will use official state reports on Greek fleet, together with crew lists, and payrolls (for both sail and steamships), covering the period from the 1840s to the First World War. Finally, the study will consider the establishment and operation of the Seamen's Pension Fund (Ναυτικό Απομαχικό Ταμείο or N.A.T. in Greek), the first employee insurance organisation in Greece. The operation of the fund is examined mainly, through official reports and annual balance sheets.

2 Origins of the Labour Force

The geographical origin of seafarers, based on available data, can be studied under certain restrictions, and with reservations. The question of origin is quite complex, as the available census data of the Greek state does not establish a clear distinction between the labour force of the seafaring fleet, and the coastal fleet, until 1879. Under these conditions, the data provides more of an overview of labour-intensive areas, and maritime population locations, rather than an accurate picture of the evolution of maritime occupations by region.

For this analysis, the research used population data from two censuses. The census of 1861—the first scientific one, considering the circumstances of

3 Leda Papastefanaki, "Μισθωτή εργασία," ["Waged labour"] in *Η ανάπτυξη της ελληνικής οικονομίας κατά τον 19ο αιώνα (1830–1914)*, [*The Development of the Greek Economy in the Nineteenth Century (1830–1914)*], eds. Kostas Kostis and Socratis Petmezas, (Athens: Alexandria Publications 2006), 253–291. For questions and concerns on seafarers and the labour market specifically, see Jaap R. Brujin and Jan Lucassen (eds.), *"Those Emblems of Hell"? European Sailors and the Maritime Labour Market. 1570–1870, Research in Maritime History, 13*, (St. John's Newfoundland: International Maritime Economic History Association, 1997).

the period—and the census of 1879.[4] Data from the census of 1907 was used separately. The registration of professions in the 1907 census was recorded in a different manner than that of the previous two. In 1907, employees were registered/province and/prefecture, and not by municipality, as was the case in the nineteenth century. The profession of seafarer is also for the first time, registered separately from fishermen.

Based on the available statistical information from the population censuses, the main areas of origin of the maritime population can be divided into five geographical units. The selection criteria were determined by the geographical proximity of the areas, but also, by the ties that the inhabitants had developed (from a historical perspective), either due to economic relations and trade exchanges, or to population movement.

TABLE 3.1 Origins of seafarers in Greece, 1861, 1879

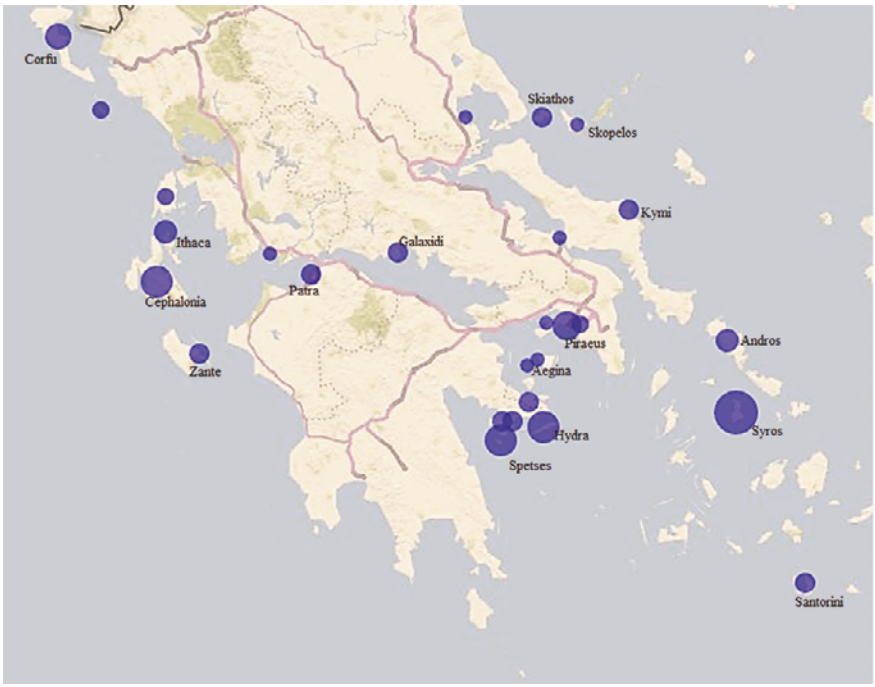
Region	Ports cities/ islands	1861			1879		
		Seamen	Residents	Males	Seamen	Residents	Males
	Hydra	1,286	9,085	3,724	1,645	7,342	3,376
	Troizina	1,163	7,243	3,863	567	6,444	3,029
Argo-	Spetses	913	8,843	3,858	1,785	6,899	3,184
Saronic Gulf	Kranidi	1,343	7,175	3,741	662	6,705	2,967
&	Ermioni	235	2,561	1,356	735	2,047	1,082
Piraeus	Aegina	508	5,898	3,132	247	6,646	3,288
	Piraeus	204	6.264	3,424	1,314	21,618	11,484
	Outside the municipality	1,567					
	Total	7.219	47,069	23,098	6,955	57,701	28,41
	Syros	849	22,506	11,202	2,558	26,946	13,495
	Andros	549	18,375	9,496	965	22,562	11,671
Cyclades	Mykonos	411	4,606	2,098	342	4,466	2,034
	Santorini	1,657	21,411	10,514	760	20,555	8,813

4 For the evolution of statistics in Greece, and population censuses, see Yannis Bafounis (ed.) *Στατιστική της Ελλάδος. Πληθυσμός του έτος 1861*, [α' έκδ. 1862] [*Statistics of Greece. Population of the Year 1861*] (Athens: Cultural Foundation of ETBA 1991); Socratis Petmezas, *Η ελληνική αγροτική οικονομία κατά τον 19ο αιώνα. Η περιφερειακή διάσταση* [*The Greek Agricultural Economy in the Nineteenth Century: the Regional Perspective*] (Heraklion: Crete University Press 2003).

TABLE 3.1 Origins of seafarers in Greece, 1861, 1879 (*cont.*)

Region	Ports cities/ islands	1861			1879		
		Seamen	Residents	Males	Seamen	Residents	Males
	Rest of islands	960	51,232	24,758	1,248	61,491	29.099
	Outside the municipality	467					
	Total	4,893	118,13	58,068	5,873	132,02	65,112
	Chalkida	563	24,265	12,755	1,25	33,356	17,777
Euboea &	Kymi	1,045	4,535	2,340	661	5,538	2,655
North Aegean	Skopelos	894	6,109	3,070	1,103	6,547	3,364
	Skiathos	620	2,572	1,344	693	3,2	1,696
	Rest	205	35,154	16,909	1,073	46,495	24.051
	Outside the municipality	833					
	Total	4,16	72,638	36,415	4,78	95,136	49,543
	Corfu				1,067	78,024	40,29
	Lefkada				312	23,083	12,185
	Paxoi				436	5,002	2,651
Ionian Sea	Cephalonia				1,748	68,321	33,274
	Ithaca				969	12.222	6.305
	Zante				742	44,522	23,935
	Total				5,274	231,174	118,64
Corinthian Gulf	Patras	181	22,762	12,402	552	34.227	18,279
	Galaxidi	586	5,074	2,637	630	4,226	1,558
	Messolongi	183	7.129	3,714	241	8,032	4,072
	Total	950	34,965	18,753	1,423	46,486	23,909
Rests		5,419			3,769		
Total		22,641	1,096,810	554,522	28,074	1,679,470	880,952

SOURCES: YANNIS BAFOUNIS (ED.), *Στατιστική της Ελλάδος. Πληθυσμός του έτος 1861*, [α' έκδ. 1862] [*STATISTICS OF GREECE. POPULATION OF THE YEAR 1861*] (ATHENS: CULTURAL FOUNDATION OF ETBA 1991); IDEM, *Στατιστική της Ελλάδος. Πληθυσμός 1879* [*STATISTICS OF GREECE, POPULATION* 1879] (ATHENS: N.P., 1881); DURING THE 1861 CENSUS, 3,338 SAILORS WERE ABSENT ABROAD, OF WHICH 2,867 WERE SETTLED BY THE PORT AUTHORITIES. KNOWLEDGE OF THEIR EXACT PLACE OF RESIDENCE IS NOT KNOWN, ONLY THEIR WIDER AREA OF ORIGIN: MPAFOUNIS (ED.), *Στατιστική της Ελλάδος, 1861*, TABLE 2, PART 2. A PERCENTAGE OF SEAFARERS WERE SCATTERED IN THE PELOPONNESE AND THE REST OF THE GREEK MAINLAND



MAP 3.1 *Origins of Seafarers*, 1879: selected ports

The first geographical unit actually includes two different zones of concentration of seafarers, the port of Piraeus on the one hand, and the islands of the Argo-Saronic Gulf (Hydra, Spetses, Poros) with the opposite coast of the Peloponnese (Kranidi, Ermioni) on the other. A connecting link between these two areas, in addition to proximity, was the constant movement of population within the unit. The port of Piraeus in the nineteenth century was a centre of attraction for the inhabitants of the Argo-Saronic Gulf, and especially the population from Hydra.[5] However, in terms of shipping activities, the two areas represent two different phases of Greek shipping. The area of the Argo-Saronic Gulf, which was associated with the rise of Greek shipping in the Aegean in the eighteenth century, was the largest recruitment location of the Greek kingdom and one of the most important registration centres of the

5 The port of Piraeus has been inhabited by people from Hydra since the 1830s: Vassias Tsokopoulos, *Πειραιάς 1835–1870. Εισαγωγή στην ιστορία του Ελληνικού Μάντσεστερ* [*Piraeus 1835–1870. Introduction in the History of the Greek Manchester*] (Athens: Kastaniotis Publication 1984), 33; Christina Agriantoni, *Οι απαρχές της εκβιομηχάνισης στην Ελλάδα τον 19ο αιώνα* [*The Beginning of Industrialization in Greece in the Nineteenth Century*] (Athens: Katarti, 2010), 108–109, 209; Papastefanaki, *Εργασία*, 46.

Greek-owned fleet during the heyday of the sailing ship (1840–70).[6] In 1861, the area accounted for 31% of the total maritime population of Greece, and 20% in 1879. The islands of Hydra and Spetses in particular, were the two largest recruitment centres during the growing period of the sailing fleet, while they were among the four most important ports of registration during the period 1840–70 (see Chart 3.1). In the 1870s, the total population of the Argo-Saronic Gulf region would decrease significantly, which can be explained in part by the decline of the sailing fleet (see Table 3.1).[7] Simultaneously, Piraeus became an important trade hub and gradually developed into the main port of the Greek state.[8] The increase in activities in the service sector and other industries was accompanied by population growth, which was mainly due to the migration and settlement of inhabitants from the mountainous regions and the maritime communities of the islands, in particular, from the Argo-Saronic Gulf, and the Cyclades.[9]

The archipelago of the Cyclades, which extends from central to the southern Aegean, is the second largest area of sailor origin. In 1861, about 118,000 people lived in the Cyclades, scattered over 30 islands, and small islets (see Table 3.1). During a period of great prosperity for the sailing fleet (1869–70), 36% of the Greek-owned fleet was registered across this location.[10] The vast majority of seafarers, around 80% to 85%, came from four islands: Santorini, Syros, Andros, and Mykonos. Syros was home to 43.5% of the seafarers of the whole region of the Cyclades in 1879. Apart from Syros, the other three islands, along with a number of smaller islands, had also developed a long-standing shipping culture, especially since the eighteenth century.[11] During the nineteenth century, the maritime communities of these islands supplied the fleet of Syros with manpower, which became the largest shipping, commercial, and economic centre of the Greek state during the first 40 years of nationhood (see

6 Gelina Harlaftis, "Η "ναυτική πολιτεία" του Ιονίου και του Αιγαίου. Ναυτότοποι, ναυτικές οικογένειες και επιχειρήσεις", ["The 'maritime city' of the Ionian and the Aegean Sea. Maritime places, families and enterprises"], in *Η Ναυτιλία των Ελλήνων, 1700–1821. Ο αιώνας της ακμής πριν από την Επανάσταση* [*Greek Shipping, 1700–1821. The century of the heyday before the War of Independence*], Gellina Harlaftis and Katerina Papakonstantinou eds., (Athens: Kedros 2013), 370–385.

7 Agriantoni, *Οι απαρχές*, 209.

8 Papastefanaki, *Εργασία*, 44–47.

9 Agriantoni, *Οι απαρχές*, 209.

10 Gelina Harlaftis, "Ιστιοφόρος ναυτιλία. Η περίοδο της μεγάλης ακμής, 1833–1871," ["Sailing shipping. The Peak 1833–1871"] in *Ιστορία Νέου Ελληνισμού, 1770–2000* [*History of Modern Hellenism, 1770–2000,*], vol. 4, ed. Vasilis Panayiotopoulos (Athens: To Vima/Alter Ego 2019), 112.

11 Information about the fleet of the Cycladic islands for 1813 is given by the French traveler Francois Pouqueville in his *Voyage del la Grece*, vol. 6 (Paris: 1826–27), 294–297. See also Harlaftis and Papakonstantinou (eds.), *Η ναυτιλία των Ελλήνων*, 385–393.

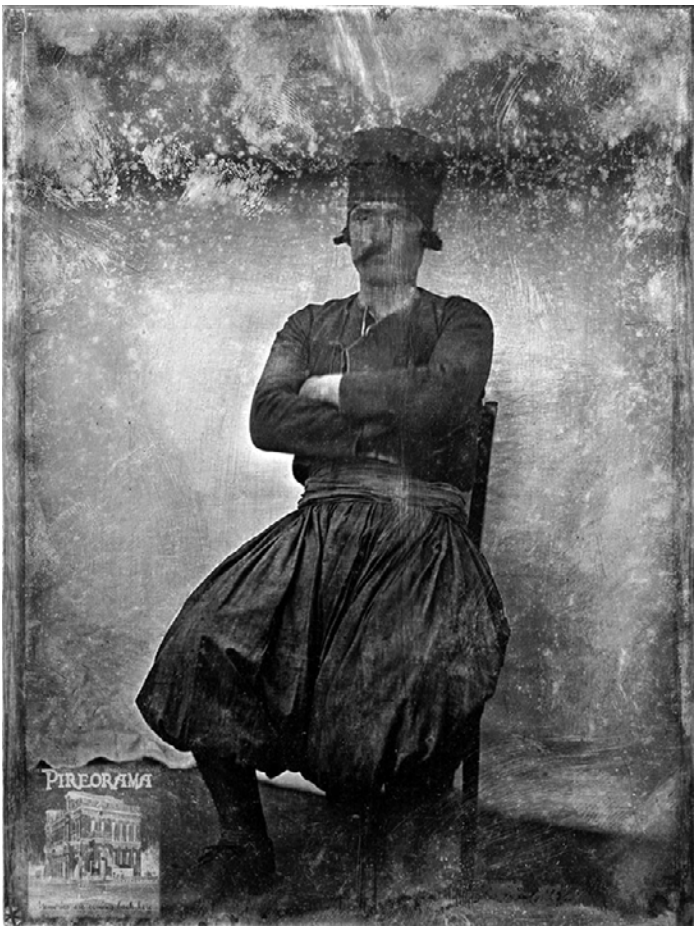


FIGURE 3.1 Greek sailor in traditional dress, 1844 (unknown author)

Map 3.1).[12] In Hermoupolis (at the port of Syros), the population was drawn from the surrounding areas, but also, from islands and coastal areas under Ottoman rule. Ships registered in the port of Hermoupolis employed several

12 For the movement of people from the Cyclades to Hermoupolis see Christos Loukos "Μερικές επισημάνσεις για τους κάτοικους της Ερμούπολης τον 19ο αιώνα: γεωγραφική προέλευση εγκατάσταση στο χώρο, επαγγέλματα, κοινωνικές σχέσεις," ["Some remarks for the inhabitants of Hermoupolis in the 19th century: geographical origin, settlement in the area, professions, social relations"] in *Σύρος και Ερμούπολη. Συμβολές στην ιστορία του νησιού, 15ος–20ος αι.* [Syros and Hermoupolis. Contributions to the history of the island, 15th–20th c.], eds. Christina Agriantoni, Dimitris Dimitropoulos (Athens: INE/EIE, 2008), 105–120.

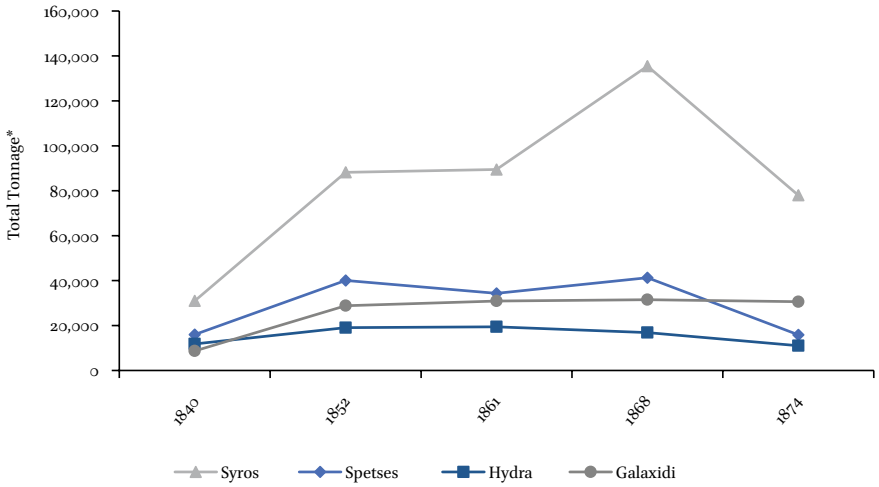


CHART 3.1 Growth of Greek fleet registrations in the ports of Syros, Spetses, Hydra, and Galaxidi, 1840–74. *According to official state sources, during the nineteenth century, there was no distinction between gross (GRT) and net registered tonnage (NRT) for sailing ships. The data analysed simply reports the total tonnage of registered ships. This problem is also found in secondary sources, and in various published shipping statistics. For a detailed analysis of the measurement system of ships and the problems of Greek sources and statistics, see Gelina Harlaftis, *A History of Greek-Owned Shipping. The Making of an International Tramp Fleet, 1830 to the Present Day* (London: Routledge, 1996) 109–115
SOURCES: PROCESSED DATA FROM ANNUAL REPORTS FROM GSA/ATHENS, Υπουργείο Ναυτικών, (1833–66) Φ. 41 [THE MINISTRY OF NAVY (1833–66), F. 41]; *Υπουργείον Οικονομικών, Στατιστικόν Γραφείον, Γενικός πίναξ του Εξωτερικού Εμπόριου της Ελλάδος, 1861, 1867–68, 1874* [*MINISTRY OF FINANCE, STATISTICS OFFICE, GENERAL TABLE OF FOREIGN TRADE OF GREECE*, YEARS 1861, 1867–68, 1874] (ATHENS: NATIONAL PRINTING HOUSE 1863, 1872, 1876); FREDERICK STRONG, *GREECE AS A KINGDOM; OR A STATISTICAL DESCRIPTION OF THAT COUNTRY, FROM THE ARRIVAL OF KING OTHO, IN 1833, DOWN TO THE PRESENT TIME*. (LONDON: N.P., 1842)

foreign seamen from the surrounding areas.[13] This increase is observed in the maritime population of Syros post-1870 (see Table 3.1), most likely due to the relocation of seafarers from the wider Aegean region, rather than the development of the Syros fleet. The crisis in shipping after 1870 intensified the clear haemorrhage of the maritime population from the Cyclades islands towards

13 For the employment of foreign seamen in Hermopolis' port, see N.A.T. report, 1863: *Journal of the Greek Government* (FEK) no. 16 (30 April 1863).

other areas.[14] One such example is the island of Santorini, which experienced a significant reduction in its maritime population between 1861 and 1879.[15]

The third area with a high concentration of seafarers is the north-western Aegean. The fleets of the two islands of the Sporades (Skiathos, and Skopelos) together with the fleets of Euboea (Kymi, Chalkida, Amaliapolis), served the needs of the mainland in the west and north. In the period 1845–70, Skopelos and Skiathos emerged (mainly because of the forest-based wealth of the region) as one of the most important shipbuilding centres in the Aegean.[16] The importance of shipping in this area has not yet been sufficiently highlighted in literature. As demonstrated in Table 3.1, on the islands of Skopelos, Skiathos, and Kymi, up to half of the male population was involved in maritime activity. It is noteworthy that the maritime population of the area recorded an increase between 1861–79. The local fleet was not involved in transporting grain from the Black Sea, unlike the powerful fleets of other areas (such as Spetses, Galaxidi and Syros). The fleet of the north-western Aegean relied mostly on the export of agricultural products and wine (from Kymi) from the wider region.[17]

The fourth geographical unit in which there was a high concentration of seafarers is the Ionian Islands, which were incorporated into the Greek state in 1864. The highest concentration of the seafaring population in the Ionian region was on the Island of Cephalonia (with 33% of seafarers), followed by Corfu (20%), and Ithaca (18%). From the middle of the eighteenth century, Cephalonia and Ithaca had become centres of shipping operations in the wider region. The inhabitants of Cephalonia (post-1750) specialised in the transport of oil, wine, and raisins, from Crete, the Peloponnese, and other areas under Venetian rule, to the ports of the Adriatic and Malta. During the nineteenth century, the merchant fleet of Cephalonia benefited from the settlement of families from the Ionian Islands to the Black Sea, and the development of commercial enterprises.[18] Merchants and shipowners from Cephalonia who had moved headquarters to the Black Sea continued to register ships at their place of origin.

14 Agriantoni, Οι απαρχές, 209.

15 For the relocation of residents from Santorini to Hermoupolis in the period 1861–79, see Loukos "Μερικές επισημάνσεις", 106–109.

16 Harlaftis, *A History of Greek-Owned Shipping*, 120.

17 For the agriculture economy of Euboea, see Sakis Dimitriadis, "Οι μεγαλοκτηματίες της Εύβοιας του 19ου αιώνα" ["The Large Landed Estate Owners of Nineteenth-Century Euboea"] (PhD diss., National and Kapodistrian University of Athens, 2018), 147–148.

18 Several families from Cephalonia and Ithaca settled in the Danube Hegemony after the Crimean War, creating a strong commercial and shipping network, which lasted until the end of the nineteenth century: Harlaftis, *A History of Greek-Owned Shipping*, 71–72.

Finally, the area of the Corinthian Gulf included three ports with a significant seafaring presence: Patras, Messolongi, and Galaxidi. In Greek literature, the fleets of this region are examined together with the fleets of the Ionian region, due to their long-standing economic interconnection, but also, due to the relations developed more widely between the inhabitants of both regions.[19] In the Corinthian Gulf, Galaxidi was the largest maritime and shipbuilding centre, as well as one of the four most important centres of registration of the Greek fleet, until the 1870s (see Chart 3.1.).

The period 1861–79 is characterised by a generalised mobility of rural and maritime population towards the major urban centres of the Greek state: Hermoupolis, Piraeus, Patras, and Athens. Fluctuations in the agricultural economy and shipping activity certainly played a decisive role in this phenomenon. The decline of the sailing fleet after 1870 may partly explain population movement, especially in areas where shipping and other related activities (for example, shipbuilding) were the main forms of employment (for example, the Argo-Saronic Gulf, and Galaxidi). The gradual recovery of Greek shipping during the period of transition to steamships (1880–1914), reinforced the centralised trends that were manifested in the nineteenth century, especially in relation to the distribution of the maritime population. At the beginning of the twentieth century, the southern Attica region (where the port of Piraeus is located) accounted for more than 17% of the Greek maritime population (see Table 3.2.).

Table 3.2. presents the geographical distribution of the maritime population in 1907 (see Table 3.2.), when steamships dominated the Greek fleet.[20] Specifically, in 1907, the tonnage of steamships represented 65% of the total tonnage of the fleet.[21] The process of transition to steamships caused significant reorganisation in the geographical distribution of the maritime population, without however, radically changing the place of seafarer origin. The traditional maritime communities of the Ionian and the Aegean continued to supply the Greek fleet with a workforce, albeit recording a decrease in absolute numbers. The emergence of Piraeus as a shipping centre of the Greek state, and the main place of registration for Greek steamships (see Chart 3.2), may explain the significant increase observed in the maritime population of Attica.

19 Alexandra Papadopoulou, "Ναυτιλιακές Επιχειρήσεις, Διεθνή Δίκτυα και Θεσμοί στην Σπετσιώτικη Εμπορική Ναυτιλία, 1830–1870. Οργάνωση, διοίκηση και στρατηγική" ["Maritime Businesses, Networks and Institutions in Merchant Shipping of the Island of Spetses, 1830–1870. Organization, Governance and Strategy"] (PhD diss., Ionian University, 2010). See also Harlaftis and Papakonstantinou (eds.), *Η ναυτιλία των Ελλήνων, 1700–1821*, 355–370.

20 In 1902, for the first time, the capacity of steamships exceeded that of sails. See below.

21 See below.

The maritime population from Hydra, Galaxidi, the Cyclades, Chios, and Crete settled in Piraeus from the end of the nineteenth century.[22] The port of Piraeus was followed by Cephalonia and Syros as the leading locations for the registration of steamships. However, there was also a high concentration of seafarers in areas that did not have a large number of registered steamships, for example, Volos, or where no steamships were registered, for example, Spetses, and Euboea. The residents of these locations most likely continued to work on the sailing fleet, or on steamships registered in nearby ports. The records of the steamship period confirm the above position. In 1910, in particular, it is estimated that more than half of steamship crews originated from the Cyclades or Ionian Islands.[23]

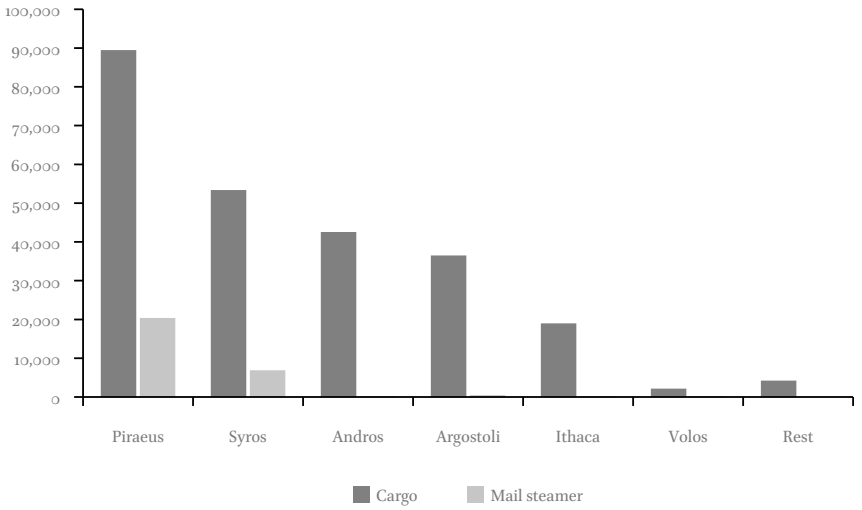


CHART 3.2 Steamship registration ports 1907 net registered tonnage (NRT)
SOURCE: NEWSPAPER *PATRIS*, NOVEMBER 10, 1907 (NO. 2171), 1–2

22 For more details on the development of Piraeus and the settlement of the maritime population at the end of the nineteenth century, see the chapter in the present volume by Katerina Galani.

23 The estimate is based on a fleet of 183 cargo steamships from 1910, and concerns 4,500 seafarers: Harlaftis, *A History of Greek-Owned Shipping*, 225–226, 232.

TABLE 3.2 Origins of seafarers in Greece, 1907

	Place of residence	Masters & seamen, boatsmen	%
Argo-Saronic Gulf	Spetses & Ermionida	1,051	6.52
	Hydra	764	4.74
	Troizina	369	2.29
Attica	Attica (included Piraeus)	2,813	17.46
Cyclades	Syros	743	4.61
	Aegina	407	2.53
	Andros	380	2.36
	Santorini	319	1.98
	Rest of Cyclades	729	4.52
Ionian Islands	Corfu	891	5.53
	Ithaca	401	2.49
	Zante	299	1.86
	Cephalonia	857	5.32
	Rest of Ionian Islands	415	2.60
Corinthian Gulf	Patras	676	4.20
	Messolongi	159	0.99
	Parnassida (included Galaxidi)	284	1.76
Euboea & North	Skopelos	317	1.97
Aegean	Euboea	1,013	6.29
	Volos	762	4.82
Others		2,462	15.31
Total		16,111	

SOURCE: *Υπηρεσία απογραφής, Στατιστικά αποτελέσματα της γενικής απογραφής του πληθυσμού, 27.10.1907*, τομ. 2 [*STATISTICAL RESULTS OF THE GENERAL POPULATION CENSUS, 27.10.1907*, VOL. 2] (ATHENS: N.P., 1909)

3 Employment, Crews, and Wages in the Sailing Fleet 1840–70

Greek merchant shipping during the nineteenth century did not develop steadily. In fact, during the period of sail, fluctuations in the freight market, either due to agricultural production crises or other external factors affecting the smooth running of the Black Sea grain trade, had a significant impact on the merchant fleet, the labour market, and maritime communities. Chart 3.3

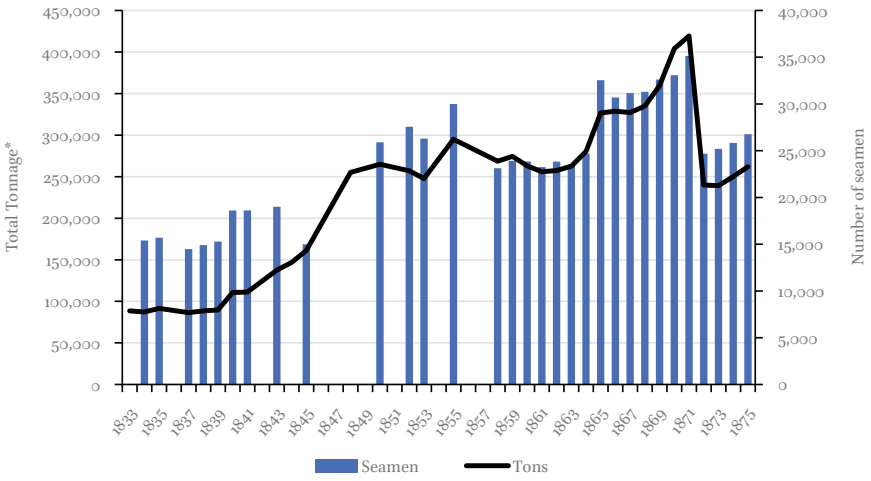


CHART 3.3 Growth of Greek registered fleet and employment trends, 1833–1875. *See note in Chart 3.1

SOURCES: PROCESSED DATA FROM GSA/ATHENS, *Υπουργείο Ναυτικών*, (*1833–1866*), Φ. 41 [*ARCHIVE OF THE MINISTRY OF NAVY* (*1833–1866*), F. 41]; *Υπουργείον Οικονομικών, Στατιστικόν Γραφείον, Γενικός πίναξ του Εξωτερικού Εμπόριου της Ελλάδος* [*MINISTRY OF FINANCE, STATISTICS OFFICE, GENERAL TABLE OF FOREIGN TRADE OF GREECE*, YEARS 1859, 1861, 1864, 1866, 1867–68, 1869–71, 1872–73, 1874] (ATHENS: NATIONAL PRINTING HOUSE, 1860, 1863, 1866, 1870, 1872,1873, 1875, 1876); STRONG, *GREECE AS A KINGDOM*; *Πανδώρα* [*PANDORA*] NO. 49–72 (1 APRIL 1852–15 MARCH 1853): 108–10, 174–75, 192, 216, 285–87; IBID, NO. 92–120 (1 APRIL 1852–15 MARCH 1853): 8–13, 160–61, 163–66; IBID, NO. 361–384 (1 APRIL 1865–15 MARCH 1866): 239. *Συλλογή των περί του Ελληνικού Ναυτικού, Πολεμικού τε και Εμπορικού* [*COLLECTION OF OFFICIAL DOCUMENTS ON THE GREEK FLEET, NAVY AND COMMERCIAL*] (ATHENS: N.P., 1837), 192

clearly shows the course and fluctuations faced by the Greek fleet, and the employment of seamen during the period of sailing fleet dominance, 1833–75.[24]

Chart 3.3 reveals two periods during which the capacity of the fleet follows a gradual upward trend; the first phase of the upward course of the fleet begins in 1840 and ends in 1849–50, while the second covers the period 1865–71. There

24 The data in Figure 3.3 refers to all types of sailing vessels with a Greek flag. These figures do not include those seafarers who are on land for various reasons, but only those who are on board ship. For instance, it does not include the unemployed, or those looking for employment. The graph is based on official data from the Ministries of Shipping and Finance, showing fleet status by year. The data comes from the registered ships of each port of the Greek kingdom. Consequently, only seafarers registered with the port authorities of each port together with the ship, are recorded.

is sharp growth during the Crimean War (1853–56), however, this is short-lived. The first phase of growth of the Greek fleet is characterised by a steady rise in freight rates, as a result of increased demand for grain from European markets.[25] The repeal of the Corn Laws (1846) and the Navigation Laws (1849) in Great Britain, together with similar laws in other European countries, played an important role in this development.[26] During this period, Greek merchant shipping experienced high growth rates, with the capacity of the fleet almost doubling in seven years, approaching by 1850, 265,000 tons (see Chart 3.3).

The second phase of growth of the Greek fleet (1865–71) was characterised by the integration of the Ionian fleet into the Greek register, following the union of the islands with Greece in 1864. Simultaneously, there was a continuous increase of grain exports from the Danube and southern Russia, where the trading networks of Greek merchants (and the diaspora) played an important role.[27] This upward trend of the Greek fleet ceased abruptly in 1871, when several Greek shipowners abandoned the Greek flag en masse, following the decision of the French State to impose excessive port fees on Greek ships, due to intense competition (see Chart 3.3).[28]

In the period 1833–75, labour on board ships underwent both qualitative and quantitative changes. The upward trend in fleet capacity between 1844 and 1849 altered fleet employment levels, and boosted labour demand (see Chart 3.3). In 1850, the number of seafarers employed reached almost 26,000, while previously, in the period 1834–45, employment hovered between 15,000 and 20,000. At the same time, however, with increased employment came rapid change in the intensity of seafarers' labour on board.[29] This trend can be initially observed between 1841–43 (see Chart 3.4), and becomes well-established after 1845. More specifically, during 1834–40 the proportion of men per 100 tons varied between 16.75 and 17.66. By 1845 this ratio had dropped to 9.31, and would not exceed 10.85 in the lifetime of the index.

25 Harlaftis, *A History of Greek Owned Shipping*, 117. See also, Papadopoulou, "*Ναυτιλιακές Επιχειρήσεις*", 87–88.

26 Harlaftis, *A History of Greek Owned Shipping*, 117.

27 For the role of Greek diaspora commercial networks, see Gelina Harlaftis "The role of the Greeks in the Black Sea trade, 1830–1900," in *Shipping and Trade, 1750–1950: Essays in International Maritime Economic History*, eds. Lewis R. Fischer and Helge W. Nordvik (Pontefract: Lofthouse, 1990), 63–95. See also, Harlaftis, *A History of Greek Owned Shipping*, 38–106.

28 Vasilis Kardasis, *Από Του Ιστίου Εις Τον Ατμόν. Ελληνική Εμπορική Ναυτιλία (1858–1914)* [*From Sail To Steam. The Greek Merchant Marine (1858–1914)*] (Athens: Cultural Foundation of ETBA 1993), 137–138; Pierre A. Moraitinis, *La Grece tell qu'elle est* (Paris: 1877), 365–66.

29 The intensity of labour is calculated per year, the total number of seafarers per total tonnage of the fleet.

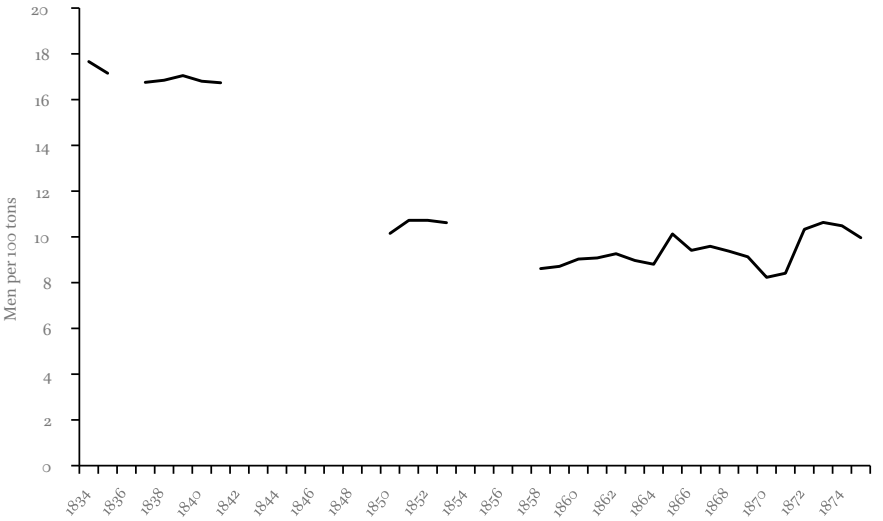


CHART 3.4 Ratio of men per ton on Greek sailing ships 1834–74
SOURCE: PROCESSED DATA FROM ANNUAL REPORTS FROM GSA/ATHENS, *ARCHIVE OF THE MINISTRY OF NAVY (1833–1866)*, F. 41; *Υπουργείον Οικονομικών, Στατιστικόν Γραφείον, Γενικός πίναξ του Εξωτερικόϋ Εμπόριου της Ελλάδος, 1861, 1867–68, 1874* [*MINISTRY OF FINANCE, STATISTICS OFFICE, GENERAL TABLE OF FOREIGN TRADE OF GREECE*, YEARS 1861, 1867–68, 1874] (ATHENS: NATIONAL PRINTING HOUSE 1863, 1872, 1876); STRONG, *GREECE AS A KINGDOM*

This development was a consequence of many factors, however, it can be linked to the transformation concerning the ownership of sailing ships, and labour relations. In particular, it is connected to a further reduction of forms of remuneration (that is, the sharing system), and the transition to an employment system in the maritime professions.[30]

Prior to the establishment of the Greek state, the dominant form of employment on Greek ships was the share system. Under this system, seafarers did not receive wages but shares, which were paid according to the financial results of the voyage. After the founding of the Greek state in 1831, the share system, which favoured the enlistment of many people, survived in certain regions of the Greek kingdom, mainly on coastal ships under 100 tons owned by multiple

30 For the transition to wage labour see, Apostolos Delis, "Ναυπήγηση και συνεταιριστική διαχείριση (συμπλοιοκτησία) εμπορικών ιστιοφόρων στην Ερμούπολη τον 19ο αιώνα" ["Ship construction and partnership in sailing vessels at Hermoupolis in the nineteenth century"], Μνήμων [Mnimon], no. 31 (2010): 85–113, See also Delis, "Le rôle du capitaine et la figure du 'directeur'", 179–192.

shareholders.[31] However, it can be observed that in areas where new forms of ship ownership and employment relations prevailed, such as Syros, shipowners made an effort to limit their labour costs by reducing labour on board.[32] This trend strengthening post 1843, when grain exports from the Black Sea multiplied, and the Greek fleet increased its capacity with construction and addition of new ships.

From 1843 to 1858, the Greek fleet was renewed by a staggering 91.2%.[33] Most of the new vessels were constructed at the Hermoupolis shipyard, the largest shipbuilding centre in the eastern Mediterranean at the time. The shipyard of Hermoupolis constructed various types of traditional vessels from the Aegean, and the Mediterranean, however, the type of ship that dominated was the brig.[34] In the first half of the nineteenth century, the brig was the most widespread medium-capacity cargo sailing vessel in most merchant fleets in Europe and the North Atlantic.[35] The brig was the backbone of the Greek-owned fleet during the period of sail. Greek, and also Italian shipowners from the Ligurian region, used brigs to transport cereals from the Black Sea.[36] Brigs were a relatively medium to small vessels, with low construction costs, and did not require large number of sailors, which kept labour costs low.

The size of brig crews varied depending on the tonnage of the vessel and the form of remuneration. In the 1830s, for example, when the sharing system was still dominant, a ship between 100 and 185 tons had about fifteen men, while ships between 220 and 325 tons employed approximately twenty men.[37] As observed in Table 3.3, in 1834, the brig *Agia Marina*, with a capacity of 126 tons, had a crew of eleven men, all paid through the share system. On ships where the crew received a monthly salary instead of shares the crew composition

31 Christos Hadjiiossif, "Conjunctural crisis and structural problems in the Greek merchant marine in the 19th century: reaction of the state and private interests," *Journal of the Hellenic Diaspora*, n. 4.12 (Winter 1985): 5–20.

32 Delis, "Ναυπήγηση και συνεταιριστική διαχείριση".

33 Constantinos Papathanasopoulos, *Η ελληνική εμπορική ναυτιλία εξέλιξη και αναπροσαρμογή* [*Greek Merchant Shipping* (*1833–1856*) *Development and Runeadjustment*] (Athens: National Bank of Greece Cultural Foundation, 1983), 98.

34 For the production from the shipyard of Hermoupolis and the characteristics of the vessels, see Apostolos Delis, *Mediterranean Wooden Shipbuilding. Economy, Technology and Institutions in Syros in the Nineteenth Century* (Leiden: Brill, 2015), 134–142.

35 Ibid, 144.

36 Delis, *Mediterranean Wooden Shipbuilding*, 142–145; Leonardo Scavino, "The Mediterranean Maritime Community of Camogli: Evolution and Transformation in the Age of Transition from Sail to Steam, 1850s-1910s" (PhD diss., University of Genoa, 2020), 54–55.

37 Apostolos Delis, "From lateen to square rig: the evolution of the Greek-owned merchant fleet and its ships in the eighteenth and nineteenth centuries," *The Mariner's Mirror*, no. 100.1 (February 2014), 55.

TABLE 3.3 Crew size, tons and form of payment of four brigs and a schooner-brig

Years	Ship name	Type	Form of payment	Tons	Crew size	Port of registry
1834	*Agia Marina*	Brig	Shares	126	11	Syros
1841–44	*Leonidas*	Brig	Wages	312.75	12–15	Galaxidi
1856–59	*Agios Charalampos*	Brig	Wages	163.78	8–9	Hydra
1859 (6 months)	*Agios Antonios*	Brig	Wages	211	9	Syros
1861–64	*Tripolina*	Schooner-brig	Wages	186	9–11	Hydra

SOURCE: PROCESSED DATA FROM PRIVATE ARCHIVE OF EVANGELOS RAFALIAS, Ὕδρα "Κατάστιχον των εξόδων και εσόδων της ελληνοεμπορικής γολέτας Τριπολίνα" και "Μισθοδοσίαι του πληρώματος της ελληνοεμπορικής γολέτας Τριπολίνα" [*HYDRA, ACCOUNTS AND PAYROLL OF THE SCHOONER TRIPOLINA*]; *FOR BRIG LEONIDAS,* "Κατάστιχον του πληρώματος 'Λεωνίδα' εις εξόφλησιν των μισθών, 1844" AND "1841–1842. Κατάστιχο δια μισθό ναυτών", [ACCOUNTS AND PAYROLL OF THE BRIG LEONIDAS], ACADEMY OF ATHENS: HTTP://REPOSITORY.ACADEMYOFATHENS.GR/KEIED/INDEX.PHP/EN/LISTITEMS/77435 FOR BRIGS AGIA MARINA, AGIOS CHARALAMPOS AND AGIOS ANTONIOS SEE: G.S.A/ATHENS, *ARCHIVES OF MINISTRY OF SHIPPING,* Εμπορικάς συνθήκαι 1842–1847, Φ. 921 [COMMERCIAL TREATIES 1842–1847, F. 921]

was smaller. In the period 1841–45, the brig *Leonidas*, of 312 tons, employed between twelve and fifteen men at most. Crew size of three medium brigs in the period 1856–64 was between eight and eleven men, including officers.

The sailing ship crew of the *Leonidas* consisted of a captain, a purser, a boatswain, a cook, and eight to eleven seamen (including on some voyages, one or two boys in the position of seamen). The number of seamen was greater on those voyages where the purser and cook were absent. Therefore, it seems reasonable to assume that the responsibilities of purser and cook were transferred to seamen. Similarly, on the sailing ship *Agios Charalampos*, which seems to have a cook for only one of eight voyages. This ship was usually served by a captain, a purser, and a boatswain along with four or five seamen, while on two voyages one or two boys are recorded as present. The same composition is observed on the sailing ship *Agios Antonios*, and finally, on the schooner *Tripolina*, apart from the senior crew and the cook, only four to seven sailors served.

In the case of the *Agios Charalampos* the vast majority of the crew had a common place of origin with the captain, while seven of the nine seamen on the *Agios Antonios* originated on the island of Hydra, with the remaining seamen

TABLE 3.4 Average monthly wages of deck crew in sailing ships in drachmas

	Leonidas 1841–44		Agios Antonios 1859		Agios Charalampos 1856–59		Tripolina 1861–64	
Rank	**Range of Wages**	**Averages**	**Range of Wages**	**Averages**	**Range of Wages**	**Averages**	**Range of Wages**	**Averages**
Captain	120	120	–	–	120	120	120	120
Purser	46–73.65	62.95	60	60	40–80	61.6	60–140	82.5
Boatswain	33.48–52.80	43.30	70	70	75–100	81.75	65–70	70
Cook	34.70–40	37.70	50	50	52	52	50–70	56.4
Seamen	25–50.80	35.2	45–55	50	52–70	60.85	42–60	56
Boy	10–25	20.5	30	30	30–40	35	15–30	18.5

SOURCE: TABLE 3.3

originating from areas in close proximity (Kranidi). On the *Agios Charalampos*, in two of the eight voyages, only seamen from Hydra served, while in the other two voyages, 90% of the crew were from Hydra. The *Leonidas*, which was registered in Galaxidi, in the period from 10th June 1841, to 10th March 1842 employed a permanent crew of twelve men from the area of Galaxidi only, while from time to time it hired an additional two or three men from other areas. The common place of origin ensured the captain, who usually had a share in the ship, maintained a balance on the ship, and therefore, obedience among the seamen.

In relation to salary levels, in the period 1840–60, the captain's monthly salary stabilised at 120 drachmas.[38] According to some estimates, during the Crimean War the captain's salary reached 140 to 150 drachmas, with sailors able to demand 80 drachmas.[39] The Crimean War caused freight rates to increase, to extreme levels—this caused a surge of shipping income for Greece.[40] In general, post mid-1840s, the average wage was rising, especially

38 See also Apostolos Delis, "Le rôle du capitaine et la figure du 'directeur'," 184.

39 Christina Agriantoni, *Οι απαρχές της εκβιομηχάνισης στην Ελλάδα τον 19ο αιώνα* [*The Begininig of Industrialization in Greece in the Nineteenth century*] (*Athens*: Katarti, 2010), 219.

40 For the increase in Greek state revenues from the shipping sector, see Gelina Harlaftis and George Kostelenos, "Services and economic growth: estimating shipping income in the 19th century Greek economy," working paper available at http://hdoisto.gr/gr/library/seminar-proceeding (dated 13 November 2006).

for seafarers, sailors, and cooks. From 1856 to 1864, sailors and cooks earned almost half as much as a captain. It should be noted, however, that each specialty role encountered variations clearly related to age and experience. Sailors between the ages of 16–21 were paid a lower rate, as were trained officers. On the ship *Agios Charalampos*, for example, the purser in his first voyage was paid 40 drachmas as he was only 19 years old. On the sailing ship *Leonidas*, in 1844, the salary of an experienced sailor reached 50 drachmas, while the remaining sailors were only paid 38 to 42 drachmas.

4 Employment in the Merchant Fleet during the Transition to Steam

From the 1880s until the end of the nineteenth century, the evolution of the Greek-owned fleet stabilised, however, it did not reach the high growth rates of the previous period. This period is characterised by a gradual contraction of the sailing fleet, and a slow but steady increase in the capacity of the steam-powered fleet (Chart 3.5). The first investments in steamships were made in the 1880s by the Greek diaspora, in particular, by wealthy businessmen operating in the Danube region, and southern Russia. In the Greek state, steamship investments were made with greater intensity and regularity towards the end of the nineteenth century, by shipowners originating from the Aegean Islands (Andros and Syros), and from the Ionian Islands (Cephalonia, and Ithaca).[41]

In the literature, the process of transition to steam is divided into two stages. The first stage, from the mid-1880s to the mid-1890s, is associated with the dominance of the merchants of the Black Sea diaspora. The second phase lasts fifteen years, from the beginning of 1900 until the First World War, and is characterised by the transfer of the shipping business base to Piraeus and London.[42] A turning point in the transition process was the Boer War (1899–1902), during which Greek shipping made impressive progress.[43] During this period, and specifically in 1902, the capacity of the steam-powered fleet exceeded, for the

41 Kardasis, *Από του ιστίου εις τον ατμόν*, 145–149; Gelina Harlaftis *Creating Global Shipping. Aristotle Onasis, the Vagliano Brothers, and the Business of Shipping, c.1820–1970* (Cambridge: Cambridge University Press, 2019), 35–38.

42 Harlaftis, "Pattern of ownership and finance in the Greek deep-sea steamship fleet, 1880–1914," in *Management, Finance and Industrial Relations in Maritime Industries: Essays in International Maritime Business History, Research in Maritime History, 6*, eds. Simon P. Ville and David M. Williams (St. John's, Newfoundland: International Maritime Economic History Association, 1994), 143–45.

43 Harlaftis, *A History of Greek-Owned Shipping*, 133–134; Kardasis, *Από του ιστίου εις τον ατμόν*, 172–173; Christos Hadziiossif, "Η μπέλ επόκ του κεφαλαίου," ["The belle epoque of capital"] in *Ιστορία της Ελλάδας του 20ού αιώνα.* Οι απαρχές [*A History of Greece in the Twentieth*

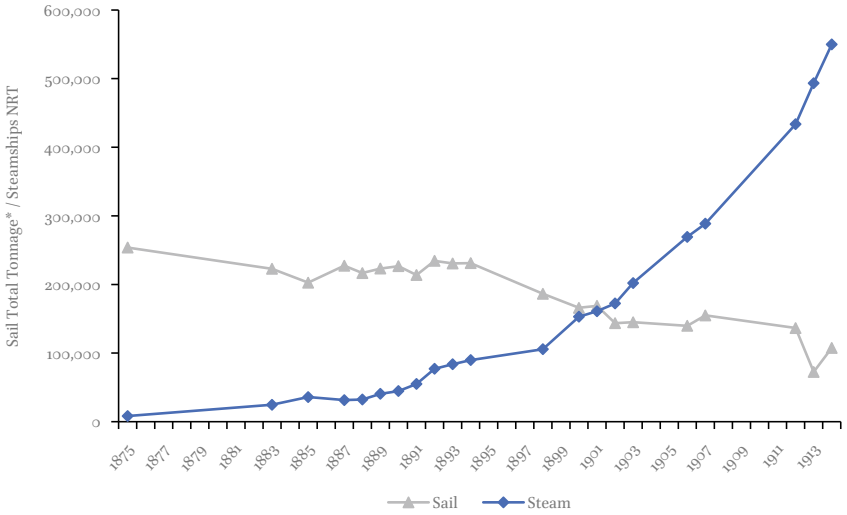


CHART 3.5 Capacity of steamships and sails, 1883–1914. *Sail total tonnage, see note in chart 3.1
SOURCES: PROCESSED DATA FROM ANNUAL REPORTS FROM *Υπουργείον Οικονομικών, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894*; *Υπουργείο Ναυτικών, Πολεμικά Πλοία και Εμπορικά, άνω των 30 τόνων* [*MINISTRY OF THE NAVY, WARSHIPS AND MERCHANTS, OVER 30 TONS*] (ATHENS: N.P., 1915); *PATRIS*, AUGUST 7, 1899, OCTOBER 12, 1902, NOVEMBER 3, 1907; EPAMINONDAS EMBIRICOS, *LA MARINE MARCHANDE. A VAPEUR GRECQUE* (ATHENS: N.P., 1907); VASILIS KARDASIS, *Από Του Ιστίου Εις Τον Ατμόν. Ελληνική Εμπορική Ναυτιλία (1858–1914)* [*FROM SAIL TO STEAM. THE GREEK MERCHANT MARINE (1858–1914)*] (ATHENS: CULTURAL FOUNDATION OF ETBA, 1993)

first time, the capacity of sail. From this point onwards, and for the next ten years, the capacity of the steam-powered fleet grew at a rapid pace. The number of steamships doubled, while tonnage tripled (see Chart 3.5).

The information available from official state data regarding the employment status in the Greek fleet during the period of the transition to steam, is incomplete, as it only covers the first phase of the transition, specifically, 1887–94. There is also a large gap in the literature for this period, in terms of employment material.[44] According to data provided by the Ministry of Finance (through annual reports), the number of seafarers employed by the

Century, 1900–1922. The Beginnings], ed. Christos Hadziiossif (Athens: Vivliorama, 1999), 335.

44 Between 1875 until the Interwar period, only estimates and not data from sources are available: Harlaftis, *A History of Greek-Owned Shipping*, 173–174.

Greek fleet (in all types of ships) ranged between 21,000 and 26,000 per year.[45] In 1887, approximately 1,400 seafarers worked in the steam-powered fleet, in all classes of steamships. Seven years later the number of seafarers had doubled.[46] The majority (over 50%) worked on seagoing steamships over 800 tons. In the period 1887–94, the number of sailors in the sailing fleet ranged between 19,000 and 23,000.

The seagoing fleet (including sail and steamships) employed a relatively stable workforce of approximately 8,000 to 9,000 seafarers, while coastal vessels employed between 13,000 and 18,000 seafarers (see Chart 3.6). It should be noted at this point that in the period 1865–71, the Greek fleet employed 30,000 to 35,000 seafarers (see Chart 3.3), with the majority working on larger ships of the seagoing sailing fleet. This change reflects the low growth rates of the merchant fleet, which was slow to recover after 1875, rather than the process of transition to steamships. Moreover, by 1894, the capacity of sailing ships did not decrease dramatically compared to 1875 levels, while the total capacity of steamships, registered in Greece in 1894, did not exceed 90,000 tons (see Chart 3.5). The difficult recovery of Greek shipping following the 1870s is probably related to the further penetration of the steamer in the Black Sea market, and the fall in freight as a result.[47] Greek shipping could no longer compete with competitors in the main area of fleet activity. The effects of the transition to steamships on employment levels became more pronounced in the first years of the twentieth century, when steam became dominant.

During the last two decades of the nineteenth century, the low levels of employment in the Greek fleet, among other factors, contributed to population migration from island communities (with a long tradition in shipping) to urban centres of the Greek state, such as Piraeus, or even abroad.[48] Many (the number remains unknown) also commenced employment on steamers

45 Data from the *Υπουργείον Οικονομικών, Στατιστικόν Γραφείον, Εξωτερικόν εμπόριον της Ελλάδος κατά τα έτη 1887* [*Ministry of Finance, Statistics Office, External Trade of Greece, 1887*] (Athens: n.p., 1888), 66–67.

46 *Υπουργείον Οικονομικών, Στατιστικόν Γραφείον, Εξωτερικόν εμπόριον της Ελλάδος κατά τα έτη 1884* [*Ministry of Finance, Statistics Office, External Trade of Greece, 1894*] (Athens: n.p., 1895), 82–83.

47 Although the steamship appeared in Mediterranean shipping since the 1840s, its large-scale introduction to the Black Sea only began in the 1860s, and intensified from the 1870s. For the appearance of the steamship in the 1840s in the eastern Mediterranean, and the effects it had on Greek shipping, see Hadjiiossif, "Conjunctural Crisis". For the extensive use of steamships in Black Sea transport in the decade 1860–70, see Harlaftis, *A History of Greek Owned Shipping*, 118–119.

48 For the migration of seafarers abroad, see Epaminondas Embiricos, *Περί εμψυχώσεως της Ελληνικής ναυτιλίας* [*On the Advocacy of Greek Shipping*] (Athens: n.p., 1890), 25.

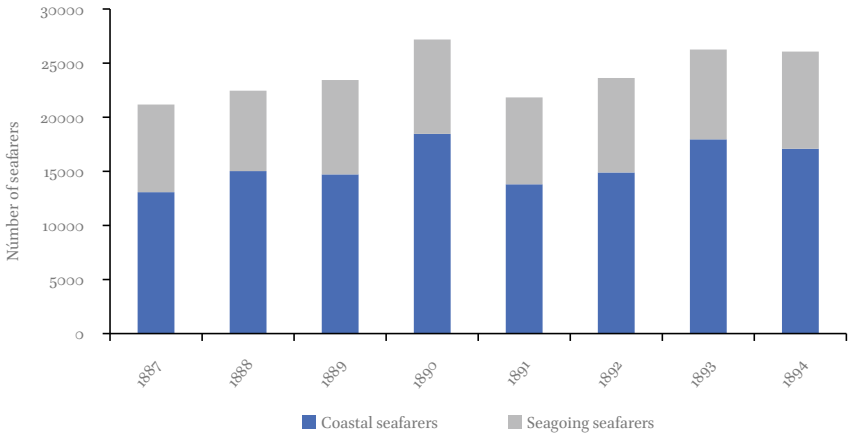


CHART 3.6 Seafarers on coastal and seagoing (included steam) ships, 1887–94
SOURCES: PROCESSED DATA FROM ANNUAL REPORTS FROM *Υπουργείον Οικονομικών, 1884, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894*

with foreign flags belonging to the Greek diaspora.[49] Simultaneously, a further part of the marine population seems to have turned to fishing and sponge fishing.[50] Post 1902, when the capacity of steamships exceeded that of sailing ships, employment in the Greek fleet decreased further. In 1906, the number of Greek seafarers estimated as working on all types of Greek ships numbered approximately 20,000, while shortly before the First World War, the Greek fleet employed 15,000 seafarers.[51]

In the field of labour, the introduction of new steam technology caused significant changes. The new means of steam propulsion intensified the technical division of labour, with the creation of new specialties and the disappearance, or reduction, of others. The number of seamen in general duties gradually decreased, while the emergence of new specialties (engineers and firemen) resulted in a transformation of the old work structures, and the creation of

49 For employment on steamships of the Greek diaspora with a foreign flag, see Simonos Katakouzinou, *Το εμπόριον και η ναυτιλία. Μεταναστεύσεις των Ελλήνων. Το νέον σύστημα του εμπορεύεσθαι* [*Trade and Shipping. Immigrations of the Greeks. The New System of Trade*] (Athens: n.p., 1908) 101.

50 Epaminondas Embiricos, *Περί της ατμηρούς ημών ναυτιλίας* [*About Our Steam Shipping*] (Athens: 1900), 40–44; Antonis Miliarakis, *Γεωγραφία Πολιτική νέα και αρχαία του νομού Αργολίδος* [*Political Geography, New and Ancient, of the Prefecture of Argolida*] (Athens: 1888), 184–187.

51 Harlaftis, *A History of Greek Owned Shipping*, 225.

a new working hierarchy on board.[52] In the hull of the ship, in particular, the engine room, a parallel hierarchy was formed with that of the bridge and the deck. Skilled workers, including engineers, firemen, and trimmers, were a separate body of worker, employed in a much harsher environment than that of the deck crew. The crew was in fact a new "industrial proletariat" of the sea, which gave a new dimension to the work on board.

In the industrial environment of steamships, the pace and intensity of work was greater. Table 3.5 shows the total number of employees on Greek steamships per tonnage category, and the proportion of workers per tonne during the first phase of the transition. As can be seen, labour intensity was highest in the largest steamships, over 1000 tons, in which the man/ton ratio ranges from 2 to 2.1 (see Table 3.5). According to the data, steamships of 1000–1200 tons employed an average of 22–24 crew members, while steamships over 1200 tons employed 29–31 crew members. The composition of the crew also differed on each cargo ship depending on age, technology, and engine power in relation to the ship's tonnage.[53] In order to better understand the size and composition of crews, the study examined five steamships from the period 1898–1914 (see Table 3.6).[54]

Towards the end of the nineteenth century, a cargo steamship such as the *Nikolaos Vaglianos* from Andros (1101 nrt), constructed in 1883, employed twenty-one men, of which only four were seamen. Twenty to twenty-one men served on steamer *Loula* (1526 nrt), registered in Syros in 1908. In such vessels, the workforce was divided into two categories: the deck and the engine department. The deck crew consisted of the captain, two mates (second and third), a carpenter, and usually four seamen. In larger steamers, the number of seamen could reach up to seven. On cargo steamers exceeding 1000 tons, almost half

52 For a bibliography on the emergence of new specialties on board, see Eric Sager, *Seafaring Labour, The Merchant Marine of Atlantic Canada, 1820–1914* (Kingston, Montreal, London: McGill-Queen's University Press, 1989); Enric Garcia, "Losing professional identity? Deck officers in the Spanish merchant marine, 1868–1914," *International Journal of Maritime History*, no. 26.3 (August 2014), 451–70; Enric Garcia Domingo, "Engine drivers or engineers: ship's engineers in the Spanish merchant navy (1834–1893)," *Journal of Mediterranean Studies*, no. 19.2 (2010), 249–70; David M. Williams, "Industrialization, technological change and the maritime labour force: the British experience 1800–1914," *Collectanea Maritima*, no. 5 (1991), 317–30; R.G. Milburn, "The emergence of the engineer in the British merchant shipping industry, 1812–1863," *International Journal of Maritime History*, no. 28.3 (August 2016), 559–75.

53 The relationship between the crew and the technical characteristics of steamships is analyzed by Apostolos Delis "Ship operation in transition" in the present volume.

54 The material comes mainly from the maritime archives of the Kaireios Library in Andros, and to a lesser extent from the Hellenic Literary and Historical Archive (ELIA) in Athens.

TABLE 3.5 Man per ton on steamships, 1889–94

	1889				1892				1894			
Class per ton of steamships	Number of Steamships	Number of seafarers	Average of seafarers per ship	Man/ Per 100 tons	Number of Steamships	Number of seafarers	Average of seafarers per ship	Man/ Per 100 tons	Number of Steamships	Number of seafarers	Average of seafarers per ship	Man/ Per 100 tons
500–600	2	51	25.5	4.5	3	90	30	5.3	5	129	25.8	4.5
600–700	3	59	19.6	2.5	8	209	26.1	4.1	8	153	19.12	3.0
700–800	5	84	16.8	2.4	7	179	25.5	3.5	7	144	20.5	2.8
800–1000	22	609	27.6	2.7	20	389	19.4	2.2	24	646	26.9	3.0
1000–1200	3	67	22.3	2	5	114	22.8	2	8	195	24.3	2.1
1200 & over	4	118	29.5	2.1	22	681	30.9	2	23	706	30.7	2.1

SOURCES: SEE PROCESSED DATA FROM ANNUAL REPORTS FROM *Υπουργείον Οικονομικών, 1884, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894*

FIGURE 3.2 Engine crew of the cargo steamer *Michail* owned by Stamatios G. Embiricos from Andros. Probably Italy, 1899
SOURCE: KAIREIOS LIBRARY, ANDROS, PHOTOGRAPHIC COLLECTION OF MARITIME ARCHIVES

of workers were employed in the engine department. The engine crew consisted of three engineers (first, second and third), a donkeyman, firemen, and trimmers. The first engineer was in charge of the engine department, while the second engineer followed in a hierarchical manner as deputy. Due to the absence of specialised personnel, Greek steamships usually employed foreign engineers, mainly of British origin. In the three cargo steamships registered in Andros, the *Andriana, Ellin*, and *Vasileus Konstantinos*, the first engineer was British in all three. However, this was not always the case, for example, on the steamer *Loula*, which was registered in Syros, a first engineer of Greek origin (from the Dardanelles) was employed (see Table 3.6).

In the hierarchical system, between engineers and firemen, was the donkeyman (chief fireman). The chief fireman was accountable to the second engineer and supervised the work of the firemen. Finally, at the base of the hierarchy were the trimmers. The size of the engine crew varied depending on the size of the ship and the technical characteristics. Large steamships, such as the *Ellin* and *Vasileus Konstantinos*, had four engineers and six to eight firemen.

TABLE 3.6 Crew size per rank, salary (in French francs) in five steamers from Andros (*Vaglianos, Andriana, Vasileus Konstantinos, Ellin*) and from Syros (*Loula*)

Rank	Nikolaos Vaglianos (1898)		Loula (1908)			Andriana (1908–1909)			Vasileus Konstantinos (1913–1914)			Ellin (1913–14)		
	n. of men	salary range	n. of men	salary range	Average	n. of men	salary range	Average	n. of men	salary range	Average	n. of men	salary range	Average
Master	1	400	1	250–300	275	1	375	375	1	400–450	425	1	450	450
First Mate	1	200	1	150–170	160	1	160–170	161.4	1	220	220	1	225–240	230
Second Mate	1	150	1	100–120	110	1	110	110	1	140–145	142.5	1	140–150	143.3
Carpenter	1	90				1	85	85	1	120	120	1	125–150	135
Bosun	1	100	1	75–80	77.5	1	90	90	1	110	110	1	90–130	115
Seamen	4	70	2–4	40–70	58.3	4–5	60–65	64.8	6	80–110	96.6	7	90–110	98.2
Boy			1	10–20	15				1	30	30			
First engineer	1	400	1	300	300	1	375–378	376	1	437.5	437.5	1	437.5	437.5
Second Engineer	1	200	1	180	180	1	225	225	1	325	325	1	275	275
Third Engineer	1	150	1	80–120	100	1	150	150	1	150–160	153.3	1	223	205
Fourth Engineer									1	40–150	83.3	1	60–150	120
Chief fireman (donkeyman)	1	100	1	90	90	1	90–95	90.7	1	120	120	1	125	125
Firemen	3	80	2–3	80	80	4	80–90	80	6	100–110	107.2	8	100–125	114.1
Trainee Seaman			2	60	60	1	50	50	1	40	40			
Trimmers	2	60	3	45	45	4	60	60	3	80	80	1–3	80	80
Cook	1	85	1	65	65	1	90	90	1	120	120	1	100–120	113.3
Steward	1	90	1–2	60–65	61.5	1	75	75	2	60–110	93.3	1	110	110

TABLE 3.6 Crew size per rank, salary (in French francs) in five steamers from Andros (*Vaglianos, Andriana, Vasileus Konstantinos, Ellin*) (*cont.*)

Rank	Nikolaos Vaglianos (1898)		Loula (1908)			Andriana (1908–1909)			Vasileus Konstantinos (1913–1914)			Ellin (1913–14)		
	n. of men	salary range	n. of men	salary range	Average	n. of men	salary range	Average	n. of men	salary range	Average	n. of men	salary range	Average
Engine Steward	1	50				1	30–35	30.6	1	50–80	63.3	1	40–62.5	55
Steward of the Officer												1	25	25
Total	21		20–21			26–27			29–30			29–31		

SOURCES: PROCESSED DATA, GELINA HARLAFTIS *CREATING GLOBAL SHIPPING. ARISTOTLE ONASIS, THE VAGLIANO BROTHERS, AND THE BUSINESS OF SHIPPING, C.1820–1970* (CAMBRIDGE: CAMBRIDGE UNIVERSITY PRESS, 2019), 137, TABLE 5.3; HELLENIC LITERARY AND HISTORICAL ARCHIVE, ATHENS, Αρχείο Σύρμα [SYRMAS ARCHIVE], Βιβλίο Μισθοδοσίας 1908–09 [SALARY BOOK 1908–09] AND Ναυτολόγια 1908–13 [CREWLISTS 1908–09], A 568

Alterations in the technical division of labour with the introduction of steamships changed the wage rates (and scales) that were followed during the sailing period, and led to a reorganisation of seafarers' work. According to estimates at the time, in the mid-1880s, the salary of master sailors was approximately 100 drachmas, while a steamship master earned twice this amount or often more.[55] At the turn of the twentieth century master salaries ranged between 375–400 francs. The appearance of engineers and firemen changed the hierarchies on board, this was reflected in wage rates. During the first two decades of the twentieth century, the salary of the first engineer, who was included within the officer hierarchy of the senior crew, was equal to or even higher than the salary of the master. The stoker also belonged to a higher salary scale than the experienced sailor, which was due to the harsh working conditions of this team, and not to any particular skill. The salary of the firemen was similar to the salary scale of the bosun.

5 Labour Insurance

The most important intervention by the Greek state in the area of labour relations was the establishment of the Seamen's Pension Fund (in Greek the Ναυτικό Απομαχικό Ταμείο, hereafter N.A.T.)—this occurred in 1861, in Athens.[56] The debate over the establishment of an insurance fund for seafarers actually began immediately following the formation of the Greek state, in 1836, when the first official written report (a royal decree on merchant shipping) was made regarding the need to establish a special fund for seafarers. Two further reports followed in 1837 and 1849, which concerned fund resources, but did not provide for operation. The fund was eventually established in 1861.[57]

The N.A.T. was the first workers' insurance organisation, as until this point only certain groups of public servants were insured by the Greek state, for example, teachers (1855) and the military (1858).[58] Shipping was one of the

55 This estimate comes from an official N.A.T. report: GSA, Συντάξεις, Απομαχικό Ταμείο Ναυτικού, 1890, Φ. 78 [Pensions—Seamen's Pension Fund, 1890, F. 78].

56 *Journal of the Greek Government* (FEK) no. 49.5 (September 1861): Law ΧΛΘ', "On the Foundation of Naftiko Apomachiko Tameio," *Journal of the Greek Government* (FEK), no. 52.13 (September 1861).

57 Antonis Liakos, Εργασία και πολιτική στην Ελλάδα του Μεσοπολέμου—Το Διεθνές Γραφείο Εργασίας και η ανάδυση των κοινωνικών θεσμών, Ίδρυμα Έρευνας και Παιδείας της Εμπορικής Τράπεζας της Ελλάδος [*Labour and Politics in Interwar Greece*] (Athens: Foundation of Research and Education of Commercial Bank of Greece, 1993), 377.

58 Dimitrios Venieris, "The Development of Social Security in Greece (1920–1990)" (PhD diss., University of London, 1994), 19–20; Liakos, Εργασία, 376–377.

most important sources of revenue for the state, while seafarers were one of the largest groups of salaried employees.[59] During the period of sailing fleet growth (1864–70), the number of employees who paid contributions to the fund ranged from between 26,000 to 37,000.[60] Specifically, it is estimated that about 6% to 8% of the total active population were employed in shipping, permanently or occasionally. This percentage declined following the switch to steamships. In 1906, when the capacity of the steam-powered fleet exceeded that of sail, shipping employed approximately 20,000 maritime workers.[61]

State welfare for seafarers was linked not only to the danger of the profession, but also to the need for a permanent supply of labour.[62] Fluctuations in employment, as mentioned above, limited maritime activity, often causing underemployment. It is no coincidence that the establishment of the fund coincides with a period of recession in the shipping activities of the Greek fleet (1856–63), and a decline in employment.[63] The crisis in shipping during this period created, along with other factors, the migration of inhabitants from traditional maritime communities of the Aegean to the urban centres of the Greek kingdom.[64] In this context, the operation of the fund can be interpreted as an attempt to keep the maritime population in their place of origin. The fund, in addition to a pension, also provided emergency financial assistance (a small amount in the form of charity, often awarded every Easter and Christmas) to destitute seafarers and their widows and orphans, who were not entitled to a pension, and who did not have others resources.[65]

59 For the contribution of the shipping sector to the GDP of Greece, see Gelina Harlaftis and George Kostelenos, "International shipping and national economic growth: shipping earnings and the Greek economy in the nineteenth century," *Economic History Review*, no. 65.4 (2012): 1403–1427.

60 This includes navy seamen, who are estimated at around 2,500 for 1870. For an estimation of the workforce employed in shipping the study preferred the data provided by the N.A.T. The information provided by the fund, although very fragmented and with a variety of other issues, can be considered more reliable compared to other sources, as it is based on the insurance contributions paid by seafarers per trip, and per specialty. For more details, see Appendix 1.

61 See Appendix 1.

62 Liakos, Εργασία και πολιτική, 377–379.

63 For the decline in employment after the end of the Crimean War, see Chart 3.3, for the shipping crisis in the period 1856–1862 see Harlaftis, *A History of Greek Owned Shipping*, 115–116.

64 For the status of the Greek fleet, and employment see Chart 3.3.

65 According to the founding law, the fund also allocated 5% of its income each year: *Journal of the Greek Government* (FEK) no. 49.5 (September 1861): Law ΧΛΘ'.

The establishment of the fund was based on the standards of the French Marine Insurance Fund (*Caisses de Invalides de la Marines*).[66] It was also based on customary forms of mutual insurance that already existed in Aegean maritime communities as early as the eighteenth century, together with the rules of Mediterranean maritime law.[67] The purpose of establishing the fund, according to the founding law of 1861 (ΧΛΘ'), was the protection of weak and helpless seafarers, and their widows and orphans. The following were entitled to a pension: seafarers over the age of 50 with 25 years of service; those who could not work due to an accident; and widows/orphans of seafarers who died at work.[68] The amount of pension provided by the fund was estimated to be less than half of the monthly seafarer salary (see Table 3.7). Widows received 7.5 to 30 drachmas, depending on the number of children they had under their protection, and the status/rank of the deceased. For example, a captains' widow received 25 drachmas, half of the captain's regular pension.

TABLE 3.7 Monthly pensions for seafarers in drachmas, 1861–84

Rank	Pension
Master	50
Skipper	30
Purser	25
Seaman, fisherman, divers, boatsmen	15
Widows	7.5–30

SOURCE: *JOURNAL OF THE GREEK GOVERNMENT* (FEK) NO. 49.5 (SEPTEMBER 1861), LAW ΧΛΘ'

66 Konstantinos Doukakis, "Θεσμική εξέλιξη της κοινωνικής πολιτικής στο ελληνικό κράτος 1821–2008," ["Social Policy's Institutional Development in the Greek State (1821–2008)"] (PhD diss., Ionian University 2010) 118–119. See also Ν.Α.Τ., Ιστορία Ναυτικού Απομαχικού Ταμείου—Πρώτης Εκατονταετίας (*1861–1961*) [*History of Seamen's Pension Fund—The First 100 years* (*1861–1961*)] (Piraeus: n.p., 1971), 23; and Christos Aggalopoulos, Κοινωνικαί Ασφάλισεις [*Social Insurance*] (Athens: n.p., 1936), 9.

67 Liakos, Εργασία και πολιτική, 377–379. For more detail on seafarers' assistance in Europe see Andrea Zappia "Between maritime labor and social security in the Kingdom of Italy: the Cassa degli invalidi della Marina mercantile of Genova in the age of transition (1861–94)" in the present volume.

68 *Journal of the Greek Government* (FEK), no. 52.13 (September 1861).

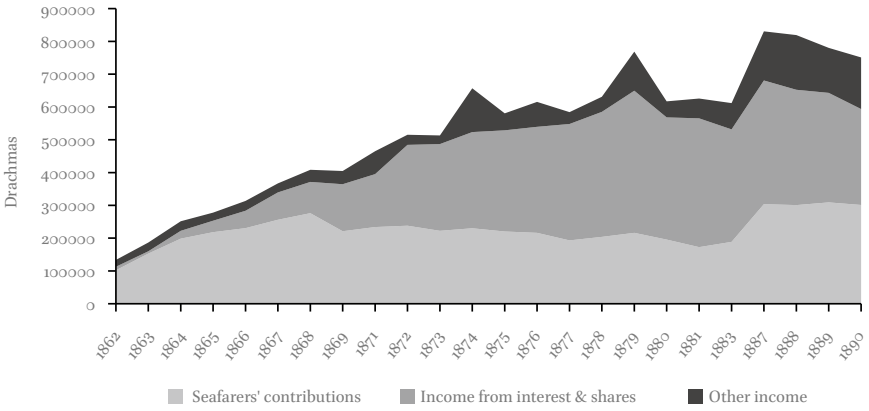


CHART 3.7 The composition of N.A.T. revenues per category, 1862–1890
SOURCES: PROCESSED DATA FROM G.S.A/ATHENS, *ARCHIVES OF MINISTRY OF SHIPPING,* Απομαχικό Ταμείο 1867–70, 1871–73, 1874–76, Φ. 158–160 [*PENSION FUND 1867–70, 1871–73, 1874–76*, F. 158–160]; Συντάξεις, Απομαχικό Ταμείο Ναυτικού, 1884, Φ. 75 [PENSIONS—SEAMEN'S PENSION FUND, 1884, F. 75]; *Συντάξεις—Ναυτικό Απομαχικό Ταμείο, 1887–1888, 1889, 1890*, Φ. 76–78 [*PENSIONS—SEAMEN'S PENSION FUND, 1887–1888, 1889, 1890*, F. 76–78]; *Συντάξεις—Ναυτικό Απομαχικό Ταμείο, 1891*, Φ. 80 [*PENSIONS—SEAMEN'S PENSION FUND, 1891*, F. 80]

The financial operation of the N.A.T. was based on funds sourced (mainly) from the contributions (3% of the salary) of each employee in the merchant marine, the navy, the *Hellenic Steam Navigation Company*, and generally, those who made a living from the sea, such as boatmen, fishermen, and divers.[69] The fund also relied on various state revenues (port dues, and fines imposed by port services on merchant ships) and various investment income. According to the annual balance sheets, the two main sources of income were: the contributions of employees to the merchant fleet, and the interest on capital from investments in the banking sector (see Chart 3.7).[70] The financial management of the fund was under the control of a three-member committee, which was supervised by the Ministry of Shipping. The committee were nominated by the

69 The operation of the Hellenic Steam Navigation Company is analyzed by Apostolos Delis "Modernizing seaborne communication in nineteenth century Greece: the role and contribution of the Hellenic Steam Navigation Company, 1857–93" in the present volume. For employee contributions, see *Journal of the Greek Government* (FEK), no. 49.5 (September 1861): Law ΧΛΘ'.

70 The balance sheet of the fund, as well as reports on the financial situation were sourced mainly from the archival collection of the Ministry of Shipping, in the General State Archive in Athens. The study also obtained data from various editions of the (FEK) *Journal of the Greek Government*.

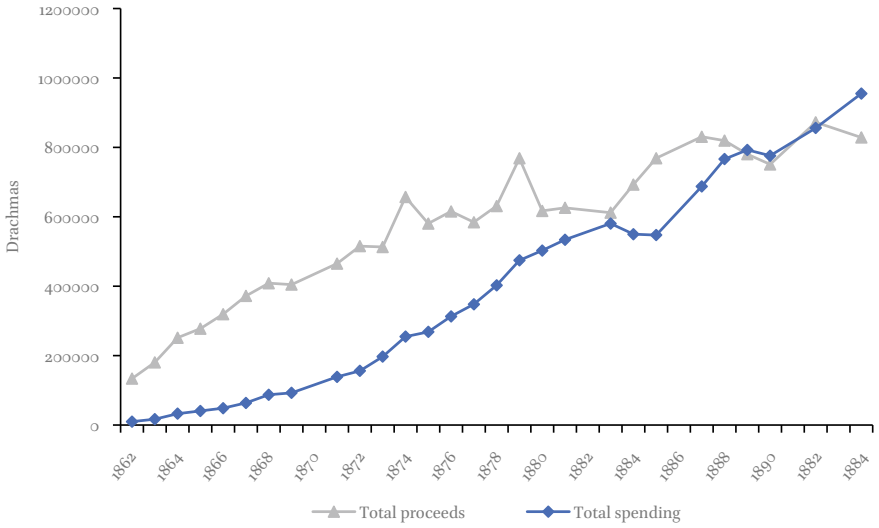


CHART 3.8 Total proceeds and total spending of N.A.T., 1862–92
SOURCE: G.S.A, Απομαχικό Ταμείο 1867–70, 1871–73, 1874–76, Φ. 158–160; Συντάξεις, 1884, Φ. 75; *Συντάξεις, 1887–1888, 1889, 1890*, Φ. 76–78; *Συντάξεις, 1891*, Φ. 80

Ministry of Shipping, but were appointed by the kingdom. In 1884, an advisory council was instituted by representatives of the maritime municipalities.

The gradual decline of the Greek fleet post 1870, combined with the rapid increase of pensioners over the same period, created issues in the financial management of the N.A.T. Specifically, within six years (1869–75), fund expenditure, which was pension orientated, almost tripled (see Chart 3.8). Furthermore, the management of the fund was exacerbated by the prolonged shipping crisis of 1877–84, which resulted in a significant decline of shipping income, and therefore, contributions.[71] During this period, fund management was faced with two main problems: firstly, a decline in the levels of employment in the merchant marine, and therefore, of insured seafarers, and secondly, increased pension claims.[72] Chart 3.8 demonstrates the income/expenditure of the fund between 1862 and 1890. The expenditure of the N.A.T. increased post 1875, as more and more seafarers retired. In general, until 1872, the majority of pensions were claimed mainly by widows of sailors, who received lesser amounts in comparison to men. For instance, in 1872, there were only 60 retired seafarers, 360 widows, and 30 orphans in receipt of a monthly pension.

71 For the shipping crisis see Harlaftis, *A History of Greek Owned Shipping*, 122.

72 The problems faced by the fund are summarized in an official report by the administration of the Minister of Shipping: GSA, Συντάξεις, Φ. 78.

Under these circumstances, the Greek state made structural changes in terms of contribution management, and insurance coverage. According to a new statutory law (APOX' 1884), the 3% proportional contribution was abolished, and replaced by a standard monthly payment, regardless of individual salary.[73] The type of contribution increased, while at the same time, a clear distinction was made between the contributions of workers employed on steamships, and those on sail ships.

The clear intention of the new regulations was to avoid financial deficit in the future. For the same reason, in order to limit the expenses of the fund going forward, retirement conditions became stricter. Thus, according to the new statute, pensions would only be received by a seafarer who was: a) over 55 years old, and had a record of more than 20 years of service; b) those who were completely unable to work, and had proven maritime service of at least 10 years; c) those who had been seriously injured in service, and were unable to work again; and d) the widows and orphans of sailors.[74] Additionally, there was also a significant change to pension benefits. Henceforth, the amount of pension claimed was determined by the number of years of service, and contributions made, and not on the criteria of specialty, as defined by the founding fund law of 1861. Finally, the emergency benefits granted to seafarers who did not work, or who were not entitled to a pension, was abolished.

The new statutory law was followed by two new royal decrees, in 1884 and 1889 respectively. The decrees provided for the reduction of all pensions granted under the founding law of 1861. The purpose was to further reduce expenses.[75] According to estimates at the time, the amount of monthly pension in the period 1890–1900, for sailors with 20 years of service, ranged between 9–15 drachmas.[76] The amount was considered to be particularly low, especially, taking account of salary levels enjoyed by experienced sailors in this period. It was also deemed unfair due to the level of monthly contributions required by seafarers.[77]

The 1884 arrangements, although they improved fund revenue and removed the issue as an immediate problem, they were not able to offer a viable solution. The 1886 bankruptcy of the *Archangelos* Bank caused significant losses to the fund, which had held shares in the bank since 1873.[78] In 1891, due to prolonged financial problems, the fund decided once again to increase the

73 *Journal of the Greek Government* (FEK), no. 163.30 (April 1884).
74 *Journal of the Greek Government* (FEK), no. 163.30 (April 1884).
75 *Journal of the Greek Government* (FEK), no. 174.4 (July 1889). For this issue, see also Ιστορία Ναυτικού Απομαχικού Ταμείου, 54–55.
76 Embiricos, Περί της ατμηρούς, 46–47.
77 The salary of an experienced sailor is estimated at 60–80 drachmas: see ibid.
78 *Journal of the Greek Government* (FEK), no. 101.6 (April 1891).

TABLE 3.8 Monthly contributions to the Seamen's Pension Fund

	Rank	Drachmas per month 1884–91	Drachmas per month 1891–
Steamer over 60 tons	Master	7.5	10
	First and Second mate	5	7
	First Engineer	7.5	10
	Second Engineer	4	5.5
	Assistant for all engineers	2.5	3.5
	Fireman (Donkeyman)	2	2.5
Steamer and sails	Bosun	2.5	3.5
	Seaman	2	2.5
	Trainee	1.5	2
	Boy	0.25	
Sails over 60 tons	Master	5	7
	First Mate	3	4
	Purser	2.5	3.5
	Skippers	2–3	2.5–3.5
	Fisherman, divers, boatmen	1.5–2.5	2–3.5

SOURCES: *JOURNAL OF THE GREEK GOVERNMENT* (FEK) NO. 163.30 (APRIL 1884); IBID, NO. 101.6 (APRIL 1891)

insurance contributions of employees, and to increase retirement time limits (see Table 3.8).[79] The 1891 arrangements would temporarily improve the situation, however, from 1894 onwards the financial situation increasingly deteriorated due to continuing deficits (see Chart 3.8).

Towards the end of the nineteenth century, appeals to the Greek government for state aid and financial support increased. Members of the advisory council argued that a viable solution would be to make the fund public, in line with a proposed plan by the French finance minister for the French Marine Insurance Fund.[80] Eventually, a package of measures proposed by advisory council was adopted. This included the introduction of new funding sources

79 N.A.T., Ιστορία Ναυτικού Απομαχικού Ταμείου, 53.
80 GSA, Συντάξεις, Φ. 78.

(port fund and maritime municipalities).[81] A contribution was also imposed on foreign seafarers for the first time, while for all employees regardless of their position, an additional charge was imposed: 0.25 drachmas per month. A shipowner contribution was introduced from 1907, when the provisions of the second statute (AROX' 1884) law were revised.[82]

6 Conclusions

Modern-day perceptions of the economic issues and problems encountered by the N.A.T. in the late nineteenth century, which continued into the first decade of the twentieth century, were linked to the decline of sailing, and the growing prevalence of steamships. For the N.A.T. management, reduced revenue from employee contributions was a consequence of steamer predominance, which they claimed did not employ enough seafarers. In fact, insured seafarers (on all types of ships), in 1906, did not exceed 20,000, while pensioners numbered close to 7,000. However, it should be noted that the causes of the problem could be traced to the period prior to the transition of Greek shipping to steam (1880–1914). As mentioned above, the decline in employment in the Greek fleet began in the early 1870s, causing the migration of the maritime population from island and coastal communities to major urban centres. The issue, therefore, was not the process of transition from sail to steam, but rather, the inability of the Greek fleet to compete with the steam-powered fleets of foreign states, which increasingly challenged in the Black Sea post 1860 (the main area of activity for Greek shipowners).[83] As pointed out, the appearance of the steamer in the Black Sea was accompanied by a decline in transport costs, which led to a gradual weakening of freight rates,[84] causing the migration of the maritime population (as described above).

The consequences of the process of transition to steamships in relation to employment levels, can be observed at the turn of the nineteenth and twentieth centuries, when the second phase of transition began. The concentration of the maritime population in the port of Piraeus, where the majority of freighters were registered, is one of the features of the transition of Greek shipping to steam.

81 N.A.T., Ιστορία Ναυτικού Απομαχικού Ταμείου, 53.

82 *Journal of the Greek Government* (FEK), no. 144.21 (July 1907).

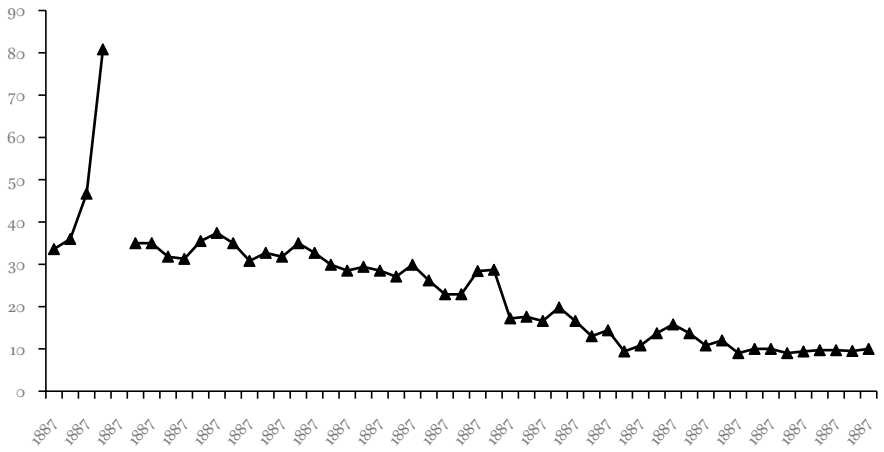
83 For the effects of the growing presence of the steamer in the Black Sea post 1860, see Kardasis, Από του Ιστίου, 145.

84 Harlaftis, *A History of Greek Owned Shipping*, 118–119. See also Appendix 2 for the freight rate.

APPENDIX 3.1 Maritime workers 1862–1906

Rank	1862	1864	1868	1869	Percentage change (1864–69)	1874	1889	1906
Masters	1007	1410	1900	1970	0.39		1104	
Skippers	2257	2818	3810	3950	0.4		4019	
Boatswain	1003	1275	1630	1650	0.28		927	
Purser	347	494	680	700	0.42		no data	
Seamen	11191	15322	20810	21650	0.41		11011	
Trainee/Boys	3424	4104	5580	5800	0.41		6110	
Fishermen, boatmen	828	738	1090	1240	0.68	no data	508*	no data
Total (a)	20057	26161	35550	37000	0.41	32400	23679	20000
Total (b) workforce in Greek Kingdom	317388	no data	no data	468194		no data	640255	678718
%	6,32			7,9				2,95

SOURCE: PROCESSED DATA FROM G.S.A., Απομαχικό Ταμείο 1867–18701, Φ. 158
* only boatmen



APPENDIX 3.2 Freight rates of wheat, Odessa-England (in shillings)
SOURCE: C. KNICK HARLEY, "COAL EXPORTS AND BRITISH SHIPPING, 1850–1913," *DEPARTMENT OF ECONOMICS RESEARCH REPORTS, 8807* (LONDON: DEPARTMENT OF ECONOMICS, UNIVERSITY OF WESTERN ONTARIO, 1988.)

CHAPTER 4

Between Maritime Labour and Social Security in the Kingdom of Italy

The Cassa degli invalidi della marina mercantile *of Genova in the Age of Transition (1861–94)*

Andrea Zappia

1 Introduction

The historiographical debate has proposed to bring together, under the category of 'seamen', those heterogeneous groups of people living in coastal villages and directly linked to maritime labour, who can be identified by common traits, and practices.[1] The characteristics of life for those who sailed, including: absence from home for long periods; difficulties in maintaining stable social relationships; and modest earnings, created significant difficulties when faced with injuries or, more simply, old age.[2] For centuries, those who found themselves faced with these difficulties could only rely on the charity of religious institutions or the aid provided by local mutual aid and corporate entities, often with very unsatisfactory results. Only in the early modern era have wealthier nation states began to act in a structured manner for this group of people. Although the nineteenth century was undoubtedly characterised by a decisive turning point as regards assistance to seafarers, it was not until the

1 Paul Adam (ed.), *Seamen in Society/Gens de mer en Société* (Perthes: Commission nationale d'histoire maritime, 1980); Jean-Pierre Poussou, Olivier Chaline and Michel Vergé-Franceschi, "La recherche internationale en histoire maritime: essai d'évaluation," *Revue d'histoire maritime* no. 10.11 (June 2010); Èric Grueber and Gérard Le Bouëdec (eds.), *Gens de mer. Ports et cités aux époques ancienne, médiévale et moderne* (Rennes: Presses Universitaires de Rennes, 2013).

2 On maritime labour from a global perspective, see Rosemary Ommer and Gerald Panting (eds.), *Working Men Who Got Wet* (St. John's, Newfoundland: Memorial University of Newfoundland, 1980); Eric Sager, *Seafaring Labour: The Merchant Marine of Atlantic Canada, 1820–1914* (Montreal: McGill-Queens University Press, 1996); Maria Stella Rollandi, *Lavorare sul mare. Economia e organizzazione del lavoro marittimo fra Otto e Novecento* (Genova: Brigati, 2003); Richard Gorski (ed.), *Maritime Labour: Contributions to the History of Work at Sea, 1500–2000*, (Amsterdam: Amsterdam University Press, 2007); Gopalan Balachandran, *Globalizing Labour? Indian Seafarers and World Shipping, c. 1870–1945*, (New Delhi: Oxford University Press India, 2012).

twentieth century that widespread and satisfactory results were achieved in this field.[3] This research aims to retrace the changes in the Italian merchant fleet during the nineteenth-century transition from sail to steam propulsion, through the study of a specific welfare institution reserved for seafarers: the *Cassa degli invalidi della Marina mercantile* (Fund for Injured Seamen of the Merchant Marine) of Genova. The research aims to identify challenges and countermeasures adopted by institutions both at the local and national level.

2 The Origins of Seafarers' Assistance in Europe

The historiographical landscape as regards seafarers' assistance in the modern era is very limited, a situation that provides scholars with great potential to develop this area of research further but, simultaneously, minimal basis from which to commence their investigation. There is no doubt that France has distinguished itself, since the Middle Ages, for the attention given to the regulation of the maritime sector, for example, pioneering schemes such as the *Rôles d'Oléron*, a relatively small corpus of maritime customs for the regulation of the Bordeaux wine trade written prior to the twelfth century; and the reforms of Colbert in the last quarter of the seventeenth century, which includes about 200 edicts and ordinances.[4] The first state initiative aimed at assisting seafarers, in the framework of the new maritime class system, was introduced by the Minister of Navy, Jean-Baptiste Colbert, through an ordinance of 19th April 1670. This ordinance was made official on 22nd September 1673 with the Edict of Nancy.[5] Within this body of law, there was a provision that established the *Caisse des invalides de la marine royale*, a fund financed through a salary deduction (2.5%) from sailors and officers (of all ranks). This provision guaranteed an annuity to war invalids.[6] The *Ordonnance de la marine* (1681), a *corpus* of laws extending the same structural reforms imposed on the navy, to merchant

3 Karel Davids, "Seamen's organizations and social protest in Europe, c. 1300–1825," *International Review of Social History*, no. 39 (1994): 145–169.

4 On the evolution of French maritime legislation, see Bernard Allaire, "Between Oléron and Colbert: the evolution of French maritime law until the seventeenth century," in *Law, Labour and Empire. Comparative Perspectives on Seafarers, c. 1500–1800*, eds. Maria Fusaro, Bernard Allaire, Richard J. Blakemore and Tijl Vanneste (Basingstoke and New York: Palgrave MacMillan, 2015), 79–99.

5 It was a census of all sea workers aimed at recruiting men for the Marine Royale: Francesco Frasca, "Jean-Baptiste Colbert e la nascita della Marine Royale," *Rivista Marittima*, no. 145 (August–September 2012): 77–93.

6 Francesco Frasca, *Il sorgere delle potenze atlantiche. Mercantilismo e guerra dalla fine del 1500 agli ultimi decenni del 1700* (Morrisville, North Carolina: Lulu Press, 2018), 231.

ship workers, also introduced by Colbert, obliged shipowners to support injured or sick sailors for four months.[7] The Marquis of Seignelay, Colbert's son and his successor as Minister of the Navy, enhanced these first social security measures with the *Ordonnance* of 1689, as did Louis de Pontchartrain in 1709.[8]

The difficult conditions experienced by seafarers not only concerned the French; in Northern Europe, for example, following the experience of the guilds and brotherhoods of sailors that arose in the late Middle Ages, a new type of organisation of seafarers was founded in the seventeenth century: the seamen's boxes.[9] Although their original purpose was to provide ransom for seamen who were captured by corsairs,[10] in later years, their services were expanded to include disability benefits, compensation for loss of personal property, lost wages, and more rarely, assistance for elderly sailors, and widows of indigent sailors. Seamen boxes were funded by the fees paid by members before each trip; the contribution varied according to the route, and guaranteed the right to receive a subsidy in case of accidents during the journey.[11] Other collective institutions performed similar functions: in England from 1696, the Seamen's Sixpence programme commenced to assist disabled mariners, widows of seamen lost at sea, and children unable to provide for themselves. In Scarborough (England), the local Trinity House provided assistance to elderly and disabled sailors as early as 1638. In 1747, Parliament authorised the Trinity House at Scarborough, and similar organizations in other ports (for example, the Bristol's Society of Merchant Venturers, and the Corporation of Trinity House at Hull) to collect the sixpence contribution for local charitable goals. Shortly after the 1747 reform, the Trinity Society constructed a hospital consisting of 27 apartments.[12]

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7 Maurice Cambon, *La Caisse Nationale de Prévoyance entre les Marins Français* (Paris: Eugene Figuiere, 1926).

8 Jean-Jacques Dubarry, Jean-Jacques Peny, and Jean-François Hervier, "Colbert, père de la sécurité sociale de la marine," *Histoire des Sciences Medicales* 13, no. 1 (1979): 39–41.

9 Violet Barbour, "Marine risks and insurance in the seventeenth century," *Journal of Economic and Business History* no. 1 (1928/1929): 561–596; Florence Edler De Roover, "Early examples of marine insurance," *Journal of Economic History* no. 5 (1945): 172–200; Frank Clyffurde Spooner, *Risks at Sea: Amsterdam Insurance and Maritime Europe, 1766–1780* (Cambridge: Cambridge University Press, 1983); Davids, "Seamen's organizations"; Sabine Go, "Mutual marine insurance in the province of Groningen, c. 1605–1770: a case of financial innovation," *International Journal of Maritime History*, no. 17.1 (2005): 123–149.

10 Andrea Zappia, *Mercanti di uomini. Reti e intermediari per la liberazione dei captivi nel Mediterraneo* (Novi Ligure: Città del Silenzio, 2018), 61–63.

11 Karel Davids, "Local and global: seafaring communities in the North Sea area, c. 1600–2000," *International Journal of Maritime History* 27, no. 4 (2015): 634.

12 Charles R. Foy, "Sewing a safety net. Scarborough's maritime community, 1747–1765," *International Journal of Maritime History* 24, no. 1 (2012): 1–28, 22. See also Samuel Baker,

In relation to the issue of assistance for seafarers, the Mediterranean context appears much less structured than the northern European landscape. However, it is worth noting that one of the oldest worker's insurance funds in Europe was established in Greece (1861), even though it had only gained independence from the Ottoman Empire in 1830. This fund was called the Ναυτικό Απομαχικό Ταμείο (Seamen's Pension Fund).[13] Conversely, in Spain, the welfare of seafarers had been managed independently by the guilds (*gremios de mar*) until their suppression (decreed in 1864), and only in 1917 was it rationalised, with the establishment of the *Montepío Maritimo Nacional*.[14]

3 Genova and the Savoy: From the Republic to Italian Unification

While the victorious powers were seeking to arrange the new Europe that emerged from the Napoleonic experience, in Genova, a provisional republican state structure had been restored, an arrangement that the Genoese envoys, led by Agostino Pareto, proposed to confirm at the Congress of Vienna. An opposing option would have provided for the annexation of the territory of the Republic, to the Kingdom of Sardinia. Pareto judged this eventuality as harmful, considering what he saw as the incompatibility of the Ligurian maritime vocation with the agrarian economy of Piedmont. This underlined the mutual disrespect of the two populations, and above all, a fear that the costs of a royal court and a military apparatus, one much more developed than that of Genova, would impose a tariff increase, causing a consequent loss of competitiveness of the port compared to nearby ports.[15] Lord Castlereagh,

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Remarks on the Present State and Method of Managing the Merchant Seamen's or Muster Roll Funds (London: J. & W. Robins, 1846).

13 George Tsakikis, *Η θεμελίωση της κοινωνικής ασφάλισης στην Ελλάδα, 1834–1934* [*The foundation of social insurance in Greece, 1834–1934*] (Athens: Papazisis Publisher, 2008); Manolis Benteniotis, *Η κοινωνική ασφάλιση των ναυτικών. Ναυτικό Απομαχικό Ταμείο: Η ιστορική διαδρομή, η κρίση, η προοπτική*, [*The Social Insurance of Seamen. Seamen's Pension Fund: the historical route, the crisis, the perspective*] (Athens: Jay & Jay, 2001).

14 Enric García Domingo and Inmaculada González Sánchez, "Apuntes para el estudio de la previsión social en la Marina Mercante Española hasta 1936," in *Proceedings of the 4th Mediterranean Maritime History Network Conference, 7,8,9 May 2014*, eds. Jordi Ibarz Gelaber, Enric Garcia Domingo, Inma González Sánchez and Olga López Miguel (Barcelona: Museu Marítim de Barcelona, 2017), 734, 738.

15 Pierangelo Gentile, "1814. Genova e i giochi della diplomazia: dalla Repubblica restaurata all'annessione al Piemonte," in *Genova e Torino. Quattro secoli di incontri e scontri. Nel bicentenario dell'annessione della Liguria al Regno di Sardegna*, eds. Giovanni Assereto, Carlo Bitossi and Pierpaolo Merlin (Genova: Società Ligure di Storia Patria, 2015), 316.

representative of the English crown at the Congress of Vienna, was instead convinced that the annexation of Genova to the Savoy crown, which became official on 3rd January 1815, would benefit the Ligurians: "That we have provided more effectually for their future security, and not the less liberally for their commercial prosperity … for their welfare".[16]

With the annexation to Piedmont, Genova gained a vast hinterland that stretched towards the north as far as the Alps, following a path anticipated by the subdivisions of the three Napoleonic departments, and which, as Giovanni Assereto acutely observed, derived from the awareness that Liguria as an economic region, in a certain sense, did not exist. There were, if anything, many vertical and parallel Ligurias, consisting of individual coastal centres and their hinterlands, extending to the Po Valley.[17] For Turin, the annexation of Genova, for centuries the subject of Savoyard designs, meant gaining one of the main port cities of the peninsula as an outlet to the Tyrrhenian Sea, one albeit already attempted by the vicissitudes of war, with a coast, a supply of seafarers, and a merchant fleet.[18]

There is no doubt that legislative measures were needed to internalise these acquisitions. In this context, the new *Regolamento della marina mercantile* (Rules of Procedure of the Merchant Marine, 1816) were formulated. The king of Sardinia, Vittorio Emanuele I, after having determined the duties of the navy, and the rules to be observed at sea and in domestic/foreign ports, arranged for the support of those sailors whose age or infirmity (in service) made them unable to provide for themselves.[19] The *Cassa degli invalidi della marina* (Fund for Injured Seamen of the Marine) was established to carry out this task; the institution's mission was to assist elderly sailors or those disabled by injuries, and upon their death, to provide support for their widows and

16 Federico Curato (ed.) *Le relazioni diplomatiche fra la Gran Bretagna e il Regno di Sardegna* vol. 1: *1814–1830* (Roma: Istituto storico italiano per l'età moderna e contemporanea, 1973), 40.

17 Giovanni Assereto, "Dall'antico regime all'Unità," in *Storia d'Italia, Le regioni dall'Unità a oggi. La Liguria*, ed. Antonio Gibelli (Torino: Einaudi, 1994), 172.

18 In 1815 the King of Sardinia ruled a territory of just over 51,000 km^2 inhabited by about 3.4 million subjects; Liguria contributed about 580,000 inhabitants spread over 6590 km^2 of extension and Genova was even slightly more populous than Turin. Composed almost exclusively of vessels intended for cabotage, the Genoese merchant fleet numbered 682 units for a total of 28,779 tons: Maria Elisabetta Tonizzi, *Genova nell'Ottocento. Da Napoleone all'Unità 1805–1861* (Soveria Mannelli: Rubbettino, 2013), 56; Giulio Giacchero, *Genova e Liguria nell'età contemporanea* (Genova: Sagep, 1980), 57.

19 The Minister of War and the Navy, Filippo Asinari di San Marzano, to the governor of Genova, Giorgio des Geneys: Archivio di Stato di Genova (hereafter ASGe), Prefettura di Genova no. 10, 1 May 1816.

orphans.[20] In addition, the fund covered the costs for the repatriation of sailors who survived shipwrecks, and those returning from captivity, in fact, the *Cassa degli invalidi della marina* inherited capital, funds, censuses, income, and credits from the *Pia giunta per il riscatto degli schiavi* (Board for the Ransoming of Captives) of Genova, an office that was eventually abolished by the new king Carlo Felice in 1823.[21]

This fund concerned the merchant marine and the navy, both of which were under the jurisdiction of the Ministry of War and Navy. The amendments made to the regulations in 1827[22] and 1841[23] did not benefit crews in the merchant marine, however, it did for naval administrative officials; the new regulations also increased the monthly contribution of merchant ships crews and officers. The bias towards the navy over the merchant marine had been clear from the beginning with the regulation of 1816, which allocated surplus funds of the *Cassa* to the maintenance of the navy, in order to safeguard peace agreements with the Barbary Regencies.[24]

This imbalance was partially resolved from 1852 onwards, when King Vittorio Emanuele II ordered the separation of the two funds by abolishing the *Cassa degli invalidi della marina*, and establishing the *Cassa di risparmio e beneficenza della marina mercantile* (based in Genova). Meanwhile, on 11th October 1850, under the first government of Massimo D'Azeglio, the division of the Ministry of War and Navy was decreed, with the latter under the responsibility of the Ministry of Agriculture and Commerce.[25] The assets of the old *Cassa degli invalidi* were divided into three equal parts: one share was attributed to the Treasury and destined for naval pensions; with the remaining shares (amounting to 1,244,301 lire) used to set up the *Cassa di risparmio e beneficenza* fund. This new fund assumed the burden of both pensions and subsidies already in payment, including for those who had paid contributions to the old *Cassa degli invalidi* prior to 1851. This basic approach, combined with

20 "Regie Patenti no. 333 of 9 March 1816, chapts. 18–19, arts. 280–305," *Raccolta degli atti del governo di S.M. il Re di Sardegna dall'anno 1814 a tutto il 1832, vol. 3* (Torino: Tipografia Pignetti, 1843), 323–385.

21 "Regie Patenti no. 1532 of 19 August 1823," ibid; Andrea Zappia, "«In rimpiazzo dell'antico Magistrato». La Pia Giunta della redenzione degli schiavi di Genova e il riscatto degli ultimi captivi liguri all'indomani dell'annessione al Piemonte (1815–1823)," in Assereto et al., *Genova e Torino*, 419–420.

22 "Regie Patenti no. 2002 of 13 January 1827, chapts. 14–15, arts. 236–278," *Raccolta degli atti del governo*, 323–385.

23 "Regio Brevetto no. 342 of 3 August 1841," ibid.

24 "Regie Patenti no. 333 of 9 March 1816, chapt. 21, art. 390," ibid.

25 Law no. 1210 of 26 June 1851 and related regulation approved with Royal Decree of 3 December of the same year.

an increase in remuneration for pensioners, and those in receipt of subsidies, began to undermine the finances of the *Cassa*. The director Giovanni Bianchi, in presenting the financial statements for the year 1852 to the president of the Chamber of Commerce of Genova, noted the prosperous balance sheet of the office, however, he pointed out that future funding could not rely exclusively upon the uncertain contributions of seafarers. In fact, it was necessary for shipowners and merchants to cooperate with the institution, not only through bequests and spontaneous donations, but also, by renouncing pensions and subsidies except in case of need. This would provide the fund with additional resources to counter unforeseen circumstances.[26]

The inherent limits of a structure based on uncertain revenues were, at first, hidden by the favourable economic situation, which encountered the first signs of recovery during the reign of Carlo Alberto. This resulted in an economic boom beginning from 1852–53. The political and economic vivacity of the Kingdom of Sardinia in the decade 1850–60 was reflected in Genova more than anywhere else, and the city experienced a period of substantial investment in engineering, textiles, construction, and the railway sectors, including all areas related to the maritime economy.[27]

The architect of this economic boom was Camillo Benso, Count of Cavour, and Prime Minister of the Kingdom of Sardinia between 1852 and 1859. He promoted strong governmental support of the Genoese economy through state subsidies, which aimed to ingratiate the ruling class of the city, and therefore, overcome the frictions that had characterised the first decades of the annexation, and the resulting uprisings of 1849.[28] Whereas the policy of subsidies offered satisfactory results in the engineering and steel sectors, in the context of navigation, it laid the foundations of a crisis that would manifest itself within a few decades. In this sector, the idea that supporting shipping initiatives would be useful for the colonial pretensions of the young Italian state played an important role. In those years, the following institutions were formed: the *Società Sarda* for Mediterranean navigation; the *Società vapori Sarda*; and the *Transatlantica* company for state-subsidised navigation with the

26 ASGe, Prefettura di Genova no. 10, 4 August 1853.

27 Assereto, "Dall'antico regime", 206.

28 It was mostly nobles and bourgeoisie that belonged to the reformist group that in 1847 formed the *Società dell'ordine*, a partnership aimed at obtaining a progressive policy from Turin in exchange for the neutralisation of popular city pressures. Giorgio Doria, *Investimenti e sviluppo economico a Genova alla vigilia della Prima Guerra Mondiale*, vol. 1: *Le premesse (1815–1882)* (Milano: Pantarei, 2008), 106. On the policy of the Savoy with Genova in the first half of the nineteenth century, see also Ivan Costanza, *L'amministrazione periferica dal Piemonte all'Italia (1815–1861)* (Roma: Carocci, 2012).

United States.[29] In many instances, the economic viability of privileged companies proved to be illusory, for example, Raffaele Rubattino's *Transatlantica* company,[30] where independent shipowners did not sufficiently invest their considerable profits, following the resumption of trade and transoceanic emigration,[31] the expansion of the fleet, and the opening of new trade routes.[32]

4 After Unification: The Five *Casse degli invalidi della marina mercantile*

The *Cassa di risparmio e beneficenza della Marina mercantile* survived for ten years, until the unification of Italy, when it became necessary to reform the maritime welfare system, in order to embrace the new national territory. As Cavour proposed, five *Casse degli invalidi della marina mercantile* funds were created, with offices in Genova, Livorno, Naples, Palermo, and Ancona.[33] Each

29 Ludovica De Courtin, *La marina mercantile italiana nella politica di espansione (1860–1914)* (Roma: Bulzoni, 1989), 36.

30 After an encouraging start, the *Compagnia Transatlantica* in Genova, founded on 4 October 1852 by Raffaele Rubattino, Carlo Bombrini, and Filippo Penco, met significant difficulties that were only partly attributable to the economic crisis of 1853–54, which continued until 1856 due to the war in the Crimea. Its problems were much more related to insufficient management that led the company to bankruptcy in 1859, despite Cavour's direct involvement: Giorgio Doria, *Debiti e navi. La compagnia di Rubattino 1839–1881* (Genova: Marietti, 1990), 45–55.

31 Migrant shipping was an enormous business and one of the most important capitalist industries at the time, with the fortunes of shipping companies inextricably linked to emigrant trade. Many of the century's most important shipping companies, such as *Cunard and White Star* of Liverpool, and *Norddeutscher Lloyd* of Bremen in Germany, were established in emigration ports: Riccardo Liberatore, "Shipping migrants in the age of steam: the rise and rise of the Messageries Maritimes c. 1870–1914", working paper available online at https://globalcapitalism.history.ox.ac.uk/sites/default/files/globalcapitalism/documents/media/case_05__shipping_migrants_in_the_age_of_steam.pdf?time=1537187426375 (accessed 5 October 2021), 5. On this topic see Torsten Feys (ed.), "Maritime Transport and Migration: the Connections Between Maritime and Migration Networks," *Research in Maritime History*, no. 33 (2007); Marie-Françoise Berneron-Couvenhes, *Les Messageries Maritimes: l'essor d'une grande compagnie de navigation française, 1851–1894* (Paris: Presses Paris Sorbonne, 2007); Drew Keeling, *The Business of Transatlantic Migration between Europe and the United States 1900–1914* (Zurich: Chronos, 2012).

32 Assereto, "Dall'antico regime", 209.

33 "Law no. 360 of 28 July 1861," available at: http://www.normattiva.it/eli/id/1861/12/30/061U0360/ORIGINAL. After returning to the jurisdiction of the Ministry of War during the third Cavour government (18 March 1860), the competence of the merchant marine was entrusted to the Prime Minister, and therefore directly to Cavour himself, who

MAP 4.1 The Ligurian area of competence of the *Cassa degli invalidi della marina mercantile* of Genova

fund independently covered one of the five sectors into which the Italian coast was divided. The jurisdiction of the *Cassa degli invalidi della marina mercantile* of Genova was of concern to the seafarers of the Ligurian rivieras—between Ventimiglia and the mouth of the Magra River—and from Sardinia and the adjacent islands.[34]

Along with the establishment of these new institutional entities, three pre-existing funds were abolished: the Sardinian *Cassa di risparmio e beneficenza*; the *Cassa del riscatto* of Livorno; and the *Cassa dei sussidi per gli invalidi* of Ancona. This was in line with the principle of fund independence: the charges and entitlements of these three institutions were inherited, respectively, by the *Casse degli invalidi della marina mercantile* of Genova, Livorno, and Ancona,

maintained the interim even when, with the birth of the Kingdom of Italy, the Ministry of the Navy was made independent. Due to the sudden death of the Piedmontese statesman, which occurred on 6 June 1861 following a malarial crisis, law no. 360 bears the signature of his successor, the Minister of the Navy, Luigi Federico Menabrea.

34 The Cassa of Livorno extended its coverage to the coast between the Magra and Terracina, including: the Tuscan islands; the Cassa of Naples from Terracina to Capo Santa Maria di Leuca; the Cassa of Palermo on Sicily and the adjacent islands; and the Cassa of Ancona on the Adriatic coast from Capo Santa Maria di Leuca to the Po delta. "Law no. 360 of 28 July 1861, art. 4," available at: http://www.normattiva.it/eli/id/1861/12/30/061U0360/ORIGINAL.

while those of Naples and Palermo were formed without credits or debts.[35] This circumstance permitted the two funds of the former territory of the Kingdom of the Two Sicilies, to capitalise on their revenues, prior to the provision of pensions. Therefore, they were able to grant higher pensions than those paid by the other funds.[36]

The funds began to operate in July 1865[37] with entry into force of the salary table imposed on seafarers (see Table 4.1),[38] as stipulated by law no. 360. However, the full regulatory framework of the individual funds had to wait a few more years. It was from October 1867 that the various boards of directors came into operation,[39] while the following year (with effect from 1st January 1869), the general regulations were approved for the administration and function of the funds,[40] together with special statutes for lifetime and temporary assignments.[41]

As for the Genoese fund, allocations were distributed in a more significant amount than those already granted by the discontinued *Cassa di risparmio e beneficienza* fund. However, it did bring the maximum limit of effective navigation assessable for retirement from twenty to 30 years, while the limit of 60 years of age remained unchanged. These increases were granted due to the considerable surpluses of annual budgets, but also, because of the extraordinary growth of the merchant marine, together with a substantial increase in revenues.[42] In addition to this income, the fund added profits generated

35 Ibid, art. 18.

36 Vittorio Mori, *Istituti di previdenza per la gente di mare* (Roma: Tipografia Diocleziana 1910), 11.

37 "Royal Decree no. 2371, 15 June 1865," available at: http://www.normattiva.it/eli/id/1865/07/10/065U2371/ORIGINAL.

38 The *Codice per la Marina mercantile* of 1865 divided seafarers into two categories, namely persons assigned to navigation, and persons assigned to the maritime arts and industries. The *Casse degli invalidi* extended their coverage to the members of the first class of seafarers: the captains and masters; the sailors and the crews; the engine personnel, the firemen and other employees in the service of steam engines on ships reserved for sea navigation; and fishermen engaged in fishing on the high seas or abroad: *Codice per la Marina Mercantile del Regno d'Italia* (Torino: Stamperia Reale, 1865), 6.

39 "Royal Decree no. 3793 of 4 July 1867," available at: http://www.normattiva.it/eli/id/1867/07/22/067U3793/CONSOLIDATED/20220318.

40 "Royal Decree no. 4701 of 8 November 1868," available at: http//www.normattiva.it/eli/id/1868/12/02/068U4701/CONSOLIDATED/20220318.

41 "Royal Decree no. 2081 of 15 November 1868," available at: http://www.normattiva.it/eli/id/1869/01/01/68020081R/CONSOLIDATED/20220318.

42 After the unification of Italy in 1861, the ships headed by the Genoese maritime compartment represented 31% of the tonnage of the national fleet, and over 50% between the 1870s and 1880s. In addition, the average unit tonnage of Ligurian vessels remained consistently much higher than the Italian average, recording, contrary to the national

TABLE 4.1 Monthly contribution for the crew members in Italian lire

Category	Lire
Sea captain	5
Captain of long coastal shipping	3.50
Master, authorized sailor for small traffic or for unlimited fishing and abroad	2.50
Ship's officer	1.50
Petty officer	1.25
Sailor	1.10
Shipboy	0.80

SOURCE: "LAW NO. 360 OF 28 JULY 1861, ART. 4," AVAILABLE AT: HTTP://WWW.NORMATTIVA.IT/ELI/ID/1861/12/30/061U0360/ORIGINAL

TABLE 4.2 Summary accounts of the *Cassa degli invalidi della marina mercantile* of Genova (1861–73) in Italian lire

Year	Estate	Total proceeds	Total spending	Balance
1861	1,594,902.48	247,020.56	206,450.82	40,569.74
1862	1,635,472.22	243,981.73	212,393.42	31,588.31
1863	1,667,505.53	265,529.40	218,906.50	46,622.90
1864	1,713,678.43	250,697.33	227,430.18	23,267.15
1865	1,736,945.58	280,881.72	236,642.55	44,239.17
1866	1,781,184.75	287,134.96	259,691.77	27,443.19
1867	1,808,627.94	315,473.84	244,558.24	70,915.60
1868	1,879,543.54	325,955.94	245,894.52	80,061.42
1869	1,949,604.96	386,373.99	304,358.71	82,015.28
1870	2,031,520.24	371,096.87	273,555.73	97,541.14
1871	2,129,061.38	407,862.56	290,144.33	117,718.23
1872	2,246,770.61	416,082.21	281,621.37	134,460.84
1873	2,381,240.45	331,541.41	298,532.98	33,008.43

SOURCE: *LA CASSA DEGLI INVALIDI DELLA MARINA MERCANTILE CON SEDE IN GENOVA. ORIGINE E SVOLGIMENTO. NOTE STORICHE—GIURIDICHE—AMMINISTRATIVE* (GENOVA: FRATELLI PAGANO, 1906), 196

by capital held, that is, a patrimony of 1,244,301 lire inherited in 1851 from the *Cassa degli invalidi della marina*. For the years 1861–1873, the fund relied on these two sources of income, and was able to meet all commitments. It achieved savings that the Board of Directors proceeded to invest, significantly increasing fund assets.

5 The Turning Point of 1874 and the Crisis of the Merchant Marine

The results achieved between 1869–73 were interpreted as harbingers of a continuous and progressive improvement in the economic conditions of the fund. In fact, the difficulties derived from the excessive charges imposed in 1851 seemed completely overcome. This situation convinced the Board of Directors to take a firm decision, decreeing a 10% increase on all annual allocations.[43] The estimates that led to this decision was not limited to the Genoese area—it had joined the chorus of excessively optimistic forecasts relating to the position of the national merchant fleet that often found itself excelling (particularly, for traffic in the Mediterranean), in the decade post-unification.[44] This prominence had given the impression that, in order to maintain a high level of competitiveness, it would have been enough to insist on the retention of sail boats, neglecting the rapid spread of steam shipping, introduced in other countries as early as the 1830s.[45] Yet, sailing technology had long since reached

data, a continuous growth up to the age of Giolitti: Marco Doria, "La marina mercantile a vela in Liguria dalla metà dell'Ottocento alla Prima guerra mondiale," in *A vela e a vapore. Economie, culture e istituzioni del mare nell'Italia dell'Ottocento*, ed. Paolo Frascani (Roma: Donzelli, 2001), 90–91.

43 Resolution of the Board of Directors of the *Cassa* of 25th November 1873 made official by "Royal Decree no. 1775 of 2nd January 1874," available at: http://www.normattiva.it/eli/id/1869/01/01/68020081R/CONSOLIDATED/20220318.

44 Carlo Bardini, "Without coal in the age of steam: a factor-endowment explanation of the Italian industrial lag before World War I," *The Journal of Economic History*, no. 57.3 (September 1997): 633–653. In particular, for the Ligurian case, see Leonardo Scavino, "Rivoluzione dei trasporti e navigazione: l'evoluzione della marineria ligure di fronte alle trasformazioni del XIX secolo," in *Percorsi di storia tra rivoluzione e modernizzazione (XVI–XIX)*, eds. Carlo Bazzani and Leonardo Scavino (Palermo: New Digital Frontiers, 2021), 289–315.

45 The first attempts to apply the use of steam to navigation were carried out by Robert Fulton in 1807, but it was in 1837, with the invention in England of propeller propulsion, that the decisive turning point took place: Paul Bairoch, *Storia economica e sociale del mondo. Vittorie e insuccessi dal XVI secolo a oggi* (Torino: Einaudi, 1999), 432. On the complex evolution of the steamship, see Simon P. Ville, *Transport and the Development of the European Economy, 1750–1918* (New York: Palgrave Macmillan, 1990); Rick Szostak, *The*

maximum technical development, while innovations in the field of steam between the 1850s and 1860s, significantly increased the competitiveness of steamers.[46] With the opening of the Suez Canal in November 1869, a new geographical premise with revolutionary potential was created, capable of subverting the central-periphery relationship, and thus returning the Mediterranean to a leading position on the global chessboard.[47] This change also posed the problem of inadequate and backward national navigation systems in Italy, which required the regularity and reliability of steamships, rather than the agility and flexibility of sailing vessels.[48] The Italian choice that proved to be incorrect, was in contrast, to continue to promote and believe in the sailing industry, in the belief that a substantial niche market would continue to prefer the transportation of goods by sailing ships.[49]

The increase in salaries was joined by that of beneficiaries. In 1852, at the time of the *Cassa di risparmio e beneficenza*, pensioners and subsidiaries of Ligurian territory numbered 1,822, and received a total of 127,946,28 lire. Ten years later the new *Cassa degli invalidi della marina mercantile* of Genova managed 2,519 pensioners and subsidiaries, at a total cost of 191,551.47 lire. As of

Role of Transportation in the Industrial Revolution. A Comparison of England and France (Montreal: MacGill-Queen's University Press, 1991); Robert Gardiner (ed.)., *The Advent of Steam: The Merchant Steamship Before 1900*. *Conway's History of the Ship* (London: Conway Maritime Press, 1993); Denis Griffiths, *Steam at Sea: Two Centuries of Steam-Powered Ships* (London: Conway Maritime Press, 1997); Adrian Jarvis "The nineteenth-century roots of globalization: some technological considerations," in *Global Markets: the Internationalization of the Sea Transport Industries Since 1850*, eds. David J. Starkey, Gelina Harlaftis (St. John's, Newfoundland: IMEHA, 1998), 217–238; John Armstrong, David M. Williams, "The steamship as an agent of modernization," *International Journal of Maritime History*, no. 19.1 (June 2007): 145–160; John Armstrong and David M. Williams, *The Impact of Technological Change. The Early Steamship in Britain* (St. John's, Newfoundland: IMEHA, 2011); Crosbie Smith, *Coal, Steam and Ships. Engineering, Enterprise and Empire on the Nineteenth-Century Seas* (Cambridge: Cambridge University press, 2018).

46 Doria, "La marina mercantile", 85–86.

47 Francesca Canale Cama, "Suez dopo Suez. Un grande gioco mediterraneo," in *Le porte del mare. Il Mediterraneo degli Stretti tra Medioevo ed Età Contemporanea*, eds. Delli Quadri, Rosa Maria (Naples: Guida Editori, 2019), 67–69.

48 In 1865, 69% of Italian commercial shipping consisted of vessels of less than 100 tons, and 60% of the over 16 million tons in transit in Italian ports travelled on ships dedicated to coastal shipping, a percentage that remained substantially unchanged until the 1880s: Giuseppe Moricola, "Il cabotaggio in età postunitaria," in *A vela e a vapore. Economie, culture e istituzioni del mare nell'Italia dell'Ottocento*, ed. Paolo Frascani (Collana: Saggi. Storia e scienze sociali, 2001), 59.

49 Still, in 1881, the Ligurian deputy Edilio Raggio pleaded the cause of sailing during a session of parliament, arguing that the excessive cost of fuel would prevent steamships from being competitive in transoceanic navigation: Doria, *Investimenti e sviluppo*, 280–281.

1st April 1874 (the year of the 10% increase of allocations from the *Cassa*), beneficiaries numbered 3,151, with total expenditure of 292,109.86 lire.[50]

The progressive and constant increase of pensioners and subsidiaries was due to the physiological passage of time, and also, to the worsening living conditions of steamship crews, which, although still fewer in number than sailing ships, began to multiply at an exponential rate. The presence of engines on steamers significantly reduced the space available for crew quarters, forcing the crew to be concentrated at the extreme bow, between the winches and the steering systems, and in close proximity to the latrines and store rooms. This unhealthy environment produced fermentation and harmful gas fumes, which affected air quality, and became a peculiarity of steamships. It was in these conditions that engine personnel carried out their incredibly intensive work, their numbers always reduced to a minimum for reasons of cost savings. For months, the same sparse handful of stokers and engineers endured strenuous work at very high temperatures, often in hot climates, while combatting the fury of the sea.[51]

The balance sheet for the five years 1874–79 already demonstrated how, under these conditions, the very survival of the fund was at risk. The Board of Directors appointed a commission in charge of identifying critical issues and formulating possible solutions for resolution. Addressing the results of this research, the commission concluded that the salvation of the fund had to come from a state contribution, estimated in 1885 (by the technical office) as an initial 60,000 lire payment, plus a 120,000 lire annual payment continuing for fifteen years. Furthermore, once the previous deficit had been remedied, the commission considered it necessary to unify the five invalids' funds, together with the *Fondo invalidi della Veneta marina* of Venezia (which became Italian in 1866) into a single Welfare Office of the national merchant marine.[52]

In the context of the general depression that began in 1873,[53] the epochal turning point constituted by the transition between sail and steam aggravated

50 *La Cassa degli invalidi*, 184.

51 Teodorico Rosati, *Assistenza sanitaria degli emigranti e dei marinai* (Milano: Vallardi, 1908), 305–306. On the topic, see also Luca Lo Basso, *Dal vento al carbone. Le metamorfosi del lavoro marittimo in Italia nell'età della transizione* (*1880–1920*) (Genova: Città del silenzio, 2020).

52 *La Cassa degli invalidi*, 41–50.

53 As Landes said, "the years from 1873 to 1896 seemed to many contemporaries a startling departure from historical experience. Prices fell unevenly, sporadically, but inexorably through crisis and boom-an average of about one-third on all commodities. It was the most drastic deflation in the memory of man. [...] The economic system appeared to be running down." Added to the deflation of the prices of goods was that of the freight market, which recorded a decline everywhere, oscillating between 25% and 40% due to the

the suffering of the Italian merchant navy; it was clear that only a complete transformation of the structures involved could lead to an exit route from this challenging situation.[54] In 1881, Parliament appointed a commission of inquiry chaired by Senator Francesco Brioschi, with the Savona deputy Paolo Boselli as rapporteur.[55] The investigation[56] could not ignore the problem of the invalidity of seafarers, and was indeed studied in an incredibly in-depth manner by the parliamentary commission, which largely reached the same conclusions as already formulated within the Genoese fund. In particular, the decision to unify local funds into a single entity, to be placed under the administration of the *Cassa depositi e prestiti*, was accepted, an institution whose primary purpose was to support organisations, and works of public utility.

Unifying the funds also meant unifying regulations, which, as we have seen, were autonomous and different from each other. The conclusions of the commission were not converted into the hoped-for general reform of the funds in subsequent years, but nevertheless, the attention paid to the issue by state institutions produced a significant amount of data relating to pensioners that is useful for historical research. In the years between 1880 and 1894, the total number of pensioners grew moderately (15.28%), firstly, due to the marked decline of subsidies reserved for orphans (–31.53%), and secondly, the less clear, but significant decline for owners and independent sailors (–12.04%), perhaps a symptom of the crisis that the issue of cabotage was going through. On the other hand, pensions reserved for sailors (+17%), captains of long

excessive supply of ships, a consequence of the disproportionate growth of the world merchant fleet, which increased by 25% in the first five years of the 1870s. David S. Landes, *The Unbound Prometheus. Technological Changes and Industrial Development in Western Europe from 1750 to the Present* (New York: Cambridge University Press, 1969), 231; Doria, *Debiti e navi*, 150.

54 The unfortunate situation of the merchant navy attracted the attention of many specialists and led to several publications on the subject matter. For example: Carlo De Amezaga, *La nostra marina mercantile* (Roma: Tipografia dell'Opinione, 1881); Tommaso Pertica, *Cenni sulla marina mercantile italiana* (Genova: Tipografia del Regio Istituto dei Sordomuti, 1881).

55 "Law no. 113 of 24 March 1881," available at: http://www.normattiva.it/eli/id/1881/03/30/081U0113/ORIGINAL. The results of the investigation, concluded on 25 September 1882, were published in seven volumes by the Chamber of Deputies: *Inchiesta parlamentare sulla marina mercantile (1881–1882). Riassunti dell'inchiesta orale e scritta*, vols. 1–4 (Roma: Eredi Botta 1882); *Aggiunte e correzioni ai riassunti dell'inchiesta orale e scritta. Notizie e memorie speciali*, vol. 5 (Roma: Eredi Botta 1882); *Verbali delle adunanze della commissione d'inchiesta*, vol. 6 (Roma: Eredi Botta 1882); *Relazione della commissione d'inchiesta* (*Relatore, on. Paolo Boselli*), vol. 7 (Roma: Eredi Botta 1883).

56 For which, see Luca Lo Basso's "The evolution of maritime labour in Italy in the age of transition: 1880–1920", in the present volume.

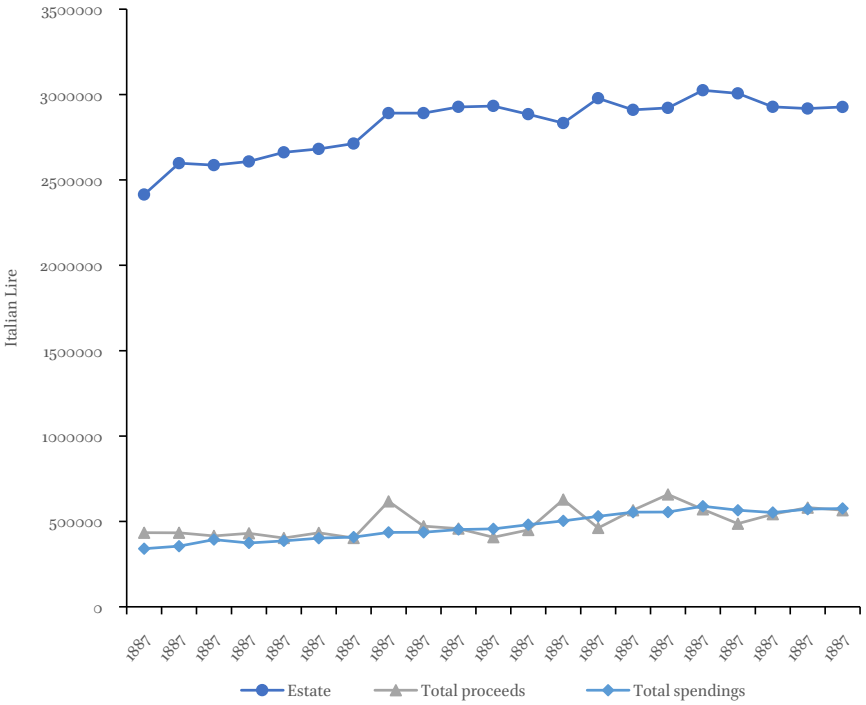


CHART 4.1 Trend of the summary accounting of the *Cassa degli invalidi della Marina mercantile* of Genova, 1874–94
SOURCE: *LA CASSA DEGLI INVALIDI*, 196–197

cabotage (+23%), and sea captains (+88.68%) increased, circumstances that led the average pension to rise by 27.16% compared to an increase in retirees of 15.28%.[57]

The balance sheet of the fund suffered: the data trend for the two decades 1874–94 (Chart 4.1), demonstrates the progressive imbalance between income and expenditure indicators, which lose their parallel plotline, and begin to intersect. The patrimonial line, which until then had registered a strong and homogeneous positive trend, begins to waver. Eight out of fifteen times between 1880 and 1894 the annual balance sheet of the fund closed at a loss. This contrasts with the preceding years, including from the time of the *Cassa di risparmio e beneficenza della marina mercantile*, where the balance sheet had always been in a positive state.

57 *La Cassa degli Invalidi*, 188–189.

6 Road to the Reform of 1894

Amongst the reasons why the findings of the Boselli investigation were not promptly actioned by a package of specific reforms, was that, in 1887, a new parliamentary investigation, chaired once again by Senator Francesco Brioschi (but *de facto* directed by Deputy Gian Galeazzo Maldini), reached radically opposing conclusions to the previous investigation. The Boselli commission—interested in avoiding the affirmation of the monopoly of the *Navigazione Generale Italiana*,[58] but also in safeguarding the now backward-looking sailing ship-owning sector—identified in construction and navigation bonuses, the most congenial method to support the national merchant marine, based on similar measures adopted in the same year by France. However, already in the mid-1890s, it became clear that the system of large shipping companies directly subsidised by the state was preferable to a system based on premiums granted to the non-subsidised merchant marine. Countries such as France, Germany, and the Austro-Hungarian Empire moved in this direction and embarked on policies characterised by lavish state subsidies to counter the British hegemony in the global market, and in order to compete for primary international routes.[59] The ambitious renewal project, based on the rationalisation and strengthening of maritime services produced by the Maldini investigation, and the imperialist aims of the new head of government, Francesco Crispi, collided with a new national economic crisis. This began in 1887, and led to a consequential reduction in public spending, circumstances that resulted in an ambiguous and "wait-and-see" maritime policy.[60]

The deficit situation outlined in the financial statements of the *Cassa degli invalidi della marina mercantile* of Genova, which was entirely consistent with

58 The shipping company named *Navigazione Generale Italiana* was created on 4th September 1881 from the merger of the *Flotte Riunite Florio* of Palermo and the *Compagnia Rubattino* of Genova. At its foundation, with 35,000,000 lire of paid-up capital, and a fleet composed of 84 ships with a total of 87,925 gross tons, the *Navigazione Generale Italiana* was the second largest shipping company in the Mediterranean after *Lloyd Adriatico*. Doria, *Debiti e navi*, 247–250.

59 Gelina Harlaftis, "Storia marittima e storia dei porti," *Memoria e ricerca: rivista di storia contemporanea*, no. 11 (2002): 19–20. For an overview on the topic, see Royal Meeker, "History of shipping subsidies," *Publications of the American Economic Association*, no. 6.3 (1905): 1–229; Grosvenor M. Jones, *Government Aid to Merchant Shipping. Study of Subsidies, Subventions, and other Forms of State Aid in Principal Countries of the World* (Washington: Government Printing Office, 1916).

60 Giuseppe Barone, "Lo stato e la marina mercantile in Italia (1881–1894)," *Studi Storici*, no. 15.3 (1974): 624–626.

the challenging environment experienced by the merchant marine, found a partial solution in a massive reform package launched in 1894 by the third Crispi government.[61] The adoption of a new statute, approved by the fund council, and in agreement with the Ministry of the Navy (21st November 1893), was approved on 14th January 1894, and sanctioned the replacement of the 1868 statute (annexed changes were added in 1874). The main innovations created by the new regulation concerned the redefinition of the type of fund allocations, and the conditions under which they were granted. The dowry subsidy for the daughters of pensioners was abolished, while a renewable subsidy replaced the annual subsidy for widows and orphans. Likewise, pensions for those seamen who had over ten years of service but without reaching twenty, were supplanted by annual renewable subsidies. Rewards for those who were crippled or maimed while in service were also replaced by annual pensions or subsidies that were renewable depending on the number of years of service. A further and even more substantial change concerned the abolition of temporary subsidies to seamen, widows, and orphans. These were replaced by temporary cheques no longer financed by *Cassa* funds, but instead, by a new arrangement made up of voluntary donations, called the *fondo elargizioni*.

As for retirement pensions, the minimum age requirement remained at 60, while the necessary years of service increased from twelve to twenty, with annual and biennial tax brackets. The previous statute, while requiring fewer years of service to access the pension, provided for brackets every five years without in any way counting the intermediate ones, thus penalising progressivity. Another meaningful change brought about by the statute of 1894 concerned the possibility of equating the pension amounts of the chief engineer and second engineer respectively, to those of sea captains and long cabotage captains. This possibility was subjected to the payment of an interest of 5% on both the difference in salary for navigation that was acquired on the effective date of the equalization, and on the difference between the monthly salary paid of L. 1.50 and that respectively of L. 5 and L. 3.50.[62] The regulation was, therefore, a significant improvement with respect to the law establishing Invalid Funds, which classified engineers in the category of deck officers. The *Cassa degli invalidi della marina mercantile* of Genova proved to be in the vanguard with respect to other corresponding national institutions: for example,

61 "Royal Decree no. 27, 14 January 1894," available at: http://www.normattiva.it/eli/id/1894/02/17/094U0027/ORIGINAL.

62 "Royal Decree no. 116, 7 March 1897, art. 2," available at: http://www.normattiva.it/eli/id/1897/04/03/097U0116/ORIGINAL.

the statute of 1868 already provided for the elevation of engineers to the class of masters. Firemen, in contrast, in all the regulations mentioned, continued to be treated as equal to sailors.[63]

In the same year in which the statute of the *Cassa degli invalidi della marina mercantile* for Genova was changed, other Italian funds also commenced regulation reform. This included the fund of Naples in 1894, those of Livorno and Ancona in 1895, and lastly, that of Palermo in 1896. Obviously, the reform would not have immediate effect on fund balances. This fact led the government to order that a 5% charge on construction fees for national merchant ships and navigation bonuses be paid to the invalidity fund of the corresponding district. This was dependent upon the harbour master's office or port office where the ship was registered. In the case of ship constructions commissioned by foreigners, 5% was paid to the invalidity fund of the jurisdiction where the shipyard was located.[64] From July 1896 to 31st December 1904, the *Cassa* of Genova received 847,431.11 lire from construction fees, and 712,873,52 lire from navigation prizes (in total, 1,560,304.63 lire) These funds were used mainly for the payment of emoluments to pensioners and subsidiaries. The assets of the bank, which on 1st January 1896 totalled 2,856,561.03 lire, increased to 3,205,434.69 lire by 1st January 1905, a growth of only 348,873.66 lire in nine years.[65]

The evident fragile condition that afflicted the structural integrity of individual funds, and in particular that of Genova, was only solved in June 1913.[66] At this time, together with the *Pio fondo della Marina mercantile veneta* (Fund of the Venetian Merchant Marine), local funds were merged into the *Cassa degli invalidi della marina mercantile*, a national institution placed under the aegis of the broader *Cassa nazionale di previdenza per l'invalidità e per la vecchiaia degli operai* (National Fund for Injured and Old Seamen). This was a voluntary insurance fund financed by contributions paid by employees, the

63 "Royal Decree no. 2081, 15 November 1868, art. 3," available at: http://www.normattiva.it/eli/id/1869/01/01/68020081R/ORIGINAL.

64 "Law no. 318, 23 July 1896, art. 47," available at: http://www.normattiva.it/eli/id/1896/07/24/096U0318/ORIGINAL.

65 *La Cassa degli Invalidi*, 74–75.

66 "Law no. 767, 22 June 1913," available at: http://www.normattiva.it/eli/id/1913/07/18/013U0767/ORIGINAL.

remainder provided in part by the state, and also by the free contributions of entrepreneurs.[67] The fund was established in 1898.[68]

7 Conclusions

This study addressed the revolutionary changes that occurred in shipping during the second half of the nineteenth century, that is, the rise of steam navigation, by focusing on the Italian case and adopting an unusual perspective provided by the *Cassa degli invalidi della marina mercantile* of Genova, a welfare institution reserved for seafarers and located in the most critical maritime compartment of the Kingdom of Italy. Following foundation, which took place the day after the unification of Italy, the fund inherited the charges of the previous *Cassa di risparmio e beneficenza della marina mercantile*—which in turn was an evolution of the *Cassa degli invalidi della marina* of the Sardinian Kingdom—without therefore being able to count on an initial period in which to limit itself to collecting contributions from seafarers, rather it was required to pay subsidies and pensions already accrued within the previous institutions. In 1874, it was decided to increase all fund allocations by 10%, a measure that was the result of optimistic medium/long-term assessments, developed at a national level, that proved to be decidedly incorrect. Despite the opening of the Suez Canal in 1869, which paved the way for steam navigation, the policy pursued by Italian leaders was to continue to focus on sail propulsion, leading to a severe decline of the national merchant marine. This short-sighted assessment of the future of civil navigation was compounded by a progressive increase of pensioners and subsidiaries, a phenomenon caused by the physiological passage of time, but also, the worsening living conditions of steamship crews. To remedy the unsustainable economic condition of the fund, the board of directors appointed a commission charged with completing an analysis of fund health, including relevant critical issues, and an indication of reforms for positive change. As previously mentioned, the problems of the fund were partly the result of the general conditions of the Italian merchant navy, so, even on a national scale, it acted similarly by resorting to advice from parliamentary committees of inquiry headed by Boselli (1881), and Maldini (1887).

67 Luigi Rava, *La Cassa nazionale di previdenza per l'invalidità e la vecchiaia degli operai in relazione alle legislazioni estere* (Bologna: Zanichelli, 1902); Carlo Bottoni, "Previdenza," *Giornale degli Economisti*, no. 10.19 (November–December 1899): 471–475 and 592–595; Ibid, no. 10.20 (June 1900): 584–586.

68 "Law no. 350, 17 July 1898," available at: http://www.normattiva.it/eli/id/1898/08/11/098U0350/ORIGINAL.

The findings, in part, conflicted with each other, and were only implemented by a cadre of reforms in 1894. Among the measures adopted were several aimed at optimising and economically supporting the *Cassa degli invalidi della marina mercantile* of Genova, and importantly, preparing the groundwork for the union of the various local funds into a single entity in 1913.

In retracing the events related to the *Cassa degli invalidi della marina mercantile* of Genova, the study has highlighted a tortuous path marked by various difficulties and issues, attributable to previous contingencies, but also to a lack of understanding and adaptation to the epochal turning point of transition from sail to steam. Significant problems also resulted from the need to strengthen and modernise the welfare system for seafarers in a newly formed state, and within the context of a backward-looking Mediterranean landscape.

CHAPTER 5

Dock Workers and Employers in Loading and Unloading in the Port of Barcelona after the End of the Guild System, 1850–90

Jordi Ibarz

1 Introduction

In the mid-nineteenth century the guild basis upon which the organization of dock work had been arranged, disappeared. This was a progressive transition that included institutional, technological, and cultural changes. In Barcelona, most of the dock workers did not understand why a part of their old comrades of the *Guild of Mareantes* were willing to work without respecting the applicable rules and rates. Naval authorities of the city were reluctant to accept that the laws of supply and demand were useful to regulate the price of labour. At the same time, a confluence of interests between merchants and some dock workers gave rise to the appearance of the *collas*, the proto-companies for the loading and unloading of cargo. It was, in short, a long and complex transition.[1]

The main objective of this chapter is to draw the basic lines of the transformations produced in dock labour in the port of Barcelona after the end of the guild system. The aim of this analysis is to understand better the general characteristics of the long process of development of manifestly capitalistic labour relations, and the conditions of the emergence of a new capitalistic class and of a port working class.

The background of the reorganization of loading and unloading in ports was the transition from sail to steam. In the Spanish case, the study of the transition has focused on technological, institutional, and organizational transformations and their impact in shipping, maritime trade,[2] and the maritime

1 Jordi Ibarz, "Fin del sistema gremial, liberalismo y desarrollo de unas relaciones de trabajo capitalistas en el puerto de Barcelona, 1834–1873", *Ayer*, no. 120 (2020): 143–69; Jordi Ibarz and Brendan J. von Briesen, "From corporations to companies: the development of capitalism in maritime cargo handling in the port of Barcelona (c.1760–1873)," *International Labor and Working-Class History*, (2022): 1–25.

2 Jesús María Valdaliso Gago, "La transición de la vela al vapor en la flota mercante española: cambio técnico y estrategia empresarial," *Revista de Historia Económica*, no. 10 (1992): 63–98.

workforce.[3] However, much less attention has been paid to the transformations that occurred in loading and unloading through the industrialization process. Most of the studies about dock labour have been devoted to the casual phase.[4] "Casual" refers to the daily hiring of workers, and the casual configuration has been characterised by the dominance of steamers over sailing ships, by the use of a low level of technology in loading and unloading, by the existence of high labour intensity, and low wages.[5] However, the guild period and its disappearance have been less explored than the casual phase.[6] The scarce research available has shown that the guild system remained the basis of the organisation of work, even after its legal disappearance. The existing literature does not allow us to establish a cause-and-effect relationship between technological changes or the modernization of port infrastructures and the disappearance of the union system. Changes related to the transition from sail to steam were determinant in the disappearance of the guild system in Marseilles and London.[7] But we also have examples that show the opposite, as in Thessaloniki (where modernization did not end the guilds), or Port Said (where a guild system was established after modernization).[8] Changes, at least initially, were marked by the increase of port traffic,[9] by the type of the trust-based relationship existing between guilds and merchants, and by the political will of the local and state

3 Enric García Domingo, *El mundo del trabajo en la marina mercante española* (*1834–1914*) (Barcelona: Edicions Universitat Barcelona, 2017).

4 Lex Heerma van Voss and Marcel van der Linden, "Dockers' configurations," in *Dock Workers: International Explorations in Comparative Labour History, 1790–1970*, eds. Sam Davies et al., vol. 2 (Aldershot: Ashgate Pub Limited, 2000), 762–80.

5 Heerma van Voss and van der Linden, "Dockers' configurations," 779.

6 Brendan J. von Briesen, "'The guild […] manufactures nothing, nor produces any artifact': Barcelona's seven maritime cargo handling guilds, c.1760–1840," *International Review of Social History*, no. 65.3 (December 2020): 405, https://doi.org/10.1017/S0020859020000012.

7 William H. Sewell, Jr., "Uneven development, the autonomy of politics, and the dockworkers of nineteenth-century Marseilles," *The American Historical Review*, no. 93.3 (June 1988): 604–37.

8 Shai Srougo, "Professional characteristics of the Jewish guild in the Muslim world: Thessaloniki dockers at the end of the Ottoman era," *Mediterranean Historical Review*, no. 26.2 (December 2011): 115–33, https://doi.org/10.1080/17535654.2011.630780; John Chalcraft, "The coal heavers of Port Sa'id: state-making and worker protest, 1869–1914," *International Labor and Working-Class History*, no. 60 (2001): 110.

9 Roy Mankelow, "The port of London, 1790–1970," in *Dock Workers: International Explorations in Comparative Labour History, 1790–1970*, eds. Sam Davies et al., vol. 1 (Surrey: Ashgate Pub Limited, 2000), 365–385; Robert Lee, "From guild membership to casualisation: dockworkers in Bremen, c.1860–1939," in *Dock Workers: International Explorations in Comparative Labour History, 1790–1970*, eds. Sam Davies et al., vol. 1 (Surrey: Ashgate Pub Limited, 2000), 342–359.

authorities.[10] The advent and propagation of steam affected, above all, the business structure.[11] It also affected the working conditions, with the increase in casual labour and changes in the remuneration systems.[12] In terms of labour organisation, the main existing thesis is that dock workers' associations were more successful on sailing ships than on steamships. Also, when the large steamship companies emerged, they directly assumed the loading and unloading tasks, altering the relationship established between master stevedores and dock workers.[13]

As in other ports, the transition from sail to steam, and its effects on the organization of dock work, was a multidimensional process in Barcelona. There was a clear institutional and legal rupture that made possible the end of the guild system and facilitated the emergence of a new entrepreneurship structure. The end of the guild system opened a period of a free labour market. With time, the influence of technological change (mainly the transition from sail to steam) and economic growth (that is, maritime traffic growth) created limitations to this free labour market. The main aspects of these changes are those that I address in this chapter, putting aside what happened with ideology and value systems. First, I present a brief description of the political and economic context, and the main transformations of the port of Barcelona throughout the period considered. Next, I analyse the end of the guild system from 1850 to 1864 and the development of capitalist relations in port loading and unloading from 1865 to 1889. Last, I consider the modernization of port infrastructure and the creation of a new system in the organization of dock work around 1890, which remained without significant changes for more than 40 years.

2 The Political and Economic Context and the Main Transformations of the Port of Barcelona

In the second half of the nineteenth century in Spain, the liberal system developed in all its fullness. However, the rule was the existence of long stages of persecution and prohibition of workers' associations, and of freedoms in general. This situation changed only during the few years in which more democratic

10 Ibarz and Briesen, "From corporations to companies".

11 Mankelow, "The port of London, 1790–1970," 371.

12 Ibid., 370.

13 John Lovell, "Sail, steam and emergent dockers' unionism in Britain, 1850–1914," *International Review of Social History*, no. 32.3 (December 1987): 230–49, https://doi.org/10.1017/S002085900000849X.

governments came to power. These periods of democratic changes were the so-called Progressive Biennium (1854–56), the Democratic Sexennium (1868–74), and the period that began in 1881, with the return to power of more liberal governments.[14] These political parameters negatively conditioned the possibilities of worker organization. They also limited the expression of workers' dissatisfaction.

The political conflict and civil wars were characteristic of Spain in the first half of the nineteenth century, but the death of the monarch Fernando VII in 1833 accelerated the liberalization process. Once the liberals settled into power, political instability continued between moderates, progressives, and radicals.[15] In the maritime world, the *Matrícula de Mar* was a point of discussion between defenders of the past and the representatives of a new, liberal society. The *Matrícula de Mar* was an institution of the Old Regime created to provide experienced sailors to the Navy. In exchange for carrying out military service in the Navy, those who were enrolled had the exclusive privileges of fishing, seafaring, and dock work.[16] Throughout the nineteenth century, when a new liberal government began, or during periods of constitutional reform, the *Matrícula* was suppressed, or its modification was considered. However, it remained in force until 1873, when the liberal system had already been fully consolidated.

Between 1840 and 1860 there was a strong acceleration in the industrialisation and modernisation processes in Catalonia, which led it to be considered "the factory of Spain", with growth focused on cotton textile production.[17] Barcelona would become the engine of this factory.[18] Cotton and coal, which were the main inputs for industrialization, arrived through the port of Barcelona. Because of this, the evolution of the port was linked to the industrial transformation experienced in Catalonia. We can measure the importance of the port in this industrial development by considering the value of the products handled in the port related to the total Catalan GDP. This indicator shows a change from 17.2% in 1845–47 to 31.1% in 1862, coinciding with the

14 Pamela Beth Radcliff, *Modern Spain: 1808 to the Present* (Hoboken, NJ: Wiley Blackwell, 2017).

15 Josep Fontana, *Història de Catalunya*, vol. 5: *La fi de l'Antic Règim i la industrialització (1787–1868)*, eds. Pierre Vilar and Josep Termes (Barcelona: Edicions 62, 2003).

16 García Domingo, *El mundo del trabajo en la marina mercante española (1834–1914)*, 33–62.

17 Jordi Maluquer de Motes and Jaume Torras i Elias, *Història econòmica de la Catalunya contemporània. s. XIX. La formació d'una societat industrial*, ed. Jordi Nadal, vol. 1 (Barcelona: Enciclopèdia Catalana, 1988), 125–37.

18 Jordi Maluquer de Motes, "Activitats econòmiques," in *Història de Barcelona*, vol. 6: *La ciutat industrial (1833–1897)*, ed. Jaume Sobrequés i Callicó (Barcelona: Enciclopèdia Catalana, Ajuntament de Barcelona, 1995), 189.

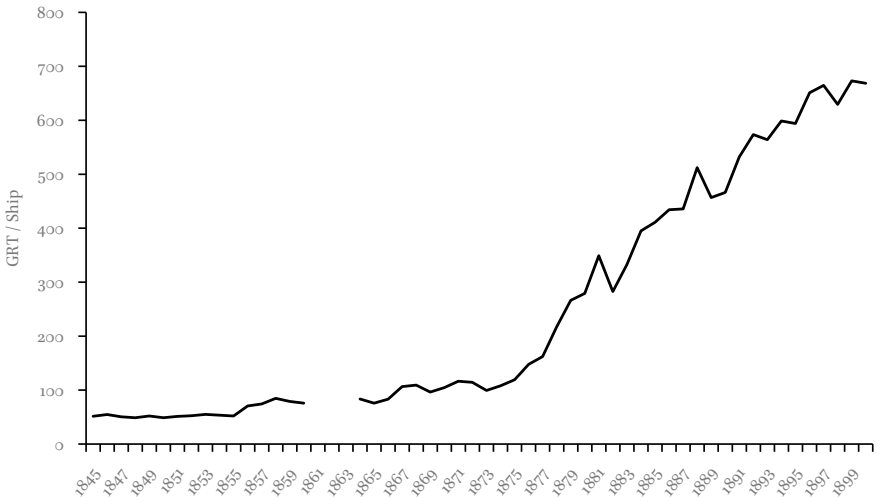


CHART 5.1 Average gross register tonnage (GRT) of ships entering the port of Barcelona, 1845–1900
SOURCES: DATA BASED ON AVELÍ PI I ARIMON, "BARCELONA ANTIGUA Y MODERNA" 1854 (1845–1849); "ESTADÍSTICA DE VAIXELLS ENTRATS I SORTITS PEL PORT DE BARCELONA ENTRE 1846 I 1855, PER NACIONS, NOMBRE I TONATGE", 1860–1868, SECCIÓ DE FOMENT: INFORMES, OFICIS, SOL·LICITUDS I COMUNICATS SOBRE PORTS, COMERÇ, SUBHASTES, JUNTA DE COMERÇ, LEGAJO CXXXIII, BOX 176–2, P. 233 (HEREAFTER JCC BC) (1850–1855); AND "ALMANAQUE DEL DIARIO DE BARCELONA" (1855–1900)

first phase of industrialization in Catalonia.[19] On the other hand, until 1870, the port experienced a deep crisis, in parallel with the Catalan industry.[20] The cause of the crisis was the American Civil War and the difficulties created in the supply of cotton.

Changes in port infrastructures were determined by the growth of traffic and by the evolution of the conditions in which maritime transport developed. This was due to changes in the dimensions and propulsion systems of the ships. The average tonnage of ships arriving at the port of Barcelona between 1845 and 1900 can be an approximate indicator of these changes.

19 Albert Carreras and César Yáñez, "El puerto en la era industrial: una síntesis histórica," in *Economía e historia del puerto de Barcelona: tres estudios*, eds. Joan Clavera and Port Autònom de Barcelona (Barcelona: Madrid: Port Autònom de Barcelona; Civitas, 1992), 85. This work is the best existing one on the subject, but it does not present a complete series but rather data from specific periods specific cuts, therefore it is only useful in establishing an approximate chronology of the transformations of port traffic.

20 Ibid., 97.

The average tonnage of the ships remained constant between 1845 and 1855, but from that point onwards it experienced sustained growth. Between 1856 and 1867 the average tonnage doubled regarding the previous period. This happened again between 1868 and 1878, and again between 1879 and 1886. Growth slowed from 1887 to 1896, increasing only by 50%. From 1896 it remained stable. It is not possible to establish an exact chronology of the causes of this extraordinary transformation, but at first it was essentially due to the growth of the average dimensions of the sailing ships and later by the replacement of sail by steam.

Starting in 1851, one of the few innovations that took place in the port was the new type of inner-traffic ship, the *barcaza*. This innovation was linked to the increase in maritime traffic and with the growth of the average tonnage of ships. *Barcazas* were basically very robust harbour lighters dedicated to loading and unloading. These new lighters were usually towed by smaller rowing boats. Because of their larger size, the construction of the *barcazas* required much higher capital than that invested in the smaller, traditional boats.[21]

The number and average tonnage of these boats and *barcazas* increased; the source in which this information is based is the official registry of inner traffic ships. In the early years, this source shows significant underreporting, but its quality improves as the period covered by the analysis progresses. Thus, the ships owned by official organizations, such as the *Junta de Obras del Puerto*, or some of those owned by the *Guild of Mareantes*, were not initially registered. Despite these limitations, this register is the main source for understanding the registration and characteristics of these new means of production in port loading and unloading.

The annual increase in registered *barcazas* was not constant. As Chart 5.2 shows, there were some years or periods where the number of new registrations was negligible. A scarcity of registrations was characteristic of the period of crisis in the 1860s caused by the difficulties in the importation of cotton (as mentioned above). It is also very clear that by the end of the period, with the construction of a new port, the *barcazas* had lost the function they had had until then, and new registrations ceased.

Official statistics tell us about the number of boats and *barcazas*. However, they are not distinguished by type (Table 5.1). These statistics have limitations because they were formulated with the same official registers that I mentioned above. Therefore, we have to consider them as an approximation. In any case, they show us the growth in the number of these inner traffic ships

21 Ibarz, "Fin del sistema gremial, liberalismo y desarrollo de unas relaciones de trabajo capitalistas en el puerto de Barcelona, 1834–1873," 122.

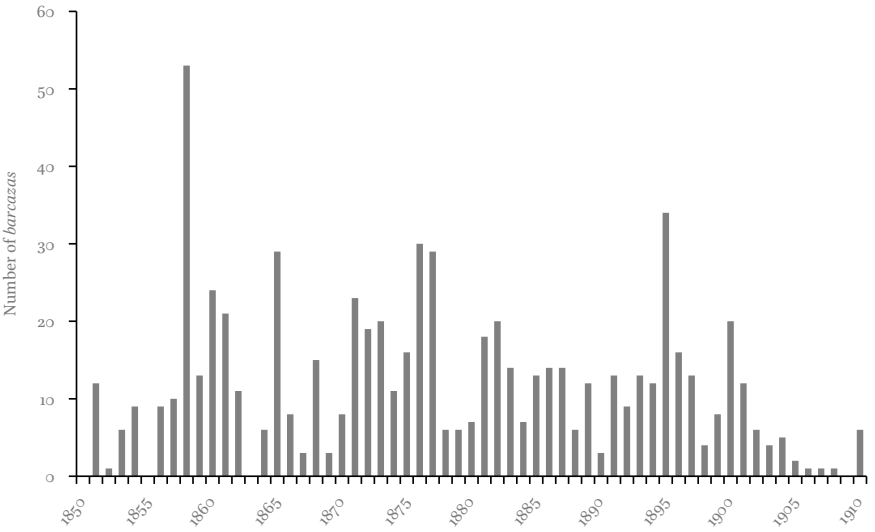


CHART 5.2 New registrations of *barcazas*, 1850–1910
SOURCE: "INSCRIPCIÓN DE EMBARCACIONES. BARCELONA CAPITAL," IN COMANDANCIA DE MARINA DE BARCELONA, Z-12, BOXES 287 AND 293, ARCHIVO NAVAL DE CARTAGENA (HEREAFTER ANC)

TABLE 5.1 Number of inner traffic ships in the port of Barcelona and their GRT, 1851–96

Year	Number	GRT Total	Average
1851	276	720	2,61
1854	358	945	2,64
1858	395		
1864	624	1578	2,53
1865	661	1711	2,59
1877	1228	4119	3,35
1888	2480	10139	4,09
1895	1120	5049	4,51
1896	1137	5246	4,61

SOURCES: DATA BASED ON THE "ESTADOS DE LA GENTE DE MAR Y EMBARCACIONES EN LOS TERCIOS DE LEVANTE, 1ER SEMETRE 1865 I 1ER SEMESTRE 1864", IN MATRÍCULAS. ASUNTOS PARTICULARES, LEGAJO 2056; AND, "ESTADOS DE BUQUES, 1877", IN ESTADÍSTICAS. NAVEGACIÓN Y PESCA, 1876–1877, LEGAJO 2359, ARCHIVO GENERAL DE MARINA ALVARO DE BAZÁN (HEREAFTER AGMAB)

until 1888, and the increase of their average dimensions until the end of the nineteenth century.

The necessary infrastructure for loading and unloading was essentially made up of a fixed part (docks and piers) and a mobile part (barges and cranes). The construction of the docks and investment in port infrastructure like cranes was the responsibility of public institutions. However, the investment in cranes was very limited, especially steam cranes, which were rare and little used. As we shall see, only four steam cranes were installed by 1862, and these were the only ones that appeared until the 1880s. Finally, between 1882 and 1885 (towards the end of the period considered) some 31 hydraulic cranes were installed on the docks. By comparison, up to the end of the period studied, cranes moved by manual force and owned privately, were much more important in number and much more used.[22]

3 The End of the Guild System, 1850–64

From 1850 to 1864, even though the first steamers had already made their appearance, sailing ships were still dominant. The first Spanish steamers connected Barcelona with Marseilles and Valencia, mainly transporting passengers and mail.[23] In 1860, only 17% of the ships arriving at the port of Barcelona were steamers. Indeed, the average tonnage of steamers was less than that of the ships, barques, and brigs that arrived in that same year.[24] Coal was the main imported cargo by volume.[25] Import duties were applied on the value of merchandise on foreign ships, which gave the importation of coal an advantage because it was cumbersome and of low value. Most of the coal came from English ports and was transported by English ships.[26] On the other hand, the number of ships arriving at the port was very large, and most of them were dedicated to coastal shipping. In 1864, 77% of the 6402 ships that arrived at the port of Barcelona were coastal Spanish ships trading in the Mediterranean,

22 Javier Aznar Colet, *Estudio sobre las antiguas grúas de mano del puerto de Barcelona* (Barcelona: Centre de Documentació Marítima, 2015).

23 Carreras and Yáñez, "El puerto en la era industrial: una síntesis histórica," 93.

24 Laureà Carbonell Relat, "El transport marítim a través del moviment del port de Barcelona en l'any 1860 i els capitans que hi participaren," *La Roca de Xeix*, no. 11–12–13 (September 1996): 14.

25 Carreras and Yáñez, "El puerto en la era industrial: una síntesis histórica," 90.

26 Carbonell Relat, "El transport marítim a través del moviment del port de Barcelona en l'any 1860 i els capitans que hi participaren," 26–27.

MAP 5.1 Port of Barcelona, 1861
SOURCE: PLANO DE BARCELONA Y SUS ALREDEDORES: A S.M. LA REYNA (FRAGMENT). INSTITUT CARTOGRÀFIC I GEOLÒGIC DE CATALUNYA: HTTPS://CARTOTECADIGITAL.ICGC.CAT /DIGITAL/COLLECTION/CATALUNYA/ID/1805/REC/236 (ACCESSED 15 MARCH 2021)

and other minor Spanish ships of local navigation. They represented 44% of the total GRT.[27]

Port infrastructures underwent very few changes in this period, and technological transformations were also very limited. As Map 5.1 shows, the port almost maintained the same physical configuration it had at the beginning of the nineteenth century. It was an open bay, divided into three main sections: the beach next to the city; the Riba dock; and the New Dock. In the middle of the Riba dock was the *Machina*, a powerful steam crane that was used to mast sail ships. Ship congestion was common.[28]

The most valuable merchandise, and those goods that could be damaged by contact with water, were unloaded on the quay, such as cotton, rice, and other vegetables. Barrels of wine and brandy, coal, and wood arrived on the beach.[29] Much of the unloading was carried out with *barcazas*.

27 A183 Comissió de Governació Exp A-3977 "Sobre els vaixells que entren en el port," Arxiu Històric de la Ciutat de Barcelona (hereafter AHCB).

28 Emerencià Roig, *La Marina catalana del vuitcents* (Barcelona: Barcino, 1929), 87–90.

29 "Registro de los Derechos de Carga y Descarga de enero de 1852," Drets de Carrega, Descàrrega i Navegació, (1852), Box 198, Archivo Histórico de la Diputación de Barcelona

As has already been established, the change in the organization of work in the port of Barcelona with the disappearance of the guild system was carried out in the absence of significant technological change and prior to the dominant influence of steam.[30] As we will see, the disappearance of the guild system took place in two stages: in 1850, their economic bases were undermined; and in 1864, they were abolished.

Port loading and unloading remained organized on a guild basis until 1850. The guild system in the ports survived the restrictive regulations of 1834 that affected other productive sectors of the country, and the abolition of most guilds in 1836; these new regulations did not apply in the maritime sector. Traditionally, there were no guilds of dock workers, instead, guilds of sailors and fishermen provided dock working services.[31] Until the end of the nineteenth century, dock work was not a permanent job: sailors and fishermen loaded and unloaded cargo during the periods when they were not engaged in their main occupation.

The guilds were the owners of the means of production, and they put great limitations on the use of private boats in loading and unloading; boat skippers (*patronos*) and seafarers were together in the guilds.[32] There were social and economic differences between their members, but the work was shared out equally. Some of the guilds used a scheduled turn system or practised a random, daily assignment with the aim of levelling opportunities. The harbour guilds (sailors and fishermen) used a daily lottery system and the maritime porters used a rotational turn.[33]

A Royal Decree ended the guild monopoly in March 1850. Merchants were still obliged to hire members of the *Matrícula*, that were sailors and fishermen, but the guild lost its prerogatives in the organization of work. The monopoly in the tasks carried out on the quays had already ended before 1850, and in July 1850, another governmental order abolished the tax levied by the sea guilds. That tax was essential for the economic viability of the guilds. The unloading of coal, which had become the main commodity by volume handled in the port, stopped being carried out by matriculated dock workers between

(hereafter AHDB). "Italia, queja al Capitán del Puerto sobre descarga de piperia et alter en la playa, 1866," Capitanía del Puerto de Barcelona, legajo 5639-7, AGMAB.

30 Ibarz and Briesen, "From corporations to companies".

31 Brendan J. von Briesen, "Service-Sector Guilds and the Challenge of Liberalization: the Organization of Maritime-Cargo Handling in Barcelona, c.1760–1840" (PhD diss., University of Barcelona, 2017).

32 Francesc de P. Colldeforns Lladó, *Historial de los Gremios de Mar de Barcelona, 1750–1865* (Barcelona: Gráficas Marina, 1951).

33 Briesen, "'The guild [...] manufactures nothing, nor produces any artifact'".

1842 and 1870, but information about the configuration of this work force is non-existent.[34]

Under these new legal conditions, the merchants, who were basically large-scale importers, began to hire the same groups of workers, which brought an end to the equitable distribution of work. These same merchants promoted the creation of a new type of proto-company for loading and unloading. The men hired by these merchants organized themselves into work groups, and the same workers usually worked together under the leadership of one of them. These work gangs, called *collas*, would become, over time, the port loading and unloading companies.[35] From 1850, the guild was in business competition with these companies, but it was an unequal competition because the guild had to maintain their own welfare system, that was still in force.

The legal reforms that led to the end of the guild monopoly were not separated from other institutional changes. In the same period, the first general laws for Spanish ports were promulgated. The Royal Decree of 17 December 1851, and the Royal Order of 30 January 1852, abolished the numerous taxes that were used throughout Spain for the construction and maintenance of ports. These were unified into only two taxes: one for anchoring and another for loading and unloading.[36] The new legislation shifted the responsibility for ports from the Navy and the port captains, to the *Ministerio de Fomento* (Ministry of Public Works) and their engineers.[37] These changes benefited the interests of merchants because they had better access, by their formal and informal connections, to the *Ministerio de Fomento* than to the Navy.

In April 1852, the first conflict arose because of the new organization of work. The workers of the *collas* worked for lower prices than those established and agreed upon by the guilds and merchants. This left the guild members practically without work, who demanded the current prices to be kept, which were not eliminated by the 1850 regulations. The captain of the port (the main local authority of the Navy) supported the guild's claim; he promulgated an edict declaring the obligation to continue working at the price of the current rates because these had not been replaced. The merchants reacted to this and, through the civil governor, obtained the disavowal of the captain of the port.[38]

34 In the *Arancel* of 1841, there is a fare for the unloading of "coal whatever the kind", but it does not appear in the agreements of 1870: Legajo CXXXIV, JCC BC.

35 "Queja de los matriculados sobre la actuación del Capitán del Puerto," 1862, Capitanía del Puerto de Barcelona, legajo 5639-6, AGMAB.

36 *La Época*, 25 December 1851 (newspaper).

37 Joan Alemany, *El Port de Barcelona* (Barcelona: Lunwerg : Port de Barcelona, 1998), 115–18.

38 Ibarz, "Fin del sistema gremial, liberalismo y desarrollo de unas relaciones de trabajo capitalistas en el puerto de Barcelona, 1834–1873," 161.

The Royal Decree of 26 February 1853 explicitly prohibited the Navy authorities, under any pretext, from interfering in the prices at which dock labour was contracted. The same norm recognised the merchants' right to hire those workers they wanted if they were members of the *Matrícula*.[39] Both the workers who remained in the guild and those who left it and joined the *collas* were members of the *Matrícula*. The obligation to hire members of the *Matrícula* was maintained, but hiring workers who had left the guild was cheaper; the workers of the *collas* were willing to work for lower rates and with a greater intensity of work.[40]

The new organization of work was very effective in facing the discontinuities in port traffic and for maintaining discipline. Depending on the fluctuating needs of the traffic, the *collas* could hire other workers on a daily basis that were not part of their core workforce, who were contracted on a regular basis. The permanent workers of the *collas* were paid by a sharing system, like the one that existed among fishermen; the rest of the workers were hired for a wage.

The economic situation of the *Guild of Mareantes* in Barcelona was precarious, however the guild continued its activities until a new battery of legal reforms led to its abolition. In June 1864, a Royal Decree liberalized loading and unloading tasks in all ports. With this measure, merchants could hire unregistered workers to work aboard ships.[41] Shortly after, in July 1864, the guilds of all maritime professions were abolished in Spain.[42]

In Barcelona, the *Guild of Mareantes* transformed into a mutual aid society, named the *Beneficencia Marinera Barcelonesa*. This society had to maintain the welfare benefits of the members. Through legal subterfuge at an auction, this new entity maintained the property of the *barcazas* and other means of production owned previously by the guild.[43] Later, the *Beneficencia Marinera* still registered some boats in its name in the official registers, the latest in the summer of 1877.[44] In any case, this institution completely lost its relevance compared to the companies, and possibly only dedicated itself to hauling ship ballast.

39 "Impreso de la Junta de Comercio de Cartagena dirigido a la Reina," 1862, 1860–68, Section: Foment: informes, oficis, sol·licituds i comunicats sobre ports, comerç, subhastes, Legajo CXXXIII, box 176–2, 199–200, JCC BC.

40 Ibarz, "Fin del sistema gremial, liberalismo y desarrollo de unas relaciones de trabajo capitalistas en el puerto de Barcelona, 1834–1873," 160–63.

41 *Gaceta de Madrid*, June 16, 1864, 1.

42 *Gaceta de Madrid*, July 13, 1864, 1.

43 Colldeforns Lladó, *Historial de los Gremios de Mar de Barcelona, 1750–1865*, 255–69.

44 Lista 4, Vol. 12, Reg. 1616 ans 1617. ANC.

The employment structure that emerged in 1850 changed very quickly. At the beginning, as we have noted, there were only groups of dock workers led by one of them, a first among equals. However, as early as 1855, there is information on the inflow of capital into the *collas*. Merchants led this new business structure: distribution of capital in some of the companies shows that these combined seafarers of the *Matrícula* with merchants.[45] Seafarers, fishermen, and boat skippers possessed the legal recognition to work in the port, but they did not have enough capital to buy the new *barcazas* required for these tasks. Registered seafarers constituted the workforce of these *collas* and their technical direction. They also oversaw the organization of work, that is the hiring and payment of casual dock workers. On the other side, the merchants had the capital, but they did not have the legal recognition to work directly in the organization of dock work. Merchants were the main capitalist partners, and they oversaw the business aspects. The available sources tell us that in 1852 the *collas* were exclusively made up of registered seafarers, formerly members of the guild. By comparison, the 1862 sources distinguish between the owners and the foremen of these companies. Furthermore, only two of the foremen of 1852 were still active as such among the *collas* of 1862.[46]

Despite the liberalization of dock work measures, in practice most dock workers continued to be members of the *Matrícula*. The first strike in dock work in Barcelona occurred in 1855. This can be interpreted as an indicator of the emergence of new labour relations outside of the conditions of the conflict-resolving characteristics of the Old Regime. In May 1855, "those who are engaged in loading and unloading goods" went on strike to get a 20% wage increase. The local authorities intervened, ordering the owners of the goods to look for other men "giving them the wage for which they offered to do so", thus ending the strike.[47] When the guild system ended, there were still important obstacles to the establishment of a free labour market. The *Matrícula* was the most important of those obstacles, and when this institution disappeared the workers fought against that free labour market.

45 José Torrents i Julia, "[no title]," 29 September 1859, Manual de Escrituras 1280/26; Ignació Gallisá y Reynés, "[no title]," 16 November 1869, Manual de Escrituras, 1374/6; Magín Soler Gelada, "[no title]," 9 May 1860, Manual de Escrituras 1287/36, fol. 24. Archiu Històrics de Protocols de Barcelona (hereafter AHPB).

46 Ibarz and Briesen, "From corporations to companies".

47 *Diario de Barcelona*, May 24, 1855.

4 The Development of Capitalist Relations in Port Loading and Unloading, 1865–89

By 1870, the Catalan economy had recovered from the crisis caused by the American Civil War.[48] However, this crisis and the expansion of the railroad hit coastal shipping very hard. This changed the structure of the maritime traffic at the port of Barcelona. Coastal shipping largely collapsed between 1864 and 1870, and in general, from the construction of the first railway in 1848 until at least the end of the century, there was a transfer of cargo from coastal ships to the railroads.[49] Coal traffic continued leading Barcelona's port life, and due to its volumes was the principal cargo on the ships that entered the port and for the number of unloaders employed.[50]

As already mentioned, the average size of the ships entering the port grew spectacularly between 1865 and 1886, going from 147 GRT per ship to 842 GRT on average.[51] Neither before nor after was there a change of that magnitude; later, ships continued to increase their average dimensions, but did not do so as quickly. In 1882, the GRT of the steamers was already much higher than that of the sailing ships; this is a clear indicator of the technological transformation that was taking place with the transition from sail to steam. This transformation took place for Barcelona between 1870 and 1880.[52] In 1873, only 17% of the GRT of Barcelona's ships were steamers, but in 1883 this reached 51% and in 1893 70%.[53] The transition from sail to steam in Spain took place between 1870 and 1890, with the most important transformations starting in the 1880s.[54]

These changes in the dimensions of the ships required the modernization of port infrastructures. After years of lethargy, the creation of the *Junta de Obras del Puerto* in December 1868, and the establishment of a new system of financing the construction through public debt, created the definitive impulse for a new port. The breakwaters of this new port were completed in 1874.[55] In

48 Mauricio Garran, *Noticia sobre el puerto: discurso leído en el Ateneo Barcelonés en la noche del 14 de marzo de 1877* (Barcelona: Imprenta de Salvador Manero, 1877), 37: http://archive.org/details/bibliotecammb2003 (accessed 15 March 2021).

49 Pere Pascual i Domènech, "Ferrocarrils i circulació mercantil a Catalunya durant la segona meitat del segle XIX," *Recerques: història, economia, cultura*, no. 21 (1988): 130.

50 Carreras and Yáñez, "El puerto en la era industrial: una síntesis histórica," 111.

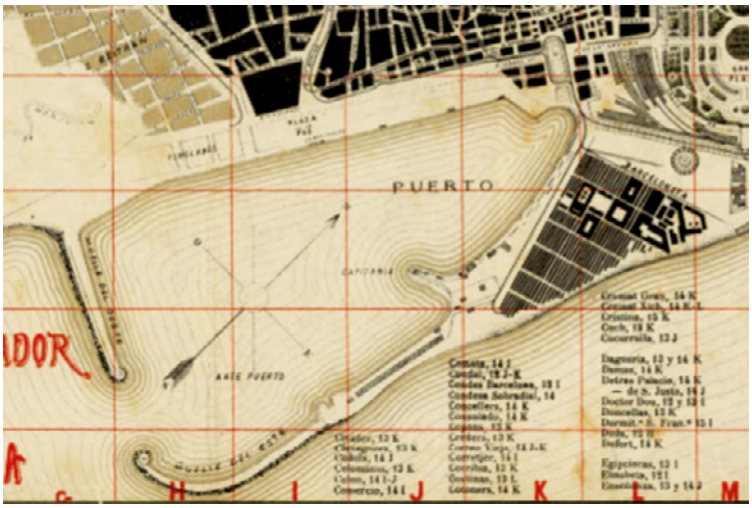
51 See Chart 5.1.

52 Carreras and Yáñez, "El puerto en la era industrial: una síntesis histórica," 121.

53 Data based on *Lista oficial de buques de guerra y mercantes de la Marina española* (Madrid: Deposito Hidrográfico, 1871), data processed by Brendan von Briesen.

54 Valdaliso Gago, "La transición de la vela al vapor en la flota mercante española," 66.

55 Maria Elena Ruiz Romero de la Cruz, *Historia de la Navegación Comercial Española. Trafico de los puertos de Titularidad Estatal desde la antigüedad a la conclusión del siglo*



MAP 5.2 Port of Barcelona, 1874
SOURCE: PLANO ANUNCIADOR DE BARCELONA (FRAGMENT). INSTITUT CARTOGRÀFIC I GEOLÒGIC DE CATALUNYA: HTTPS://CARTOTECADIGITAL.ICGC.CAT/DIGITAL/COLLECTION/CATALUNYA/ID/2220/REC/251 (ACCESSED 17 MARC 2021)

this way, the open bay that had until then been the port of Barcelona came to an end, as we can see in Map 5.2. The inner beach disappeared and loading and unloading began to be carried out in previously unknown conditions of safety and security for the vessels.

Despite these infrastructural transformations, the *barcaza* remained one of the main means of production. Between 1865 and 1877 the number of inner traffic ships in the port doubled, and the construction of new *barcazas* was important between 1871 and 1877. The average tonnage of these ships also increased significantly.[56] Cranes were the other important means of production during this period. What happened with the installation of cranes shows institutional indolence. As legally established, cranes, like any other loading and unloading infrastructure, must be owned by the state, however, in the port of Barcelona (as in other Spanish ports) state action was very hesitant, without a clear position in favour of direct public investment in infrastructure. In 1860, a concession was made to a French company for the installation of a steam

XX (Madrid: Ente Público Puertos del Estado, 2004), 959: https://riuma.uma.es/xmlui/handle/10630/13615 (accessed 19 March 2021).

56 See Table 5.1.

crane.[57] Shortly after this, four steam cranes were built by the state, initiating the revocation process of said concession.[58] These first four state-owned cranes were oversize in relation to the needs of loading and unloading, and they were too few and were fixed on the docks. For this reason, ships could often not be moored close to them. Thus, in 1864, the installation of various manual cranes was authorized, however, it is possible that these cranes were already in operation two years earlier.[59] Merchants and ship agents were the only ones authorized to install these cranes,[60] and from 1864 to 1887, 26 manual cranes were installed.[61] In 1879, a new project for the construction of hydraulic cranes was approved, but these were not put into operation until 1884.[62]

In legal and institutional terms, this was a period of great change. In 1868, the Navy lost most of its powers in the governance of ports in favour of the *Ministerio de Fomento*—that is, from military personnel to engineers. Later, with the Ports Act of 1880, the businessmen of the sector achieved a greater role in port management.[63]

The *Matrícula de Mar*—for which attempts for its abolition had sparked heated discussions for years—was finally abolished in March 1873 without causing any complaints or conflicts.[64] A new registry of workers was

57 Manuel Maria Pecero, "[no title]," *Manual de Escrituras 1371/1*, fol. 225, AHPB.

58 Ángel Camón, "Cuatro grúas de carga y descarga de géneros," 1863, box 1929, Arxiu de la Junta d'Obres del Port. Museu Marítim de Barcelona (hereafter JOP MMB); and Alemany, *El Port de Barcelona* (Barcelona, 1998), 158.

59 "Maldant y Barthe solicitan continúe establecida en el puerto de Barcelona la cábria de su propiedad para la carga y descarga," 1865–69, Section: Capitanía del Puerto de Barcelona, 5639–7, AGMAB; and, "Cabrias, gruas, machinas, pescantes. Generalidad," 1865–82, folder 1, Grúas, YM V n, Section: Puertos. Navegación y Pesca Marítima. ANC.

60 "Reglamento de policía del Puerto," 1869, Section: Capitanía del Puerto de Barcelona, 5639–7, AGMAB.

61 "Expediente relativo al proyecto de establecimiento de las grues de mano por cuenta de la junta," 1887, Caja 1012, H-1781 nº3, JOP MMB.

62 "Obras, máquinas, aparatos y medios necesarios para el buen uso de los muelles de la Muralla, de Atarazanas y de Barcelona," 1879, Caja 1939. JOP MMB.

63 Daniel Castillo Hidalgo and Jesús María Valdaliso Gago, "Puertos y regiones marítimas en España en perspectiva histórica: movimiento comercial y transformaciones económicas (c. 1880–2009)," in *Los puertos mediterráneos: contactos, multiculturalidad e intercambios: estrategias socioeconómicas, políticas y ecológicas: PHICARIA: IV Encuentros Internacionales del Mediterráneo*, ed. José María López Ballesta (Murcia: Concejalía de Cultura, 2016), 57–75: https://dialnet.unirioja.es/servlet/articulo?codigo=5374278.

64 Jordi Ibarz Gelabert and Juanjo Romero Marín, "L'abolició de la Matrícula de Mar i les tasques de càrrega i descàrrega al port de Barcelona, 1868–1874," *Barcelona quaderns d'història*, no. 15 (2009): 255–70.

instituted, the *Inscripción Marítima*, which replaced the *Matrícula*.[65] However, the *Inscripción* did not recognize rights over port work and the provision of military service in the Navy was voluntary.[66] The transformations produced in navigation with the development of steam undermined the arguments of the Navy in favour of maintaining the *Matrícula*.[67]

Regarding the business structure, the main novelty was the loss of the leading role of the merchants. In their place emerged the ship agent, a figure closely linked to the transition from sail to steam. The appearance of ship agents was due to the need to reduce the stays of steamships in ports. This task could not be carried out by the owners of the ships, who directed the operations from their headquarters, nor by the captains, who were limited in their actions to commanding the ships.[68] Some of these ship agents were former sailing ship owners[69] who had not managed to stay in this position, or who combined both actions, as Spanish ship owners and agents of foreign companies. This would explain why the first organization established to defend the interests of the sector, founded in 1876, was called the *Asociación de Navieros y Consignatarios de Barcelona* (Barcelona Shipowners and Ship Agents Association). Both figures were incorporated in the name, whose legal and practical distinction was difficult at that time. This entity was promoted and directed by the protagonists of oceanic shipping of the age of sail in Catalonia.[70] Only in the transport of mineral coal—which in volume constituted approximately half of Barcelona's port traffic during those years—did merchants maintain the power that they had had until then. This was because coal was one of the few goods that arrived in full shipments.

These changes gave rise to the appearance of three different groups in the business structure. This also implied a certain physical segregation at the port. From the construction of the new breakwaters and docks of the port, the outer dock was assigned to coal, the inner one to general merchandise, and finally there was the part of the quays and warehouses. The first of these spaces corresponded to the coal merchants, the second was under the responsibility of

65 Enric García Domingo, "'La hermana mayor': las difíciles relaciones entre la marina mercante española y la Armada (1802–1932)," *Hispania*, no. 77.255 (2017): 229.

66 Agustín Vigier de Torres and Guillermo Pérez-Olivares Fuentes, *Compendio de derecho y legislación marítima* (Madrid: Varicop, 1958), 120.

67 García Domingo, *El mundo del trabajo en la marina mercante española (1834–1914)*, 56.

68 Vigier de Torres and Pérez-Olivares Fuentes, *Compendio de derecho y legislación marítima*, 44.

69 Carbonell Relat, "El transport marítim a través del moviment del port de Barcelona en l'any 1860 i els capitans que hi participaren," 46.

70 Martín Rodrigo y Alharilla, *La Marina mercante de vapor en Barcelona (1834–1914)* (Estudis 24) (Barcelona: Museu Marítim de Barcelona, 2017), 119.

the ship agents, and when the general merchandise arrived at the quays it was received by the owners of said goods or by their representatives. The *collas* that emerged during the previous period remained and consolidated their position. Regarding the organization of work, dock workers were also divided into three main groups: those on board, those on land, and those of mineral coal. Both labour associationism and labour conflict allow us to distinguish the existence of three differentiated groups. Dock workers in these three groups generally acted independently of each other. The existence of this type of distinction was fundamental in the work of almost all ports.[71]

Information about the social origins of dock workers is scarce. The only available information is that referring to the members of the *Inscripción Marítima*: the sailors and fishermen of the city who could participate in the work on board the ships. By 1878, 84.8% of them were born in Barcelona, and this did not change much over the time. By 1890, this group was 87.6%. This situation only changed at the end of the nineteenth century: by 1902, only 62.9% were from Barcelona, but this happened in a period beyond our analysis.[72]

Dock workers' action was completely controlled by the current legislation. As I have already mentioned, it was only possible during the few periods of democratic opening. The constitutional protection of the right of association and the right of assembly was established for the first time in one of these periods, known as the Democratic Sexennium (1868–74), which, in 1868, led Queen Isabel II into exile.[73] This made possible, in the summer of 1870, the celebration of the First Workers' Congress of the Spanish Region, which led to the founding of the International Workingmen's Association in Spain. The International (1864–76) was the most important organization created until then to fight for workers' rights, and included Marxists, anarchists, and trade unionists. In the Congress of the Spanish Region the sailors-dock workers were represented by the *Sociedad Marítima Restauración*, and the coal unloaders by the *Sociedad de Carga y Descarga del Carbón de Piedra*.[74] Despite being two societies within the International, their conflicts and strikes were not raised jointly.

71 Lovell, "Sail, steam and emergent dockers' unionism in Britain, 1850–1914," 235.

72 Data based on the "Relación de Inscritos Marítimos de la Provincia Naval de Barcelona," *Boletin Oficial de la Provincia de Barcelona*, January 16, 1879, October 30, 1890, October 23, 1902.

73 José Daniel Pelayo Pelayo Olmedo, "El derecho de asociación en la historia constitucional española, con particular referencia a las leyes de 1887 y 1964," *Historia constitucional*, no. 8 (2007): 96–97.

74 *La Federación*, June 21, 1870.

In July 1870, the sailor-dock workers from the port presented a proposal for new rates for their work. The workers' society had 60 members, but at the time of the strike up to 900 workers joined.[75] The link between their society and the International was an indication of modernity. Despite this, the conflict presents some characteristics of what we could call the early repertoires of contention.[76] The sailors' society was called "Restoration", an expression of their collective wishes, an indication of their desire to return to a lost, desirable past. But even more important was the role of patronage and intermediation carried out by the local authority of the Navy. The sailors presented their claims to the *Comandante de Marina*, not to the employers, and requested his mediation. The workers' representatives signed that request as "your children" and referred to the "kind and good effect" dispensed by the Commandant, and to "the benevolence of goodness that comes from his patriotic Heart".[77] The strike lasted for more than a month. It ended abruptly with the hiring of "scabs", the intervention of 500 soldiers, and the declaration of yellow fever in the city. This epidemic reached Barcelona through the port and particularly affected the maritime neighbourhood of Barcelona, the *Barceloneta*.[78] The authorities declared the port closed and evicted the *Barceloneta*. The loading and unloading tasks were moved to a distant and open beach, located on the other side of the city. These works were carried out with great difficulties and risk, with no other technical resource beyond the *barcazas*. It had been 20 years since the appearance of the *collas*, despite this the sailors still saw them as an anomaly. When the sailors were not sailing they used to look for work in the port as dock workers. There they observed "that the work falls on some former colleagues of ours, who have become friends with the owner of the ship, gaining his influence to become directors of that work. Thus, they become for us new exploiters who, in addition to the master who dominates us as much as he can, subjugate us to his will".[79] During the strike, the sailors tried to reach an agreement directly with the merchants and the captains of the ships, but they did not achieve that objective to avoid dealing with the *collas*. In addition to the intervention of the authorities in favour of the employers, the existence of a business structure with the *collas* organizing work was an effective tool to end labour disputes. The workers, after a few inactive months or working in

75 *La Federación*, July 10, 1870.

76 Charles Tilly, *Popular Contention in Great Britain, 1758–1834* (Cambridge, Mass. and London: Harvard University Press, 1995), 61–62.

77 Legajo CXXXIV-2, pp. 370–372, JCC BC.

78 See Chapter 7 of Eduard Page Campos in the present volume.

79 Asociación Internacional de Trabajadores. I Congreso Obrero de la Región Española, Fundación Anselmo Lorenzo, 34.

difficult conditions, requested the reopening of the port and the return to work without conditions. As they said, they were "more willing to die of a disease than of misery".[80]

When the epidemic ended, in November 1870, the coal unloaders went on a new strike. The conflict was about the manner of hiring. During the epidemic, it had been established that in the new place of unloading, work would be by *contrata*, with the use of *barcazas*. In fact, it was as if the merchants had contracted the services of a company, which allowed greater control of the work by the workers and higher remuneration. The merchants, when the port reopened, tried to return to work for wages. The strike lasted only one day and ended with a workers' victory. Beyond the development of the conflict, what we are interested in highlighting is the chronological distance with the strike of the sailors, an example of the lack of coordination between both groups of workers.

With the First Spanish Republic, in February 1873, political instability facilitated an increase in strike conflict in ports. Towards 1873, we can speak of a conflictive cycle, in which strikes did not only arise in Barcelona, but also occurred in different towns and cities on the Mediterranean coast. The demands in this period referred, above all, to wages and the length of the working day. The dynamics of the conflicts were very similar. Strikes usually ended with the intervention of "scabs" hired by employers to break the resistance of the workers.[81] In any case, there is not enough information to affirm that they were coordinated actions. Rather, they seemed to respond to local dynamics, with common evolutions everywhere.

The end of the First Republic gave way to the Monarchical Restoration of 1874 and again, for years, workers and their organizations could not express themselves freely. The right of association was loosely included in the new constitution but was *de facto* prohibited for workers and depended on the discretion of the authorities.[82] A new liberal government in 1881 began a period of political openness, which, despite its own hesitations, allowed the activity of the labour movement. In March 1884, the *Sociedad de Marineros Trabajadores* of the port of Barcelona was formed. It was promoted by the society of the carters, who were trying to organize trade unions in different transport sectors throughout the city.[83] At least 400 unloading sailors participated in the

80 *La Federación*, October 23, 1870.

81 *La Federación*, May 17, 1873, October 25, 1873.

82 Pelayo Olmedo, "El derecho de asociación en la historia constitucional española, con particular referencia a las leyes de 1887 y 1964," 101–102.

83 *La Tramuntana*, March 7, 1884, 3.

society. In the summer of that same year, dock workers from the different port specialties—sailors, porters, coal unloaders, carters and others—organized the Federation of Maritime and Land Transport, integrated into the Federation of Workers of the Spanish Region, the Spanish section of the International. Together, they tried to establish a closed shop. They demanded that employers only hire workers associated with their societies. As usual, employers hired "scabs" to end the strike, and the authorities also contributed to its defeat by imprisoning the leaders of these societies. On the other hand, employers tried to create joint associations, "of cats and rats, that is, of masters and workers", with the aim of achieving control of workers.[84]

Despite these joint actions, the dock workers of each specialty maintained their independent societies. In 1882, the coal unloaders were integrated into the *Sociedad de Carga y Descarga del Carbón de Piedra*.[85] This society had the same name as another which had existed in 1870, but there is no evidence of its uninterrupted existence during all those years. The sailors were in the *Sociedad de Marineros de Carga y Descarga*.[86] The name of the society was a sign that work as a dock worker was still an alternative or complementary activity for sailors when they were not sailing. The quay workers had founded the *Sociedad de Faquines del Comercio* in 1874, but its legalization was not permitted until October 1887, under the name of the *Montepío de Faquines del Comercio*.[87]

During the 1880s, the new political openness allowed the surfacing of a great associative vitality in the sector, with workers associated with mutual aid entities. The sailors were in the *Sociedad Marinera de Beneficencia* in 1881, the *Centro de Socorros del Muelle* in 1884, and the *Centro de Trabajadores del Muelle* in 1886. The quay workers were in the already cited *Montepío de Faquines del Comercio*, and the coal unloaders were in the *Hermandad de Trabajadores de Carga y Descarga de Carbón de Piedra en este puerto*, in 1889.[88] They were also organised in entities dedicated to workers' leisure: in September 1883, the *Centro General de Carboneros* and, in January 1885, the *Marineros Trabajadores del Puerto de Barcelona* and the *Unión Benéfica de Trabajadores del Muelle y*

84 *La Tramuntana*, August 22, 1884, August 29, 1884.

85 *El Diluvio*, July 3, 1882; *Crónica de Cataluña*, July 13, 1882; *El Diluvio*, August 14, 1884.

86 *El Diluvio*, October 20, 1890.

87 Reglamento para el régimen de la Sociedad de Faquines del Comercio de Barcelona, Barcelona, 1924. Libro de registro de Montepios, nº MN 79. Archivo Histórico del Gobierno Civil de Barcelona (hereafter AHGCB).

88 Libro de registro de Montepíos, nº MA 157, MA 496, MA 699 y MN 384; and Libro de Registro de Asociaciones nº 780, AHGCB.

Almacenes de Barcelona y sus contornos.[89] We know little more of most of these mutual aid and leisure societies beyond their existence, but it is clear that dock workers maintained the separation between coal unloaders, sailors-dock workers, and quay workers.

5 The Modernization of Port Infrastructure and the Creation of a New System in the Organization of Dock Work around 1890

In the last third of the nineteenth century, the evolution of the national and international economy generated processes of concentration in different Spanish ports, including Barcelona.[90] The hegemony of steam, already indisputable by that time, led to the transformation of the port system. The commercial activity of beach ports, so characteristic of the Spanish Levant Coast in previous years, disappeared. At the end of the nineteenth century the economic importance of the port reached its zenith. By 1890, the maritime trade of Barcelona was almost equivalent to 50% of the GDP of Catalonia.[91] Once again, the growth of coal traffic showed the limitations of the port, which was again in need of expansion.[92] In Barcelona, the traffic of certain merchandise, such as wood, that was sufficiently abundant and regular, allowed the appearance of new figures among employers and dock workers dedicated to these goods.

The *barcazas* lost their importance due to the construction of new infrastructure in the port. Most of the existing *barcazas* were dedicated to unloading coal, which was handled in the dock closest to the mouth of the port. Due to the existing undertow, coal ships could not be docked, which is why the unloading of coal with *barcazas* was maintained. Some of the barges that had previously been dedicated to general loading and unloading were bought by the companies of the coal merchants or were sold and moved to other ports.[93]

The state definitively assumed control of the port infrastructures. In March 1890, the process of the expropriation of manual cranes, existing from the 1860s and owned by private individuals, was completed. The *Junta de obras*

89 Libro de Registro de Asociaciones, nº 386; Libro de Registro de Asociaciones, nº 522, AHGCB; *El Diluvio*, July 6, 1886; and Libro de Registro de Asociaciones, nº 526, AHGCB.

90 Castillo Hidalgo and Valdaliso Gago, "Puertos y regiones marítimas en España en perspectiva histórica," 62.

91 Carreras and Yáñez, "El puerto en la era industrial: una síntesis histórica," 104–105.

92 Carreras and Yáñez, 90.

93 Lista 4, Vol. 12, Reg. 1809 and 1816, ANC, transferred to Valencia in 1897; or Lista 4, Vol. 12, Reg. 1848, 1849 and 1850, ANC, transferred to Palamós in 1905.

del puerto expropriated these cranes because of the infractions carried out by their owners. The owners had exploited the cranes commercially, as a business, when it was established that they had to give them free to the rest of the ship agents and merchants if they were not using them. In spite of what had been established, "in the greatest number of cases, the licensees are not the true owners of the cranes, but rather the foremen of the crews [*collas*] of porters that they use in their operations; even though this, as everyone knows, is not easy to prove; without this, which nobody ignores, is easy to prove"; they not only dedicated the cranes exclusively to the service of the licensees, "but of all their customers, thus making the purpose of the most essential condition of the concession illusory, since the monopoly of the docks is coming to fruition".[94] Furthermore, as I have already mentioned, between 1882 and 1885, the *Junta de Obras del Puerto* installed and put into operation a new system of hydraulic cranes. In 1888, there were 31 hydraulic cranes in the port.[95]

The new conflict cycle of 1890 shows the existence of significant changes in the organization of work. The port strikes began on the first May Day celebrated in Spain. On 1 May 1890, a strike was declared on loading and unloading operations, with the city of Barcelona paralyzed by the demands of the workers. In Barcelona, the influence of anarchism led to the extension of the general strike for more days than originally planned.[96]

The strike also extended several days in the ports of Sant Feliu de Guíxols, Valencia, Bilbao, and Cádiz. The foremen and the workers of the *collas* wanted to return to work. To avoid coercion, they requested help from the military authority, who sent troops to the port. Finally, on 6 May, through an agreement between the dock workers and their employers, the port returned to normality. In Barcelona, the situation became complicated again in July of that same year. On 29 July 1890, the workers who were hired by the *collas* called a new strike. The organization of work by the *collas*, which until now had served to keep the workers under control, began to fail. The reaction of the employers was the constitution of *Montepío de San Pedro Pescador* in August 1890. In this body, foremen and dock workers had to be integrated. Under the outward appearance of a mutual aid society, a system of labour regulation was hiding. The articles of association set out the conditions under which the dock work had to be carried out; the foremen promised not to hire anyone who was not

94 "Expediente relativo al proyecto de establecimiento de las grúas de mano por cuenta de la junta", Caja 1012. H-1781 nº3. Año 1887. JOP MMB.

95 Esteve Amengual, *El Puerto de Barcelona en 1888. Opúsculo* (Barcelona: Suc. de N. Ramírez, 1888), 6: http://archive.org/details/bibliotecammb970 (accessed 20 April 2021).

96 Joaquim Ferrer, *El Primer «1er. de maig» a Catalunya* (Barcelona: Nova Terra, 1975), 85–121.

member of the *Montepío*.[97] This was, in fact, the closed shop that sailors had been demanding since at least the 1880s. In contrast, there were various rules to maintain control over workers. Thus, anyone who "directly forms a conflict that could remotely harm" the *Montepío* could be expelled from the entity, which meant firing him from dock work. And there was no possibility of "any appeal" over these dismissals.[98]

Most of the sailors were integrated into the *Montepío*, but at the same time they did not stop raising their demands. This is demonstrated by these workers' request for the establishment of a hiring turn, and the strike that resulted in October 1890.[99] The foremen did not accept the shift proposed by the *Sociedad de Marineros de Carga y Descarga*, and they refused to integrate associated workers into the *collas*. In the *Montepío* statutes, the free election of workers by the foremen among the members of the association continued in force. The creation of a mixed society to dilute social conflict was not successful in 1884, but it was achieved in 1890. Thus, for decades, the *Montepío de San Pedro Pescador*, led by the foremen of the *collas*, retained control over the dock workers.[100]

Employers also created this type of mixed society in other ports during those years. As in Barcelona, these initiatives arose after the realization of major strikes in the ports; they were also a strategy to control that workforce. This occurred in Santander in 1894,[101] in Bilbao in 1900,[102] and somewhat later in Valencia.[103]

In Barcelona, the system was applied to general unloading workers, in coal, and also in quay work. Coal merchants established the *Montepío de Santa Eulalia* in 1891. This was created after a strike in May of that year by the 500 workers of the *Hermandad de Carga y Descarga del Carbón de Piedra*. The main difference with the *Montepío de San Pedro* was that, in this case, exclusivity was not mandatory, but merely a preference in hiring. After ten years, coal unloaders achieved the dissolution of the mutual aid society of the employers and

97 Artículo 6, disposición 3ª, Reglamento del Montepío de San Pedro Pescador de 1894.

98 Artículo Adicional, Reglamento del Montepío de San Pedro Pescador de 1894.

99 *Diario Mercantil*, October 12, 1890.

100 Jordi Ibarz, "El montepío de San Pedro Pescador y las sociedades de socorros mutuos de los estibadores de Barcelona, 1890–1939," in *Solidaridad desde abajo. Trabajadores y socorros mutuos en la España contemporánea*, ed. Santiago Castillo (Madrid: UGT, 1994), 107–24.

101 José Ortega Valcárcel, *Gentes de mar en Cantabria* (Santander: Universidad de Cantabria, 1996), 263.

102 *El Cantábrico*, May 17, 1900.

103 Ramiro Reig, *Obrers i ciutadans: blasquisme i moviment obrer: València, 1898–1906* (Politècnica 6) (València: Institució Alfons el Magnànim, 1982), 190.

the recognition of the workers union.[104] The quay workers, as we have already mentioned, had been in the *Montepío de Faquines del Comercio* since 1887. This mutual aid society changed its name in 1902 and was renamed the *Mutua de Faquines del Comercio de Barcelona*, from then on acting as a union.[105]

6 Conclusions

The disappearance of the guild system and the consequent reorganization of work happened without the presence of significant technological transformations; it was not a consequence of the transition from sail to steam. However, immediately after the guild's demise, the effects of this transition began to show. The requirements of the steamers led to the appearance of new protagonists, remodelling the business structure. Merchants lost the prominence they had had up to then and a new figure appeared, that of ship agent. Only in coal, which arrived at the port in whole shipments, did the merchants of this commodity maintain their importance. Merchants had promoted the *collas*, the forerunners of loading and unloading companies. But these *collas* adapted perfectly to the changes in the business structure, and acquired greater importance and prominence.

The action of the workers was conditioned by the existence of legislation at the service of their employers, and by the existing organisation of work. Occasionally, various initiatives for union work in common arose, but, in general, the workers acted separately, based on the three major existing port specialties. Despite these limitations, the workers managed to modify the organisation of work that emerged at the end of the guild system. After a few years of a free labour market, the employers accepted some limitations, such as the establishment, in practice, of a closed shop.

At first, steamers were not yet dominant, but as their influence grew it was necessary to recognize limitations in access to dock work. A free labour market, which merchants had long pursued, could be useful for the loading and unloading of sailing ships, which did not need to be unloaded quickly. However, when steamers dominated, it was necessary to introduce a certain order in hiring. It was necessary to ensure a sufficiently docile workforce who were experts in their tasks.

104 Jordi Ibarz Gelabert, "Sociedades y montepíos: asociacionismo laboral de los cargadores y descargadores del puerto de Barcelona, 1884–1931," *Sociología del trabajo*, no. 18 (1993): 134.

105 Libro de Registro de Asociaciones, no. 3063, AHGCB.

This new order in hiring was done through the constitution of mutual aid societies. These societies were managed by employers and the foremen of the *collas*, representing the interests of ship agents, but almost all dock workers in each specialty participated. It was in the category of general cargo where this system was implemented most successfully. However, recognition of some limitations to the free labour market was common. There was no return to a monopoly situation like the one that existed during the guild system configuration. Serious conflicts often arose over how these limitations should be established. Occasionally, "scabs" were used to end strikes. However, the free labour market, as had been established in the 1860s with the end of the guild system, disappeared forever.

CHAPTER 6

Associationism and Labour Conflicts in Fishing in Eastern Spain during the Transition from Sail to Motor (1864–1923)

Daniel Muntané

1 Introduction

The study of fishing associations in eastern Spain following the dissolution of the guilds of the sea[1] (*Gremios de mar*) is pending further research. While there is extensive literature on the topic for the north of Spain,[2] in Europe,[3] and worldwide,[4] there is a void of work focusing on eastern Spain. Nevertheless, at a local scale, some works are relevant: for example, for the villages of Palamós, and Sant Carles de la Ràpita.[5] This research aims, as far

1 Until 1864, Spanish fishermen were grouped in the guilds of the sea. These entities were mainly characterised by their religious character, their corporatist functioning, and their provision of mutual aid among associates. The origins of this type of association come from the Middle Ages.

2 See Dionisio Pereira, "Capitalismo pesquero y sindicalismo en la España de anteguerra la Federación Nacional de Industria Pesquera," *Revista Andaluza de Antropología*, no. 4 (2013): 122–146; Eduardo Núñez, *Asociacionismo marinero en Asturias. Gremios, Cofradías, Pósitos y Sociedades de Mareantes* (*I*) (Candás: Ayuntamiento de Carreño, 1993); and Alberto Ansola, "Los trabajadores del mar: asociacionismo, reformismo y conflictividad sociolaboral en las comunidades pescadoras cántabras (1864–1936)," in *Campesinos, artesanos, trabajadores*, eds. Santiago Carrillo and Roberto Fernández (Lleida: Milenio, 2001), 527–539.

3 See, among others: Rob Van Ginkel, "Cooperating competitors: texel fishermen and their organizations (c.1870–1930)," *Anthropological Quarterly*, no. 69.2 (April 1996): 51–65; John K. Walton, "Fishing communities, 1850–1950," in *England's Sea Fisheries: The Commercial Sea Fisheries of England and Wales Since 1300*, eds. Chris Reid, N. Ashcroft and David Starkey (London: Chatham, 2000), 127–138; and Finnur Magnusson, *The Hidden Class. Culture and Class in a Maritime Setting: Iceland, 1882–1942* (Aarhus: Aarhus University Press, 1990).

4 For example, see Wallace Clement, "Canada's coastal fisheries: formation of unions, cooperatives and associations," *Journal of Canadian Studies* 19, no. 1 (Spring 1984): 5–33; Manuel Valdes-Pizzini, "Fishermen associations in Puerto Rico: Praxis and Discourse in the Politics of Fishing," *Human Organization* 49, no. 2 (Summer 1990): 164–173; and Michael K. Orbach, "Fishery cooperatives on the Chesapeake Bay: advantage or anachronism?," *Anthropological Quarterly*, no. 53.1 (January 1980): 48–55.

5 See Joan Lluís Alegret and Alfons Garrido, *Història de la Confraria de Pescadors de Palamós* (Palamós: Confraria de Pescadors de Palamós, 2004), and Lluís Millan, *Pescadors i navegants als Alfacs. Crònica de la Ràpita Marinera* (Sant Carles de la Ràpita: Jordi Dassoy, 2003).

as is possible, to cover this deficiency. The chapter analyses fishing associationism, and associated labour conflicts in eastern Spain from 1864, the year of dissolution of the guilds of the sea, to 1923, the beginning of the military dictatorship of Miguel Primo de Rivera, and the start of a generalised use of motorised boats.

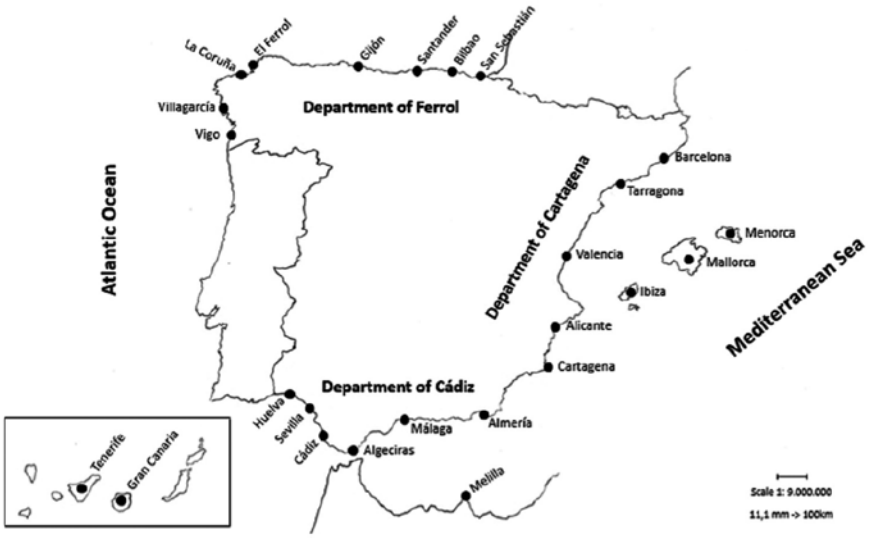
2 Geographical Area

The Spanish state divided fishing into three maritime departments: Cádiz, Ferrol, and Cartagena. The Department of Ferrol covered territory from Galicia to the Basque Country. The Department of Cádiz extended from the Atlantic to the Mediterranean; that is, along the entire coast of Andalusia and included the Canary Islands. Finally, the Department of Cartagena occupied the rest of the Spanish Mediterranean extending to the French border. Each department was subdivided into maritime provinces. In turn, the maritime provinces were subdivided into smaller units known as maritime districts. The geographical area of this research is eastern Spain, which is made up of the maritime provinces of: Alicante, Valencia, Tarragona, Barcelona, Menorca, Mallorca, and Ibiza. These maritime provinces were integrated into the Department of Cartagena (see Table 6.1).

TABLE 6.1 Administrative division of the Spanish coast, 1908

Department	Maritime Provinces	Department	Maritime Provinces	Department	Maritime Provinces
Ferrol	Vigo	Cádiz	Huelva	Cartagena	Cartagena
	Villagarcía		Cádiz		Alicante
	La Coruña		Sevilla		Valencia
	El Ferrol		Algeciras		Tarragona
	Gijón		Málaga		Barcelona
	Santander		Almeria		Menorca
	Bilbao		Melilla		Mallorca
	San Sebastián		Gran Canaria		Ibiza
	–		Tenerife		–

SOURCE: *ANUARIO ESTADÍSTICO DE LA MARINA MERCANTE Y DE LA PESCA MARÍTIMA* (MADRID: DIRECCIÓN GENERAL DE LA MARINA MERCANTE, 1907–14)



MAP 6.1 Administrative division of the Spanish coast (1908): maritime departments and provinces
CREATED BY DANIEL MUNTANÉ

3 The New Fishing Systems

Unlike the Spanish Atlantic coast, in eastern Spain steam fishing boats were very few in number, especially for inshore fishing. Therefore, due to the small number of boats, there was no transition to steam. In eastern Spain, the majority of steamboats were dedicated to maritime trade,[6] so in fishing, the study will refer to a transition from sailing boats to motorboats. The first motorboats that were documented in eastern Spain date back to the second decade of the twentieth century. The motor first penetrated those villages that had port facilities, mainly because motorboats could not be beached in the sand. The subsequent diffusion would come in the 1920s and 1930s. The introduction of the motor had a significant impact on fishing, and added to the transformation of the sector, which began a few years earlier through new technical forms of

6 See Pere Pascual, "El comerç de cabotatge (1820–1935). Etapes i factors de la seva evolució," in *Promediterrània 2000. El transport marítim de cabotatge a la Mediterrània*, ed. Càtedra d'Estudis Marítims (Palamós: Universitat de Girona, Ajuntament de Palamós i l'Estrop, 2002), 51–62.

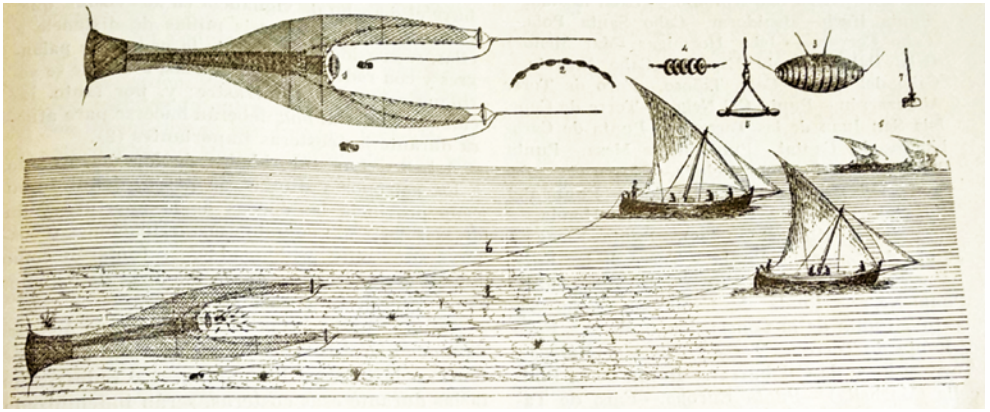


FIGURE 6.1 Pair sail trawling
SOURCE: BENIGNO RODRÍGUEZ, *DICCIONARIO DE ARTES DE PESCA DE ESPAÑA Y SUS POSESIONES* (MADRID: SUC. DE RIVADENEYRA, 1923), 597

fishing. This was known as *bou's* pairs[7] (see Table 6.2), at the end of the nineteenth century, and encircling fishing with artificial light, in the first decade of the twentieth century (see Table 6.3).[8]

7 Trawling was known in Spain as the *bou*. It consisted of two paired boats under sail that dragged a net along the seabed. The reason for their name came from the similarity that the two boats had with two oxen (bous) plowing the land: see Georgina Soler, *Del bou a la vaca: La pesca d'arrossegament a Catalunya i l'Empordà (1865–1936)* (Treball d'introducció a la recerca, Universitat de Girona, 2002).

8 This process has been studied in the Mediterranean: see Daniel Faget and Jacques Sacchi, "Fishing in the Mediterranean, past and present: history and technical changes," in *Development of Marine Resources*, eds. André Monaco and Patrick Prouzet (London: ISTE ltd and John Wiley and Sons, Inc., 2014), 1–56. These authors have studied the development and expansion of trawling in the Mediterranean. Pair trawling began in the Spanish Levant at the end of the seventeenth century, then later spread rapidly throughout the Mediterranean (from eastern Spain to the Adriatic). This transformation has also been studied in Spain within economic history: see, among others, Ernesto López, "Institutions, technical change and the development of the Spanish fishing industry (1858–1936)," in *Swedish and International Fisheries*, ed. B. Andersson (Goteborg: Göteborg Universitet, 1999), 61–90; and Jesús Giráldez, "Las bases históricas de la actividad pesquera en España," *Papeles de economía española*, no. 71 (1997): 33–47.

TABLE 6.2 Number of *bou* boats, 1866–1914

Maritime Provinces	1866	1878	1907	1908	1909	1910	1911	1912	1913	1914
Palamós	2	–	–	–	–	–	–	–	–	–
Mataró	48	46	–	–	–	–	–	–	–	–
Barcelona	140	86	235	299	312	312	358	328	350	279
Tarragona	128	147	550	410	420	424	420	394	380	402
Tortosa	20	–	–	–	–	–	–	–	–	–
Vinaroz	48	79	–	–	–	–	–	–	–	–
Valencia	90	102	303	315	318	291	297	311	276	297
Alicante	86	86	269	254	258	265	248	233	237	237
Menorca	–	–	–	–	–	–	–	–	2	–
Mallorca	16	14	38	36	42	40	40	28	30	32
Total	**578**	**560**	**1,395**	**1,314**	**1,350**	**1,332**	**1,363**	**1,294**	**1,275**	**1,247**

SOURCES: *ANUARIO ESTADÍSTICO DE LA MARINA MERCANTE Y DE LA PESCA MARÍTIMA* (1907–14); GEORGINA SOLER, *DEL BOU A LA VACA: LA PESCA D'ARROSSEGAMENT A CATALUNYA I L'EMPORDÀ (1865–1936)* (TREBALL D'INTRODUCCIÓ A LA RECERCA, UNIVERSITAT DE GIRONA, 2002), 96. NB: AT THE END OF THE NINETEENTH CENTURY, PALAMÓS AND MATARÓ WERE PART OF THE BARCELONA MARITIME PROVINCE, TORTOSA OF THE MARITIME PROVINCE OF TARRAGONA, AND VINAROZ OF THE MARITIME PROVINCE OF VALENCIA

TABLE 6.3 Number of encircling fishing boats with artificial light, 1908–14

Maritime Provinces	1908	1909	1910	1911	1912	1913	1914
Barcelona	–	–	–	–	–	–	8
Tarragona	74	59	40	12	9	–	96
Valencia	3	20	–	–	–	–	8
Alicante	6	10	35	83	91	159	196
Menorca	–	–	–	–	14	14	14
Mallorca	–	–	10	12	20	20	20
Total	**83**	**89**	**85**	**107**	**134**	**193**	**342**

SOURCES: *ANUARIO ESTADÍSTICO DE LA MARINA MERCANTE Y DE LA PESCA MARÍTIMA* (1907–14)

For eastern Spain, Joan Lluís Alegret and Miquel Martí[9] have suggested that the widespread introduction of fishing equipment for the *bou's* pairs implies a slow but irreversible change in production relations in the fishing sector. This process was not homogeneous across the maritime provinces; rather, it was a long, complex, and uneven development that depended directly on the specific characteristics of each population nucleus. Frequently, these technical innovations were introduced when fishing was the only attractive economic sector in which native capital could be invested. In other cases, they penetrated through the migration of fishermen from the other maritime provinces (Tarragona and Alicante) of the Department of Cartagena.[10] Also, a close correlation between the decline of the sailing cabotage trade and the boom in fishing can be observed between the end of the nineteenth century and the beginning of the twentieth century.[11] In this period, big ports concentrated on the cabotage trade. The reasons for this were centrality within the railway system, and the ability to host steamboats (see Table 6.4 and Table 6.5). This change in production relations also influenced fishermen's associationism. The end of the seafarer's guilds closed a long period of corporate and community management, and opened a new phase characterised by a wide variety of societies that represented different positions within the sector.

The new fishing systems increased the supply of fish available in urban markets. They also increased the profitability of fishing, and therefore benefits.[12] This fact attracted many people, who until that moment were outside the sector. For example, in many coastal villages, individuals with capital and local influence decided to invest money in these new fishing systems, this increased catches. Also, in many of these villages, fishing was the only attractive economic sector in which to invest.[13] With the appearance of new systems, production

9 Miquel Martí and Joan Lluís Alegret, "La pesca en blanc i negre," in *Per a una història de la pesca dels Països Catalans. Recerca i reflexions historiogràfiques*, eds. Joan Lluís Alegret and Alfons Garrido (Girona: Càtedra d'Estudis Marítims, Universitat de Girona, Museu de la Pesca, 2018), 115–134.

10 See Alegret and Garrido, *Història de la Confraria*, 61–65.

11 For example, see Georgina Soler and Neus Torres, "Els pescadors de Palamós," in *El port de Palamós, 1902–2002. Memòria d'un centenari*, ed. Joan Lluís Alegret (Barcelona: Ports de la Generalitat, 2003), 231; and Rafael Viruela, "Las comunidades pesqueras ante la crisis de las pesquerías y el cambio económico," *Cuadernos de geografía*, no. 57 (1995): 153–182.

12 The fish were sold at public auction. In many villages, after the disappearance of the guilds, fishermen societies ceased to control the fish auction. This control would return again with the appearance of the *pósitos de pescadores* in the early twentieth century. The *pósitos de pescadores* was a state initiative of cooperative associationism promoted throughout Spain by the military sailor and sociologist, Galician Alfredo Saralegui.

13 See Alegret and Garrido, *Història de la Confraria*, 63.

TABLE 6.4 Fish caught in eastern Spain, 1892–1908

Years	**1892**		**1908**	
Maritime Provinces	**Kilograms**	**Pesetas**	**Kilograms**	**Pesetas**
Alicante	1,124,216	644,477	3,049,327	1,972,842
Valencia	444,178	225,340	2,773,552	2,300,109
Tarragona	1,499,028	1,206,964	3,871,452	2,915,789
Barcelona	1,742,195	1,264,869	4,718,613	4,469,669
Menorca	104,138	100,449	316,062	254,501
Mallorca	1,105,034	727,789	800,054	1,346,001
Ibiza	–	–	147,400	96,925
Total	**6,018,789**	**4,169,888**	**15,676,460**	**13,355,836**

SOURCES: *ESTADÍSTICA DE PESCA: AÑO 1892* (MADRID: REVISTA DE PESCA MARÍTIMA, 1892); *ANUARIO ESTADÍSTICO DE LA MARINA MERCANTE Y DE LA PESCA MARÍTIMA* (1907–14)

TABLE 6.5 Commercial maritime traffic (value of goods expressed in thousands of pesetas), 1860–1900

Ports (Catalonia)	**1860**	**1900**
Barcelona	275,608	774,888
Tarragona	44,311	53,609
Tortosa	9,157	217
Vilanova i la Geltrú	8,717	121
Sant Feliu de Guíxols	3,876	11,612
Salou	3,037	–
Roses	2,543	382
Malgrat de Mar	2,337	783
Sant Carles de la Ràpita	2,220	373
Palamós	1,823	5,071
El Vendrell	1,483	–
Blanes	1,358	185
Mataró	1,264	92
L'Escala	1,245	7
Port de la Selva	922	2
Arenys de Mar	835	–

TABLE 6.5 Commercial maritime traffic (*cont.*)

Ports (Catalonia)	**1860**	**1900**
Cadaqués	566	131
Sitges	346	–
Palafrugell	343	7
Tossa de Mar	293	46
Lloret de Mar	277	–
Cambrils	62	–
Torredembarra	–	650

SOURCE: JAUME SANTALÓ, *ROSES, 1875–1975: DEL MODEL COMERCIAL A LA REVOLUCIÓ TURÍSTICA* (ROSES: AJUNTAMENT DE ROSES, 2001), 19

relations were modified. In traditional fishing systems, access and control of the means of production were much more evenly distributed among the crew. In comparison, with the significant capitalisation required by the new fishing systems, fishermen found it impossible to gain control of the means of production, which, in turn, were monopolised by a few ship-owners.[14]

In eastern Spain, inshore fishing was well developed. Frequently, fishermen travelled with their boats to fish in other maritime provinces of the same department. These migrations could be temporary for seasonal fishing purposes, or could also be permanent in search of new fishing grounds. For example, in the city of Barcelona, at the end of the nineteenth century, there were high levels of fishermen migration. They moved from other maritime provinces of the Department of Cartagena, and also from other maritime departments; in other words, from all parts of the country.[15] In the city of Barcelona, population growth caused an increase in demand for fish.[16] This encouraged the migration of fishermen to the city, and also the appearance, at the beginning of the twentieth century, of deep-sea fishing companies in the port of Barcelona

14 Cesáreo Fernández, *Estudios sobre la pesca con el arte denominado parejas del bou y reglamento para su régimen* (Madrid: Establecimiento tipográfico Estrada, Díaz y López, 1866), 69.

15 Arxiu del Museu Marítim de Barcelona (AMMB), fondos de la Junta de Obras del Puerto (JOP), caja 811: "Instancia de la Asociación *La Unión de Pescadores de Barcelona* al gobernador civil de la provincia de Barcelona, en 30 de julio de 1896".

16 See Ana Sinde and Gema Álvarez, "La flota pesquera de altura y gran altura en el puerto de Barcelona. Una historia no contada (1907–1936)," *Revista de Historia Industrial*, no. 76 (2019): 80.

TABLE 6.6 Deep-sea fishing fleet in the port of Barcelona, 1925

Owner company	Number of ships	GRT
Pesca y navegación, S.A.*	7	1,909
Vda. Ramón Canosa (Benita Gutiérrez)	3	957
Francisco Freixas Pons y Luis Declaux González	3	866
Marlés y Serra, S.A.	4	1,279
Galiana y Bejarano	2	598
Total	**19**	**5,609**

SOURCES: EMERENCIÀ ROIG, *LA PESCA A CATALUNYA* (BARCELONA: EDITORIAL NORAY S.A., 1996), 94–97; ANA SINDE AND GEMA ÁLVAREZ, "LA FLOTA PESQUERA DE ALTURA Y GRAN ALTURA EN EL PUERTO DE BARCELONA. UNA HISTORIA NO CONTADA (1907–1936)," *REVISTA DE HISTORIA INDUSTRIAL*, NO. 76 (2019): 93. * THE COMPANY PESCA Y NAVEGACIÓN S.A. HAD ITS SHIPS REGISTERED IN SAN SEBASTIÁN BUT OPERATED THROUGH A BRANCH ESTABLISHED IN THE CITY OF BARCELONA IN 1920.

(see Table 6.6).[17] The Barcelona fishing fleet was made up of steam trawlers, and due to high running costs was owned by powerful capitalists (and associated companies) with state-wide political influence. The trawlers fished in North Africa for two weeks, and later unloaded tons of fresh fish in the port of Barcelona. This catch was kept on ice in the hold, or in special compartments in the trawler.[18]

4 The Liberalisation of Trawling (1864–98)

Fishing with the above-described method of *bou* became more important from the eighteenth century.[19] The *bou* system was a much more productive and profitable fishing technique than traditional fishing. Its introduction was closely associated with opposition from the seafarer's guilds, who saw this fishing method as an attack on their ability to control production (since

17 This was the only port in eastern Spain where the analysis has been able to document the practice of deep-sea fishing. This sort of fishing was also present in the ports of the north and south of Spain.

18 See Rodríguez, *Diccionario de Artes de Pesca*, 176–186.

19 Carlos Martínez and Roberto Fernández, "El despliegue de los bous catalanes en el siglo XVIII," in *Historia moderna. Historia en construcción*, ed. Carlos Martínez (Lleida: Milenio, 1999), 61–75.

the owners of the *bou's* pairs were not part of guilds).[20] On the other hand, these same guilds were also opposed to trawling for reasons that, at present, would be considered ecological or environmental in nature. The motive was the harmful effects that this activity caused to the fishing ecosystem, by killing young fish that had not reached maturity.

Although the seafarers' guilds disappeared in 1864, opposition to *bou's* pairs continued. Guild abolition implied the end of guild corporatism, and that the monopoly on the management of fisheries resources remained in the hands of the state, which, later, created the *Comisión permanente de pesca*,[21] an advisory body for the study and reform of fishery ordinances. The aforementioned commission approved a regulation on trawling, by *Real Orden* of 9 December 1865, known as the *Reglamento para la pesca con parejas del bou*. This regulation prohibited trawling in those districts where it was not practised prior to regulation enforcement. In the districts where fishing was previously carried out, it was permitted to continue at a coastal distance of twelve miles from the Strait of Gibraltar to the Ebro, and six miles in the provinces of Barcelona and Tarragona. A closed season was established from 30 May to 15 September (Gibraltar-Ebro), and from 30 May to 1 October (Tarragona-Barcelona). In addition, the construction of new *bou's* pairs, the transfer of pairs from one district to another, or the use of trawling on boats previously used for other activities, was prohibited. The regulations also prohibited the replacement of damaged nets or boats.[22]

The abolition of the Matriculate of the sea (*Matrícula de mar*) and the establishment of a regime for the free exercise of maritime industries, led to a misunderstanding of freedom in the fishing sector that resulted in breaches of the law. Its disappearance, in 1873, allowed the entry of individuals who, until then, were outside the sector. Although the Ministry of the Navy continued to maintain control over seafarers, the end of the Matriculate resulted in anyone being allowed to obtain income from fishing activities; that is to say, individuals or businessmen who, until then, were outside the profession, were permitted to seek income from fishing without the need to register. The law of 22 March 1873,[23] established the abolition of the Matriculate and the

20 The concession to exercise *bou* fishing was a privilege that could only be granted by the Spanish Monarchy; the seafarer's guilds had not direct control: see Soler, "Del bou a la vaca," 49.

21 The *Comisión permanente de pesca* was created by the state nine months after the abolition of the seafarer's guilds: see Martí and Alegret, "La pesca," 127.

22 Local fishing commissions against *bou* fishing played a prominent role in drawing up the 1865 regulation: see Soler, "Del bou a la vaca," 52–55.

23 See *Gaceta de Madrid*, no. 85, March 26, 1873.

free exercise of maritime industries for all Spaniards. For the purposes of this law, navigation, port traffic, and fishing in general, were considered maritime industries. Due to a lack of means, the Navy authorities were unable to enforce the regulations of 1865, and this development was taken advantage of by fishermen. In June 1878, a *Real Orden* was approved for the legalisation of those *bou's* pairs constructed between September 1868 and December 1874. However, many ship-owners demanded that all pairs constructed up to 1878 remain under legal protection. The petition was eventually successful, extending the period up to 1 June 1878.[24]

The strong pressures exerted by the supporters of trawling influenced and gradually modified the initial position of the *Comisión permanente de pesca*. The *Real Orden* of 9 October 1888 began to legalise trawling; unregulated fishing was now declared from three miles off the coast, and there were no restrictions other than those related to the safety of boats. The closed season imposed a few years earlier also disappeared. This was a decision by legislators, which later was considered to be excessively expansive by the same ship-owner companies of the *bou*.[25] With the *Real Orden* of 8 October 1894, fishing was returned to the six-mile demarcation. Finally, in 1898, the *Reglamento para la pesca con parejas del bou y demás redes de arrastre remolcadas por embarcaciones*, was approved. This ratified the resolutions previously taken in 1888 and 1894. This regulation once again placed trawling three miles off the coast. The following year, at the request of various societies of ship-owners and fishermen, a closed season was established from 1 May to 30 September in the maritime provinces of Alicante, Valencia, Tarragona, and Barcelona.[26] The 1865 regulation failed to achieve its goal of ending trawling. In the period 1866–78, there was no growth of the *bou* fleet throughout all of eastern Spain. It also decreased significantly in the maritime province of Barcelona. Subsequently, and following the liberalisation of trawling, the number of existing boats grew progressively. In 1907 the number of *bou* boats had more than doubled compared with 1866.

5 A New Associationism in the Fishing Sector (1864–1923)

As previously pointed out, the disappearance of the seafarers' guilds in 1864 closed a long period of corporate and community management. Their abolition gave way to the progressive appearance of new fishermen's societies that,

24 Soler, "Del bou a la vaca," 56–60.

25 "La pesca del 'Bou'" *La Vanguardia*, January 11, 1898, 1–2.

26 Soler, "Del bou a la vaca," 61–66.

separately, wanted to represent the different existing positions within the sector, including: ship-owners' societies, workers' societies, consumer and production cooperatives, *pósitos de pescadores, sociedades de fomento y protección de la pesca*, brotherhoods and mutual entities, industrial societies, recreational societies, and educational societies. All abandoned the corporatist and religious character of the seafarers' guilds, but maintained the provision of mutual aid among members.[27] However, beyond this common element, modern fishing associationism divided into multiple societies that frequently competed with each other for the defence of the particular interests of their members. Although a general classification of fishing associations can be established based on the main function of each society, we should consider that many carried out multiple functions at the same time, and therefore, could be located within different typologies of this sort of organisation.

The ship-owners' societies were formed by the owners of fishing boats. In their regulations, they were dedicated to helping their members in the event of boat stranding or shipwreck, and to provide mutual aid in case of illness or old age. Most of these societies were focused mainly on defending the interests of the ship-owners of the *bou*. For example, at the end of 1896, a meeting of delegates from the ship-owners' societies of eastern Spain, held in Tarragona, asked the government to introduce a closed season for trawling. In this meeting, *La asociación de patronos pescadores* from Barcelona, *La marina auxiliante*, from Valencia, and *La sociedad marítima protectora de San Pedro*, from Tarragona, participated, together with representatives from the fishing boat owners of the following populations: Torrevieja; Santa Pola; Peñíscola; Vinaroz; Sant Carles de la Ràpita; Ametlla de Mar; Cambrils; Torredembarra; Calafell; Vilanova i la Geltrú; Badalona; and l'Escala.[28] Following the dissolution of the seafarers' guilds, the monopoly of the management of fishing resources remained in the hands of the Spanish state; however, with the passage of time, the state gave relevance and prominence to the societies which defended the *bou* system, simply because it helped to increase the supply of fish in the markets.

The workers' societies consisted of boat crews. Their main objective was to defend the material, economic, social, and moral interests of their members. The appearance of this association model was the result of the polarisation taking place in the sector. Many were created following a strike or labour

27 The *Ley de asociaciones* of 1887 considered that mutual aid societies were an associative modality without worker connotations. They were far from being considered dangerous to the state. Beyond developing other different functions, mutual aid and apoliticism appeared in the regulations of all fishermen's societies.

28 "La pesca del 'Bou,'" *El Liberal*, November 30, 1896, 2.

conflict between sailors and *bou* ship-owners. These societies were exposed to the influence of terrestrial labour movements within their respective populations. Thus, at the beginning of the 1870s, groups of fishermen were formed in El Cabañal, Valencia, and in Tarragona attached to the *Federación regional española*,[29] which was the Spanish section of First International (1864–76). Later, at the end of the nineteenth century, societies became closely related to socialist trade unionism, such as, for example: *La asociación de marinos pescadores*, from Sitges, *La asociación de pescadores remitgés*, from Badalona, or *La sociedad de marineros pescadores*, from Tarragona.[30] At the beginning of the twentieth century, a political movement known as *Blasquismo*[31] also exerted a strong influence on the *El progreso pescador* society from Valencia. Finally, following the formation of the *Confederación nacional del trabajo* (CNT) in 1910, some societies closely related to anarcho-syndicalism appeared, such as *La perla*, from Palma de Mallorca, *Los trabajadores del mar*, from Mahón, or *La llum del dia*, from Vinaroz.

The *sociedades de fomento y protección de la pesca* appeared in eastern Spain with the aim of promoting fishing, fighting abuses, and reporting to the competent authorities, the legal infractions committed during the course of trade. These societies consisted of fishermen who used traditional methods. With the abolition of the seafarers' guilds, fishing surveillance and law enforcement also disappeared. The state, which now performed this function, had limited surveillance capacity due to a lack of material and personnel resources. For example, at the end of the nineteenth century, small navy vessels were used for this purpose, but their presence did not succeed in eliminating infractions, which were mainly committed by *bou's* pairs. As a result, the creation of fishing protectorate bodies were proposed, which would be closely related to relevant societies, and under the control and inspection of the naval authorities. The statutes of *La protectora de la pesca*, from Mahón, requested such a body, and were presented to the Civil Government of Menorca on 22 February 1904.[32]

29 *La Federación*, March 20, 1870, 4; *La Federación*, September 27, 1873, 3. The *Federación regional española* was founded at the Barcelona workers' congress of 1870.

30 Archivo General de la Marina Española (AGME) "Don Álvaro de Bazán" (Viso del Marqués), serie 1.24. Indiferente de Marina, legajo 4771: "Presidente de la Liga Marítima Española en comunicación con el ministro; remite reglamento de los montepíos existentes".

31 *Blasquismo* was a republican and populist movement that emerged in the city of Valencia in the last decade of the nineteenth century, and was led by the politician and writer Blasco Ibáñez.

32 CSIC. Institució Milà i Fontanals. Fons Tomàs Carreras i Artau. Qüestionaris de l'Arxiu d'Etnografia i Folklore de Catalunya. Qüestionari 9. Ètica i dret consuetudinaris i economia popular de Catalunya: costums i tractes més usuals referents a la pesca marítima. Artes de pesca en Mahón: Sociedad la Protectora de la Pesca de Mahón. Reglamento.

Other societies made similar requests, including: *La amistad*, from Palma de Mallorca, and *El fomento de la pesca*, from Valencia (1902); *El fomento de la pesca*, from Barcelona (1904); and *La lucha*, from Alicante (1905).[33]

The brotherhoods and mutual entities functioned as mutual aid societies for cases of illness, accident, or old age amongst members. Most societies grouped together the entire local class of sailors dedicated to maritime traffic and fishing. However, with the decline of the sailing cabotage trade, at the end of the nineteenth century, they became fully focused on fishing activities. In addition to providing mutual aid, the societies also defended the private interests of the membership. For example, in the maritime district of Mataró, in the first decades of the twentieth century, *La germandat marinera mataronina Sant Pere i Sant Elm*, from Mataró, requested the prohibition of fishing with artificial light; on the contrary, *La germandat marinera malgratenca sota l'advocació de Sant Pere*, from Malgrat de Mar, requested legalisation. There were also some mutual societies that continued to cling socially and culturally to the corporatism of the previously established seafarers' guilds. A good example was *El gremio de pescadores y marineros*,[34] from Mahón, which at the beginning of the twentieth century, maintained a certain religious influence. It received the name of a guild, although it was no longer so, and was opposed to trawling.

The cooperative movement grew in importance as the divisiveness in the fishing sector increased. At the end of the nineteenth century, there were already consumer cooperatives such as *La societat cooperativa "la marítima"*, from Mataró, or *La cooperativa "els pescadors"*, from Vilanova i la Geltrú. At the beginning of the twentieth century, different reformist ideas appeared that proposed the creation of consumer, production, and credit cooperatives on the Cantabrian coast.[35] In eastern Spain, there were similar associations such as *El progreso pescador*, from Valencia, and *La sociedad de marineros "la unión"*, from Sant Carles de la Ràpita. Both societies were created from two strikes. *El progreso pescador* was an emancipated society from *La marina auxiliante*, which was formed as a consumer and production cooperative. In 1919, it had a total of five *bou's* pairs.[36] Throughout its existence, the *Sociedad de marineros*

33 See Soler, "Del bou a la vaca," 69–72.

34 This society was related to the *Sociedad La protectora de la pesca* de Mahón: see Qüestionari 9. Ètica i dret consuetudinaris i economia popular de Catalunya: costums i tractes més usuals referents a la pesca marítima.

35 See Alberto Ansola, "Una pesca feliz: Alfredo Saralegui y sus Pósitos de Pescadores (1915–1936)," *Historia Social*, no. 57 (2007): 7–8.

36 Alfredo Saralegui, "La unión hace la fuerza. Sociedad El Progreso Pescador, de Valencia", *Boletín de Pescas*, publicación mensual ilustrada del Ministerio de Marina con el concurso del Instituto Español de Oceanografía, nos. 35–36 (July and August 1919): 291–239.

"la unión" maintained manifest discrepancies with *La sociedad de patronos armadores*, and, in 1922, it merged with *El pósito de pescadores de Sant Carles de la Ràpita*, contributing three fishing boats.[37] Furthermore, during the first decades of the twentieth century, there was also, in Costa Brava, a type of association known as *La pescadora* that, in different villages such as Roses, l'Escala, Blanes, or Palamós, developed a cooperative proposal similar to that of the *pósitos de pescadores*. However, they were private societies, and unlike the *pósitos de pescadores*, were not interfered with by the state.

Educational societies provided training and education for members and their children. In Barcelona, *La asociación de patronos pescadores*, and *El fomento de la pesca* were formed, (1902); while *El patronato de la escuela de pesca*, which was an educational entity for the fishermen of the city was also formed (1902).[38] Other examples included *El cercle de pescadors i obrers*, from Caldes d'Estrac, an educational and recreational society created in 1893; or *La sociedad instrucción y pesca*, established in Calella de Palafrugell in 1912, which combined education with mutual benefits for members.[39] It should be noted that illiteracy was one of the main issues for fishermen at the beginning of the twentieth century, their lack of education made them especially vulnerable to intermediaries. This problem was deeply rooted within the fishing sector, and for this reason, the *pósitos de pescadores* created schools for the children of fishermen.

The *pósitos de pescadores* were created during the second decade of the twentieth century and disappeared following the Spanish Civil War. These entities were financed by the *Caja central de crédito marítimo* (CCCM), an institution under the Ministry of the Navy, which served as a link between the state and the *pósitos de pescadores*. One of its main objectives, was to respond to conflict experienced within the fishing industry at the beginning of the twentieth century, and to achieve social harmony in the sector. Inside the *pósitos de pescadores*, ship-owners and the crew of fishing boats were grouped together. Its founder also wanted to increase the well-being of fishermen, seeking to organise them into different sections, that is: control of the fish auction and disappearance of intermediaries; the consumer cooperative; the production cooperative; mutual aid; and schools for the children of fishermen. Its formation in the territory was important, and in 1935, there were a total of 59 *pósitos*

37 Millan, *Pescadors i navegants als Alfacs*, 74–87.

38 "Notas Locales," *La Vanguardia*, January 7, 1902, 3.

39 See Alfons Garrido, "Origen i evolució de les associacions de pescadors a través del Gremi de Sant Pere de Palafrugell (segles XVII–XX)," *Estudis del Baix Empordà*, no. 29 (2010): 162–180.

de pescadores scattered across eastern Spain. However, they did not manage to achieve social harmony or peace within the fishing sector; although there were some exceptions, the vast majority of the *pósitos de pescadores* ended up being controlled by ship-owners.[40]

Recreational societies were associations where fishermen engaged in social and leisure activities. Many held parties or dances that served to raise funds for fishermen who suffered from a storm or shipwreck. They also were *casinos*[41] (social clubs), such as *La unión de pescadores*, from Valencia, which was closely linked to *El progreso pescador*.[42] In Catalonia, the formation of choral societies stood out, bringing together fishermen to sing and to provide mutual aid in the event of illness, incapacity, or old age. For example, in Badalona, *El mont de pietat del cor de la marina* was created in 1876 and, at the beginning of the twentieth century, former members of this same society founded a new one called *Cor marítim badaloní*.[43]

Industrial societies were companies managed by powerful individuals who had significant capital, and were engaged in the fishing industry. In the port of Barcelona, the societies of steam trawlers that fished in North Africa stood out. They began to settle permanently in the city from 1907, and functioned as part of an expansion strategy by ship-owners of ports in the north of Spain (mainly Galicia). This development was due to the enormous overexploitation suffered by traditional northern fishing grounds.[44] This type of company also operated in inshore fishing. A good example was *Pesquera mallorquina S.A.* of Nicolás Company, a captain of the merchant marine, who, in the early 1920s, fished in the waters of the maritime district of Palma de Mallorca. This society was dedicated exclusively to *bou's* fishing and had three pairs: one that operated under sail, another by steam, and a third by motor.[45]

40 Ansola, "Una pesca feliz," 3–26.

41 Associations whose members pay a fee and can meet in a place or set of facilities to talk, read, play, or organise recreational or cultural activities.

42 "Los pescadores de Valencia," *La Tarde*, February 10, 1909, 1.

43 Arxiu Històric de la Ciutat de Badalona (AHCB): "Cor de Marina A.F.C. 443. Reglaments" and "Donació Cor Marítim Badalona. Certificació de Constitució i estatuts".

44 These societies were very important in the port of Barcelona between the years 1907–36: see Sinde and Álvarez, "La flota pesquera de altura," 79–106.

45 Juan Delgado, "La pesca marítima en España en 1920. Baleares," *Boletín de Pescas, publicación mensual ilustrada del Ministerio de Marina con el concurso del Instituto Español de Oceanografía*, nos. 61–63 (September, October and November 1921): 256–259.

6 Fishing Conflicts in Eastern Spain (1864–1923)

In inshore fishing, the system of shares (*sistema a la parte*)[46] functioned in the following way: by a distribution of profits obtained from the sale of fish, that is, the remuneration of each boat member for the performance of his work.[47] The shares were calculated as follows: firstly, a deduction of common expenses (basically, the operation of the boat and the maintenance of the crew); and secondly, of the remaining total, one part went to the ship-owner, and another to the crew (the sailors and the skipper of the boat).[48] In addition, the crew also received whitebait, which was unsold fish eaten by the crew and their families.[49] With the passing of the decades and an increase in the price of fish, whitebait was no longer used for consumption, as crew members preferred to sell this produce at auction alongside the main catch.

However, it should be noted that, although it seems sailors participated in the extracted benefits, in the end, they did nothing more than receive a salary pertaining to their work. The system of shares was the method that the ship-owner used to save on the payment of a fixed salary in a profession that was highly conditioned by the uncertainty of the weather, and the catch. Storms meant that for several days, or sometimes for longer periods of time, fishermen were required to leave their boats moored on the beaches or in the ports without the ability to fish, with the consequent associated economic losses.

As Ansola has pointed out,[50] with the arrival of capitalism in the fishing sector, the system of shares underwent modifications, which increased boat and fishing equipment expenses, in detriment to the crew. The separation between labour and capital increased, in a way that meant growth in catches from

46 It was the method of paying wages in inshore fishing, however fixed salary was operated in deep-sea fishing.

47 In each locality of the Mediterranean coast, and depending on the fishing equipment, the share-based system operated with its own specificities or customs.

48 In some cases, the ship-owner could also be the skipper of the boat or perhaps a member of his family. In the *bou's* pairs there were two skippers, each in charge of directing one of the two boats. In addition to their corresponding share, the skippers could receive a payment from the ship-owner for work done.

49 Consumption was a very relevant element in ensuring the subsistence of fishermen: see Cristina Borderías and Luisa Muñoz, "¿Quién llevaba el pan a casa en la España de 1924? Trabajo y economías familiares de jornaleros y pescadores en Cataluña y Galicia," *Revista de historia industrial*, no. 74 (2018): 77–106.

50 Alberto Ansola, "The impact of technological change on production and labour relations in the Cantabrian fisheries, (1864–1936)," in *Technological Change in the North Atlantic Fisheries*, edited by Paul Holm and David J. Starkey (Esbjerg: North Atlantic Fisheries History Association, 1999), 205–223.

more-intensive fishing techniques did not translate into general economic and social improvements for the entire sector. Many fishermen became a mere workforce, and remained subject to new social relations of production, which did not benefit them.

The existing inequalities within the fishing sector would be basically translated into two types of conflicts: on the one hand, there were strikes carried out by trawling sailors and those that used artificial light to fish (see Table 6.7); and, on the other hand, there were disputes and tensions between the societies of fishermen who defended the introduction of intensive fishing systems, and those who defended traditional or "minors" fishing systems, some of whom considered themselves heirs to the corporatism of the guilds system.

In most strikes and labour disputes that occurred across eastern Spain during the period studied, the issues mainly pertained to wages. Either, it was the main reason for the confrontation, or it was one of the main reasons for discussion between ship-owners and sailors. Other types of labour demands could be added to the fight for wages, such as: recognition by ship-owners of the workers' societies of sailors; the exclusive hiring of those sailors who were associated with the workers' societies; setting hours of work; establishing treatment between ship-owners and seamen on-site, and during working hours; and compliance by ship-owners with the law related to workplace accidents.

Moreover, in different geographical locations of eastern Spain, the appearance of new fishing systems generated strong social conflicts, which would lead to tensions, fights, riots, and a high degree of verbal and physical violence between the conflicting parties. For example, in the 1880s,[51] fishermen from the village of l'Estartit asked for permission to use *bou's* pairs, arguing that phylloxera had destroyed the vineyards, and that harvests were negligible. The concession for fishing with the *bou* caused a long conflict with the fishermen of the village of Roses, who complained that those of l'Estartit did not respect the laws and fished inside the Gulf of Roses. This was not the only case: on the island of Menorca, in the second decade of the twentieth century, there were disputes between the fishermen from Mahón, and the fishermen using the *bou* from Mallorca.[52] The latter, in 1917, were authorised to fish in the waters of Menorca, as the effects of the First World War had caused meat prices to rise, therefore the *bou's* pairs could supply the islands with low price fish.[53] The systematic opposition that Mahón societies (*La protectora de la pesca*, and *El gremio de pescadores y marineros*) raised to the use of trawling, deteriorated

51 Soler, "Del bou a la vaca," 105–110.

52 "Lo del 'Bou,'" *El Noticiero Popular*, February 1, 1912, 3.

53 "Ayuntamiento de Mahón," *La Voz de Menorca*, February 27, 1917, 2.

TABLE 6.7 Strikes and labour disputes between ship owners and sailors between 1873–1923

Village	Chronology	Fishing System
Pueblo Nuevo del Mar	1873	Bou
Sant Carles de la Ràpita	1884	Bou
Vilanova i la Geltrú	1889	Bou
Pueblo Nuevo del Mar	1890–91	Bou
Tarragona	1897	Bou
Badalona	1898	Bou
Valencia	1902–04	Bou
Sant Carles de la Ràpita	1904–05	Bou
Sitges	1908	–
Palma de Mallorca	1916	Bou
Palma de Mallorca	1916	Encircling
Lloret de Mar	1919	Encircling
Palma de Mallorca	1919–20	Bou
Valencia	1920	Bou
Vinaroz	1920–21	Bou
Sant Feliu de Guíxols	1923	Encircling
Blanes	1923	Bou

SOURCES: STRIKES AND LABOUR DISPUTES DOCUMENTED THROUGH THE PRESS BETWEEN 1864–1923, AND THE INSTITUTO DE REFORMAS SOCIALES, *ESTADÍSTICAS DE LAS HUELGAS DE 1915 Y 1916* (MADRID: SOBRINOS DE LA SUC., DE M. MINUESA DE LOS RÍOS, 1918), 205–207

(in early 1918) into a violent riot in the port, caused by supporters of the *bou* against defenders of traditional fishing.[54]

The introduction of encircling fishing with artificial light at the beginning of the twentieth century also faced strong opposition. The detractors of this fishing system argued that its general use could result in the exploitation and exhaustion of the natural resource.[55] And, in addition, there were other economic reasons more worrisome than the shortage itself: on one hand, there

54 "La cuestión de la pesca," *El Bien Público*, February 20, 1918, 1.

55 With encircling fishing using artificial light, bluefish were mainly caught, that is, sardines, anchovies, and mackerel. This system replaced the fishing system of the *sardinal* and the *encesa*: see Carles Bas and Raimon Camprubí, *La pesca a Catalunya* (Barcelona: Ediciones Destino, 1980).

was the fishermen's fear of losing control of the means of production; and, on the other hand, the increase in fish catch directly influenced the market by lowering the price of fish.[56] In 1908, in El Cabañal (Valencia), there were protests against the tests, which had been carried out since April 1907, to introduce this fishing system. A year later, in the port of Alicante, there was a small altercation involving the wives of fishermen, who protested against the presence of encircling fishermen from the villages of Alicante, El Campello, and from the island of Tabarca.[57] In the maritime province of Barcelona—in such villages as Badalona, Mataró, Blanes, or Sant Feliu de Guíxols—there were also fishermen's societies that were systematically opposed to the introduction of artificial light fishing on their coasts.[58] In 1919, Mataró's fishermen societies[59] achieved a prohibition of this fishing equipment in the maritime districts of Barcelona, Badalona-Masnou, and Mataró,[60] thanks to the support received from the influential societies of steam trawlers, which were concentrated in the port of Barcelona.[61] Logically, the prohibition of encircling fishing with artificial light in the maritime districts near Barcelona was very beneficial for the societies of steam trawlers, since it involved the elimination of a direct market competitor, and made an increase of fish prices possible. According to the press of the time, among its promoters were the politicians Lluís Moret i Català[62] and José Enrique de Olano (The Count of Figols),[63] who were part of the company *Pesca y navegación, S.A.*[64]

As previously pointed out, steam propulsion for inshore fishing in eastern Spain was rare. However, the authorisation of various legal requests submitted

56 Yvette Barbaza, *El paisatge humà de la Costa Brava* (*II*) (Barcelona: Edicions 62, 1988), 157.

57 "La pesca con farola submarina," *El Pueblo*, May 13, 1908, 1; "Los pescadores de Alicante," *Diario de Alicante*, June 7, 1909, 1.

58 "La indústria de la pesca," *La Veu de Catalunya*, July 27, 1918, 9; "Badalona Marítima," *La Veu de Catalunya*, August 15, 1918, 9; "Crònica," *El Programa*, March 3, 1917, 3.

59 Three societies: *La Germandat Marinera Mataronina Sant Pere i Sant Elm; La Societat Cooperativa "La Marítima"*; and *La Societat de Pescadores "La Justícia"*.

60 By the *Real Orden* of 7 September 1919. The ban lasted until the 1930s, when steam trawling societies lost importance in the port of Barcelona: see "Lo de los traineros," *El Diluvio*, June 2, 1921, 12.

61 A. Marin, "Contra una injusticia," *El Diluvio*, June 8, 1923, 17; A. Marin, "Reconocimiento de Justicia," *El Diluvio*, June 13, 1923, 11; A. Marin, "El pleito de la traíña," *El Diluvio*, June 21, 1923, 12.

62 He was a member of the Spanish Congress for the electoral district of Mataró between the years 1920–23.

63 He was a politician and mining entrepreneur; among other activities, he chaired the *Real club de regatas* and the *Asociación de armadores de navegación libre* from Barcelona.

64 "L'explotació de la pesca," *Catalunya Marítima*, March 30, 1920, 138; "Nueva Compañía Pesquera," *Vida Marítima*, July 10, 1920, 334.

by some ship-owners during the first years of the twentieth century—in places such as Calella (1900) or Palma de Mallorca (1901),[65] and later in Valencia (1910–1914)[66]—requesting the use of *bou* fishing with steamboats, generated strong opposition from fishing communities and societies dedicated to the same fishing system with sailing boats. With regards motorboats, their appearance also caused conflicts with fishermen who were still using sail. In the Valencian community, the growth of motorboats was slow: in the 1930s they still only represented 15% of all boats. The main reason was the high price of the engines and the lack of necessary capital for their acquisition.[67] However, in Catalonia growth was significant: throughout the 1920s and into the mid-1930s, the number of motorboats almost equalled those of sailing craft.[68] At the beginning of the 1920s, the penetration of motor power divided the fishermen of Vilanova i la Geltrú into two distinct sides: on the one hand, fishermen who continued to fish with sailboats due to lack of capital; and, on the other hand, the fishermen who used motorboats.[69]

Finally, during the military dictatorship of Miguel Primo de Rivera (1923–30), conflict in fishing began to lessen. However, social harmony in the sector was just a mirage. With the proclamation of the Second Spanish Republic, the conflict returned.[70] From the 1930s onwards, the transport of fish by road grew in importance, while deep-sea fishing in the port of Barcelona declined.[71] Parallel to this decline in deep-sea fishing was the legalisation of encircling fishing with artificial light in the maritime districts of Barcelona, Badalona-Masnou, and Mataró. In the decades after the Spanish Civil War, the changes and the transformations in the sector were consolidated. The advent of capitalism and industrialisation within the fishing sector was a long, complex, and uneven process. However, in the 1960s, many coastal villages of eastern Spain abandoned fishing to focus mainly on tourism.

65 Archivo Naval de Cartagena (ANC), sección YM, grupo VI-A y B, carpeta 218: "Que se informe con respecto á si pueden pescar al bou dos embarcaciones de vapor".

66 "Los pescadores del 'bou,'" *El Pueblo*, September 15, 1910, 1; "La pesca del 'bou,'" *Diario de Valencia*, September 2, 1914, 5.

67 Viruela, "Las comunidades pesqueras," 160.

68 Soler, "Del bou a la vaca", 129.

69 Xavier Garcia, *La vida marinera a Vilanova i la Geltrú* (Vilanova i la Geltrú: Selecta, 1980), 69.

70 Ansola, "Una pesca feliz," 24–25.

71 Sinde and Álvarez, "La flota pesquera de altura," 79–106.

7 Conclusions

Throughout the nineteenth century, the state tried to create the conditions necessary for the development of a liberal economy in the fishing sector, and to suppress the long corporatist tradition of the seafarer's guilds. By the end of the century, this policy culminated in the liberalisation of the fishing sector. In this way, the foundations were laid for the penetration of the capitalist mode of production through boats and fishing systems, which were much more productive and profitable than traditional methods. In eastern Spain, this process did not occur in a uniform manner, neither in intensity, nor chronologically. However, as these technical innovations were introduced, fishing associationism was also transformed, giving rise to a broad variety of societies that, in different ways, wanted to give voice to the different interests now existing within the sector. All these changes created conflict, based mainly on disputes between capital and labour. This led to strikes, and confrontation between the defenders of the new fishing systems, and the defenders of the "minors" systems.

PART 2

Maritime Communities

CHAPTER 7

The Metamorphosis of Barceloneta: The Effects of Industrialisation and Liberalism on the Maritime District of Barcelona

Eduard Page Campos

1 Introduction

The transition from sail to steam navigation and the general industrialisation process of the economy, in conjunction with the liberalisation of maritime trade and labour, generated far-reaching social transformations. Those communities that lived from their relationship with the sea saw the foundations of their existence transformed in less than a century. The transformation of labour categories and relations, the dismantling of customs and practices in the management of vessels, and the change in demographic regimes are some of the most important phenomena associated with these processes. For those communities embedded in big cities and linked to ports with an international scope, the acceleration of communications, migratory processes, and commercial globalisation increased the social impact received.[1]

Barcelona's maritime district, Barceloneta, experienced the conjunction of all these phenomena. Consolidated as a result of the expansion of Catalan trade and the growth of the port of Barcelona, Barceloneta transformed significantly throughout the nineteenth century at different levels. Based on a consultation of a wide range of sources—the civil register of the city, its commercial guides,

1 The attention that worldwide historiography has addressed to these processes has expanded in recent decades. Several studies have focused on the transformation at different levels of maritime populations and big port cities in the context of industrialisation. See Nicolas Cochard, *Les marins du Havre : gens de mer et société urbaine au XIX^e siècle* (Presses Universitaires de Rennes, 2016); Josef W. Konvitz, "The crises of Atlantic port cities, 1880 to 1920," *Comparative Studies in Society and History*, no. 36.2 (1994): 293–318; Frank Broeze, ed., *Brides of the Sea: Port Cities of Asia from the 16th–20th Centuries* (Kensington: New South Wales University Press, 1989); Richard Lawton and W. Robert Lee, eds., *Population and Society in Western European Port Cities, c.1650–1939* (Liverpool: Liverpool University Press, 2002); Brad Beaven, "From Jolly Sailor to Proletarian Jack: the remaking of sailortown and the merchant seafarer in Victorian London," in *Port Towns and Urban Cultures: International Histories of the Waterfront, c.1700–2000*, eds. Brad Beaven, Karl Bell, and Robert James (London: Palgrave Macmillan, 2016), 159–178.

the press, notarial documentation, contemporary social commentators, institutional sources and electoral lists, among others—in this chapter we will look at the evolution that, until the end of the nineteenth century, the district experienced in four different aspects. These were: the economic activity in the neighbourhood, its demographic patterns, its socio-professional structure, and the standard of living of its population.

2 The Genesis of a Maritime District in Barcelona's Back Yard, 1753–1830s

The birth of Barceloneta is closely linked to the expansionist context of the Catalan economy in the mid-eighteenth century. The new development of commercial agriculture, with the specialisation in vine growing for the export of wines and spirits, initially to northern Europe, established an incipient link between the Catalan economy and the international market. This led to an increase in food imports and in the country's consumption capacity, in a dynamic that enabled a growth in population that was unhindered by the classic limits of the old demographic regime.[2] The city of Barcelona, as the main gate to foreign trade through its port, played a paramount role in the whole process. The increasing activity in the port was augmented by the dynamism of the manufacturing sector, in a city that was experiencing a sustained growth in population.[3] This context explains the decision, taken in 1753, to build a new district outside the walls that surrounded the city. Located on a sandy area immediately beside the port's only quay, it fulfilled the functions of both alleviating the demographic pressure on the walled city and channelling a growing contingent of people linked to maritime activities (Fig. 7.1).

With regard to access to property, priority was given to those professions linked to the sea. Thanks to this and to the proximity of the port, activities linked to the maritime-port economy became established here from very early

2 The basis of the process of transformation of the Catalan economy in the eighteenth century, explained in Pierre Vilar, *Catalunya dins l'Espanya moderna: recerques sobre els fonaments econòmics de les estructures nacionals* (Estudis i Documents 1–4) (Barcelona: Edicions 62, 1964), bk. 3; Francesc de Paula Valls Junyent, *La Catalunya atlàntica: aiguardent i teixits a l'arrencada industrial catalana* (Eumo, 2004).

3 The leading role of the manufacturing sector in the expansion of the economy of Barcelona prior to industrialisation is described in J.K.J. Thomson, *A distinctive industrialization: cotton in Barcelona, 1728–1832* (Cambridge: Cambridge University Press, 1992); Alejandro Sánchez Suárez, "Les activitats econòmiques a Barcelona (1717–1833)," in *Història de Barcelona*, vol. 5: *El desplegament de la ciutat manufacturera* (*1714–1833*) (Barcelona: Ajuntament de Barcelona: Enciclopèdia Catalana, 1995), 217–65.

FIGURE 7.1 The walled city of Barcelona and the district of Barceloneta (bottom right) in 1808
SOURCE: *PLAN OF THE CITY AND PORT OF BARCELONA*, FILE 11-C-52, CARTOTECA DEL INSTITUTO GEOGRÁFICO NACIONAL (PPOBL 1870-1970 CC-BY 4.0 IGN.ES)

on. The decades that followed the construction of Barceloneta saw the intensification of the economic dynamics described. The opening up of American ports to direct trade expanded a colonial market that had been residual in the foreign trade relations of the Catalan economy until then. This expansion allowed an economic network to flourish in the district to meet the demands generated by the expansion of Catalan trade and, specifically, by the increase in port and shipping activity.[4]

This led to the creation of a robust local bourgeoisie which, based on the income generated by this network, controlled the real estate in the district.[5] At the same time, the demand for labour on board ships encouraged seamen to settle in Barceloneta. At the end of the eighteenth century, in the absence of

4 The most important studies regarding the founding of Barceloneta and its economic basis are: Mercè Tatjer, *Burgueses, inquilinos y rentistas: mercado inmobiliario, propiedad y morfología en el centro histórico de Barcelona: la Barceloneta, 1753–1982* (Madrid: Consejo Superior de Investigaciones Científicas, 1988); Mercè Tatjer, "La Barceloneta com a centre de producció i aprovisionament naval, 1750–1950," *Barcelona quaderns d'història*, no. 22 (2015): 67–86.

5 Tatjer, *Burgueses, Inquilinos y Rentistas*, 66.

demographic sources, we have several contemporary witnesses who described the occupational profiles of the population. They reported a preponderance of fishermen, caulkers, and other artisans, though, above all, they emphasized the presence of seafarers working for the merchant marine.[6] By the end of the eighteenth century, though still a relatively small district, with around 3,000 or 4,000 inhabitants, Barceloneta had already become, due to the constitution of its population and its economic activity, an urban maritime community inserted into the dynamics of a prominent Mediterranean port city.

3 Economic and Sociodemographic Features of Barceloneta in the Golden Age of Sail, 1830s–60s

3.1 *A District at the Service of the Maritime Economy*

Economic growth came to a halt at the end of the eighteenth century and the beginning of the nineteenth due to a long period of wartime interruptions, that started with the conflict with Revolutionary France and which culminated in the Peninsular War against Napoleon's troops. Hence, the Catalan economy was faced with a situation of adversity, and in particular, the merchant marine, shipbuilding, and their auxiliary sectors suffered a severe blow as a result of the paralysis of international trade, the repeated blockades of transatlantic routes and, eventually, the loss of a large part of the colonial market. The situation changed in the 1830s with the start of the industrialisation process, the driving force of which was the textile sector. Fresh impetus for maritime trade also came following the recovery of old trade routes and the opening of new ones, and above all, from the intensification of relations between Catalonia and the Antillean colonies: Cuba and Puerto Rico.[7]

The expansion of maritime trade created a renewed demand for resources, tools, and services, the provision of which boosted the economy of the entire

6 Between 1772 and 1787, descriptions of these links were made by three travellers who visited the district. See: Bernardo Espinalt y Garcia, *Atlante Español o Descripción General de Todo El Reyno de España*, ed. Francisco Nacente (Valencia: Librerías 'París-Valencia', 1998), 318; Antonio Ponz, *Viage de España, ó, cartas en que se dá noticia de las cosas mas apreciables y dignas de saberse, que hay en ella*, eds. Joaquín Ibarra and Viuda de Joaquín Ibarra (Madrid, n.p., 1772), 40; Arthur Young, *Viatge a Catalunya* (Tremp: Garsineu, 1993), 40.

7 For a view on the crisis and recovery of the Catalan maritime economy during this period, see Josep Maria Delgado Ribas, "La construcció i la indústria naval a Catalunya (1750–1820)," *Recerques: història, economia i cultura*, no. 13 (1983): 45–64. Pere Pascual i Domènech, "Desenvolupament de la marina de vapor i crisi de la construcció naval i de la marina mercant catalana," in *Història econòmica de la Catalunya contemporània*, vol. 3: *Indústria, finances i turisme*, eds. Jordi Nadal et al. (Barcelona: Enciclopèdia Catalana, 1991), 299–312.

Catalan coast. Since the commercial expansion of the eighteenth century, the Catalan port system had been characterized by its decentralized model. Several towns gained their autonomy by maintaining their own shipyards and fleets, together with the workforce and capital necessary to sustain them, thus enabling them to become directly involved in the transatlantic routes.[8] The new economic phase that commenced in the 1830s, however, increased the importance of the port of Barcelona, which played a more centralized role in the import and export networks of the Catalan economy. Its position as a buyer of raw materials (cotton, coal, iron) for the nascent industry, and as a re-exporter of colonial products (sugar, coffee, tobacco) throughout the Mediterranean made that possible.[9] The new context led to an increase in the number of ships stopping at Barcelona, and this facilitated the centralisation of certain services in the city, such as ship repairing and final equipping. Consequently, the prominence of shipbuilding and, above all, ship repairing in Barceloneta increased notably. The sector acquired a remarkable importance, which explains the fulfilment of the conservation of the district's main shipyard, located outdoors and of communal use for the shipbuilder's guild. The development of this space as a shipyard was prioritised over various projects designed to increase the residential space of the neighbourhood in the 1830s and 1840s. Intervention by different authorities, who stressed the importance of the activity for the subsistence of many families in the district, was crucial. In addition, the sector, with its demand for goods and supplies,[10] contributed greatly to boost the district's economy, and the master shipbuilders became major forces in the social and political power of the district at the same time as participating in the funding of maritime trade.[11]

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8 In fact, Barcelona was not the main shipbuilding centre. More sailing ships were constructed in Arenys de Mar, Lloret de Mar, and Blanes than in Barcelona during the nineteenth century, according to data from Josep Ricart i Giralt, "El siglo de oro de la marina velera de construcción catalana 1790–1870," *Memorias de La Real Academia de Ciencias y Artes de Barcelona* (1924): 10–25. The province of Mataró, located north of Barcelona, contained the major concentration of port towns with strong maritime-driven economies, as detailed in Joaquim Llovet, *La matrícula de mar i la província de Marina de Mataró al segle XVIII* (Mataró: Caixa d'Estalvis Laietana, 1980); Joan Giménez i Blasco, *La província marítima de Mataró: economia i conflictes socials (1750–1870)* (Mataró: Fundació Iluro, 2013).

9 Pascual i Domènech, "Desenvolupament de la marina de vapor," 312–21; Carles Sudrià, "Comerç, finances i indústria en els inicis de la industrialització catalana," *Barcelona quaderns d'història*, no. 11 (2004): 14–15.

10 The ropemaking and sailmaking industries were especially boosted, also helping to play a significant role in the creation of Barceloneta as a supply centre.

11 Several wooden shipbuilders became major landowners and political representatives of the district. They participated in the maritime trade as shipowners and shipbuilding

The main commercial and financial activities of the maritime economy, however, were not located in Barceloneta, but in the social areas of Barcelona's bourgeoisie. The presence of trade intermediaries—commission agents, traders, traffickers, and merchants of all kinds—and of shipowners and ship consignees in Barceloneta, was particularly anecdotal (Table 7.1). The economy of the neighbourhood was, therefore, specialised in the production and sale of goods and the provision of non-financial services to the merchant marine and the port. The income generated by these activities formed the nucleus of the district's elite. The large commercial capital generated by the expansion of Catalan trade was instead located outside Barceloneta, in areas dominated by financial activity and unconnected with manufacturing and retail trade. The process of spatial separation between these two spheres was widespread in the main European port cities during the process of industrialisation,[12] but Barcelona's early development in this respect, and the characteristics of its maritime district's elite, made up of craftsmen and petit-bourgeoisie, is particularly noteworthy.

TABLE 7.1 Commercial and financial activities, 1842–97

Year	Trade intermediaries			Shipowners and ship agents		
	Barceloneta	Barcelona	%	Barceloneta	Barcelona	%
1842	9	532	1.7	–	–	–
1849	4	428	0.9	–	–	–
1857	17	802	2.1	1	80	1.3
1863	8	828	1	2	84	2.4
1880	6	666	0.9	1	108	0.9
1897	1	428	0.2	0	93	0
Total	45	3684	1.2	4	365	1.1

SOURCE: COMPILATION BY THE AUTHOR BASED ON DATA FROM THE COMMERCIAL GUIDES OF THE CITY OF BARCELONA

sponsors. See Eduard Page Campos, "Auge i crisi de la construcció i reparació naval a La Barceloneta," *Drassana: Revista del Museu Marítim*, no. 27 (2019): 90–105.

12 Paul Thomas van de Laar, "Bremen, Liverpool, Marseilles and Rotterdam: port cities, migration and the transformation of urban space in the long nineteenth century," *Journal of Migration History*, no. 2.2 (30 September 2016): 300–302.

Barceloneta's main strength was its position as the first and only meeting point between the city and the port (Figure 7.2.). Both people and goods arriving at the docks had to pass through the quarter and, to obtain everything they needed, the ships had much easier access to the neighbourhood than to the rest of the city. One of the sectors that grew significantly, driven by maritime demand, was cooperage. Wines and spirits were the main product exported by the port of Barcelona, monopolising practically all port exports in the mid-nineteenth century.[13] Thanks to this, a large network of barrel and keg producers was established in Barcelona, the prosperity of which was linked to the development of this export. In seventeen months between 1844 and 1846, thirteen workshops in the city manufactured a total of 4,929 barrels, 4,664 of which were under the command of masters established in Barceloneta, according to the accounts of the institution responsible for supervising the measurements, weight and quality of the barrels and their contents.[14] In fact, between 27% and 43% of the city's cooper masters were concentrated in Barceloneta between 1842 and 1863 (Table 7.4). Some masters were also involved in the wholesale trade of wines and spirits, as was the case with Miguel Aragonés, a large fiscal contributor and political representative of the district, who also participated in the manufacture and production of drinks.[15] The income generated by both barrel-making and these collateral activities meant that, in 1865, cooperage was the most important economic activity in the formation of Barceloneta's elite minority.[16]

Ship chandlers, the stores that provided all the essentials for equipping ships, as well as the tools and materials for shipbuilding and ship repairing, were also concentrated in the maritime quarter. One of these shops, owned by Isidro Bertran, submitted a large collection of more than 500 naval articles to the 1872 Maritime Exhibition of Barcelona, which according to the jury represented "everything that is indispensable for the material needs of ships".[17] An advertisement for the same store published years later listed the main

13 Albert Carreras and César Yáñez, "El puerto en la era industrial: una síntesis histórica," in *Economía e historia del puerto de Barcelona: tres estudios*, eds. Joan Clavera and Port Autònom de Barcelona (Barcelona and Madrid: Port Autònom de Barcelona; Civitas, 1992), 81–157.

14 File CXIII, document 5, p. 10; and file CXIV, document 2, pp. 38–40, Junta de Comerç collection, Biblioteca de Catalunya, Barcelona.

15 Inventory of goods of Elvira Aragonés Closas, 5 August 1869, file 1376/5, document 139, notary Josep Maria Prats i Ràfols collection, Arxiu Històric de Protocols de Barcelona.

16 Data from the electoral list published in *Boletín Oficial de la Provincia de Barcelona*, November 17 to 22, 1865.

17 He received one of the most important awards in the competition. See Agustín Urgellés de Tovar, *Exposiciones marítima, agrícola y artística celebradas en Barcelona En 1872:*

products it offered, which again comprised a complete range of the articles that were essential for vessels: anchors, chains, iron and copper nails, hemp ropes and galvanised wire, sailcloth, paints, oils, and varnishes.[18] As well as the stores required for the maintenance of the ships, there were also those necessary for the crews. In 1843, a report by several army officers defined Barceloneta as "a warehouse for all kinds of goods for embarking and disembarking" due to the large number of food supplies and shops located in the district. The massive presence of seamen was the main reason indicated.[19] Since most Catalan ships departed from the port of Barcelona, this food supply network included service to ships registered in other coastal towns. Likewise, the hospitality industry was stimulated by the extraordinary connection between the district and the port, which led to the proliferation of drinking establishments and accommodation services for sailors making a temporary stay in the city. This was a fundamental sector in the economic formation of the neighbourhood elite, concentrating 29.4% of the total contributions of the district's electors in 1847.[20]

Another shipping-related service established in the neighbourhood was that of translation and interpreting for foreign ships arriving at the port. The forging of contacts thanks to their knowledge of languages enabled translators to act as key players in the informal networks where information relating to maritime trade circulated. Through the relations that translators established with foreign shipmasters, they acted as links between them and those interested in the loading of their ships. Taking advantage of this privileged position, some translators also acted as shipbrokers and commission agents for the cargoes, thus becoming direct participants in the business. This was the case, for instance, with the Italian Justiniano Rissetti, a facilitator of contacts for Italian ships seeking cargo to return to their country in the 1850s and 1860s. Years later, he set up his premises in an affluent part of the district, and he used

historia y reseña de dichos concursos (Barcelona: Establecimiento tipográfico de Leopoldo Domenech, 1872), 83–84, 120, 136.

18 Gaietà Cornet i Mas, *Guía de Barcelona: metódica descripción de la capital del principado de Cataluña y de sus. Alrededores unidos a la antiqua población por medio del ensanche. acompañada de un magnifico plano iluminado* (Barcelona: Eudaldo Puig—Ed. López, 1882), 21 (advertisement section).

19 *Contestación al diario razonado del excmo. Señor Don Antonio Van-Halen, Conde de Peracamps, que publican los generales y gefes que firmaron la estipulacion de atarazanas* (Barcelona: Imprenta de A. Berges y Cª, 1843), 86.

20 Data from the electoral list published in Joan Fuster Sobrepere, "Barcelona a la dècada moderada (1843–1854): el projecte industrialista en la construcció de l'estat centralista" (PhD diss., Universitat Pompeu Fabra, 2004), 515–93.

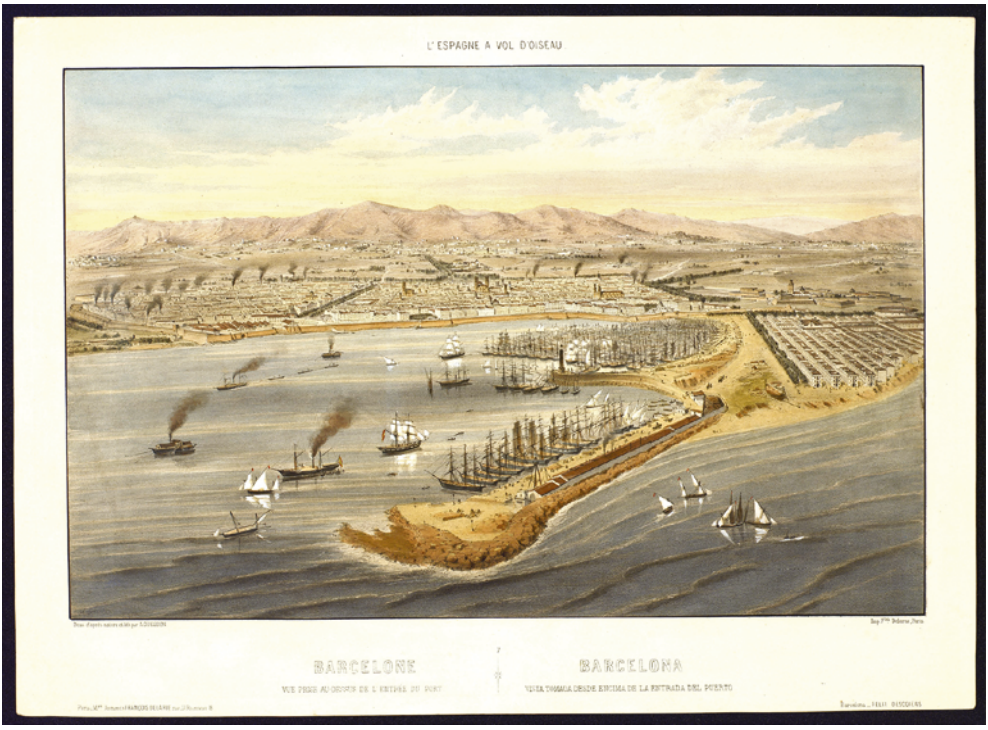


FIGURE 7.2 Several sailing ships anchored in the port of Barcelona in 1856. The only exit of the port, by Barceloneta (centre right), intrinsically connected to the only two docks. The walled city, with its industrial chimneys, is in the background
SOURCE: ALFED GUESDON, *BARCELONE: VUE PRISE AU DESSUS DE L'ENTRÉE DU PORT*, FILE 18474, GRAVATS DE BARCELONA COLLECTION, ARXIU HISTÒRIC DE LA CIUTAT DE BARCELONA

them as a recruitment point for workers on board in the service of shipowners and captains.[21]

At the same time, also attracted by the demand produced by the merchant marine and the maritime industries, craftsmen involved in metalworking began to settle in Barceloneta. By 1841, ten of the city's 37 metalworking firms were in the maritime quarter.[22] They were smaller than the city's average premises, the result of the predominance of craft workshops employing ten to fifteen workers on average. While the walled city was dominated by the manufacture

21 *Diario de Barcelona,* December 18, 1858 and June 2, 1860; *El Diluvio,* August 8, 1882.

22 Jordi Nadal, "La metallúrgia: de les reparacions mecàniques a les construccions metàlliques," in *Història econòmica de la Catalunya contemporània*, vol. 3: *Indústria, finances i turisme*, eds. Jordi Nadal et al. (Barcelona: Enciclopèdia Catalana, 1991), 164–65.

of textile machinery, those in Barceloneta were specialised in the manufacture of tools for maritime industries and metal objects for equipping ships, such as kitchens, anchors, pots, and locks. Some of the masters of these workshops submitted materials at several industrial exhibitions, as was the case with the blacksmith Juan Cors Calvet, who specialised in cutting tools for carpenters, shipbuilders, and other craftsmen, and Jaime Calopa Nadal, who made iron tools for ships, such as capstans, and was involved in repairing iron hulls.[23] The production and sale of more complex metal objects, such as nautical and optical instruments, essential for any maritime expedition, was also developed here. In the mid-nineteenth century, establishments of this type were concentrated along the district's main street, the *Passeig Nacional*.[24]

The new industrial phase of the Catalan economy that began in the 1830s required the supply of machinery. The three main Catalan metallurgical factories (*Maquinista Terrestre i Marítima, Nuevo Vulcano*, and *Alexander Hermanos*), founded between the 1830s and 1850s and funded by prominent members of the bourgeoisie, were all located in Barceloneta. The strong links with the maritime economy that the three companies aimed to forge at the beginning of their respective careers, was crucial for this choice of location. Thus, the initial aims of all three companies included the areas of iron shipbuilding, ship repairing, and the supply of steam engines and boilers to vessels. In the first years of their existence, when steam navigation was still in its embryonic phase, they were major players to make Barcelona competitive in the service of both the Spanish navy and the first steamship companies. Some of these companies set up regular routes with Barcelona as their central point, mainly connecting with the south of France. *Nuevo Vulcano* was founded in the 1830s as a subsidiary workshop of a shipping company, at first limited to servicing the companies' ships, while *Alexander Hermanos*, who was born in 1849, soon specialized in engine-manufacturing. The last of the three companies, *Maquinista Terrestre i Marítima*, was created in 1855 out of the merging of the

23 Manuel Saurí, *Manual histórico-topográfico, estadístico y administrativo: ó sea, guía general de Barcelona*, ed. José Matas (Barcelona: Impr. y libr. de Manuel Saurí, 1849), 324; Francisco José Orellana, *Reseña completa descriptiva y crítica de la exposicion industrial y artística de productos del principado de Cataluña* (Barcelona: [s.n.], 1860), 131; Urgellés de Tovar, *Exposiciones marítima, agrícola y artística celebradas en Barcelona En 1872*, 64, 120, 135.

24 They produced and sold objects such as compasses, barometers, sextants, and spyglasses, according to advertisements for these stores. Some of these advertisements were in *Diario de Barcelona*, October 15, 1841 and August 23, 1847; Saurí, *Manual histórico-topográfico, estadístico y administrativo*, 268; and *La Nación*, March 20, 1866.

two biggest metallurgic companies of the time, to become the main factory in the sector in Catalonia with a very extensive architectural complex.[25]

The increasing traffic at the port of Barcelona, its integration into international markets and the development of land industries and their demand for goods, all led to the growth of sail shipping between 1830 and 1870. In this context, Barceloneta's economy became oriented towards meeting the growing demands created by shipping and port activities through a dispersed productive and service fabric, while it also embraced the first challenges of nascent steam shipping through the launching of more complex productive endeavours.

3.2 *An Extraordinary Growth in Population*

The economic expansion led to an extraordinary growth in population. In the three decades between 1830 and 1860, the neighbourhood almost tripled in its number of inhabitants (Chart 7.1). The rate of population growth increased tenfold, with an annual increase of 322.14 inhabitants/year, while in the period between 1781 and 1832 it had been limited to 31.9. This was also a higher rate than that of the city, the population of which multiplied in the same period by 1.62, limited in part by the physical barrier of the walls, while the maritime quarter grew by 2.7. The birth rates in the district, for the years with available data, were slightly higher than those of the city (Table 7.2), though these were corrected by greater mortality rates (Table 7.6). A higher natural increase in Barceloneta can therefore be ruled out as an explanation for the greater population growth in the district. The influx of outsiders, who made up most of the district's adult population, is the key to this growth. This immigration involved both sexes, although men predominated. Thus, 65.9% of the men and 60.5% of the women over 13 who died in the district between 1840 and 1870 had been born outside the city.

25 The bibliography on these three companies is very extensive. The works that focus most on their economic development are: Nadal, "La metallúrgia: de les reparacions mecàniques a les construccions metàlliques"; Carlos Alfaro Zaforteza, "La sociedad Nuevo Vulcano la Armada y los orígenes de la navegación de vapor en España, 1834–1855," *Drassana: revista del Museu Marítim*, no. 15 (2007): 74–83; Santiago Riera i Tuèbols, "La indústria de construcció de màquines a Catalunya i els Països Catalans," *Catalan Historical Review*, no. 1 (2008): 239–50; Albert Pérez i Núñez, "Indústria i poder. La maquinista terrestre y marítima durant el sexenni democràtic," *Barcelona quaderns d'història*, no. 15 (2009): 201–16; Carme Cebrián et al., eds., *150 años de historia de la maquinista terrestre y marítima, S.A. y de MACOSA: de la revolución industrial a la revolución tecnológica* (Barcelona: Dos Punts Documentació i Cultura, 2009); Joan Alemany, *Construcció i reparació naval a la Barcelona industrial: els Talleres Nuevo Vulcano* (Barcelona: Museu Marítim de Barcelona, 2019).

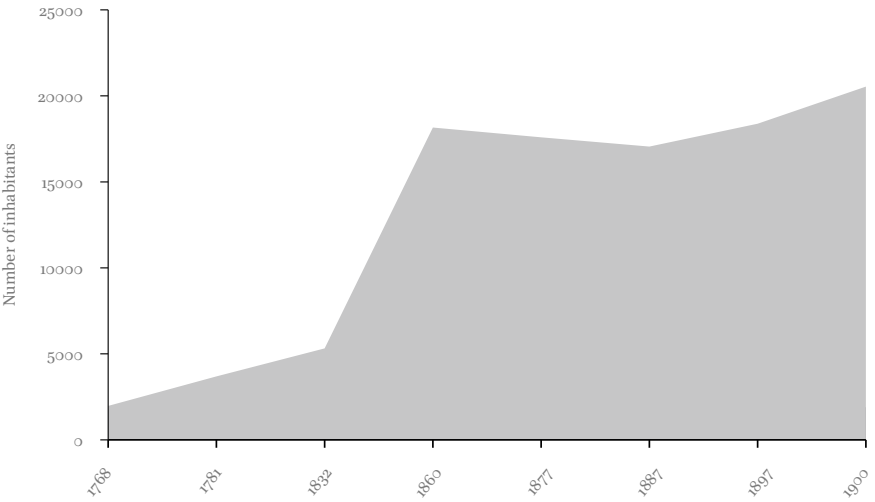


CHART 7.1 Evolution of the population of Barceloneta, 1768–1900
SOURCE: COMPILATION BY THE AUTHOR BASED ON DATA FROM MERCÈ TATJER, *LA BARCELONETA: DEL SIGLO XVIII AL PLAN DE LA RIBERA* (BARCELONA: SATURNO, 1973), 71–74; ESPINALT Y GARCIA, *ATLANTE ESPAÑOL O DESCRIPCIÓN GENERAL DE TODO EL REYNO DE ESPAÑA* (VALENCIA: LIBRERÍAS "PARÍS-VALENCIA", 1998), 318–19; ANDRÉS AVELINO PI Y ARIMÓN, *BARCELONA ANTIGUA Y MODERNA. DESCRIPCIÓN É HISTORIA DE ESTA CIUDAD DESDE SU FUNDACIÓN HASTA NUESTROS DIAS* (BARCELONA: TOMÁS GORCHS, 1854), 299–304; MIQUEL GARRIGA I ROCA, *PLANO TOPOGRÁFICO-GEOMÉTRICO DEL PUERTO Y POBLACIÓN DE LA BARCELONETA* (BARCELONA, 1862), CHAPT. 10; AND AVEL·LÍ GUITERT DE CUBES, *EL VIGÍA DE LA BARCELONETA*, JUNE 21, 1896

TABLE 7.2 Birth rates in the mid-nineteenth century (‰)

Year	Barceloneta	Barcelona
1845	33	30.4
1846	32.7	30.6
1847	30.1	29.9
1856	30.7	24.5

SOURCE: COMPILATION BY THE AUTHOR BASED ON BIRTH DATA FROM LAUREÀ FIGUEROLA, *ESTADÍSTICA DE BARCELONA EN 1849* (BARCELONA: ALTA FULLA, 1993), 66; AND *EL CONSULTOR: NUEVA GUÍA DE BARCELONA* (BARCELONA: IMPRENTA DE LA PUBLICIDAD, A CARGO DE A. FLOTATS, 1857), 88; AND POPULATION DATA FROM ANDRÉS AVELINO PI Y ARIMÓN, *BARCELONA ANTIGUA Y MODERNA. DESCRIPCIÓN É HISTORIA DE ESTA CIUDAD DESDE SU FUNDACIÓN HASTA NUESTROS DIAS* (BARCELONA: TOMÁS GORCHS, 1854), 299–302, AND THE CENSUS OF 1860

The demand for crew for the merchant marine was the major pole of attraction, together with the growing demand for labour in the district's metal industry. Other maritime jobs, linked to fishing and the maritime industries, were not a factor of attraction. In fact, while almost two-thirds of the men born in Barcelona had a maritime occupation (64.9%), for those born outside the city this was the case with less than half (45.8%). Regarding the origin of the immigration, nearby towns from the rest of Catalonia predominated, especially coastal municipalities in the provinces of Barcelona and Tarragona. In second place were the Balearic Islands, Barcelona's main direct commercial connection during that period (Map 7.1). The Balearic Islands provided a predominantly maritime workforce, as 54.2% of all the islanders with a profession in the district in those years were sailors, more than twenty points above the average. Many of them came from Minorca, an island whose merchant marine had been in crisis since the 1820s, following the closure of the route that connected it with the Black Sea.[26]

The expansion of the population was accompanied by the physical growth of the neighbourhood, through the repetition of the existing model of houses. Between 1830 and 1848, 169 new houses were built,[27] and by the centenary of the district's founding in 1853, some observers reported that it already looked more like a city than a neighbourhood.[28] The demand for housing and the speculative spirit of landowners led to the construction of houses on the actual seafront. A newspaper that expressed admiration for Barceloneta's progress wondered whether there would come a day when houses would be built on the water itself.[29] In fact, several storms in the middle of the century caused the collapse of some of the buildings and severe damage to others.[30] Concerns about the overpopulation of Barceloneta produced complaints and demands for reform or the enlargement of the district. Meanwhile, as a reflection of the optimism that existed in the early 1860s toward the future of the city's maritime economy, one publication advocated making use of the space resulting from the demolition of the Ciutadella fortress to provide an outlet for "the

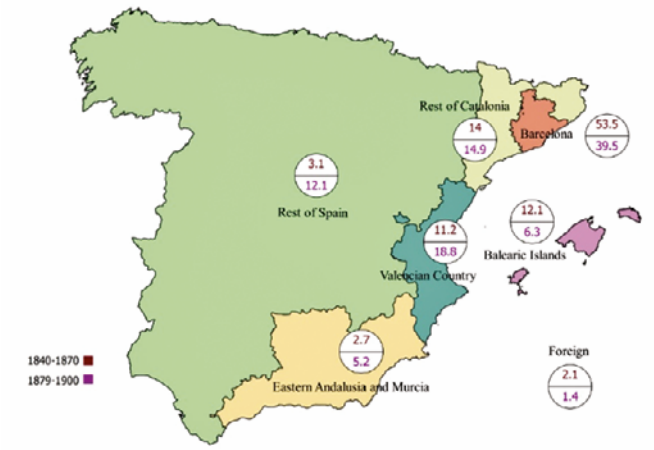
26 Juan Pou Muntaner, *La Marina en las Baleares: síntesis histórica* (Palma de Mallorca: Gráficas Miramar, 1977), 258; Adolf Sintes, *Mestres d'aixa menorquins: de la tèquina al bergantí* (Sant Lluís: Llevant, 2008), 23–28.

27 Laureà Figuerola, *Estadística de Barcelona en 1849* (Barcelona: Alta Fulla, 1993), 62.

28 *La España*, February 4, 1853.

29 *La España*, June 25, 1848.

30 The most destructive storm occurred in the winter of 1853–54. The impact was reported in *Diario de Barcelona,* December 28, 1853, *El Áncora,* December 29, 1853, and *El Balear*, January 10, 1854.



MAP 7.1 Places of origin of the population, 1840–1900 (%)
SOURCE: COMPILATION BY THE AUTHOR BASED ON THE REGISTRY OF DEATHS OF THE CIVIL REGISTRY OF BARCELONA

multitude of families whose subsistence depends on maritime works and for which the Barceloneta district is already insufficient".[31]

3.3 *Labour and Social Life: a Working-Class Port District*

Due to the specific type of economic activity in which the neighbourhood specialised, the concentration of seafaring workers, and the exclusion of financial activities, Barceloneta's population was markedly working-class in nature. The socio-professional structure of the district for males between 1840 and 1870 was dominated by jobs related to production and transport, a second important group linked to the primary sector (mainly fishing), and a distinct lack of the service sector and professionals, technicians, and administrative staff, which all together accounted for barely one-tenth of the male labour force (Table 7.3). If we classify the professions between those directly linked to the sea (exclusively those registered in the *Matrícula de Mar*:[32] sailors, fishermen, and shipbuilders/caulkers) and the rest, the former accounted for 52.1% of the workforce. As for the rest, those linked to the provision of goods and services, to the merchant marine, and the maritime industries (such as coopers,

31 *El Pájaro Azul*, June 20, 1863.

32 An institution of the Spanish navy that registered all maritime professionals who had to complete their military service in the navy. It was inspired by the French Inscription Maritime.

TABLE 7.3 Socio-professional structure of the male population, by groups of occupation, 1840–1900 (%)

Groups of occupation (HISCO)	1840–1870	1879–1900
(-1)- *No workers*	0.4	0.1
0/1- Professional, technical and related workers	2	1.4
2- Administrative and managerial workers	0.5	0.2
3- Clerical and related workers	0.7	2.3
4- Sales workers	2.1	3.5
5- Service workers	5.2	6.3
6- Agricultural, animal husbandry and forestry workers, fishermen and hunters	14.5	6.2
7/8/9- Production and related workers, transport equipment operators and labourers	74.6	80.1

SOURCE: COMPILATION BY THE AUTHOR BASED ON THE REGISTRY OF DEATHS OF THE CIVIL REGISTRY OF BARCELONA

blacksmiths, carpenters, and ropemakers) also accounted for a significant proportion (Table 7.5).

Regarding female labour, although only 6.2% of manufacturing establishments were run by women (particularly concentrated in food and textiles), in commerce the percentage rises to 17.1%, especially in retail (18.5%). Women were particularly concentrated in food stalls in the market or the streets. In addition, many were employed in butcher's shops, bakeries, and grocery stores. Some were also involved in the hotel trade, in both guesthouses and inns, and in services such as being midwives and laundresses. We also know about the importance of domestic service as a fundamental source of female labour in the neighbourhood.[33] Another source was textile domestic labour, especially in the sewing of clothes, for both textile factories and sailmaking workshops. In fact, in the only census which indicates the profession of some women, more than half of those with a referenced profession were seamstresses.[34]

Prostitution was also an existing resource, being an activity traditionally associated with the port districts of big cities. In fact, this was reported as a problem associated with Barceloneta on numerous occasions throughout the

33 This came to our knowledge through newspaper job advertisements, especially in *Diario de Barcelona*.

34 Padrón del Asilo de Montalegre, 1870, file A-4500.15, 307–320, Gobernación series. Arxiu Municipal Contemporani de Barcelona.

central decades of the nineteenth century. Linked to the world of taverns and cafés, the press often drew attention to the presence of this activity, expressing their moral reprobation toward it. The social life of seamen in general, which was expanding as a result of the growth in population and port traffic, was associated with negative moral attributes by the city's cultural elites.[35]

Population growth caused another major problem. The expansion of the housing stock was restrained by the limited natural space, and the increase in buildings could not meet the existing demand for housing. As a result, buildings originally conceived as single-family homes were subjected to an accelerated process of subdivision, producing in extreme cases houses of approximately 27 m^2 of useable space. In 1862, only 150 of the 1,441 buildings in the neighbourhood remained undivided.[36] Moreover, these houses had a very high population density, and reports by newspapers and social commentators spoke of the experience of people who lived "piled up like *marmots*", with 12 or more people (even 16 to 20) living in very small flats.[37] The lack of housing in the face of the growing demand also led to an increase in rental prices, as expressed by the City Council in 1863 due to its own experience,[38] in a district where poverty was already highlighted as a major problem.[39]

4 The Transformation of the Maritime Economy and Its Effects on Barceloneta

The economic expansion of Barceloneta based on a production- and service-oriented network aligned with the demands of the port and the shipping industry, came to an end in the last third of the century. A number of

35 Examples of the complaints about the moral state of the district can be found in *La Iberia*, March 2, 1855; and *Diario de Barcelona*, October 1, 1856.

36 Tatjer, *Burgueses, inquilinos y rentistas*, 245–47.

37 *Diario de Barcelona,* June 17, 1862; *El Pájaro Azul*, September 28, 1861. Concerns about the overcrowding of people in Barceloneta's housing had already been expressed at the institutional level since at least 1834, when a cholera epidemic ravaged the district. Though at that time the population density was still far from the levels it would subsequently reach, as explained in Maria Assumpció Cladellas Blasco, "El Còlera de 1834 a Barcelona" (PhD diss., Universitat de Barcelona, 1995), 208; 213.

38 The city council decided to accept the rental increase of the building it occupied because, as it stated, "the rental price of all the buildings in Barceloneta have experienced an increase that would deprive (…) of finding cheaper ones": File 4588, 1863, Hisenda series, Arxiu Municipal Contemporani de Barcelona.

39 For instance, in *El Constitucional*, February 17, 1841; and *Diario de Barcelona*, August 12, 1854.

circumstances combined to transform the economic and social context on which Barceloneta's development had been based. Until then, steam-powered ships were still in the minority, but technical improvements, lower costs, and trade liberalisation facilitated the adoption of steam and iron by the Spanish merchant fleet in the 1870s, and later superseding sails and wood in the 1880s.[40] The higher costs involved in purchasing and managing modern vessels also transformed the shipping business, accelerating the concentration of capital and companies. This process rapidly changed the hitherto predominant ship-owning pattern of small shareholders of vessels, which had enabled the involvement of a broad social strata.[41] Vessels, in turn, due to technological transformations and the larger size of shipping companies, changed their supply model, becoming less dependent on day-to-day decisions and more subject to managerial planning.[42]

One of the crucial changes that facilitated the proliferation of steamships and their adoption by Spanish shipowners was the liberalisation of the importing of foreign-built ships. This measure was part of a legislative reform carried out in 1868 and 1869 that ended the protectionist framework of the Spanish merchant marine.[43] The liberalisation process took place during the same period that an end was brought to the protection of maritime labour, based on the exclusivity to practise it which the registered workers had guaranteed.[44] In addition to these issues, the port of Barcelona initiated its reform in the 1870s.

40 A detailed view of the transition from sail to steam in the Spanish merchant fleet, is in Javier Moreno Rico, "El capitán de la marina mercante José Ricart y Giralt (1847–1930): una aproximación a la historia marítima contemporánea de Barcelona" (PhD diss., Universitat Politècnica de Catalunya, 2011), 21–52; Santiago Riera i Tuèbols, *Dels velers als vapors* (Barcelona: Associació i Col·legi d'Enginyers Industrials de Catalunya, 1993), 93–141; Antoni Sella and Martín Rodrigo Alharilla, *Vapors* (Barcelona: Museu Marítim: Angle, 2002), 10–93.

41 This model is explained in Joan Giménez i Blasco, *De la vela al vapor: la marina catalana a través d'una família de Vilassar de Mar de Mar: els Sust* (Lleida: Pagès, 2009), 186–95; Enric García Domingo, "El Trabajo en la marina mercante española en la transición de la vela al vapor (1834–1914)" (PhD diss., Barcelona, Universitat de Barcelona, 2014), 186–98. In the case of Barceloneta, the social strata that participated in this ship-owning model included several craftsmen devoted to activities at the service of the merchant marine.

42 Frank W. Geels, "Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study," *Research Policy*, no. 31.8 (2002): 1268.

43 Jesús María Valdaliso, "Entre el mercado y el Estado: la marina mercante y el transporte marítimo en Espana en los siglos XIX y XX," *Tst: transportes, servicios y telecomunicaciones*, no. 1 (2001): 55–79.

44 Jordi Ibarz Gelabert and Juanjo Romero Marín, "L'abolició de la matrícula de mar i les tasques de càrrega i descàrrega al port de Barcelona, 1868–1874," *Barcelona quaderns d'història*, no. 15 (2009): 255–270; García Domingo, "El trabajo en la marina mercante española," 29–80.

FIGURE 7.3 The port of Barcelona in 1882–83, when the first steps in its reform had already been carried out. The new quays and dikes and the demolition of the city's walls had moved the epicentre of the port westward
SOURCE: DIRECCIÓN DE HIDROGRAFÍA (1885), *PLANO DE LA RADA Y PUERTO DE BARCELONA: MAR MEDITERRÁNEO: COSTA ORIENTAL DE ESPAÑA*, FILE S1-35-O-101, CARTOTECA DEL INSTITUTO GEOGRÁFICO NACIONAL

The growth in port traffic and the new characteristics of the vessels required more space for the anchorage of ships, loading and unloading, and cargo storage. The extension of the port area to meet this demand led to Barceloneta losing its exclusivity in the relationship between the city and the port, which was mainly displaced to the west of the maritime quarter (Figure 7.3.).[45]

4.1 *The Change in the Nature of the Economy*

The impact of these events on Barceloneta's economic reality was significant. The spread of iron ships caused an accelerated decline in shipbuilding and ship repairing in the district, that was limited only to wooden ships. From the 1870s onwards, this was evidenced by the disappearance of shipyards and master shipbuilders and a decrease in the workforce employed.[46] As was the case all along the Catalan coast, the transition to iron shipbuilding failed, mainly because of the country's shortage of iron and the dispersed model in which the construction of vessels was funded and accomplished, unable to adapt to the new reality. The dismantling of the sector led to a dissociation of many master shipbuilders from both the sector and the quarter.[47]

In the case of cooperage, an activity that did not undergo any technological changes or transformation of its labour process, it showed a remarkable resistance throughout Catalonia.[48] Barceloneta, however, was an exception. After reaching a maximum number of masters and workshops in the 1860s, the decline in the activity continued until the end of the century on a much larger scale than in the whole city (Table 7.4). The decline in the weight of viniculture trade in the port of Barcelona, in continuous growth until 1880, was constant thereafter. However, the main reason for this sharp decline was the move of cooperage workshops and warehouses to the neighbouring municipality of Sant Martí de Provençals. The availability of much more space and the proximity to larger wine and spirits warehouses were major factors. As a result, the 133 coopers (2.8% of the total adult male workforce) located in the neighbourhood in 1862 was reduced to only 9 (0.3%) in the 1890 census.

45 The process of port reform, explained in Joan Alemany, *El port de Barcelona* (Barcelona: Lunwers Editores, 1998), 123–81.

46 The adoption of iron ships in Spain was very limited until the last quarter of the nineteenth century, as was the case throughout Europe and North America, due to high costs and technical limitations. See Apostolos Delis, *Mediterranean Wooden Shipbuilding: Economy, Technology and Institutions in Syros in the Nineteenth Century* (Brill's Studies in Maritime History 2) (Leiden and Boston: Brill, 2016), 42–43.

47 Page Campos, "Auge i crisi de la construcció i reparació naval a la Barceloneta".

48 Ramon Arnabat, "Associacionisme i mobilització dels boters: Catalunya, 1871–1887," *Estudis d'història Agrària*, no. 26 (2014): 14–16.

TABLE 7.4 Evolution of cooperage in Barceloneta and Barcelona, 1842–1901

Year	Master coopers in Barceloneta	Master coopers in Barcelona	Barceloneta over total (%)
1842	10	37	27
1849	13	32	40.6
1857	17	52	32.7
1863	28	64	43.7
1880	8	36	22.2
1897	2	21	9.5
1901*	2	70	2.9

NB: *First time that data were included from the recently added municipalities, including Sant Martí de Provençals

SOURCE: COMPILATION BY THE AUTHOR BASED ON DATA FROM THE COMMERCIAL GUIDES OF THE CITY OF BARCELONA

The food sector also underwent a notable transformation, with the disappearance of establishments closely linked to ship supplies, such as soup pasta factories. Food and drink services tended to change in nature due to the transformation of the waterfront. Barceloneta's popularisation as a maritime leisure area led to the emergence of food houses. During the second half of the century, sea bathing became more accessible for the popular classes, and establishments that provided them proliferated in the district. This became the main leisure activity in the summer months for thousands of Barcelonans, whose visit to the neighbourhood also led to the proliferation of temporary coffee and drink stalls during the season.[49] In contrast, lodging houses, devoted especially to providing sailors with temporary accommodation, significantly declined in number from the 1860s onwards. While at the midpoint of the century the district's location as the first and immediate space of contact with the port resulted in the proliferation of establishments specialising in such services, the expansion of the port notably decentralised this activity. The transformation of management in maritime trade was also significant. Whereas the traditional informal networks and the managerial role of captains had been of paramount importance in the age of sail, their integration into large shipping companies implied the loss of the captains' decision-making capacity.[50] The impact of

49 As recorded in Box 833, file 5, Port collection, Arxiu del Museu Marítim de Barcelona.

50 A matter dealt with, in the case of Spain, in García Domingo, "El trabajo en la marina mercante española en la transición de la vela al vapor (1834–1914)," 148–51. The creation

this transformation was noticeably detrimental to services such as translation and interpreting, that disappeared completely in the last two decades of the century. Ship chandlers in Barceloneta, meanwhile, were able to adapt to new demands, above all through specialisation in the production and sale of paints and varnishes to protect the hulls of steamships.[51]

The circuit generated by the demands of ships and the maritime industries, as we have seen, was also fundamental for the development of the metal sector in Barceloneta. The crisis in both sectors brought consequences for the decentralised model of the neighbourhood's metalworkers. The results provided by the processing of data in commercial guides show how, in the last two decades of the century, the number of master blacksmiths, tinsmiths, and smiths declined. Even more pronounced was the fall in the influence these masters enjoyed in 1865 among the Barceloneta economic elite, and which had largely evaporated by 1889. The manufacture and sale of nautical instruments, meanwhile, disappeared completely from the neighbourhood, due to its transfer to a social space belonging to the bourgeoisie or the abandonment of this activity resulting from technological substitution, depending on the case.[52]

The three big mechanical construction factories established in Barceloneta remained standing and expanded their production capacity and the amount of labourers employed throughout the second half of the century.[53] To do this, however, they had to give up building modern iron ships, developed in the 1850s by two of them, due to the high costs of importing the necessary materials. Furthermore, the construction and repair of steam engines and boilers, the main productive area in which they were involved, proved insufficient to sustain their progress. The three companies were faced with the need to diversify their productive area in order to prosper. The construction of metal structures such as railway bridges and markets was the most common solution. Companies set up with the goal of satisfying the demands of the maritime

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of a telegraph network between ports that allowed shipping companies to take decisions at each stop of the journey was a major factor in reducing the autonomy of ship captains. See Byron Lew and Bruce Cater, "The telegraph, co-ordination of tramp shipping, and growth in world trade, 1870–1910," *European Review of Economic History*, no. 10.2 (2006): 150.

51 This was the case with the two most prominent establishments, which expanded their business during the first decades of the twentieth century. See *La Publicitat*, June 18, 1931; and Fábrica de Pinturas Hijos de M. Martí Ventosa SL, ed., *Ciento cincuenta años al servicio de la marina mercante: 1800–1951* (Barcelona: l'Empresa, 1951).

52 These trends are observed in the main sources studied, especially commercial guides and newspapers.

53 The three factories employed a combined workforce of almost 2,000 workers at the end of the century.

economy were thus largely disengaged from the same, and were forced to diversify to survive.[54]

The powerful wooden shipbuilding industry, and the supply chain formed to equip and sustain the lives of ships and their crews, which had formed the heart of the maritime quarter's economic activities and shaped its local elite, went into a sharp decline. The economy of the district gradually turned its back on maritime-port needs, satisfied by different business models, and the capital amassed in the district in the central years of the nineteenth century tended to disconnect both from the maritime economy and from Barceloneta. The spatial metamorphosis of the waterfront completed this transformation, as leisure activities expanded their scope at the expense of the traditional use of the streets and the beach as outdoor workshops.

4.2 *Deceleration of Population Growth and the Transformation of the Socio-Professional Structure*

Despite the fact that the maximum number of stories for buildings in Barceloneta was raised from two to four, thereby increasing the housing supply, population growth in Barceloneta slowed down. The annual increase in inhabitants halved from 322.14 inhabitants/year (1832 to 1860) to 155 (1860 to 1900). This stagnation was particularly pronounced in the 1870s and 1880s. Nevertheless, the contribution of migration did not stop and, in fact, extended its geographical radius, both from the south of the Spanish Mediterranean and from the interior of the peninsula (Map 7.1). The push factors were linked to the agricultural and maritime crises in the places of origin, especially the Valencian coast,[55] while the pull factors pointed to the industrial development of the city and the neighbourhood. The three large metallurgical factories were the main attractors of labour. The male immigrant population recorded as day labourers thus rose from 12.4% of the total until 1870 to 45.4% from 1879 onwards. This was accompanied by a reduction in the numbers of sailors, fishermen, and shipbuilders, as well as of numerous craft professions. The only professions, together with the day labourers, that increased their relative presence were clerks, merchants, and those related to the police and army (Table 7.5).

The change in the socio-professional structure of the neighbourhood was not limited to the immigrant population. The decline of professions

54 The process followed by them during this period, in the bibliography mentioned in note 25.

55 Rafael Viruela Martínez, "Expansión y crisis de la actividad pesquera valenciana en el siglo XIX," *Investigaciones geográficas*, no. 13 (1995): 117–33.

directly linked to the sea was also particularly marked among those born in Barcelona, especially at the end of the century. In 1900, for the first time, those professions—sailors, fishermen, shipbuilders and caulkers—did not surpass in number the rest of the professions once the category of day labourer had been discounted. The generalised collapse of the craft professions, with the disappearance of many occupations and the generalisation of the term "day labourer", were the main signs of an accentuated process of proletarianisation. At the same time, the professions linked to services, administration, and commerce increased slightly, but to a limited extent in relation to the expansion that they experienced in the European urban sphere.

The decoupling of Barceloneta's economic activity from maritime and port demands was thus combined with a fall in maritime labour in the socio-professional structure of the district. The lack of definition of the term "day labourer" prevents us from specifying the exact extent of the decline. Through fragmentary evidence, we can intuit that some of them may have been employed in port loading and unloading. The uninterrupted increase in goods traffic in the port of Barcelona over the second half of the century[56] made this activity an alternative for workers who had hitherto been linked to the merchant marine, maritime industries, and fishing.

Evidence regarding the evolution of female labour is scarce. The enlargement of the port and its separation from Barceloneta affected those women who lived from contact with a large mass of passers-by. The mechanisation of the textile industry reduced the possibility of obtaining resources for the informal domestic economy. Nevertheless, women's generalised entry into the factory system, the maintenance of the importance of domestic service, and the increase of retail trade in the district shaped a female labour market that was still indispensable for the survival of working-class families in the last quarter of the century.[57]

56 Carreras and Yáñez, "El puerto en la era industrial: una síntesis histórica".

57 The working-class male salary was insufficient to guarantee this survival throughout the nineteenth century. Compared with the reduction in female employment at the end of the century, in Barcelona it did not undergo any decline. See Cristina Borderías Mondejar, "La transición de la actividad femenina en el mercado de trabajo barcelonés (1856–1930): teoría social y realidad histórica en el sistema estadístico moderno," in *¿Privilegios o eficiencia?: Mujeres y hombres en los mercados de trabajo*, eds. Lina Gálvez-Muñoz and Carmen Sarasúa (Alacant: Universitat d'Alacant, Servicio de Publicaciones, 2003), 241–76.

TABLE 7.5 Socio-professional structure of the male population, by origin

Profession (based on HISCO)	Immigrants (%)		Locals (%)	
	1840–1870	1879–1900	1840–1870	1879–1900
Seaman, Able or Ordinary	36.8	21.3	30.2	22.6
Worker, No Further Information	12.4	45.4	2.1	39.3
Fisherman, Deep-Sea or Inland and Coastal Water	5.3	2.7	26	14.6
General Farmer	2.7	0.1	0.3	0
Wood Shipwright	2.9	1.6	8	1.7
Carpenter, General	3.3	2.5	2.8	2.5
Policeman and other Maintainers of Law and Order (except Military)	2.5	4.9	1	0
Shoe-maker, General	1.9	1	0.7	1.3
Bricklayer (Construction)	1.9	0.9	2.4	0.4
Cooper	1.9	0.1	1.7	1.3
Cloth Weaver (Hand or Machine)	0.6	0	1.4	0.4
Locksmith	1.8	1.2	0.3	1.3
Working Proprietor (Wholesale or Retail Trade)	0.5	3	1	2.9
Clerical or Related Worker, Specialisation Unknown	0.8	2.8	0	0.4
Blacksmith, General	1.9	0.6	1.7	1.7
Animal-Drawn Vehicle Driver (Road)	1.1	0.6	0	0
Military, Specialisation Unknown	0.8	1.8	0	0
Total	**628**	**676**	**288**	**239**

SOURCE: COMPILATION BY THE AUTHOR BASED ON THE REGISTRY OF DEATHS OF THE CIVIL REGISTRY OF BARCELONA

4.3 *The Evolution of Standards of Living in the Second Half of the Nineteenth Century*

The consequences of the economic and social transformation were also felt in the standards of living of the population. Mortality rates in Barceloneta represented a growing trend between the middle and the end of the nineteenth

TABLE 7.6 Mortality rate of Barceloneta, 1856–1900

Year	Mortality rate (‰)
1856–65	27.9
1876–80	30.8
1879	32.7
1881–89	33.5
1890	32.1
1891	28.4
1894	30.1
1895	27.5
1896	30
1900	25.7

SOURCES: COMPILATION BY THE AUTHOR BASED ON DATA OF GUMERSINDO COLOMER CODINA, *MOVIMIENTO DE LA POBLACION DE BARCELONA* (BARCELONA: ESTABL. TIP. DE LOS SUCESORES DE N. RAMIREZ Y CIA, 1883); ILDEFONS CERDÀ, *TEORÍA GENERAL DE LA URBANIZACIÓN*, VOL. 2: *LA URBANIZACIÓN CONSIDERADA COMO UN HECHO CONCRETO. ESTADÍSTICA URBANA DE BARCELONA* (BARCELONA: INSTITUTO DE ARQUITECTURA AVANZADA DE CATALUNYA: ACTAR, 1867), 549; PEDRO GARCÍA FARIA, *SANEAMIENTO DE BARCELONA: CONDICIONES HIGIÉNICAS DE LA URBE: SU MEJORAMIENTO, DISMINUCIÓN DE LA MORTALIDAD DE SUS HABITANTES Y AUMENTO DE LA VIDA MEDIA DE LOS MISMOS: MEMORIA*, VOL. 2 (BARCELONA: *ESTABLECIMIENTO TIPOGRÁFICO DE LOS SUCESORES DE N. RAMÍREZ Y CA*, 1884), 144–45; 190; REGISTER OF DEATHS, 1890 AND 1900, ARXIU DEL REGISTRE CIVIL DE BARCELONA; AND *GACETA SANITARIA DE BARCELONA*, JUNE 1892 AND MARCH TO FEBRUARY 1890, 1894, 1895 AND 1896

century. The difference between the mortality rate in the maritime district and that of the rest of the city also increased from the period 1856–65 to the data of the 1880s and 1890s: while the rates in the other districts remained stable, those in Barceloneta increased by 5.6 points. In 1890, the mortality rate in the district was still extremely high, and it was not until the last decade of the century that mortality levels fell significantly (Table 7.6).

Mortality remained dominated by a huge proportion of deaths among children and the young population. The weight of deaths of under-five was always greater than 50% until 1890 and 1900. Mortality in the city of Barcelona as a whole had a different age distribution, much less young, due to an older population structure,[58] but also to a faster pace in the mortality transition.

58 See the population pyramids of both the district and the city in Eduard Page Campos, "Entre el mar, el puerto y la ciudad. Comunidades marítimas urbanas en transición: el caso de la Barceloneta en el siglo XIX," *Avances del Cesor*, no. 16.21 (2019): 149–51.

Barceloneta's slowdown is manifested in the predominance of mortality in the summer months, which was consolidated in the years 1869–70 and 1879. This pattern did not clearly decline until the end of the century, when mortality in the winter months became dominant, a model more characteristic of a modern mortality regime.[59] In the city of Barcelona as a whole, however, the winter months already predominated in the 1860s and 1870s.[60]

The social causes of mortality are key indicators for understanding the risks associated with the social conditions of specific human groups in history.[61] In Barceloneta, throughout the second half of the nineteenth century, diseases resulting from water- and food-borne infections decreased significantly, while those transmitted by air suffered a major increase (Table 7.7). The former are associated with the poor state of sanitary infrastructures and hygiene, especially deficiencies in sewage, problems in water supply, and the interference of food in a bad state. The data from Barceloneta thus points to an improvement in these elements in the last two decades of the century. In contrast, the increase in deaths due to airborne infections is linked to the process of population densification and the intensification of bad housing conditions. Furthermore, it shows a lack of improvement in the nutritional levels of the population, and even the worsening of the same, according to McKeown's thesis on the relationship between airborne diseases and undernutrition.[62] Therefore, the reduction of mortality in Barceloneta in the last decade of the nineteenth century cannot be attributed to an improvement in the standards of living of the population. The general pattern of an increase of infectious diseases, in fact, does not fit with the epidemiological transition model.[63]

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59 José Soriano Palao, "La transición demográfica en Yecla, 1860–1930," *Papeles de Geografía*, no. 26 (1997): 167–69.

60 Gumersindo Colomer Codina, *Movimiento de la poblacion de Barcelona* (Barcelona: Establ. Tip. de los Sucesores de N. Ramirez y Ciª, 1883).

61 Mercedes Arbaiza Vilallonga, "Causas sociales de la mortalidad durante la industrialización vizcaína (1877–1930)," *Asclepio*, no. 49.1 (1997): 245–83; Josep Bernabeu-Mestre et al., "El análisis histórico de la mortalidad por causas: problemas y soluciones", *Revista de Demografía Histórica*, no. 21.1 (2003): 167–93.

62 Thomas McKeown, *El crecimiento moderno de la población* (Barcelona: Antoni Bosch, 1978), 164–74.

63 The epidemiological transition model has shaped our understanding of the main factors and phases of the reduction of mortality that societies experience. The model has received several reviews and reformulations, but the focus on the reduction of infectious disease as a primary point of the process has been predominant. See J. Frenk et al., "Elements for a theory of the health transition," *Health Transition Review: The Cultural, Social, and Behavioural Determinants of Health*, no. 1.1 (1991): 21–38; Elena Robles González, Josep Bernabeu-Mestre, and Fernando García Benavides, "La transición sanitaria: una revisión

TABLE 7.7 Social causes of death in Barceloneta (%)

Groups of causes of death	1860	1869–70	1879	1890	1900
Water- and food-borne infectious diseases	19.4	14.7	19.3	10	9.2
Airborne infectious diseases	30	31.8	33.5	47.5	46.8
Other infectious diseases	6.4	6.9	10.7	9.4	11.3
Non-infectious diseases	35.6	34.7	30.8	29.5	25.7
Not classified	*8,6*	*11,9*	*5,7*	*3,6*	*7*

SOURCE: COMPILATION BY THE AUTHOR BASED ON THE REGISTRY OF DEATHS OF THE CIVIL REGISTRY OF BARCELONA. THE CLASSIFICATION OF CAUSES OF DEATH FOLLOWS THE MODEL PROPOSED BY JOSEP BERNABEU-MESTRE ET AL., "EL ANÁLISIS HISTÓRICO DE LA MORTALIDAD POR CAUSAS: PROBLEMAS Y SOLUCIONES," *REVISTA DE DEMOGRAFÍA HISTÓRICA*, NO. 21.1 (2003): 167–93

The results of the evolution of the mortality pattern in Barceloneta are similar to cases of populations with accelerated industrialisation processes and very rapid, uncontrolled urbanisation. Barceloneta, however, maintained its urban structure almost completely, and its population growth remained constrained in the last third of the century. The worsening of standards of living, therefore, occurred in a population that did not suffer dramatic spatial or population changes. It was the impact of the economic and labour transformation, according to our hypothesis, that explains it.

In fact, the standards of living in Barceloneta, and particularly the overcrowding in houses and the bad hygienic and sanitary conditions, were concerns that grew throughout the second half of the century. These concerns were heightened by the impact of a yellow fever epidemic in 1870 that caused widespread devastation in the maritime quarter. The diagnosis of the extraordinary incidence of the epidemic in Barceloneta was clear to medical hygienists. The maritime quarter, argued Dr Robert, was "a wretched population, not particularly given to cleanliness and at least four or five times larger than it should be".[64] Meanwhile, Dr Carlos Ronquillo described Barceloneta as a "filthy slum", and pointed out that the way the inhabitants of the neighbourhood "live and sleep physically and morally" was the main cause of the outbreak

conceptual," 1996; JP Mackenbach, "The epidemiologic transition theory," *Journal of Epidemiology and Community Health*, no. 48.4 (1994): 329–31.

64 *El genio médico-quirúrgico*, October 22, 1870.

of the epidemic.[65] Thus, problems of hygiene and overpopulation were considered not merely social problems but also moral questions, a topic that was typically present in the major maritime districts of port cities around Europe during the transition from sail to steam.[66] The multiplication of complaints about these conditions in Barceloneta coincided with the beginning of public action to alleviate some of the city's problems. This included the introduction of public fountains, the construction of a new market, and the approval of the reform and sanitation of the city's subsoil. These events, concentrated in the last fifteen years of the century, explain the reduction in water and food related mortality. Notwithstanding, the perception of the district by the elites was increasingly embedded in the general concerns regarding the consequences of industrialisation and urban growth, and the social tensions it generated. The social consequences of these processes brought the general feeling—among some of those linked to the maritime economy and to Barceloneta—of a sense of nostalgia for the vanished age of sail, and of a crisis and decadence in the neighbourhood.[67]

5 Conclusions

The expansion of maritime trade and port and shipping activity in the city of Barcelona constituted the fundamentals of Barceloneta's economic

65 Preceptos de salubrificación y beneficencia aplicables a las epidemias de Barcelona en general y a las de fiebre amarilla en particular, 1871, file CXXXIII, box 176, Junta de Comerç collection, Biblioteca de Catalunya, Barcelona.

66 Some of these concerns over similar maritime populations also occurred in English port cities, such as London, Liverpool, and Portsmouth. See Valerie Burton, "Boundaries and identities in the nineteenth century English port: sailor town narratives and urban space," in *Identities in Space: Contested Terrains in the Western City since 1850*, eds. Simon Gunn and R.J. Morris (Aldershot, England and Burlington, Vt.: Ashgate, 2001), 137–151; Brad Beaven, Karl Bell, and Robert James, eds., *Port Towns and Urban Cultures: International Histories of the Waterfront, c.1700–2000* (London: Palgrave Macmillan, 2016).

67 The most important studies on the Catalan age of sail written in the first decades of the twentieth century were imbued with this sense of nostalgia (Ricart i Giralt, "El siglo de oro de la marina velera de construcción catalana 1790–1870"; Emerencià Roig, *La marina catalana del vuitcents* (Barcelona: Barcino, 1929). These works are part of a larger trend in European studies and literature that took a romantic view of the age of sail in the late nineteenth and early twentieth century. See Robert D. Foulke, "Life in the dying world of sail, 1870–1910," *Journal of British Studies*, no. 3.1 (1963): 106. The notion of Barceloneta's decadence was the motivation for the fin de siècle work by a resident of the district on its history, written between 1895 and 1897 and published decades later: Avellí Guitert de Cubas, *Barceloneta* (Barcelona: s.n, 1921).

development during the first centenary of its existence. The multiple and structural changes in these sectors in business and labour, due to the processes of industrialisation and liberalisation in the maritime world, shaped the transformation of the district in the second half of the nineteenth century. The vast network of small workshops devoted to providing products and services to merchant ships and the maritime industries faded away, as did the labour force related to these activities. Along with this, the crisis of sail-powered shipping and the pole of attraction that the metallurgical factories represented, detached from maritime demands, all served to change Barceloneta's socio-professional structure. It became less maritime-oriented and experienced a process of proletarianisation. Concurrently, the extraordinary population growth that took place in the district throughout the most active years of the maritime economy, between 1830 and 1860, slowed down. However, the social problems and concerns related to the population expansion did not. The standards of living of the population, in fact, declined slightly from 1860 onwards, increasing the differential between the indicators of the district and those of the city. The attitudes of the city's elites toward Barceloneta became more and more concerned, especially regarding social problems that were commonly viewed as moral issues, as an undesired effect of industrialisation and liberalisation. The same effect entailed the emergence of a sense of nostalgia for the age of sail, and a sense of a crisis in the district in the late nineteenth century.

CHAPTER 8

The Port of La Ciotat and Its Maritime Community towards Industrialisation (1836–1916)

Kalliopi Vasilaki

1 Introduction

The port of La Ciotat lies between the two dominant ports of Provence: Marseilles, the main commercial hub; and Toulon, the naval base. It was integrated into the seaport system of Provence, which, together with a complex of other secondary ports, engaged in several maritime activities, including fishing, coastal and long-distance trade, and shipbuilding. These activities supplemented the needs of the two main ports.[1] The maritime communities of the secondary ports and coastal towns of Provence constituted main nodes of the seaport networks in the maritime transport system of the region.[2] Even though half of the total amount of sailors in Provence were concentrated in the big ports of Marseilles and Toulon, the smaller ports, all along the coast, formed significant seafaring communities.[3] In this regard, the smaller ports

1 For the system of ports in Provence see: Bruno Marnot, *Les grands ports du commerce français et la mondialisation du XIX^e siècle (1815–1916)* (Paris: Presses de l'Université Paris-Sorbonne, 2011); and Laurent Pavlidis, "Construction navale traditionnelle et mutations d'une production littorale en Provence (Fin XVIII^e–début XX^e siècle)" (PhD diss., University of Aix-Marseilles, 2012).

2 For an analysis of the role of secondary ports and their maritime communities on seaport systems, see: Gordon Jackson, "The significance of unimportant ports," *International Journal of Maritime History* 13, no. 2 (2001): 1–17; Werner Scheltjens, *Dutch Deltas. Emergence, Functions and Structure of the Low Countries' Maritime Transport System ca. 1300–1850* (Leiden and Boston: Brill, 2015); Margrit Schulte Beerbühl and Jörg Vögele (eds.), *Spinning the Commercial Web. International Trade, Merchant and Commercial Cities, c. 1640–1939* (Frankfurt am Main: Peter Lang, 2004), 247–376; Amélia Polónia, "European seaports in the early modern age: concepts, methodology and models of analysis," *Cahiers de la Méditerranée*, no. 80 (2010): 17–39: http://journals.openedition.org/cdlm/5364; Gelina Harlaftis, "Greek shipping as a unification factor of markets: the methodology", in Η ναυτιλία των Ελλήνων, *1700–1821* [Greek Shipping, 1700–1821: The Heyday Before the Greek Revolution], eds. Gelina Harlaftis and Katerina Papakonstantinou (Athens: Kedros, 2013), 39–90.

3 In the ports of Saint Tropez, La Seyne, and La Ciotat, almost the two-thirds of men worked at sea during the second half of the eighteenth century. See: Gilbert Buti, "Entre 'fortunes de mer et honnêtes profits'. Marins provençaux au XVIII^e siècle," in *Los niveles de vida*

around Marseilles and Toulon shaped a strong maritime culture; the sea was at the core of society and seafarers represented an essential part of economic and social life, and depended significantly on the shipping activities of the main ports.

The cultural appropriation of the population of La Ciotat with the sea, through a plethora of maritime activities, formulated a strong maritime identity followed by patterns of behaviours and social norms that defined the character of the city, and its collective memory.[4] From the 1840s onwards, La Ciotat faced a total economic and social transformation by converting to one of the most important industrial shipbuilding centres of the Mediterranean. From the second third of the nineteenth century, several factors, such as the commercial decline of Marseilles at the end of eighteenth century, the emergence of new commercial and political routes, with the conquest of Algiers, and the introduction of new technologies in navigation and shipbuilding, shaped the economic function of the ports of Provence, and subsequently influenced the character of their coastal societies. This chapter on La Ciotat's industrial adjustment, and the subsequent effects on its maritime community during the second half of the nineteenth century, provides a useful insight into the socio-economic evolution in the French Mediterranean, provoked by the advent of industrial capitalism, and the transition from sail to steam navigation.

In French historiography, the social history of maritime populations and their littoral societies has been at the centre of research since the 1980s, through the pioneering works of Alain Cabantous[5] and Gerard le Bouëdec[6] for the Atlantic coast, and of Gilbert Buti for the Mediterranean coast of France.[7] This work focused mainly on the period before the Industrial Revolution. However, the study of maritime communities and their social transition during

en Espana y Francia (*siglos XVIII–XX*), eds. Gérard Chastagnaret, Jean-Claude Daumas, Antonio Escudero, and Olivier Raveux (Alicante: Publicaciones de la Universidad de Alican, 2010), 269.

4 Lydia Carol-Dekker, "Maritime culture: A sociological perspective," *The International Journal of Maritime History*, no. 30.2 (2018): 302–314; Madeleine Brocard, John Barzmann, Brigitte Deltombe, and Morel P., "L'identité maritime des villes portuaires," *Géographes associés*, no. 20 (1997): 71–78.

5 Alain Cabantous, *Dix milles marins face à l'Océan: les populations maritimes de Dunkerque au Havre aux XVII^e et XVIII^e siècle, vers 1660–1794: étude sociale* (Paris: Publisud, 1991); Alain Cabantous, *Les citoyen du large. Les identités maritimes en France* (*XVII^e–XIX^e siècle*) (Paris: Aubier, 1995).

6 Gérard Le Bouëdec, *Activités maritimes et sociétés littorales de l'Europe atlantique* (*1690–1790*) (Paris: Armand Colin, 1997).

7 Gilbert Buti, *Les Chemins de la mer. Un petit port méditerranéen: Saint-Tropez* (*XVII^e–XVIII^e siècle*) (Rennes: Presses Universitaires de Rennes, 2010).

industrialisation remains under-explored. In this respect, the work of Nicolas Cochard is an essential step for the study of seafarers within their urban society during the nineteenth century.[8] The fundamental social restructuring present during industrialisation reshaped the maritime culture of the littoral population, and thus, altered the perception of littoral societies. For a focus on the nineteenth century, we need to reformulate the concept of maritime communities. Alain Cabantous questions who is included among seafarers,[9] and observes the differences the contemporary era imposes on this concept, given population growth, immigration, and urbanisation during the nineteenth century. Gérard Le Bouëdec, in his article about the evolution of the perception of the coastal zone during the nineteenth century, underlines the profound transformation of littoral societies and maritime activities, confronted with industrialisation and the reconfiguration of maritime trade.[10] The port-cities often become industrial centres, with decisive social effects that totally transform the maritime population. Nicolas Cochard argues the need to remind ourselves of the particularities of the history of seafarers in the nineteenth century, since generalised mechanisation reshaped the world of the sea in an in-depth manner.[11]

This chapter considers the maritime community of La Ciotat, a well-established part of the coastal economy in Provence. The first part provides an analysis of the emergence of La Ciotat as an important industrial shipbuilding centre of the French Mediterranean, demonstrating the process of economic transformation at the port. The second part examines the social change of La Ciotat from two main perspectives: the demographic transition of the town, focusing on demographic dynamics and occupational structure; and the evolution of sailors' professional trajectories during the process of industrialisation. This study provides evidence on how the restructuring of the economic

8 Nicolas Cochard, *Les marins du Havre. Gens de mer et société urbaine au XIX^e siècle* (Rennes: Presses Universitaires de Rennes, 2016).

9 Alain Cabantous, "Histoire maritime ou histoire sociale ? L'approche des gens de mer," *Drassana: revista del Museu Marítim*, no. 15 (2007): 84–96; "Qui saisir parmi la population dénommée 'gens de mer'?". https://www.raco.cat/index.php/Drassana/article/view/104719 (accessed 15/08/2020).

10 Gérard Le Bouëdec, "L'évolution de la perception des zones côtières du XV^e siècle au XX^e siècle", in *Terres Marines. Etudes en hommage à Dominique Guillemet*, eds. Frédéric Chauvaud and Jacques Péret (Rennes: Presses universitaires de Rennes, 2006), 27–37, http://books.openedition.org/pur/20421 (accessed 07/09/2020).

11 Nicolas Cochard, "L'histoire des populations maritimes à l'époque contemporaine: la géographie au service de l'historien," *EchoGéo*, no. 19 (2012): 1–14, http://journals.openedition.org/echogeo/12991 (accessed 31/07/2020).

function of the port constitutes an essential component of the social transformation of the town, and the modification of its maritime labour market.

2 The Transformation of the Port of La Ciotat towards an Industrial Shipbuilding Centre

As the writer of the *mémoire historique* of La Ciotat (1842) remarked, "[l'industrie] la plus naturelle au pays, celle qui fait surtout l'existence de la Ciotat c'est le métier de la mer".[12] Since its origins in the fifteenth century, the town was dependant on a plethora of maritime activities, such as fishing coastal and long-distance trade, shipbuilding, and seafaring. Wooden shipbuilding formed a well-established aspect of the local economy from the seventeenth century onwards, and was boosted by the proximity of the port to Marseilles and its *maisons de négoce* (trading houses). With minimum infrastructure, as was the case in most Mediterranean ports during this period, La Ciotat constructed large commercial sailing ships, commissioned mostly by the shipowners of Marseilles.[13] Simultaneously, essential ancillary industries, such as rope and sail making, were also established in the port.[14] In addition, La Ciotat was highly dependent on the maritime trade of Marseilles, and the prominent captains and officers of the town were closely connected to some of the most powerful trading houses.[15] During the *ancien regime*, the commercial activity of the port and the fleet was enhanced by active participation in the *caravane maritime*, the practice of chartering western ships by the Ottoman Empire, in order to execute trade in the Levant.[16] In the eighteenth century,

12 Etienne-Michel Masse, *Mémoire historique et statistique sur le Canton de La Ciotat, Département des Bouches du Rhone* (Marseilles: Caranud Fils, 1842), 215.

13 Gilbert Buti, "Activités maritimes et gens de mer de La Ciotat aux XVII^{e} et XVIII^{e} siècle," in *La Ciotat, de Citharista aux chantiers navals. Histoire et archéologie, Activités maritimes et gens de mer de La Ciotat aux XVII^{e} et XVIII^{e} siècles*, ed. Brigitte Vasselin (Valensole: Aurorae Libri, 2017), 118.

14 Marie Perrin, "Métiers et activités à La Ciotat," in Vasselin, *La Ciotat*, 121.

15 For instance, the Icard and Brunet families regularly led the ships of the house of Roux. See: Gilbert Buti and Alain Cabantous, *Etre marin en Europe occidentale (1550–1850)* (Rennes: Presses universitaires de Rennes, 2016), 26; Paul Masson (ed.), *Encyclopédie départementale des Bouches-du-Rhône*, vol. 9: *Le mouvement économique: le Commerce* (Paris Champion and Marseilles: Archives départementales des Bouches-du-Rhône, 1922), 644.

16 P. Perrignon de Troyes, "Le port de La Ciotat," *Revue de la marine marchande*, no. 22 (Juillet 1917): 383. For the practice of *caravane maritime* see: Paul Masson, *Histoire du commerce français dans le Levant au XVII^{e} siècle* (Paris: Librairie Hachette, 1896); Daniel Panzac, *La caravane maritime. Marins européens et marchands ottomans en Méditerranée*

La Ciotat furnished more sailors and captains to the commerce of Levant than Marseilles. As Gilbert Buti indicates, of the 937 charter contracts signed by the Vice-Chancellor of Alexandria between 1753 and 1768, 36.4% of captains originated from La Ciotat, 21% from Saint Tropez, and 11.5% from Marseilles.[17]

From the end of eighteenth century, the maritime community of La Ciotat faced a significant economic and demographic downturn. The Reign of Terror, the years 1793–94, together with the British blockade, which completely cut off the port of Marseilles from overseas markets, led to the economic failure of the merchant elite of Marseilles.[18] Subsequently, all secondary ports of Provence, which relied upon the maritime economy of Marseilles, witnessed a decline of commercial activities. Also, from the last quarter of the eighteenth century onwards, the *caravane maritime* and the commercial routes of the Levant, which La Ciotat was largely dependent upon, decreased significantly. The military defeat of the Ottoman Empire by Russia, which from 1783 opened the Black Sea to European ships, together with the Napoleonic campaign in Egypt, weakened the commercial structure of the Ottoman Empire. The rise of the Ragusan (today Dubrovnik) and Ottoman Greek fleets in the Levant, and conflict associated with the French revolution, led to the decline of the *caravane maritime* and the disappearance of French caravaneers in the Mediterranean. In the beginning of the nineteenth century, a series of events, including the Greek War of Independence, the Egyptian rebellion led by Muhammad Ali, and the conquest of Algiers by France, led to the final suspension of maritime and trade relations between France and the Ottoman Empire, which had characterised all of the seventeenth and eighteenth centuries.[19] Given the political and economic circumstances at the beginning of nineteenth century, La Ciotat found itself in a profound economic crisis. Minutes from town council meetings often referred to the "general misery" of La Ciotat due to the absence of port and shipyard activities, and sustained unemployment.[20]

(*1680–1830*) (Paris: CNRS, 2004); Gilbert Buti, "Allez en caravane: le cabotage lointain en Méditerranée, XVII^{e} et XVIII^{e} siècle," *Revue d'Histoire moderne & contemporaine*, no. 52.1 (2005.1): 7–38; Maria Fusaro, Colin Heywood, and Mohamed-Salah Omri (eds.), *Trade and Culture Exchange in the Early Modern Mediterranean. Braudel's Maritime Legacy* (London and New York: I.B. Tauris, 2010).

17 Buti, "Allez en caravane," 20.

18 Charles Carrière, *Négociants marseillais au XVIII^{e} siècle. Contribution à l'étude des économies maritimes* (Marseilles: Institut historique de Provence, 1973), 260–63.

19 Daniel Panzac, "International and domestic maritime trade in the Ottoman Empire during the eighteenth century," *International Journal of Middle East Studies*, no. 24 (1992): 202–204.

20 Archives Municipales de La Ciotat (hereafter AMLC), DA.01-06 to DA-01-12, Registres de Délibérations du Conseil Municipal (1802–1833).

From the second third of the nineteenth century onwards, the port of La Ciotat underwent significant restructuring. During this period, La Ciotat commenced a profound transformation with the establishment of important industrial shipbuilding activity at the port. Together with La Seyne-sur-Mer,[21] they became the only secondary ports of the Provence littoral area during the nineteenth century that oriented their maritime activities towards new technologies. For La Ciotat, the first phase of transition began with Louis Benet (1805–77), industrialist, and son of a Marseilles shipowner. In 1836, he founded a standard limited partnership company for the construction and repair of steamships in the Mediterranean, and the manufacture of steam engines. The same year, the first paddle steamer, *Le Phocéen*, was constructed in La Ciotat, with a plan and engine imported from Great Britain.[22] In 1839, the company was integrated into the network for the construction of railways in the south of France, namely the *Compagnie des mines de la Grand-Combe et des chemins de fer du Gard*,[23] and expanded to a new joint-stock company named the *Ateliers de construction de machines à vapeur à La Ciotat*. The company was obliged to construct, apart from steamships, locomotives destined for the railway company. Louis Benet succeeded in integrating the financial means, together with a relevant technological network, mainly from Great Britain, in order to build a powerful industrial establishment in La Ciotat.

Different factors can attest to the beginning of industrialisation at the port. Already in this first phase of transition, shipbuilding production in La Ciotat

21 The shipyards of the American, Eduard Church, founded in 1818 in La Seyne-sur-Mer, focused their activity on fluvial navigation. The British engineer and industrialist, Philip Taylor, bought the site in 1845, which, after serious restructuring in 1853, transformed into *La Compagnie des Forges et Chantiers de la Méditerranée*, with capital of 4 million francs. It became one of the most important industrial complexes, with more than 3000 workers in the shipyards during the second half of the nineteenth century. See: Xavier Daumalin and Olivier Raveux, "Aux origines de la Société des forges et chantiers de la Méditerranée. L'œuvre de l'industriel anglais Philip Taylor (1846–1853)," *Provence historique*, no. 247 (2012): 25–38.

22 Xavier Daumalin and Olivier Raveux, "Aux origines de l'industrie modern marseillaise: l'œuvre de Louis Benet et de Philio Taylor (années 1830–1850)," *Rives méditerranéennes*, no. 45 (2013): 22. *Le Phocéen* was 333 tons, with dimensions of 50.75 × 6.89 × 4.25 m.

23 The company was formed in 1837 by Paulin Talabot, and resembled the business of Baron James de Rothschild and the Stephenson (father and son) founders of the locomotive workshop of Robert Stephenson and Co., in Newcastle. The aim of the *Compagnie* was to build a railway linking the region of Beaucaire and the coal-mining enterprise in Grand'Combe on the Rhône River, as well as a railway connecting Marseilles with Avignon. For a further analysis see: Xavier Daumalin, "L'atelier de construction ferroviaire. Louis Benet & Cie à La Ciotat (1839–1848)," *Revue d'histoire des chemins de fer*, no. 28–29 (2003): 27–43.

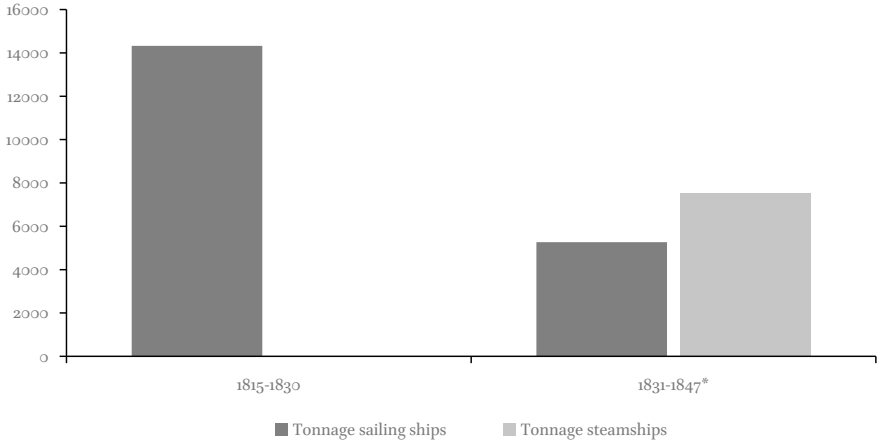


CHART 8.1 Shipbuilding production in La Ciotat (in tonnage) during the years 1815–30 and 1831–47
SOURCES: FOR THE TONNAGE OF SAILING SHIPS: LAURENT PAVLIDIS, "CONSTRUCTION NAVALE TRADITIONNELLE ET MUTATIONS D'UNE PRODUCTION LITTORALE EN PROVENCE (FIN XVIII^{e}–DÉBUT XX^{e} SIÈCLE)" (PHD DISS., AIX-MARSEILLES UNIVERSITÉ, 2012), 158. FOR THE TONNAGE OF STEAMSHIPS: SERVICE HISTORIQUE DEFENCE (TOULON), 14 P 122, MÉMOIRES STATISTIQUES; PAUL BOIS, *LE GRAND SIÈCLE DES MESSAGERIES MARITIMES* (MARSEILLES: CCIMP, 1992); AND YVES LAGET ET AL., *NOTRE HISTOIRE DE LA CONSTRUCTION NAVALE À LA CIOTAT. DE L'ANTIQUITÉ À NOS JOURS* (LA CIOTAT: ASSOCIATION JOSEPH EDOUARD VENCE, 2011). *THE TONNAGE OF CERTAIN STEAMSHIPS IS MISSING. THESE ARE THE STEAMERS *LE RHÔNE*, *L'HÉRAULT* (1837), *L'UTILE* (1838), *SALAMANDRE* (1847), *ARIEL* (1847), AND *SAINT-GEORGES* (1847)

reflects the industrial growth of the site. With an industrial unit of 25,000 m^2 displaying remarkable technological progress, during the period 1831 to 1847, the total tonnage of steamship construction in La Ciotat surpassed the total tonnage of sailing ship construction (Chart 8.1). At the end of the 1840s, the company of *Louis Benet & Cie*, by carrying out the production of steamships and locomotives concurrently, became the most important enterprise of this type in the Mediterranean.

The key factors for the development of industrial shipbuilding activity in La Ciotat consist of historical and economic circumstances: the declining economic activity of La Ciotat, together with the ability to provide empty space in the port, offered the possibility of the introduction of new industrial activities. Aside from this, the geographical position of the port and proximity to the commercial port of Marseilles, and the naval base of Toulon, played a pivotal role in the technological shift. In terms of social space, the existence of skilled

human labour, related to wooden shipbuilding expertise acquired in the previous centuries, was also an essential component. On a geopolitical level, the conquest of North Africa, with the expedition to Algiers in 1830, created new commercial (and diplomatic) routes, and demand that was able to activate market forces in the direction of steam propulsion.[24] These circumstances led the entrepreneurs of Marseilles, for the first time, to invest in these new shipping technologies. In the 1830s, Charles and Auguste Bazin opened the first line from Marseilles to Naples.[25] The *Compagnie Gérard,* from Toulon, offered regular routes to Corsica, and the *Compagnie Valery*, from 1833, created a regular connection with North Africa.[26] In 1836, three companies were created, which specialised in coastal navigation within the Languedoc: the *Théophile Périer & Cie*, *Auguste et Guillaume Chanhel frères & Cie*, and *Simon Thérond & Cie*.[27] At the same time, in 1835, the *Assemblée Nationale* passed a law for "the establishment of liners designed to transport mail in the Mediterranean, between France and the Levant", and thus created the first French public postal service for North Africa and the eastern Mediterranean operated by French naval steamships.[28] Subsequently, during this period, market demand for steam navigation increased the need for industrial shipbuilding.

However, the shipyards of La Ciotat faced serious decline due to the economic crisis of 1848–51 in France, which drastically affected the shipbuilding sector. From 1848 onwards, Louis Benet did not possess adequate capital to support the needs and demands of the industrial shipbuilding sector. Hereafter, the industrial unit in La Ciotat integrated into the *Service maritime des messageries nationales*. In 1851, the French state, aiming to establish powerful steamship lines in the Mediterranean, such as those of the *Peninsular and Oriental Company* (*P&O*), created in 1837 in Great Britain, and *Lloyd Austriaco*, formed in 1836 in the Austrian Empire, ceded all postal services for twenty years to the *Société des Messageries Nationales* (generally known as the *Compagnie des Messageries Maritimes*), the first large French steam shipping company

24 Marchel Roncayolo, *L'imaginaire de Marseilles. Port, ville, pôle* (Marseilles: Chambre de Commerce et d'Industrie Marseilles-Provence, 1990), 78.

25 Xavier Daumalin and Marcel Courdurié, *Vapeur et Révolution industrielle à Marseilles (1831–1857)* (Marseilles: Chambre de commerce et d'industries de Marseilles-Provence, 1997), 106.

26 Marie-Françoise Berneron-Couvenhes, *Les Messageries Maritimes. L'essor d'une grande compagnie de navigation française, 1851–1894* (Paris: Presses de l'Université Paris-Sorbonne, 2007), 42.

27 Daumalin and Courdurié, *Vapeur et révolution industrielle à Marseilles*, 115.

28 Dominique Brisou, *Accueil, introduction et développement de l'énergie vapeur dans la Marine militaire française au XIX^e siècle* (Paris: Service historique de la marine, 2003), 612.

subsidised by the state.[29] The company offered scheduled steamer services, firstly from Marseilles to Alexandria, Constantinople, and Syria, and from the 1860s onwards to the South Atlantic, and the Indian and Pacific Oceans. By 1869, the *Compagnie des Messageries Maritimes* had 65 ships in service, representing an investment of over 100 million francs, which made the Company one of the largest steamship companies in the world.[30]

The shipyards of La Ciotat reflected the capacity of the expansion of the *Compagnie des Messageries Maritimes*.[31] Following a policy of vertical integration of production, the company devoted the biggest part of investment directly into La Ciotat for the construction of a new, large, and competitive fleet, and for the maintenance of the old fleet.[32] The industrial site of La Ciotat grew into the main tool of expansion of the Company, following the opening of new lines through state subsidies. Table 8.1 represents the average yearly tonnage of the output of the shipyards (in gross tonnage, GT) following quinquennial periods from 1855 to 1915.[33] The shipbuilding production in La Ciotat was subjected to strong protectionism, reflected in government decisions and state subventions, rather than the freight rate fluctuations of shipping cycles often affected by the dynamics of the international and regional economy.[34] In the years 1857 to 1866, the shipyards of La Ciotat already produced 26% of the total tonnage of steamships connected to the ports of France (both constructed and purchased).[35] By 1910, the percentage of output for steamships

29 It was named the *Compagnie des Services Maritimes de Messageries Nationales* in 1852. In 1853, following the proclamation of the Second Empire, the company's name changed to *Compagnie des Services Maritimes Imperiales*. After the Franco-Prussian War, and the foundation of the Third Republic, the company changed its name again, to the *Compagnie des Messageries Maritimes*, abbreviated as MM.

30 Michael Stephen Smith, *The Emergence of Modern Business Enterprise in France, 1800–1930* (Cambridge, MA: Harvard University Press, 2006), 90.

31 Berneron-Couvenhes, *Les Messageries Maritimes,* 74.

32 Archives du Chambre de Commerce et d'Industrie Marseilles-Provence (hereafter ACCIMP), L 19/60/427-1, Assemblé générale des actionnaires, 28 mai 1853.

33 Unfortunately, the absence of documents relating to repairs and maintenance, an important function of the shipyards, does not allow further analysis of the construction site.

34 For the state subsidies of the *Messageries Maritimes*, see the analysis of Berneron-Couvenhes, *Les Messageries Maritimes*. For an analysis of the shipping cycles and their effect on shipbuilding, see Martin Stopford, *Maritime Economics* (London and New York: Routledge, 1997).

35 Archives French Lines (hereafter AFL), 1997-002-4714, Navires construits à La Ciotat pour le compte de la Compagnie des messageries maritimes ; and Jules Peulvé, *Déposition à l'enquête maritime: marine marchande* (Paris: Imprimerie centrale des chemins de fer, 1870).

TABLE 8.1 Quinquennial average yearly output of the shipyards of La Ciotat in gross tonnage, 1852–1915

Period	Average annual tonnage
1852–55	774
1856–60	2,386
1861–65	3,836
1866–70	6,438
1871–75	5,872
1876–80	3,067
1881–85	7,529
1886–90	4,668
1891–95	4,954
1896–1900	8,193
1901–05	5,256
1906–10	2,866
1911–15	5,334

PROCESSED DATA FROM: ARCHIVES FRENCH LINES (HEREAFTER AFL), 1997-002-4714, NAVIRES CONSTRUITS À LA CIOTAT POUR LE COMPTE DES *MESSAGERIES MARITIMES* AND BERNERON-COUVENHES, LES MESSAGERIES MARITIMES, ANNEXE 14, 789–799

constructed in La Ciotat represented 22% of the total number of steamships within the French merchant marine (in net tonnage).[36]

The Company succeeded in creating a major shipbuilding and ship-repair complex, with a labour force of more than 3,500 workers. From the 1850s onwards, the shipyards experienced a vast spatial expansion and a significant development of their industrial facilities. The site occupied a total area of 93,000 m^2, with an industrial complex of metal, engine, and tool workshops, together with a dry dock, three construction docks, and one slipway. The technological evolution of the shipyards was immense: the steamships passed 120 m in length and 3000 tons, employing engines of 2,400 to 2,900 hp.

The port traffic of La Ciotat from 1850 to 1913 (Table 8.2) offers a clear insight into the economic function of the port as a shipbuilding centre of the *Compagnie des Messageries Maritimes*.[37]

36 Statistique Générale de la France, *Annuaire Statistique*, 1911, Tableau I. Effectif de la marine marchande au 31 décembre 1910.

37 Table taken from: Masson, *Encyclopédie départementale*, 647.

TABLE 8.2 Port traffic in La Ciotat, 1850–1913

Year	Ships	Tonnage	Average tonnage
1850	200	15,673	78.4
1860	677	32,579	48.1
1869	608	89,348	147
1880	1,084	233,749	215.6
1890	946	320,655	339
1896	816	425,495	521.4
1900	716	384,07	536.4
1913	338	201,411	595.9

SOURCE: TABLE TAKEN FROM: PAUL MASSON (ED.), *ENCYCLOPÉDIE DÉPARTEMENTALE DES BOUCHES-DU-RHÔNE*, VOL. 9: *LE MOUVEMENT ÉCONOMIQUE: LE COMMERCE* (PARIS CHAMPION AND MARSEILLES: ARCHIVES DÉPARTEMENTALES DES BOUCHES-DU-RHÔNE, 1922), 647

TABLE 8.3 Traffic of the port of La Ciotat in 1896 based on vessels with cargo, and vessels on ballast

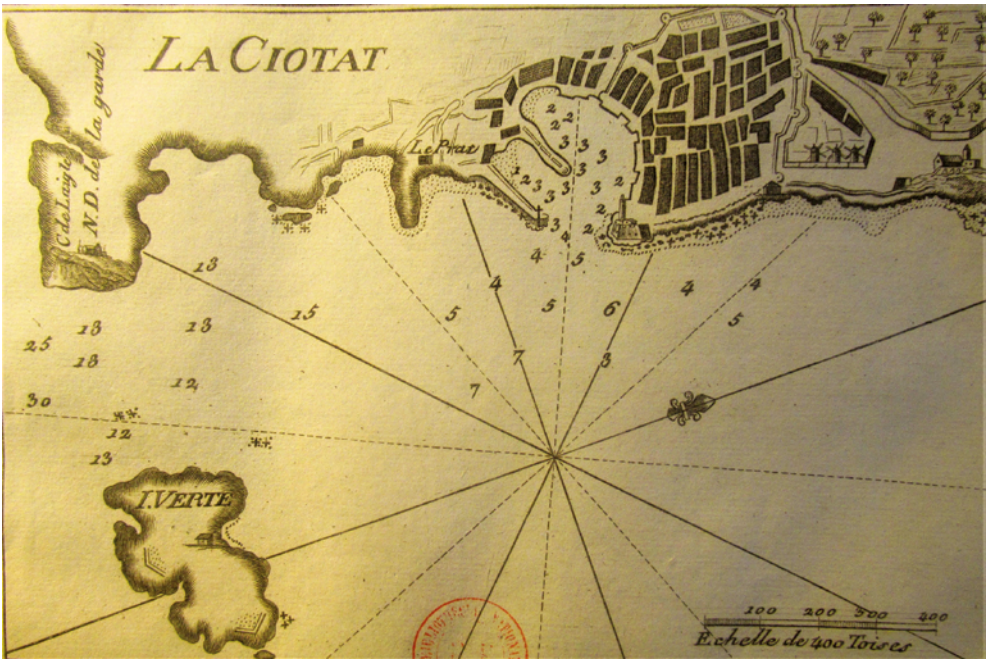
	Number of ships	Tonnage
Vessels with cargo	337	10,446
On ballast	479	415,049

SOURCE: TABLE TAKEN FROM: MASSON, *ENCYCLOPÉDIE DÉPARTEMENTALE*, 647

Even though port traffic increased significantly during this period, it was limited to ships on ballast that visited the port in order to conduct essential maintenance works. This is evident by the data for the number of vessels with cargo and those on ballast that entered the port in 1896 (Table 8.3). Apart from the ships of the Company, the port was mostly frequented by small coastal vessels.[38]

The reduced commercial use of the port is also evident by the choice to build a railway station 5 km north of the town and thus, keep the port separated from an efficient railway system with access to the hinterland. A railway system of short range existed in the port only for the transportation of heavy raw materials and tools, to the shipyards. Therefore, the shipyards of *Messageries*

38 Ibid., 647.



MAP 8.1 Map of La Ciotat, 1800
SOURCE: BIBLIOTHÈQUES NATIONALES DE FRANCE (BNF), IMAGE CARTOGRAPHIQUE, JEAN-JOSEPH ALLEZARD, *NOUVEAU* RECUEIL DE PLANS DES PRINCIPAUX PORTS DE LA MÉDITERRANÉE, *NOUVELLE ÉDITION, CORRIGÉE ET AUGMENTÉE DE 32 PLANS* (LIVORNO AND MARSEILLES: CHEZ L'ÉDITEUR SR TRABAUD, 1800)

Maritimes aligned to La Ciotat's specific characteristics, that is, industrial shipbuilding activity. During this period, the port of La Ciotat functioned as an ancillary industrial hub, an outport of Marseilles, without commercial activity nor shipping and maritime services.

The spatial changes at the port, as can be seen from two different maps from 1800 (Map 1) and 1891 (Map 2), reflect the socio-economic transformation that occurred in the town during the second half of the nineteenth century, and the economic diversification of the port, related to industrial shipbuilding. The industrial growth of the port, together with the subsequent urbanisation, utterly transformed the spatial dynamics of the town. The map of 1891 reveals the emergence of the industrial character of the port as a centre of shipbuilding production. In the latter map, the south part of the port constitutes a distinctive geographical entity of production, and of a local labour market, where the shipyards, workshops, and workers residences, were based. Hence, La Ciotat was divided into two unique parts: the industrial complex, and the town.

MAP 8.2 Map of La Ciotat, 1891
SOURCE: BIBLIOTHÈQUES NATIONALES FRANCE (BNF), IMAGE CARTOGRAPHIQUE: SANS MÉDIATION (PARIS: IMP. SARAZIN, 1891)

From the beginning of the twentieth century onwards, the shipbuilding complex of La Ciotat experienced a constant decline. The economic situation of the *Compagnie des Messageries Maritimes* dramatically changed due to the coal crisis, the continuous strikes, which affected the regularity of services, and a new law on the merchant marine.[39] Simultaneously, private and public interests gradually diverged: the interest of the company was to maintain a high subsidy, for a minimum service, while the interest of the state was to lower the subsidy while requiring more services from the company. In addition, the technological needs of the new fleet could not be facilitated by the La Ciotat shipyards, which demanded extensive infrastructure works. With the beginning of the First World War, the company deficit continued to grow due to serious cash flow problems that arose from government debts.[40] After a period

39 Paul Bois, *Le grand siècle des Messageries Maritimes* (Marseilles: CCIMP, 1992), 68.
40 Ibid. 77.

of crisis at the site, with widespread worker dismissals followed by momentous strikes in the town, the company leased the ship construction and repair centre to the *Société Provençale de constructions navales*,[41] a subsidiary company of *Schneider Corporation*.[42]

3 The Evolution of Social Dynamics in La Ciotat through the Demographic Characteristics of the City

Between 1851 and 1916, La Ciotat witnessed rapid demographic and urban expansion generated by workforce demand in the shipyards. The city went through a demographic transformation with vast population growth maintained mostly by large-scale migration. Within one decade, from 1851 to 1861, La Ciotat became the fastest growing town in Provence. The population increased from 5,129 residents in 1851, to 8,444 in 1861, an annual growth rate of 5.7%. A comparison of annual growth rates of individual port-towns in Provence from 1850 to 1901, attests to the relevant demographic expansion of the town. During this period, the population of La Ciotat registered a 3.2% annual rate of growth; a significant percentage with regards to the overall annual growth of the population in France.[43] During the same period, similar annual growth rates were registered in other ports of Provence that succeeded in industrialising their economies, such as La Seyne-sur-Mer (4.6%), and of course, Marseilles (3.8%).

The main factor for the demographic growth of La Ciotat during the second half of the nineteenth century was a disproportionate dependency on migratory waves, a phenomenon common to many cities in France and Europe during the nineteenth century.[44] The *Compagnie des Messageries Maritimes* attracted thousands of working-class residents, originating from two principal areas: the Provence hinterland, and Piedmont, in Italy. The statistical analysis of place of birth for residents via the nominative censuses of La Ciotat, is revealing (Chart 8.2). In 1851, the number of residents without French

41 AFL, 1997 002 5226, Fonds Compagnie des Messageries Maritimes, Bail par la Cie des Messageries Maritimes à la Ste Provençale de Constructions Navales.

42 *Schneider-Creusot*, or *Schneider & Cie*, was an iron and steel-mill in Creusot, one of the greatest industrial establishments in the world, which became a major arms manufacturer.

43 The population of France registered a 0.3% annual growth in 1806–21, 0.5% in 1821–51 and 0.2% in 1851–91. See: Magali Talandier, Valérie Jousseaume, and Bernard Henri Nicot "Two centuries of economic territorial dynamics: the case of France," *Regional Studies, Regional Sciences*, no. 3.1 (2016): 72.

44 Robert Lee, "The socio-economic and demographic characteristics of port cities: a typology for comparative analysis?," *Urban History*, no. 25 (1998): 156.

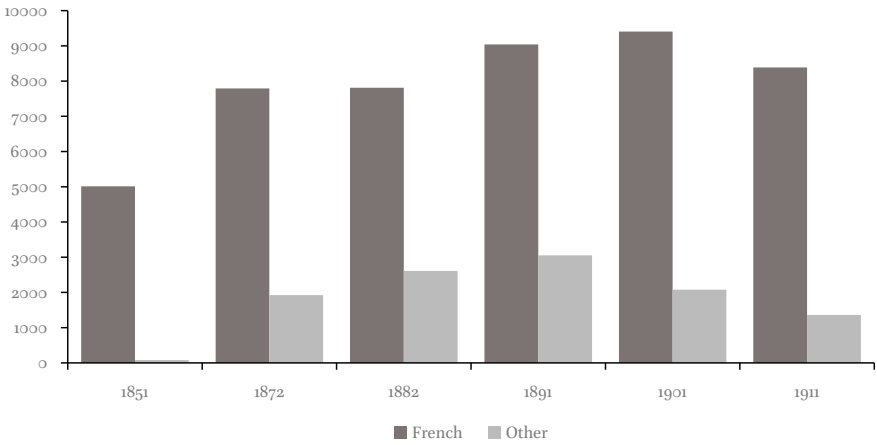


CHART 8.2 Distribution of the population of La Ciotat according to nationality, 1851–1911 SOURCE: PROCESSED DATA FROM ARCHIVES MUNICIPALES DE LA CIOTAT (HEREAFTER AMLC), LISTES NOMINATIVES DE RECENSEMENT DE POPULATION DE LA CIOTAT (1851–1911)

nationality in the town was 80. After four decades, in 1891, the number of foreigners amounted to 3,052 individuals. However, the impact of immigration on La Ciotat is more obvious from the recapitulation data of the 1882 nominative census, which includes a statistical analysis of the provenance of residents. In this year, almost half of the population of La Ciotat were not born in the town: 24% were Italian, and 22% originated in other parts of France.[45]

Simultaneously, the city encountered a cumulative urban expansion. As can be seen below (Chart 8.3), from 1851 to 1911, the rural proportion remained stable whereas the proportion residing in the urban area more than doubled.

This rapid increase of migration, together with urban expansion from the 1850s onwards, resulted in a significant demand for housing. Immigration and the subsequent urban expansion created a shortage of housing, which led to the involvement of the *Compagnie des Messageries Maritimes* in the provision of working-class accommodation. Therefore, between 1854 and 1858, the company constructed, in a 21,000 m^2 area, a housing complex of 24 houses (of eight apartments each), with a total capacity for 800 residents, to cover the housing needs for a part of the workforce of the shipyards.[46]

45 AMLC, Liste nominative de recensement de population of La Ciotat, 1882.
46 Archives du Musée Ciotaden, CHAN/41 Construction du quarter Notre Dame des Victoires.

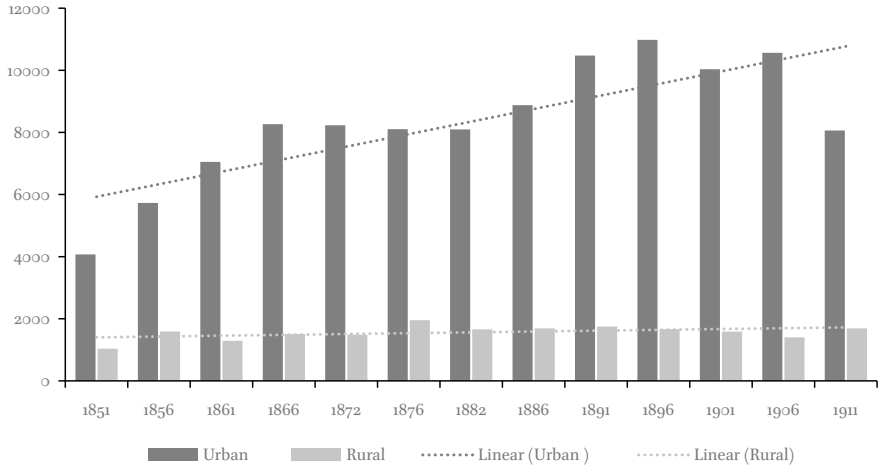


CHART 8.3 Urban section and rural section growth in La Ciotat, 1851–1911
SOURCES: PROCESSED DATA FROM AMLC, LISTES NOMINATIVES DE RECENSEMENT DE POPULATION DE LA CIOTAT (1851–1911)

The nature and development of specific port economies was also reflected in the operation of their labour markets.[47] The demographic development of La Ciotat between the middle of the nineteenth century and the beginning of the twentieth century reflects the overall pattern of economic trends in the town. The population growth rate was undoubtedly related to the expanding shipbuilding industry. The employment records in La Ciotat's shipyards, from 1851 to 1912 provide, inter alia, valuable data on the total number of household members of each worker.[48] This data, together with demographic trends, demonstrates the clear correlation between population growth and employment in the shipyards (Chart 8.4).

La Ciotat population fluctuations followed variations of labour force capacity at the shipyards, a phenomenon that was very closely associated with the dependency of the *Messageries Maritimes* on state policies of commercial and imperial expansion. This link with state intervention through subsidies, during the course of this period, had important effects on demand at the shipyards.

47 Lee, "Socio-economic characteristics," 161.

48 Database, Employment records in the shipyards of La Ciotat (1851–1912). Sources: Archives du Musée Ciotaden, Registres entrées, M1–M4 (1851–1873), P1–P9 (1870–1912). The employment records in the shipyards of the *Messageries Maritimes* is a valuable and unexplored source for their history; it is maintained in the archives of the *Musée Ciotaden* in La Ciotat. For the study of this period, there are complete registers for the recruitment of workers from 1851 to 1912 (around 44,000 entries in total).

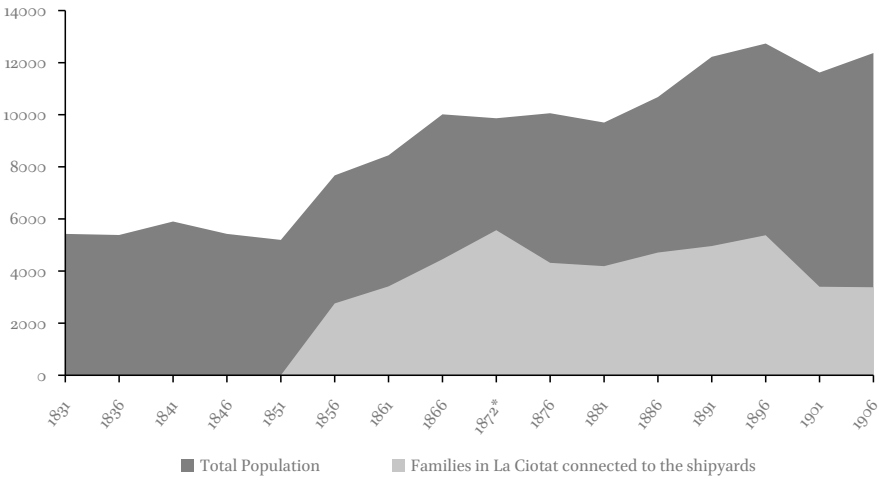


CHART 8.4 Members of household connected to the shipyards in relation to the total population of the city, 1831–1911
SOURCES: PROCESSED DATA FROM: AMLC, LISTES NOMINATIVES DE RECENSEMENT DE POPULATION OF LA CIOTAT (1851–1911) AND ARCHIVES DU MUSÉE CIOTADEN (AMC); EMPLOYMENT RECORDS IN THE SHIPYARDS OF LA CIOTAT (1851–1912). *FOR THE YEAR 1872, THE RECAPITULATION DATA FROM TWO REGISTERS (M4, REGISTRES EMBAUCHES AND P2, REGISTRES ADMISSIONS PROVISOIRES) HAVE BEEN USED

A lack of orders for the *Compagnie* created high levels of unemployment and a halt to growth, causing widespread dismissals in the workforce.[49]

For instance, the Franco-Prussian war, in 1871, reduced production at the shipyards, and had subsequent decremental effects on both the workforce, and the overall population. In addition, the shipyards of La Ciotat had been requisitioned in order to manufacture artillery equipment. The *Compagnie* was obliged to postpone new constructions, and to concentrate only on the maintenance of the existing fleet.[50] Subsequently, the workforce declined from 3,153 in August 1870 to 1,706 a month later. Likewise, the crisis at the beginning of the twentieth century in the shipyards was evident in the demographic dynamics, as the annual rate of growth between 1906 and 1911 dropped by 3.8%.

The connection between the shipbuilding industry and the town of La Ciotat is clear by remarks made in the general assembly of the *Compagnie* in

49 For the relationship between the *Compagnie* and the state see: Louis Girard, *La politique des travaux publics du Second Empire* (Paris: Armand Colin, 1952); and Berneron-Couvenhes, *Les Messageries Maritimes*.

50 Berneron-Couvenhes, *Les Messageries Maritimes*, 338–39.

1908 by André Lebon, President of the Executive Board, in the context of a discussion on the future of the shipyards.

"It is always extremely hard, even painful, to carry out staff dismissals, especially in a locality where there are no other possible occupations for the workers than those that we offer them. It is certain that when you fire workers in big cities, they have possibilities for finding work without relocation. In a city like La Ciotat it is their livelihood that you take away and they are forced to emigrate, even when they are landlords".[51]

The progression towards industrialisation, and changes in the process of shipbuilding production profoundly affected the maritime community of La Ciotat. This can be demonstrated by the professional composition of the population as derived by the database of nominative censuses of La Ciotat for the years 1851 and 1911. It is a challenging process to conduct an analysis of the occupational structure of a French littoral town during the second half of the nineteenth century using such data; the *pluriactivité* of the population, the practice of carrying out various professional activities, was a common phenomenon in both French littoral and agricultural societies.[52] During the nineteenth century, the agricultural-maritime relationship was still strong, especially in towns such as La Ciotat, which were surrounded by a fertile land of vineyards and olive trees. Maritime work was often a seasonal occupation and the use of the land remained important. The interconnection of professions such as sailors, fishermen, farmers, innkeepers, bakers, or even general labourers, is apparent in the nominative censuses at the beginning of the second half of the nineteenth century. On this basis, a clear occupational classification for a socio-professional analysis of a town cannot be fully accurate.

51 ACCIMP, L 19/60/427-5, Assemblées Générales des actionnaires, 25 mai 1908.

52 Gérard Le Bouëdec, "La pluriactivité dans les sociétés littorales. XVII^{e}–XVIII^{e} siècle," *Annales de Bretagne et des pays de l'Ouest*, no. 109.1 (2002): 61–90; Gérard Le Bouëdec, "Small ports from the sixteenth to the early twentieth century and the local economy of the French Atlantic coast," *International Journal of Maritime History*, no. 21.2 (2009): 103–126; Gilbert Buti, "Gens de mer et du terroir: capitaines-vignerons et marins-forestiers de la France méditerranéenne au XVIII^{e} siècle", in *Entre terre et mer. Sociétés littorales et pluriactivités* (*XV^{e}–XX^{e} siècles*), eds. Christophe Cérino, Aliette Geistdoerfer, Gérard Le Bouëdec, and François Ploux (Rennes: Presses universitaires de Rennes, 2004). Apart from French historiography, several other studies on seafarers have referred to this phenomenon: Karel Davids, "Local and global: Seafaring communities in the North Sea area, c. 1600–2000," *International Journal of Maritime History*, no 27:4 (2015): 629–646; Daniel Vickers and Vince Walsh, *Young Men and the Sea: Yankee Seafarers in the Age of Sail* (New Haven, CT: Yale University Press, 2005); Eric W. Sager, *Seafaring Labour: The Merchant Marine of Atlantic Canada, 1820–1914* (Kingston, Montreal and London: McGill-Queen's University Press, 1989).

Nevertheless, grouping the occupational activities of the population on the nominative censuses of 1851 and 1911 can give a clear overall image of the social restructuring of the town.

During the nineteenth century, La Ciotat faced incremental growth in industrial occupations, whereas traditional maritime professions and agriculture were in decline. New categories of workers, either with industrial specialties or unskilled, gradually emerged Professions related to the production and operation of machinery and tools, such as boilermakers, metal turners, fitters, mechanics, and machinists, increased from 3% in 1851, to 15% in 1911. Iron shipbuilding professions, such as riveters and drillers, appeared on the census of 1911 as 3.5% of the working population, while the category of general labourer increased from 6% to 11%. The principal sector that declined as a main occupational activity in the nominative census was fishing—the profession of fisherman dropped from 9% in 1851 to only 2% in 1911. The same effect can be observed from seafaring activities, a decline from 12% to 6%, whereas the traditional shipbuilding occupations, such as rope makers and pit sawyers, had disappeared entirely by the 1911 census. Agriculture was also a sector that slowed dramatically. Taking data from the occupied population of both the urban and rural regions, agricultural professions dropped from 22% in 1851, to 7% in 1911.[53] This change in occupational patterns undoubtedly reflects the growing emphasis the local shipyards placed on iron shipbuilding and steam propulsion, leading to a process of decline of a traditional maritime community, and the rise of an industrial maritime reality.

The economic growth of the town in relation to industrial shipbuilding led to new social implications, and thoroughly changed the social dynamics of the area, including an important impact on local labour relations. Demographic growth had a profound effect on the long-term process of social and structural change. The mountainous provenance of most immigrants who arrived in La Ciotat during the second half of the nineteenth century, such as the Provence hinterland and Piedmont, generated different social constructions that were not connected to the maritime culture of the town.[54] The transformation of the rural countryside during the nineteenth century, with the dramatic decline of agriculture, the development of rail and road systems, and industrialisation, which demanded a significant labour force for the littoral industrial

53 In rural areas alone, where the majority of farmers were located, the phenomenon is even more evident: agriculture dramatically dropped from 90% in 1851, to 36% in 1911.

54 Gilbert Buti, "Provençaux des rivages, provençaux des montagnes (XVIII^{e} siècle–milieu XIX^{e} siècle)," in *Mer et Montagne dans la culture européenne* (*XVI^{e}–XIX^{e} siècle*), eds. Alain Cabantous, Jean-Luc Chappey, Renaud Morieux, Nathalie Richard, and François Walter (Rennes: Presses universitaires de Rennes, 2011), 17–29.

establishments, modified the relationship between the sea and the mountains, and created new social and cultural structures.[55] The shipyards in the town offered new work opportunities in the more industrial environment of a factory that generated a widespread waged labour force. Industrial workers gradually developed class-consciousness, reflected in the formation of labour unions, and particularly, in the momentous strikes that took place in La Ciotat at the beginning of the twentieth century. The increasing proletarisation of labour, and the decline of rural sources of income during this period, turned the seasonal migration patterns of the eighteenth century into permanent rural-urban migration.[56]

Simultaneously, pluriactivity between the agricultural and maritime professions was replaced with industrial activities between the shipyards ashore, and on board the liners of the *Messageries Maritimes*. The transformation of the port towards industrial shipbuilding, and the formation of a private steam navigation company did not only affect activities ashore, but altered dramatically, seafarer careers, and the associated labour market. The following analysis of the transformation of seafaring activities demonstrates the clear connection between seafarers and the economy of the port.

4 The Career Paths of Sailors as an Indicator of the Change

During the second half of the nineteenth century, the character of the maritime community of La Ciotat altered dramatically. Certainly, this was not only due to the industrialisation of the port of La Ciotat. The trajectories of maritime labour should be examined through the economic circumstances to which they were dependent.[57] As mentioned previously, a series of historical conjunctures had already affected the economic networks upon which La Ciotat depended. In this framework, the industrialisation of the port succeeded in the transformation of the professional trajectories of seafarers, and to change their social structure. The study of seamen registers maintained by the *Inscription Maritime* is a vital pathway to comprehend this transition.[58]

55 Buti, "Provençaux," 26.

56 Anne Winter, *Migrants and Urban Change. Newcomers to Antwerp (1760–1860)* (London: Pichering & Chatto and Routledge, 2009): 174.

57 Gilbert Buti and Alain Cabantous, *Etre marin en Europe occidentale (1550–1850)* (Rennes: Presses universitaires de Rennes, 2016), 17.

58 The institution of the *Inscription Maritime* was established in 1668 by Colbert, the First Minister of State and Chief of the Naval Administration in France, as the Système des Classes, renamed in 1784 as *Inscription Maritime*. This institution constituted a tool for

Following each individual's career, from ship boy to sailor, and then *hors service*,[59] eventually reaching the end of their career, the researcher can reconstruct the professional trajectory of sailors during this transitional period. Even though this research is still ongoing, several preliminary results underline the transformation that occurred. The study of the La Ciotat registers of seamen, and the reconstruction of their personal paths, reveals the diversification of their activities, from fishing to coastal trade, long distance trade, and the navy, and shows common points of evolution, including the changes and process of adaptation.

In order to understand the professional trajectories of sailors during the second half of the nineteenth century, two databases were produced.[60] The first database is a catalogue of all active sailors of the period 1840 to 1920; it is a register of their personal details, and a recapitulation of each individual's service (1410 sailors in total). In the second database, three categories of sailors were separated by date of birth (almost 200 sailors for each category). From those, 50 individuals, who had long careers in shipping, were selected from each category. Their analytical career path was registered, and the following samples were created:

I. Sailors born 1800–1810—Career started 1815–1825—*Hors Service* 1850–60
II. Sailors born 1840–50—Career started 1855–65—*Hors Service* 1890–1900
III. Sailors born 1865–75—Career started 1880–90—*Hors Service* 1915–25

Through the second database,[61] the analytical career path of three different age groups demonstrates the transition that occurred in the professional structure of seafarers in La Ciotat. The percentage of total service on board sailing ships and steamers for the three different periods, illustrates the incredible

information and control of the reservoir of seamen available for the royal navy. Every man exercising one of the maritime professions for over a year, was registered in the *Inscription Maritime*, for the Navy's disposal. At the same time, the state provided privileges in return for service in the navy, such as tax exemptions, military pensions, and life insurance for the families of listed seamen. The registers of seamen (*matricules des gens de mer*) are separated by port and classed by rank.

59 *Hors de Service* is the deactivation of seamen from the service of the navy when they become 50 years old. However, they were still eligible to work on the merchant marine, and their activity continued to be registered.

60 These databases have been produced with data from the following sources: Service Historique de la Défense (SHD) Toulon, Inscription Maritime du quartier de La Ciotat, 14 P 133–135, Officiers mariniers et matelots (1825–1865); 14 P 139, Hors de Service (1850–1865); 14 P 150, Novices (1849–1865); 14 P 151, Mousses (1850–1865); 14 P 152, Inscrits provisoires (1860–1883); 14 P 156–158, Inscrits définitifs (1865–1883); 14 P 164–165, Hors de service (1865–1900); 14 P 170, Mécaniciens et chauffeurs, inscrits provisoires (1865–1879); 14 P 171, Mécaniciens et chauffeurs, inscrits définitifs (1863–1879).

61 Henceforward: Inscription Maritime database, La Ciotat—career paths of sailors.

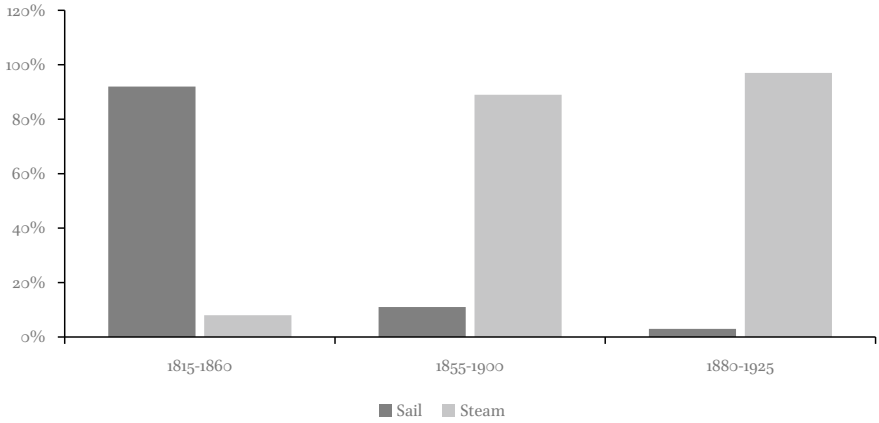


CHART 8.5 Total service on board steamships and sailing ships by percentage of the three different samples, given their career period
SOURCE: INSCRIPTION MARITIME DATABASE, LA CIOTAT—CAREER PATHS OF SAILORS

metamorphosis that occurred in La Ciotat during the second half of the nineteenth century (Chart 8.5).

The transformation of seafaring careers towards steam navigation is somewhat apparent in the first sample, mainly from the 1840s onwards. Some of the sailors worked occasionally on the first steamers constructed in La Ciotat, and their function on board was limited to the deck, as sailors or boatswains. In most cases, they returned to sailing ships. Those who were mostly occupied on long distance trade, worked on some of the large three-masted ships and brigs of Marseilles, and sailed towards the French colonies in South America, the Ivory Coast, the French Antilles, and the East Indies. Others focused their career on the grand cabotage in the Mediterranean, travelling to North Africa and the Levant. Another category concentrated their activities on coastal trade along the coasts of France and Italy. These activities, together with fishing in between long voyages, were interconnected trajectories for sailors who sailed between the 1820s and 1880s. Maritime pluriactivity, the participation of sailors in different kinds of maritime activities, a common phenomenon of the *ancien regime* economic reality, was still apparent.

Even though the transition towards steam navigation seems tenuous in the first sample, the registers of entries of shipyard workers does offer a different image. Despite the fact that most sailors remained working at sea, it is remarkable that 40% ended their sailing career, and moved permanently to the shipyards. For instance, Charles Villecroze, born in 1807, had a long career at sea, mainly in grand cabotage and coastal trade, combined with

limited fishing activity in La Ciotat. On 20 July 1852, he embarked for the first time on the steamer *Erickson*, and continued his career on steamers for four years. From 1856 onwards, he moved to shipyards as a labourer and continued working there until 1868. During this period, there is no record of him in the registers of the *Inscription Maritime*, apart from declaring him "inactive in La Ciotat". Interestingly, this is also the trajectory of Jean Baptiste Gody, born in 1806. He worked as a sailor and boatswain on long-distance trade on brigs and three-masted ships, until 9 September 1857 (aged 51). A month later, he moved to the shipyards, where he worked as a labourer on the copper smelter until 1866. In a few cases, sailors worked onboard the steamers of the *Messageries Maritimes* while they worked in the shipyards. For example, Felix Martin worked on steamers from 1847. On 8 August 1853, he disembarked from the steamer *Anatole* and on the same day started to work in the shipyards as a labourer, this lasted until 1857. During this period, even though he remained in the shipyards, he worked on board two steamers of the *Compagnie* for a total service of ten months.

The second and third samples confirm a total shift of seafaring activities for the sailors of La Ciotat born between 1840–50 and 1865–75. Of these men, 89% and 97% respectively, completed service on board steamers. At the same time, professions on board underwent major changes during this period. As the Chart 8.6 indicates, there is a decline of deck professions whereas engineers and engine crew (stokers, coal trimmers, and oilers) increased dramatically.

The technical transformation of navigation caused a profound change and diversification of maritime professions. The education, training, and technical competence of the labour force was an essential component for the operation of the industry.[62] During the sailing era, the art of seamanship was obtained by practise onboard a sailing ship; in wooden shipbuilding, the skills were handed down from father to son, or in a practical form of apprenticeship. In industrial shipyards, the scale of production, together with new types of expertise in processing and manufacturing methods, including new materials and tools, made the training of a skilled workforce imperative. At the beginning of steam navigation, the profession of engineer, even though essential for the operation of a steamship, was greatly restricted. In this regard, the recruitment of a skilled and competent labour force for the operation of a steamship engine room was a major challenge for steamship companies.

62 Richard A. Walker, "The geography of production," in *A Companion to Economic Geography*, eds. Eric Sheppard and Trevor J. Barnes (Malden, MA, Oxford, and Victoria, Canada: Blackwell, 2003), 125.

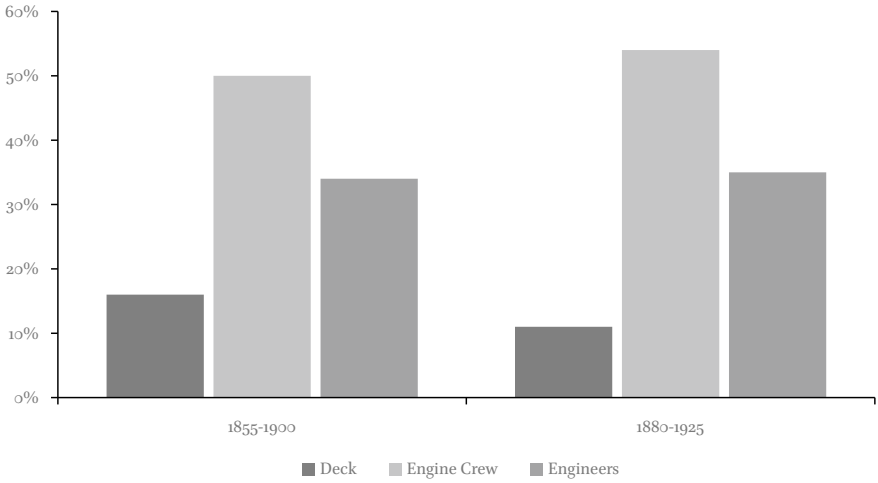


CHART 8.6 Repartition of work in percentage on deck, on the engine crew and engineers given the total careers of sailors on the two last samples
SOURCE: INSCRIPTION MARITIME DATABASE, LA CIOTAT—CAREER PATHS OF SAILORS

The extensive shift in the career trajectory of sailors in La Ciotat was also related to the strategy of the *Compagnie des Messageries Maritimes* to use shipbuilding as a focal point for the training and recruitment of engineering personnel. The construction centre at La Ciotat, together with one at La Seyne-sur-Mer, constituted a major location for engineering apprenticeships in Provence, whilst the *Ecole des Arts et Métiers* of Aix-en-Provence was an important core source of theoretical information.[63] Apart from their role in the formation of a skilled maritime workforce, the shipyards were also in charge of the employment of all engine personnel.[64] As Marie Couvenhes demonstrates, the percentage of chief engineers previously employed in the shipyards rose from 50% for the working generation of 1870, to 79% in 1880, and 90% in 1890.[65]

The transition of the maritime community can also be supported by the fact that in 1890, 59% of all machinists at the *Compagnie des Messageries Maritimes* were born in La Ciotat.[66] The use of La Ciotat as a recruitment centre for experienced engineers and stokers confirms the movement of seafarers not only

63 Daumalin and Courdurié, *Vapeur et révolution industrielle*, 99.
64 As Berneron-Couvenhes points out, in 1890, 95% of engineers were hired in La Ciotat Berneron-Couvenhes, *Les Messageries Maritimes*, 468.
65 Berneron-Couvenhes, *Les Messageries Maritimes*, 466–470 and Table no. 79.
66 Ibid., 468.

from sail to steam, but also from deck to engine room. In this framework, La Ciotat functioned not only as a major shipbuilding centre for the *Compagnie* but also as a pool of maritime labour for their liners. In both the second and the third samples of the analysis, approximately 80% of total service on board steamers, was onboard *Messageries Maritimes'* vessels.

The analysis of sailor careers clearly confirm the transition in the maritime identity of the port, due to its function as an industrial shipbuilding centre. The link with a private shipping company, both ashore and on board, reflects the pattern of adaptation to the new economic reality. The maritime community, integrated into the practices of an industrial economy, experienced a total cultural transformation. The sailors moved from working in different kinds of maritime and agricultural activities, to depending on a waged labour system, strictly controlled by the *Compagnie*. Even though the traditional maritime culture of the population was in a process of decline, the town kept a strong connection with the sea in different ways, following the industrialisation of the port. The loss of the sailor as a highly-skilled profession was balanced by the rise of the industrial skilled maritime worker on board ships. In this way, the prestige of the seafaring population was reaffirmed through an industrial career path that retained a link to the sea.

5 Conclusion

The case of La Ciotat is an excellent example of the social transformation of a maritime community towards an industrial reality. The advent of steamships constituted a major breakthrough in the history of La Ciotat. This transition was not only associated with general technical changes in navigation, but also with the formation at the port of a major French steamship company during the second half of the nineteenth century. The *Compagnie des Messageries Maritimes* constituted the main instrument of social change in the town, by developing the industrial climate of the port, and reshaping the characteristics of its littoral society. The economic and technological development of La Ciotat depended on state policies of expansion, and had significant effects on demographic fluctuations, occupational activities, and the patterns of employment in the town. The industrial transformation of the port gave a different character to the town, mainly related to the sounds of metal workshops, and the presence of large iron ships in the port. The identity of the local community was reshaped by the shipyards and their reputation. Ship launch celebrations were a major event, which refashioned the public life of the town, with the majority of the local population celebrating the achievements of their work.

FIGURE 8.1 Emile Loubon, *Le port de La Ciotat* (1841)
SOURCE: WIKICOMMONS [ONLINE] HTTPS://COMMONS.WIKIMEDIA.ORG/WIKI/FILE:EMILE_LOUBON-LA_CIOTAT.JPG

Since this period, the history of La Ciotat had been inextricably linked to industrial developments. The adaptation of the industrial shipbuilding economy of the port created strong industrial trajectories; a clear path dependence that determined the identity of the town to the present day.[67] Even though the shipyard of La Ciotat has changed ownership many times during the last two centuries, it has always been considered as one of the most important shipbuilding centres of the Mediterranean. After the closure of the shipyard in 1986, La Ciotat transformed into "*une station-service de luxe*", and is now considered one of the largest yacht maintenance and refitting seaports of the Mediterranean.[68] The population of La Ciotat were transformed from a traditional maritime community of the sailing ship era, to an industrial shipbuilding working-class society. As the mayor of the city, Patrick Boré, declared in the New York Times in 2015, "Paris has its Eiffel Tower; we have the shipyard".[69]

67 For the definition of "path dependence" in economic geography see: Walker, "The geography of production," 111–132.

68 Philippe Jacqué, "Les mégayachts, planche de salut des chantiers navals de La Ciotat," *Le Monde*, 29 November 2017, https://www.lemonde.fr/entreprises/article/2017/11/29/les-megayachts-planche-de-salut-des-chantiers-navals-de-la-ciotat_5221782_1656994.html (accessed 25/09/2020).

69 Christopher F. Schuetze, "Superyachts to the rescue," *The New York Times*, 18 January 2015, https://www.nytimes.com/2015/01/17/business/international/superyachts-bring-new-life-to-french-shipbuilding-port.html (accessed 25/09/2020).

CHAPTER 9

Camogli as a Maritime Community in the Age of Transition (1850s–1914)

Leonardo Scavino

1 Introduction

This contribution aims to frame the evolution of the maritime community of Camogli within the broader context of the global transformations shaped by the transition from sail to steam navigation. From a methodological perspective, the chapter attempts to hold together both local and global dimensions: indeed, an analysis completed on a micro-historical research subject—a Ligurian maritime town, populated by no more than 10,000 people—is intended to connect with macro-historical processes, such as the transition from sail to steam. To this purpose, in particular, the aim is to verify how technological changes affected traditional seafaring communities in their development and adaptation within nineteenth-century globalised and industrialised shipping.

Technological advances in navigation represented a watershed in the nineteenth-century shipping system. The so-called "transport revolution",[1] which revolutionised global communications, profoundly affected shipping. The centuries-old system based on the entrepreneurship of small-scale seafaring communities, which reached its heyday in the mid-nineteenth century,[2] was gradually replaced with modern shipping companies, funded on the stock market and able to mobilise substantial economic resources, unavailable to traditional communities. Thus, the case-study of Camogli offers an unexplored perspective on the evolution of a Mediterranean maritime community in the age of transition; its development on the international stage together with a retreat to a subordinate position, will be addressed by consideration of the effects of ongoing global processes, and the uniqueness of Camogli's local circumstances.

1 Philip H. Bagwell, *The Transport Revolution, 1770–1985* (London: Routledge, 1988).

2 See also Katerina Galani's chapter on the sailing maritime community of Galaxidi in the present volume.

As to the objectives of this research; the shipping business, the fleet, and maritime labour are identified as the primary elements through which the study will analyse the history of the maritime community of Camogli. Therefore, firstly, the chapter will outline the transformation of Camogli's shipping business in the nineteenth century, from Tyrrhenian cabotage to oceanic tramp shipping. Secondly, it will address the fleet, its evolution in numbers and types, to provide a quantitative and qualitative tool to measure the development and adaptation of Camogli shipowners to the demands of the international market for maritime transport. Thirdly, it will take into account maritime labour, an essential element to examine seafaring communities, which sheds light on the social and professional changes shaped by the reconfiguration of shipping practices throughout the nineteenth century.

Before moving forward, a shortlist of preliminary clarifications is necessary to place the present chapter in the context of the book. Firstly, the definition of "maritime community" as adopted; and secondly, the reasons behind the decision to choose Camogli as a case study to investigate transition in the Ligurian maritime environment. In the first instance, notwithstanding the persistence of various debatable aspects underlying the status of maritime communities, for the purpose of this work, the study opted for a relatively wide-ranging and straightforward definition. According to Karel Davids, a maritime community can be defined as "a village, town or a neighbourhood where a substantial part of the population earns its livelihood wholly, or partly, by work at sea or is directly dependent on seafaring".[3] The primary focus is given to seafaring and other maritime-related professions and, most importantly, it takes into account the community's dependency on seafaring for sustenance.

For centuries, the Ligurian region was driven by the influence of the maritime economy; in fact, apart from Genoa, which due to the political and administrative role as capital, offered various alternatives to seafaring, in most towns and villages lying eastward and westward of Genoa (in Italian, the *Riviera di Levante* and the *Riviera di Ponente*), fishing, shipping, and shipbuilding represented the primary sources for subsistence. Soon after the Vienna Congress in 1815, when Liguria was annexed by the Kingdom of Savoy, Camogli was indistinguishable from any of the surrounding communities (such as Recco, and Santa Margherita); its inhabitants were mainly involved in coastal fishing, or engaged in cabotage within the limits of the northern Tyrrhenian Sea.[4] By

3 Karel Davids, "Local and global: seafaring communities in the North-Sea area, c. 1600–2000," *International Journal of Maritime History* 27, no. 4 (2015): 629–46.

4 Pietro Berti, "Il traffico camogliese del carbone vegetale: un contributo alla storia marittima di Camogli," in *Camogli da borgo a città. Notizie storiche e spunti di ricerca*, eds. Giovanni B.R.

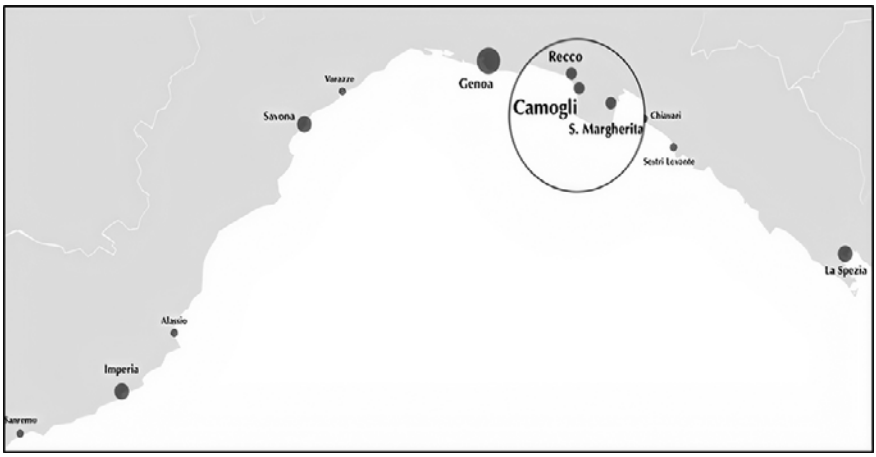
1881, the shipowners of Camogli owned the third-largest merchant fleet in the Mediterranean, and the eighth-largest in the world, when taking account of sail ships only.[5] However, following the First World War, as quickly as it had arisen, the fleet disappeared.

From a methodological perspective, this paper draws on a composite set of primary sources, mostly maritime-related; in particular, crew lists, hold logbooks, and registers of maritime workers, constitute the bulk of the archival documents cited. Kept in the State Archives of Genoa, each of these archival collections belong to the classic corpus of sources dealing with nineteenth-century maritime history.[6] Crew lists were represented by an official four-page document delivered by the port authorities located in the port registry (all Camogli-owned ships were registered in Genoa), where valuable data was recorded about the ship, the members of the crew, and the route followed by the vessel. Hold logbooks, complemented by general logbooks and navigation logbooks, contained valuable information about cargo, including ports and dates of loading and discharge, the nature and quantities of merchandise, and personal information about charterers and consigners. The registers of maritime workers contain personal and professional data on seafarers, such as enrolment years, career advancement, and some necessary details concerning each embarkment, along with the date and cause of career cessation for each seafarer. Altogether, the sources cast a broad and multifaceted perspective on almost every aspect of the maritime activities of Camogli.

Figari (Genoa: Deferrari, 2004), 315–28; Annamaria Mariotti, "La tonnarella di Camogli e la pesca nel Golfo Paradiso tra ottocento e Novecento," in *La pesca in Italia tra età moderna e contemporanea*, eds. Giuseppe Doneddu and Alessandro Fiori (Sassari: EDES, 2003), 63–76. The archival collection of the *Magistrato di Sanità*, maintained in the State Archives of Genoa (hereafter ASGe) provides sufficient data about Camogli's shipping in the late eighteenth century: see, ASGe, *Magistrato di Sanità*, registers 398–483.

5 A.N. Kjaer, ed., *Navigation maritime. Les marines marchands* (Christiania: Bureau Central de Statistique du Royaume de Norvége, 1887), 12, Table n. 2.

6 See: Malcolm Cooper, "Maritime labour and crew lists analysis: problems, prospects and methodology," *Labour / Le Travail* 23 (1989): 179–94; Paolo Frascani, "Tra la bussola e il negozio: uomini, rotte e traffici nei giornali di bordo delle navi a vela dell'800," *Società e Storia* 100 (2003): 487–510. For the registers of maritime workers, see the methodology employed by Alain Cabantous and then continued by Nicholas Cochard in his volume about the seafarers of Le Havre: Nicholas Cochard, *Les marins du Havre: gens de mer et société urbaine au XIX^e^ siècle* (Rennes: Presses universitaires de Rennes, 2020).

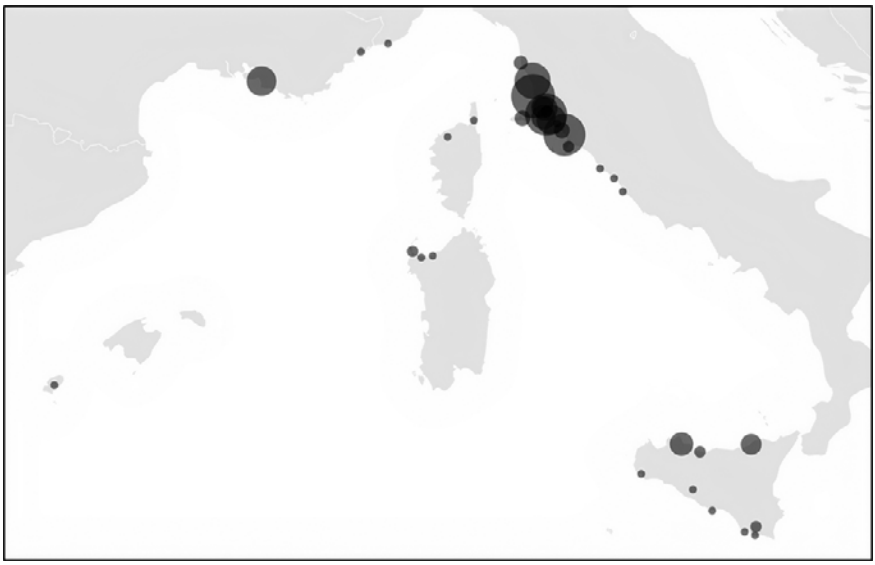


MAP 9.1 Camogli within the Ligurian maritime region

2 Shipping

The primary purpose of this section is to provide a basic framework to examine the rise and fall of Camogli's shipping during the nineteenth and early twentieth centuries. As previously indicated, until the 1830s, the shipowners of Camogli engaged primarily in cabotage and fishing, in continuity with the prevalent activities which had characterised many Ligurian seafaring communities in the early modern period. In Camogli, even in the late eighteenth century, both fishing for anchovies, and the charcoal trade along the coast of Tuscany, were the primary areas of activity for the local fleet. Notwithstanding fishing, which despite playing an essential part in communitarian life, most often resulted in marginal profits, Camogli's long-standing handling of charcoal transport (Tuscany to Genoa and Marseilles), offers a fascinating comparison with the British context. In this example, Ralph Davis pointed out the centrality of colliers to the eighteenth-century development of seafaring communities on the English east coast, such as Scarborough and Whitby.[7] Indeed, during the last decades of the nineteenth century, the charcoal trade engaged the majority of Camogli ships and people. Charcoal, and sometimes timber, was transported from Maremma, a sparsely populated and agricultural region in the south of Tuscany; since there were no proper ports in the area, the cargo

7 Ralph Davis, *The Rise of the English Shipping Industry in the Seventeenth and Eighteenth Centuries* (St. John's Newfoundland: IMEHA, 2012), 31–2.



MAP 9.2 Loading ports of Camogli's fleet (1785)
SOURCE: DATA PROCESSED FROM THE STATE ARCHIVES OF GENOA (HEREAFTER *ASGE*), *SANITÀ*, 468–469

was transferred on barges, or loaded onto small-sized vessels directly from the beach.[8]

Subsequently, the decades between 1830 and 1870 corresponded to a period of profound change in the economic and social conditions of Camogli. In less than 40 years, a traditional seafaring community managed to achieve a dominant position within the Italian shipping industry and compete on the international stage. Participation in the leading maritime business activity of the period, the Black Sea grain trade, lay at the roots of such a transformation. The geographical range of Camogli shipping expanded towards new horizons, passing from a local to an international dimension, in preparation for the last oceanic stage. Throughout the history of Camogli, the Black Sea phase is the cornerstone for further developments: shipping profits were extensively reinvested in the shipping sector, especially in relation to the enlargement and modernisation of the fleet.

8 Berti, "Il traffico camogliese del carbone vegetale," 315–28; Danilo Barsanti, *Castiglione della Pescaia. Storia di una comunità dal XVI al XIX secolo* (Firenze: Sansoni, 1984).

In the earlier phase of Camogli's integration into Black Sea trade, local maritime actors were distinguishable from the typical Sardinian business pattern.[9] Whereas most Ligurians tried to settle in the port-cities of the Black Sea, in an attempt to create their own commercial networks, Camogli specialised in maritime transport, to which were devoted, most of its human and economic resources. Camogli's shipowners disregarded trade and focused on shipping, by providing transport services to merchants outside their local domain. This characteristic pushed them towards exogenous commercial networks; between 1850 and 1860, natural interactions with Sardinian merchants were gradually complemented by occasional contacts with the Greeks, whose long-range commercial interests led Camogli to access new strategic markets, like that of the United Kingdom.[10] This transition led to various consequences for Camogli's trade patterns. Sardinian trade houses were highly competitive as regards grain exports to the Mediterranean, however, the import trade to the Black Sea ports was largely in the hands of the Greeks, who also controlled a significant share of outbound trade to the United Kingdom.[11]

On average, the value of Italian imports in the northern ports of the Black Sea never exceeded 10% of the total, measuring *c.*5–6%.[12] For example, within the yearly performance of Italian trade in Taganrog and Mariupol in 1867–68,

9 Olga Fedenko, "The activity of the Italian merchants in Odessa during the nineteenth century," *Danubius* 34 (2016): 31–42.

10 A general reference on Greek commercial networks from the Black Sea, is Gelina Harlaftis, *A History of Greek-Owned Shipping: the Making of an International Tramp Fleet, 1830 to Present Day* (London: Routledge, 1996). See also: Evridiki Sifneos and Gelina Harlaftis, "Entrepreneurship at the Russian frontier of international trade. The Greek merchant community of Taganrog in the Sea of Azov, 1780s–1830s," in *Merchant Colonies in the Early Modern Period*, eds. Victor N. Zakharov, Gelina Harlaftis, and Olga Katsiardi-Hering (London: Pickering & Chatto, 2012), 157–79; Gelina Harlaftis, "From diaspora traders to shipping tycoons: the Vagliano Bros," *The Business History Review* 81 (2007): 237–68; Oleksei Shliakhov, "Greeks in the Russian empire and their role in the development of trade and shipping in the Black and Azov Seas," *The Historical Review/La revue historique* 10 (2013): 255–264.

11 State Archives of Turin (hereafter *AST*), *Consolati nazionali*, Odessa 6, Lettera del console a Odessa a Torino, 7 aprile 1853; see, also: Evridiki Sifneos, *Imperial Odessa: People, Spaces and Identities* (Leiden: Brill, 2018), Appendix, Table 12.

12 Sokratis Petmezas, Alexandra Papadopoulou et al., "Black Sea Historical Statistics, 1812–1914. Research project: 'The Black Sea and its port-cities, 1774–1914. Development, convergence and linkages with the global economy'," 2012–2015: www.blacksea.gr.

imports value ranged *c.*4%.[13] These numbers are dazzling in comparison with shipping movement, as the Italian flag accounted for the *c.*28% of the tonnage.[14]

The bulk of Camogli ships arrived at the Black Sea on ballast, after direct routes from Genoa to Constantinople, without intermediate stops. Some vessels called at Messina, with no orders, seeking cargo to sell in the southern Russian ports. Indeed, an average of 10–11 vessels from Camogli (nearly 8% of the total number) called yearly at Messina to load cargo for Russia.[15] The main items imported were citruses, followed to a much lesser degree by olive oil.[16]

However, the presence of the Camogli fleet in the area was mainly motivated by the export of cereals. The Black Sea grain trade was concentrated in three different geographical areas: the ports of the northern shore, dominated by the hegemony of Odessa; the ports of the Sea of Azov, mainly Taganrog, Mariupol, and Berdyansk; and the ports of the Danube, where Galatz and Braila played a prominent role. Sardinian activities were subordinated to both structural and conjunctural factors: between 1850 and 1878, the Italian flag accounted for a yearly average of 17.6% of the total tonnage that departed from Odessa, 22.6% from the Azov ports, and only 5.66% from Galatz and Braila.[17] These numbers were subject to significant yearly fluctuations: for instance, in the Azov ports, the statistical extremes ranged from 15% (1850; 1859) to 47% (1875).[18] The best performances were achieved in Berdyansk, where Italian ships maintained a steady average of 49% from 1857 to 1879.[19] According to relevant British

13 "Della navigazione e del commercio nei porti di Taganrog e di Marianopoli nel 1868 rapporto del Cav Avv. Rossi Console a Taganrog," in *Bollettino consolare*, ed. Ministero degli Affari Esteri di S.M. il Re d'Italia (Torino: Paravia, 1869), 201.

14 Ibid.

15 ASGe, *Ruoli di equipaggio*, from 1853 to 1865.

16 Foreign Affairs State Archives (hereafter AMAE), *Affari Esteri*, Odessa, 895.

17 *Commercial reports received at the Foreign Office from Her Majesty's consuls* (hereafter *CRFO*), (London: Harrisons and Sons, from 1862 to 1879); "Della navigazione e del commercio nei porti di Taganrog," 199–206; "Stato della navigazione nei porti di Taganrog e Marianopoli. Rapporto del Regio console cav. Avv. G. Rossi," in *Bollettino consolare*, ed. Ministero degli Affari Esteri di S.M. il Re d'Italia (Torino: Paravia, 1869), 464–68; "Memoria sul commercio di Berdiansk, di Giovanni Battista Giovannetti, ex vice-console toscano (1848 e 1849) in Orano," in *Bollettino consolare*, ed. Ministero degli Affari Esteri di S.M. il Re d'Italia (Torino: Paravia, 1868), 45–104; "Agricoltura, industria e commercio della Moldavia; rapporto del nobile avv. Bernardo Lambertenghi Regio vice console a Galatz," in *Bollettino consolare*, ed. Ministero degli Affari Esteri di S.M. il Re d'Italia (Torino: Paravia, 1868), 107–28.

18 *CRFO*, from 1862 to 1879.

19 "Berdyansk," in *CRFO* (London: Harrisons and Sons, from 1862 to 1879); "Memoria sul commercio di Berdiansk"; *AMAE, Affari polici*, Odessa, 895; Igor Lyman, Victoria Konstantinova, and Anastasiya Ignatova (eds.), *The Ukrainian South as Viewed by Consuls of the British Empire* (*Nineteenth–Early Twentieth Centuries*, vol. 1: *British Consuls in*

MAP 9.3 Arrivals of Camogli ships to the Black Sea ports (1853–1865)
SOURCE: DATA PROCESSED FROM *ASGE, RUOLI DI EQUIPAGGIO*, 1853–65

consuls, the reasons for Italian success in these ports lay in various factors. First, the high appreciation of Italian captains, whose "intelligence, activity and exemplary conduct" were praised and valued over "the shipmasters of any other nation".[20] The second factor lay in terms of market competitiveness: Italian labour prices, their rules on working hours, and even food provisioning differed considerably from their British counterparts.[21] Indeed, lower operational costs allowed Italian captains to accept lower freights, and hence, permitted greater competitiveness in the freight market.

During the 1853–65 period, which is detailed on a large corpus of crew lists, the fleet of Camogli was distributed among the primary ports of the Black Sea as shown in Map 9.3 and Table 9.1. Data suggests that several ships (44.48%) travelled to the Azov region, a choice influenced by greater Italian presence at the ports of Taganrog, Mariupol, and Berdyansk (see above). The Danube area followed (32.14%), and finally, Odessa (23.38%). However, the aggregation

the Port of Berdyansk (Kiev: Institute of Ukrainian Archeography and Primary Sources Studying of M.S. Hrushevskyi, 2018).

20 "Report by Mr. Consul Carruthers on the trade of Taganrog for the year 1861," in *CRFO* (London: Harrisons and Sons, 1862), 248–9. Also in Berdyansk, in 1864, Italian captains were "preferred by the majority of the exporters to any other except British. This might be attributed to the energetic character of their commanders, and the great care taken by them in the preservation of cargoes": "Report by Mr. Acting Consul Wagstaff on the trade of Berdyansk for the year 1864," in *CRFO* (London: Harrisons and Sons, 1865), 13.

21 Ibid.

TABLE 9.1 Arrivals of Camogli ships at the Black Sea ports, 1853–1865

Ports of loading	Number
Odessa	144
Taganrog	149
Berdyansk	71
Mariupol	54
Galatz	110
Braila	88

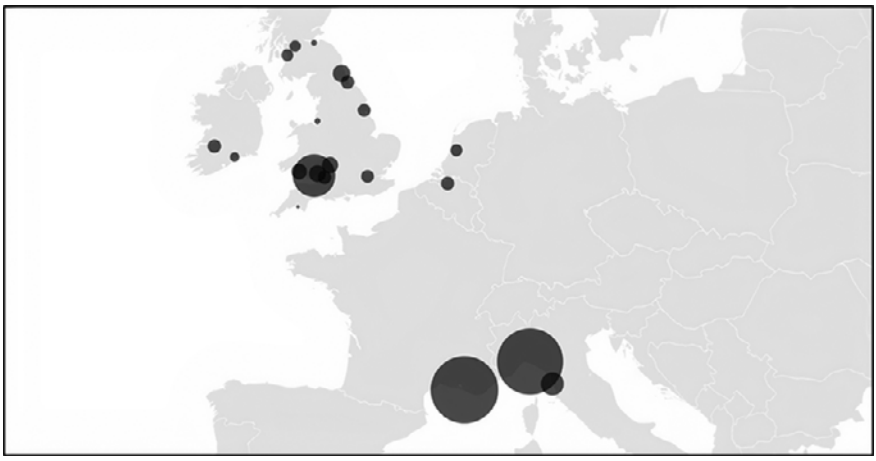
SOURCE: DATA PROCESSED FROM *ASGE, RUOLI DI EQUIPAGGIO*, 1853–65

of data available from 1853 to 1865 can only marginally represent the significant historical evolution of the arrival of Camogli ships in these ports. Indeed, the significant differences in various oscillations from year to year (also taking into account the outbreak of the Crimean War, which suspended most commercial activities in 1855 and 1856) must not be underestimated. For instance, in 1853, Odessa accounted for 53.3% of arrivals, whereas the Danube ports accounted for 6% only. In 1861, the proportions were almost reversed: Galatz and Braila accounted for 43.75% of Camogli Black Sea traffic, whereas Odessa had declined to 14.37%.[22]

Once the vessels of Camogli were loaded in Black Sea ports, cargo was then transferred to the Mediterranean or the British Isles. When destined for a Mediterranean port (mainly Genoa and Marseilles), the exact destination was indicated to the captain in the port of embarkation. In contrast, for cargo destined for British and northern European ports, the captain received a first informal destination to a port for orders—Malta in the Mediterranean and Falmouth or Cork in the Atlantic—before reaching a final consignee.

Even more marked difference to that of the distribution of the loading port is the destination of grain cargo that indicates more noteworthy modifications from phase to phase. Chart 9.1 constitutes a fundamental tool to observe the characteristics of Camogli's participation in the Black Sea trade throughout the 1850s and 1860s. Mediterranean destinations, especially Genoa and Marseilles, seem to be central, at least until 1860–61. Thereafter, an impressive growth of cargo marketed towards the Atlantic radically transformed trade, and impacted on the further development of Camogli. In the 1850s, Marseilles

22 Data processed from *ASGe, Ruoli di equipaggio*, from 1853 to 1865.



MAP 9.4 Camogli's discharging ports of Black Sea cargoes (1853–65)
SOURCE: DATA PROCESSED FROM ASGE, *RUOLI DI EQUIPAGGIO*, 1853–65

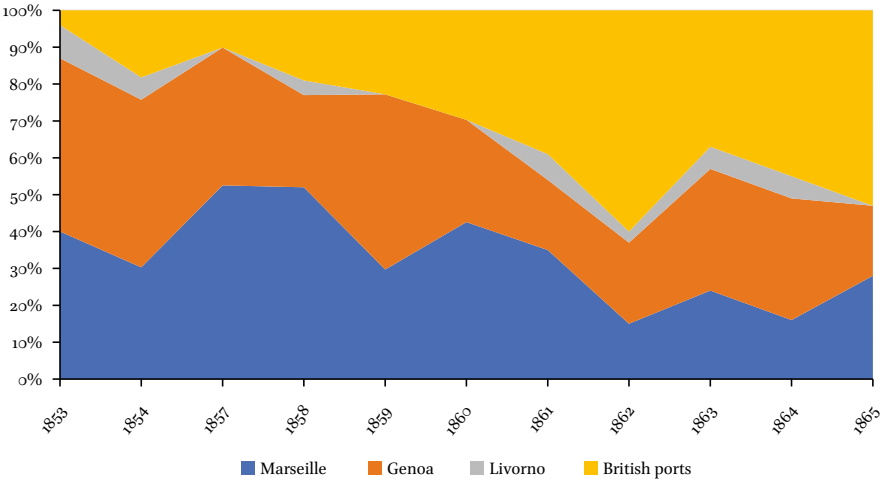


CHART 9.1 Camogli's discharging ports for Black Sea cargoes, 1853–65
SOURCE: DATA PROCESSED FROM *ASGE, RUOLI DI EQUIPAGGIO*, 1853–65

and Genoa received 41% each (on average) of grain loaded onto the Camogli shipping fleet. By including Livorno, the average figure increased to 86% between 1853 and 1859.

Despite the predominance of Mediterranean destinations, the transport of cereals to the United Kingdom began in 1847, following the abolition of the protectionist Corn Laws. This allowed Russian grain to penetrate the British

market.[23] The redirection of trade, from the Mediterranean to the British Isles and Atlantic destinations, impacted greatly upon the maritime history of Camogli. Rather than only being limited to a simple geographical transfer, accessing British seaborne trade and dealing with British and Greek subjects operating across a broad range of businesses, represented crucial factors in the growth of Camogli shipping.

In particular, integration within a British economic trade environment was facilitated through the transport of a new commodity, coal. The handling of this product generated a radical transformation of Camogli's routes to and from the Black Sea, with consequences for cost-effectiveness. Originally, the Black Sea—Mediterranean route led Italian ships to travel on ballast for the first leg (with the unique exception of Sicilian exports); then, once the grain cargo was consigned at destination, navigation resumed on the return journey. The profitability of Black Sea freight covered the inefficiencies of this transport pattern. However, access to the British market led to the formation of a composite route; westward grain trade was reciprocated with eastward coal transport to the Mediterranean and the Black Sea, a factor that led to more efficient management, and consequential higher profits. According to the Italian consular representative in Berdyansk, in 1868, "the value of a ship, employed between the Levant and the ports of the United Kingdom, with the auxilium of coal as return cargo, could be repaid in 5 to 6 years".[24]

The role of the Black Sea trade phase within the history of Camogli is undoubtedly remarkable. In a decade (1850–65), the most successful shipowners reinvested their shipping income in vessel construction, paving the way for the creation of a remarkable fleet, which reached a peak in 1879 (183,000 tons).[25] The primary reasons supporting the exceptional trajectory of Camogli shipping can be identified in the following factors: firstly, strict specialisation in shipping; and secondly, openness to commercial partners beyond the Ligurian-Sardinian networks, in particular Greek merchants. As indicated previously, Camogli business strategies diverged from most Ligurian competitors; rather than gaining a foothold ashore, to handle export trade through their own

23 On the Corn Laws, their abolition, and their impact on the growth of Black Sea trade, see: Cheryl Schonhardt-Bailey, *From the Corn Laws to Free Trade: Interests, Ideas, and Institutions in Historical Perspective* (Cambridge: MIT press, 2006); Susan Fairlie, "The Anglo-Russian Grain Trade 1815–1861" (PhD diss., University of London, 1959); Idem, "The nineteenth-century corn law reconsidered," *The Economic History Review* 18, no. 3 (1965): 562–75; Idem, "The Corn Laws and British wheat production. 1829–1876," *The Economic History Review* 22, no. 1 (1969): 88–116.

24 "Memoria sul commercio di Berdyansk", 81–2.

25 Kjaer, *Navigation maritime*, 12, Table n. 2.

commercial houses, the Camogli captains operated on the free freight market, and simultaneously, invested in the qualitative and quantitative upgrading of the fleet, and sought a reduction of operational costs. Finally, frequent visits to British ports facilitated Camogli's readjustment to the transformation of the Mediterranean and Black Sea shipping market, from which they were gradually excluded by the increasing competitiveness of steamers.

As will be seen in the next section, at this point, Camogli enjoyed one of the largest merchant fleets in the whole Ligurian regional maritime area. A significant number of shipowners resided in the small community, in fact, in terms of tonnage, they could successfully rival Genoese shipping *élites*.[26] Nevertheless, rather than competing on the same routes, in the second half of the nineteenth century, Camogli and Genoa developed their own trajectories in relation to their respective business interests. In Genoa, the steam-powered companies that were created, thanks to their strong and stable connection within banking and politics, were granted a monopoly on postal services, and specialised in the highly profitable migrant transoceanic market.[27] In contrast, the shipowners of Camogli took the opposite path: from the early 1870s onwards, they were gradually ousted from the Mediterranean and the Black Sea routes as a result of the advent of steam navigation in Black Sea trade.[28] Nevertheless, their established links with British ports, and the creation of an integrated wheat-coal trade route, secured them access to alternative markets,

26 According to Kjaer, the tonnage owned by Camogli shipowners amounted to 183,026 tons, as opposed to 150,126 tons owned by Genoa shipowners: Idem.

27 On Italian subsidised steam shipping, see: Giorgio Doria, *Investimenti e sviluppo economico a Genova alla vigilia della Prima Guerra Mondiale* (Milano: Pantarei, 2008); Epicarmo Corbino, "Il protezionismo marittimo in Italia: le industrie marittime fino al 1885," *Giornale degli economisti e rivista di statistica* 61, no. 11 (1921), 370–89; Andrea Giuntini, *Le meraviglie del mondo. Il Sistema internazionale delle comunicazioni nell'Ottocento* (Prato: Istituto di studi storici postali, 2011), 75–86. In particular, see the case of Rubattino: Giorgio Doria, *Debiti e navi. La compagnia di Rubattino (1839–1881)* (Genova: Marietti, 1991); Arturo Codignola, *Rubattino* (Bologna: Licinio Cappelli, 1938).

28 For instance, already in 1867, 37% of the value of the goods exchanged in Galatz had been transported on steamships. In 1872, 421 steamships cleared the port of Odessa (only partially balanced by 621 sailing vessels). In the same year, only 69 steamers called at Taganrog, counting for no more than 18% of the tonnage. In Berdyansk, competition among steamers was even less effective: in 1874, the tonnage of steamships cleared from the port counted for 8% of the total. See: "Agricultura, industria e commercio della Moldavia," 121–5; "Report by Consul-General Abbott on the trade of Odessa in 1872," in *CRFO*, (London: Harrisons and Sons, 1873), 1020–1; Igor Lyman and Victoria Konstantinova, eds., *The Ukranian South as Viewed by Consuls of the British Empire,* vol. 1: *British Consuls in the Port of Berdyansk* (Kiev: Institute of Ukrainian Archeography and Primary Sources Studying of M.S. Hrushevskyi), 471 and 520–5.

an essential step in readjusting to the late nineteenth century reconfiguration of global seaborne trade.

From the late 1860s, increasing numbers of Camogli-owned ships docked in the ports of Latin America. Although—owing to the paucity of sources for this specific period—to contextualise the traces of their presence in a systematic framework might present some difficulties, some prominent features can be recorded. First, these ships converged into two neatly distinct areas: the La Plata basin and the Pacific coast. Secondly, their movements can be reconstructed: for example, the handling of the earliest waves of migrant transport, the commercialisation of Peruvian guano, and the transport of "coolies" across the Pacific, from China to Peru.

Although a vast literature has focused on the establishment of steamers within transoceanic passenger transport and their decisive influence on mass migration, few studies have highlighted the role of sailing vessels in sustaining the earliest manifestations of such movements.[29] Mass migration in the age of sail was characterised by minimal organisation: multiactivity and irregularity represented unique features of the handling of migration transport in the sail era. From a nautical point of view, there were no substantial differences between cargo and passenger sailing vessels: in the latter case, the hold was provided with temporary intermediate decks where migrants were allocated.[30] Thus, shipowners could engage in both cargo and passenger transport without any marked differentiation. This feature granted significant elasticity in terms of market opportunities, and represented a fundamental prerequisite for this business. Obviously, due to the inherent characteristics of migration flows, it was not possible for ships to find passengers in both directions. Therefore, most vessels involved in migrant traffic transported people from Europe to America, and then sought cargo for a return to Europe.

Along the Latin American Pacific coast, people and vessels from Camogli were to be found mainly in Peru, and to a lesser extent Chile.[31] Some members of the community moved to Callao from the early 1830s, and started

29 Torsten Fey, *The Battle for the Migrants. Introduction of Steam Shipping on the North Atlantic and its Impact on the European Exodus* (St. John's Newfoundland: IMEHA, 2017).

30 See, Regio Decreto 20 novembre 1879 n. 5166 che approva il regolamento per l'esecuzione del testo unico del Codice per la Marina Mercantile, Art. 546. For a broader analysis see, Augusta Molinari, *Le navi di Lazzaro. Aspetti sanitari dell'emigrazione transoceanica italiana: il viaggio per mare* (Milano: Franco Angeli, 1988); Idem, "Emigration traffic in the port of Genoa between the nineteenth and twentieth centuries: shipping and problems of social hygiene," *Journal of American Ethnic History* 13, no. 1 (1993): 102–118.

31 Giovanni Bonfiglio, *Gli Italiani nella società peruviana. Una visione storica* (Torino: Edizioni della Fondazione Giovanni Agnelli, 1999); Gabriella Chiaramonti, "Italiani in Perú fra otto e novecento: marinai, commercianti, imprenditori di origine ligure," *Zibaldone. Estudios*

businesses there; later, according to the mechanisms of chain migration,[32] various people from Camogli began to circumnavigate the Peruvian economic system. Notwithstanding coastal cabotage, which the Ligurian migrant community seized upon quickly, and subsequently controlled for the remainder of the nineteenth century,[33] the foreign seaborne trade of Peru relied mainly upon guano exports to Europe.[34] Already in 1865, the Italian consul of Callao invited his government to encourage the arrival of national vessels to Peruvian ports. In doing so, he praised guano cargo for its profitability, where many ships travelled on ballast from Europe satisfied with sole return freight.[35] Alternatively, he noted, coal was the primary outbound cargo from the United Kingdom. Being, on the one hand, well-ensconced in the British coal trade and on the other, knowledgeable of the Peruvian market, the establishment of Camogli's shipping within this alternating route seems plausible. In addition, a further profitable trade to which Camogli's shipowners were committed was the transport of Chinese indentured labourers (coolies) from Macao to Peru, destined to work either in guano mining or in plantations.[36]

Following the abandonment of the Mediterranean and Black Sea routes, Southeast Asia constituted a geographical region to which Camogli shipowners turned their attention for the first time. Surprisingly, the establishment of Ligurian sail shipping in the region followed the opening of the Suez Canal (1869), which in standard literature is often recognised as crucial for the

italianos 3 (2015): 57–77; Luigi Favero et al., *Il contributo italiano allo sviluppo del Cile* (Torino: Edizioni della Fondazione Giovanni Agnelli, 1993).

32 See, John D. Gould, "European inter-continental emigration: the role of 'diffusion' and 'feedback'," *The Journal of European Economic History* 9, no. 2 (1980): 267–315.

33 Central State Archives (hereafter *ACS*), *Ministero della marina,* Direzione generale della marina mercantile, Miscellanea Uffici Diversi, b. 271, Lettera di Pietro Castelli al Ministro della Marina (1866); *AMAE, Ministero degli affari esteri*, b. 817, Lima, 1865. See also: Rosendo Melo, *Historia de la Marina del Perù* (Lima: Carlos F. Southwell, 1907), 217–20.

34 Concerning the guano age, for the exploitation and importance to Peruvian foreign trade and national finances, see: Edward F. Frank, "History of the guano mining industry," *Journal of Cave and Karst Studies* 60, no. 2 (1998): 121–5; Walter M. Mathew, "The imperialism of free trade: Peru, 1820–70," *The Economic History Review* 21, no. 3 (1968): 562–579; Idem, "Foreign contractors and the Peruvian government at the outset of the guano trade," *The Hispanic American Historical Review* 52, no. 4 (1972): 598–620; Idem, "Peru and the British guano market, 1840–1870," *The Economic History Review* 23, no. 1 (1970): 112–28.

35 *AMAE, Affari Esteri*, b. 817, Lima, 1865.

36 For the coolie trade there exists a vast bibliography. The classical reference point is: Walter Stewart, *Chinese Bondage in Peru: A History of the Chinese Coolie in Peru, 1849–1874* (Westport: Greenwood Press, 1970). More recent are: Elliott Young, *Alien Nation. Chinese Migration in the Americas from the Coolie Era through World War II* (Charlotte: The University of North Carolina Press, 2014); Arnold J. Meagher, *The Coolie Trade. The Traffic in Chinese Laborers to Latin America 1847–1874* (Philadelphia, Xlibris Corporation, 2008).

decisive leap forward for steam shipping in competition with sail.[37] In contrast, early trade outcomes for canal operations consisted of the division of Indo-European trade into two sub-categories. On the one hand, steamers navigated the canal with general cargo composed of high-value commodities; on the other, sailing vessels belonging to second-comer merchant marines specialised in the transport of bulk merchandise around the Cape of Good Hope.[38] Indeed, in the second half of the nineteenth century, an increasing number of Italian ships called at Far East ports. Although Suez had gradually absorbed most of the highly-profitable cargo, the Cape route was still active, and numerous sailing vessels carried low nominal value products (for example, cereals, coal, and timber) according to the "old way". Not only did Cape Town retain its status as a crucial hub for Indo-European trade, but it was also part of a broader international framework. The participation of Italian shipowners (and those of Camogli) in this shipping movement arguably lay in their previous experiences as cross-traders, as witnessed in the last phase of the Black Sea period. Again, the connection with the successes achieved in previous decades was a primary factor in determining subsequent developments. In British ports, and in particular Cardiff, the evidence suggests a high demand for sea trade via Cape Town, especially, vessels loaded with coal. In the biennium 1886–88, for instance, approximately 90 Italian vessels departed British ports for the Cape, and more than 60% of them sailed from Cardiff.[39] Once at the Cape, some continued to the ports of the Far East to shed coal or ballast, and then, upon reaching Rangoon, Singapore, Batavia, or Moulmein, most vessels loaded rice or teak cargo.[40] Throughout the 1870s, rice became such a strategic product for the Southeast Asian region that in common understanding, export locations became known as "rice ports" (*porti del riso*).[41] Similar,

37 For a general account of the relationships between Italy and the Suez Canal, see: Salvatore Bono, "Il Canale di Suez e l'Italia," *Mediterranea Ricerche Storiche* 8 (2006): 411–22; Ugo Spadoni, "Il Canale di Suez e l'inizio della crisi della marina mercantile italiana," *Nuova Rivista Storica* 54 (1970): 651–72.

38 Although not specifically discussing the Italian merchant marine, but rather, an overall perspective, the delimitation of a market niche for sail ships after the construction of the canal is outlined in an exemplary way by: Gerald S. Graham, "The ascendancy of the sailing ship: 1850–1885," *The Economic History Review*, no. 9.1 (1956): 74–88.

39 *ACS, Ministero della Marina*, Direzione generale della marina mercantile, Divisione premi compensi e tasse, Movimento nazionale nei porti esteri, Capetown, b. 57–61.

40 Ibid.

41 For the development of the international rice market, in particular, from the Burma delta, see: Michael Adas, *The Burma Delta: Economic Development and Social Change on an Asian Rice Frontier. 1852–1941* (Madison: University of Wisconsin Press, 1974). See also, Peter A. Coclanis, "Distant thunder: the creation of a world market in rice and the transformations it wrought," *The American Historical Review* 98, no. 4 (1993): 1050–78; Idem,

MAP 9.5 Camogli's ships in ports for loading operations (1881–1914)
SOURCE: DATA PROCESSED FROM ASGE, *GIORNALI NAUTICI*, 1881–1914

and somehow complementary in terms of geographic proximity, was the teak trade, which took place in the same broad regional area, and followed identical route patterns.[42]

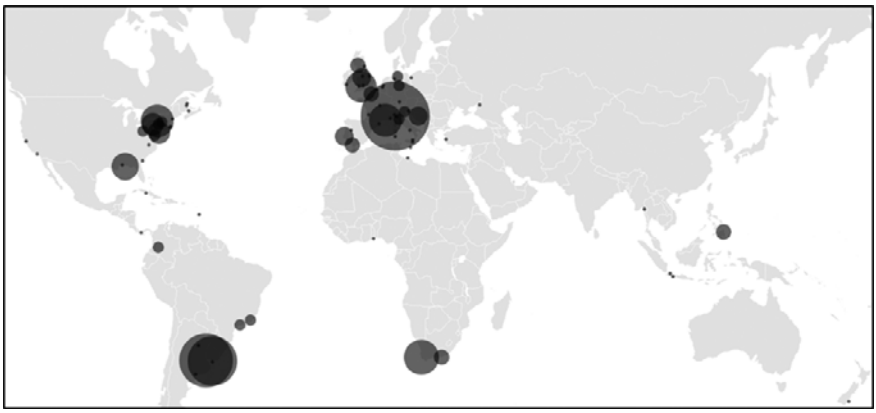
Subsequently, during the period between 1881 and 1914, Camogli's specialisation in oceanic cross-trade of bulky cargo reached an apex. In particular, there was no relationship with domestic production, a pattern that considerably affected the outgoing leg from the Mediterranean. Conversely, returning to Mediterranean Europe implied the procurement of cargo destined either for Genoa or Marseilles. As a result, beginning in 1885, many captains resorted to subsidised coal shipments, in order to return to Italian ports with cargo,[43] in line with their past experiences.

Although, in the 1870s and 1880s, Camogli expanded vessel range to the outer rim of the Pacific Ocean, in the last period before the First World War, activities became concentrated around a figurative triangle, between Europe, North America, and Latin America.

"Southeast Asia's incorporation into the world rice market: a revisionist view," *Journal of South-East Asian Studies* 24, no. 2 (1993): 251–67.

42 For a general overview, see: Chiang Rai, *Control and Prosperity: the Teak Business in Siam 1880s–1932* (PhD diss., University of Hamburg, 2016).

43 The issue of subsidised routes and the development of maritime protectionism within the Italian merchant marine is discussed in Royal Meeker, "History of shipping subsidies," *Publications of the American Economic Association* 6, no. 3 (1905): 96–111; Andrea Giuntini, *Le meraviglie del mondo. Il sistema internazionale delle comunicazioni nell'Ottocento* (Prato: Istituto di Studi Storici Postali), 35–98. See also, Sara Palmer, "The British coal export trade, 1850–1913," in *Volume Not Values: Canadian Sailing Ships and World Trades*, eds. David Alexander and Robert Ommer (St. John's Newfoundland: Memorial University of Newfoundland, 1979), 331–54.



MAP 9.6 Camogli's ships in ports for discharging operations (1881–1914)
SOURCE: DATA PROCESSED FROM ASGE, *GIORNALI NAUTICI*, 1881–1914

From a general point of view, Map 9.5 and Map 9.6 illustrates the statistical distribution of loading and discharging ports for Camogli vessels between 1881 and 1914. In the first map (Map 9.5), four main commercial areas are highlighted: the Mediterranean region, England, the east coast of North America, and the La Plata basin. In the Mediterranean, the map of loading ports is polycentric and dispersed: there are no primary places for the collection of outbound cargo, and even Genoa, which was always the port of departure, does not present significant numbers. Instead, 86.48% of Camogli departures from Genoa occurred on ballast. Meanwhile, the primary Mediterranean loading port was Cádiz (Spain), from which several ships retrieved salt cargo destined for Latin America. Apart from the coal trade to Cape Town—or periodically, to the La Plata region—the weight of the British Isles should not be overestimated in this phase: more so than on the westward journey, Camogli captains called at British ports on their return, to be chartered with coal cargo for Genoa.[44] On the other side of the ocean, the commercial predominance of North America (in particular, the Gulf of Mexico region) was linked to the establishment of Camogli shipping in the trade of pitch-pine timber, which was mainly retrieved from Pensacola and widely marketed in Europe and Latin America.[45] Finally, Camogli vessels trading in and around the Latin American continent, were primarily concentrated in the La Plata region, especially in the ports of Buenos

44 Edward E. Pratt, ed., *The Export Lumber Trade of the United States* (Washington: Government Printing Office, 1918).

45 Between 1881 and 1914, pitch-pine cargo arrived at Buenos Aires (14), Montevideo (5), Rosario (3), and to Rio de Janeiro, Bahia Blanca (1). Data processed from *ASGe, Giornali nautici*, 1881–1914.

Aires and Montevideo, where they were chartered for the transport of either *quebracho* wood (a natural dye) or animal bones (fertilisers).[46]

Map 9.6, represents the opposing side of Camogli commercial trade: ports of discharge. Comparing the data from Map 9.5 and Map 9.6 highlights some noteworthy differences: firstly, the North American region loses predominance; secondly, the Mediterranean recovers its centrality (Genoa in particular); thirdly, the La Plata ports and the British Isles remained stable; and fourthly, Cape Town witnesses a remarkable increase. These differences uncover the presence of significant numbers of ballast voyages, which, as they were economically non-productive, were not recorded in the maps. In North America, for instance, the comparison between high loadings and low discharges underlines how a significant number of vessels arrived in ballast. In the Mediterranean case, in contrast, the differences between loading and discharging is overturned in favour of the latter, particularly since Mediterranean ports, usually left in ballast, received several fully-loaded ships (often, with coal cargo from Britain). A third pattern is present in Latin America and the British Isles, where loading and discharge levels are almost equal. The La Plata ports received cargo from the Mediterranean (salt and some general cargo), the British Isles (coal), and North America (pitch-pine timber); but in return, they sent *quebracho* wood and animal bones northward and eastward. The United Kingdom received cargo from the American continent and sent coal to the Mediterranean, Latin America, and South Africa. Finally, as mentioned previously, Cape Town retained a relevant role in the economy of Camogli shipping until 1914, mainly as it was frequented by vessels discharging British coal, before sailing either towards American, or Far East ports.

In sum, Camogli seafarers sailed with continuity across the Atlantic both in the horizontal and vertical directions, carrying out trade inside a sort of nineteenth-century version of the "Atlantic commercial triangle", whose primary commodities were salt from Europe, pitch-pine timber from North-America, and *quebracho* wood and wheat from Latin America.

3 Fleet and Ship Ownership

The evolution of the Camogli fleet is inherently linked to the shipping industry and its transformation. Throughout the period under analysis, the fleet's characteristics reflected Camogli maritime activities, from cabotage in the late

46 Cargo of animal bones from Buenos Aires, Montevideo, and Rosario were 11, 7, and 1 respectively; those of *quebracho* were 8 from Buenos Aires and 1 from Montevideo. Data processed from *ASGe, Giornali nautici*, 1881–1914.

TABLE 9.2 Estimated number of Camogli-owned ships by type (1785)

Year	*Leudo*		*Navicello*		*Pinco*		Total
	Est. no.	%	Est. no.	%	Est. no.	%	Est. no.
1785	16	19	53	65	13	16	82

SOURCE: DATA PROCESSED FROM *ASGE, UFFICIO DI SANITÀ*, 468–469

eighteenth century to oceanic tramp shipping before the First World War. In addition, ships constituted the productive means and the fixed capital of the shipping industry. The fleet's qualitative and quantitative features provide evidence of economic conditions, routes, and the markets of the maritime community; but also, the fleet represents an investment, subject to market oscillations, which could lead to the occurrence of path-dependency phenomena.[47]

At the end of the eighteenth century, the Camogli fleet complied with all the required characteristics of cabotage shipping. Although lacunose sources impede a positive and exhaustive reconstruction of the number and types of vessels, an estimation was made based upon health record data concerning voyages.

Table 9.2 illustrates an estimation of the numbers and types of vessels that the fleet of Camogli was composed of in 1785. Absolute numbers reveal an already developed shipping tradition: the existence of *c.*80 ships with a population of only a few thousand people, proves a firm dedication to the shipping business. Moreover, the qualitative information about vessel types provides an emblematic outline of the fleet's nature and composition. Cabotage-type vessels constituted the bulk of the Camogli fleet, with a clear predominance of *navicelli*, employed on charcoal routes from Tuscany.[48]

47 Pierre Garrouste and Stavros Ioannides, eds., *Evolution and Path Dependence in Economic Ideas. Past and Present* (Cheltenham: Edward Elgar Publishing, 2001).

48 The origins of the *navicello* lies in the navigation of the river Arno, where it was used for marble transport. Afterwards, it was associated with additional local commodities, such as timber and charcoal, which initially complemented marble cargo but then became bulk cargo in their own right. From a technical point of view, whereas the sophisticated system of sails and rigging are well known, it is hard to find explicit references about the dimensions and tonnage of this type of ship. The average tonnage varied from 30 to 70 tons, but in some cases *navicelli* of more than 100 tons can be found. See: Luciana Gatti, *Un raggio di convenienza* (Genova: Società Ligure di Storia Patria, 2008), 67; Sergio Bellabarba and Edoardo Guerreri, *Vele italiane della costa occidentale dal Medioevo al Novecento* (Milano: Hoepli, 2002), 158–63. Most of tnavicellhe *navicelli* recorded by the author range from 30 to 70 tons. There are, however, some exceptions, as in the case of

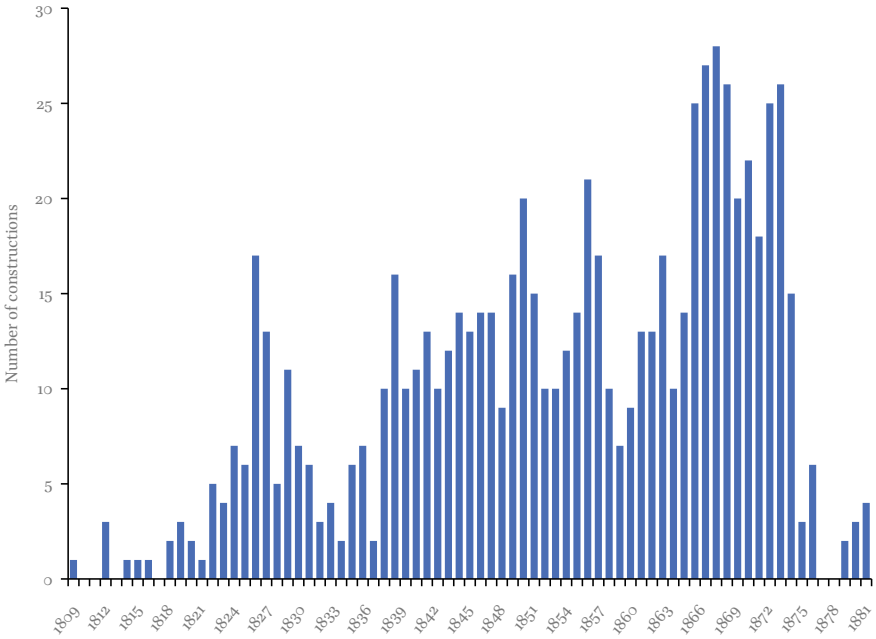


CHART 9.2 Constructions of Camogli's ships, 1809–83
SOURCE: DATA PROCESSED FROM TOWN MARITIME MUSEUM OF CAMOGLI (HEREAFTER *CMMC*), *ASSICURAZIONI VARIE*, ELENCO DEI BASTIMENTI ISCRITTI NELLA ASSOCIAZIONE DI MUTUA ASSICURAZIONE MARITTIMA CAMOGLIESE, 1853; *CMMC, ASSICURAZIONI VARIE, ELENCO DEI BASTIMENTI ISCRITTI NELLA ASSOCIAZIONE DI MUTUA ASSICURAZIONE MARITTIMA CAMOGLIESE* (GENOVA: TIPOGRAFIA DELL'ISTITUTO SORDO-MUTI, 1883); *SULLE CONDIZIONI DELLA MARINA MERCANTILE AL 31 DICEMBRE 1891*; *SULLE CONDIZIONI DELLA MARINA MERCANTILE AL 31 DICEMBRE 1914; REGISTRO ITALIANO PER LA CLASSIFICAZIONE DEI BASTIMENTI. LIBRO REGISTRO 1902*; *REGISTRO NAZIONALE ITALIANO PER LA VISITA E CLASSIFICAZIONE DELLE NAVI E DEI GALLEGGIANTI. LIBRO REGISTRO 1916; REGISTRO NAZIONALE ITALIANO PER LA VISITA E CLASSIFICAZIONE DELLE NAVI E DEI GALLEGGIANTI. LIBRO REGISTRO 1921*

Subsequently, over the course of the nineteenth century, the fleet of Camogli underwent exponential growth in terms of numbers and tonnage. Chart 9.2 outlines the number of new ship constructions commissioned by Camogli shipowners from 1809 to 1883.

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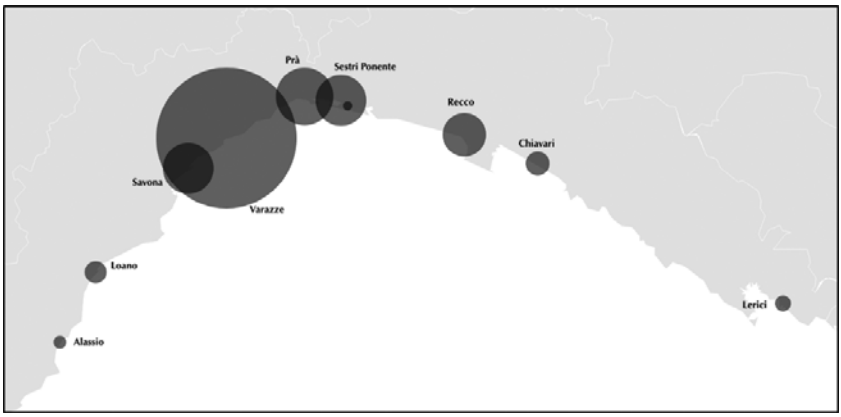
the *navicello* known as *Il Magnanimo*, measuring 130.08 tons, which was built in 1827 in Varazze for the Camogli ship-owner Gaetano Schiaffino. Another example is the *N.S. del Carmine* (101.40 tons) built in 1830 for the Camogli ship-owner Michele Bertolotto. These and other cases can be also found in: Berti, "Il traffico camogliese del carbone vegetale," 315–28.



MAP 9.7 Places of construction of Camogli's fleet (1853–1865)
SOURCE: DATA PROCESSED FROM ASGE, *RUOLI DI EQUIPAGGIO,* 1853–1865

The first phase of development (1825–60) can be linked to the successful integration of the Camogli shipping fleet to Black Sea trade. Throughout this period, cabotage-type vessels were rapidly replaced by brigantines, brigs, and barques, two or three-masted ships, whose average tonnage grew from 121 tons in 1828 to 223 tons in 1860.[49] Most vessels were constructed in the Ligurian town of Varazze (60.81%), but with the remainder also coming from other Ligurian shipyards.[50]

In 1853, the Camogli fleet numbered 143 vessels, 67.83% of them weighed more than 150 tons. Furthermore, the lists of ships, appearing within the documents of the local mutual insurance institution,[51] provide us with an insight into ship ownership, and its characteristics.

As indicated in Table 9.3, in 1853, 88% of the Camogli fleet belonged to ten family groups. The first and foremost feature to be addressed, however, is the chosen definition of family group, and to what extent it may reflect the effective

49 Data processed from: *ASGe, Ruoli di equipaggio*, from 1828 to 1865; *ASGe, Ufficio di sanità*, Arrivi di bastimenti dall'estero, 590–613.

50 Data processed from: *ASGe, Ruoli di equipaggio*, from 1829 to 1865.

51 Founded in 1851, the *Mutua assicurazione marittima camogliese* was a mutual insurance institution which provided insurance services to all the shipowners of Camogli. See: Giovanni B.R. Figari, "La società di mutua assicurazione marittima camogliese: 1853–1888," *Quaderni del Museo* 4 (1976); Giovanni B.R. Figari, Simona Bagnato Bonuccelli, *La marina mercantile camogliese dalla guerra di Crimea all'Inchiesta Parlamentare Boselli: 1855–1882* (Genova: Tolozzi, 1983); Giulio Giacchero, *Storia delle assicurazioni marittime. L'esperienza genovese dal Medioevo all'età contemporanea* (Genova: Sagep, 1984), 165–200; Vito Piergiovanni, "Alle origine delle società mutue," in Idem, *Norme, scienza e pratica giuridica tra Genova e l'Occidente medievale e moderno* (Genova: Società Ligure di Storia Patria, 2012), 1013–32.

TABLE 9.3 Main shipping family groups in Camogli (1853)

Shipping family groups	No. of ships	%
Schiaffino	40	35
Olivari	11	10
Mortola	9	8
Degregori	8	7
Bertolotto	7	6
Lavarello	7	6
Razeto	6	5
Brigneti	5	4
Ferrari	5	4
Cichero	4	4

SOURCE: DATA PROCESSED FROM *CMMC*, *ASSICURAZIONI VARIE*, ELENCO DEI BASTIMENTI ISCRITTI NELLA ASSOCIAZIONE DI MUTUA ASSICURAZIONE MARITTIMA CAMOGLIESE, 1853

ship ownership distribution among Camogli inhabitants. Table 9.4 was based upon groupings organised by family name, which may suggest the existence of distinguishable shipowner families, that is, acting as one, or as "family firms".[52] For instance, the ownership of 35% of the fleet would imply tremendous economic power in the hands of the Schiaffino family. However, arguing a sense of belonging based on surname distinction would provide an unsatisfactory illustration of the social environment of Camogli. Since the early modern period, most of these families had divided into different branches; therefore, as a result, in the nineteenth century, the relationships between people holding the same surname were no closer or more relevant than other members of the community. Whereas a surname-based grouping might work well with some of the smaller families, such as Bertolotto and Degregori, whose networks rarely extended outside the nuclear family, it is hardly representative of a corpus of almost 30 different shipowners belonging to the Schiaffino group.

Indeed, the structure of ship ownership in Camogli was not based on family firms holding concentrated capital; quite the opposite, it was formed by

52 The business model of "family firms" has been successfully applied to Greek entrepreneurship in the nineteenth century: see Gelina Harlaftis and Ioannis Theotokas, "European family firms in international business: British and Greek tramp-shipping firms," *Business History* 46, no. 2 (2004): 219–55. See also: Ann Prior and Maurice Kirby, "The Society of Friends and the family firm, 1700–1839," *Business History* 35, no. 4 (1993): 66–85.

dozens (up to more than 100 in 1883) of single-ship enterprises led by individual shipowners. Each ship was allotted into 24 *carati* (shares), whose majority was normally held by a single owner, while the remaining shares were divided among various members of the community, notwithstanding family ties or regular business relationships. Instead of capital concentration, the Camogli business model was based on capital dispersion: single-ship shipowners never possessed all the shares of their vessels and, simultaneously invested significant resources in the purchase of shares belonging to others.[53] Single-ship enterprises and investment diversification were self-protecting economic behaviours that dominated the Camogli shipping business until the end of the nineteenth century, when the first primaeval forms of capital concentration appeared in response to the deep financial and commercial crisis in which the Ligurian community found itself, from the early 1880s.

Turning back to the fleet, during the second phase (1860–78), Camogli shipping gradually readjusted to the needs of oceanic trade, for which more capable and more modern vessels were required.

As indicated in Chart 9.2, from 1867 to 1874, Camogli shipowners embarked on a massive construction campaign, resulting in the modernisation and enlargement of the fleet—this initiative meant that vessels reached unprecedented dimensions in size, and in characteristics. In 1879, Camogli was ranked fifteenth in the world for ship tonnage, eighth if only sailing ships were taken into account.[54] At that time, the fleet was composed of 368 ocean-going vessels, measuring slightly less than 500 tons on average. Brigs and brigantines were replaced by barques to form the predominant position; gradually, the first full-rigged ships emerged.[55]

From the 1880s onwards, however, the conditions of the international seaborne trade changed, and sail shipping was progressively marginalised into peripheral routes and low-value cargo. The crisis of the Camogli community, affected by the financial crisis of the late 1870s, was reflected in the conditions of the fleet, which entered a declining phase, which culminated at the end of the century. As indicated in Chart 9.3, after the early 1880s, Camogli shipowners lost considerable resources both in terms of tonnage and number of ships owned.

53 See the list of *carati* belonging to Gaetano Schiaffino of Martino at his death, 16 June 1877, in Leonardo Scavino, "The Mediterranean Maritime Community of Camogli: Evolution and Transformation in the Age of Transition from Sail to Steam (1850s–1910s)" (PhD diss., University of Genoa, 2020), 206. Source: ASGe, Notai III sezione, r. 680, n. 556.

54 Kjaer, *Navigation maritime*, 12, Table n. 2.

55 See, for instance, the full-rigged ship *Quaker's City* (872 tons), belonging to Emanuele Boggiano. *CMMC, Assicurazioni varie*, Elenco dei bastimenti iscritti nella Associazione di mutua assicurazione marittima camogliese.

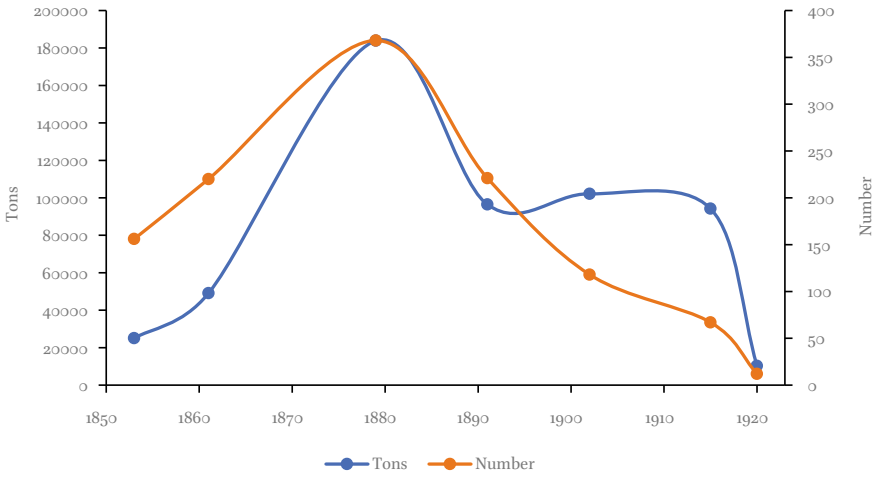


CHART 9.3 Total tonnage and number of ships owned by Camogli shipowners, 1853–1920
SOURCE: DATA PROCESSED FROM CMMC, *ASSICURAZIONI VARIE*, ELENCO DEI BASTIMENTI ISCRITTI NELLA ASSOCIAZIONE DI MUTUA ASSICURAZIONE MARITTIMA CAMOGLIESE, 1853; CMMC, *ASSICURAZIONI VARIE*, ELENCO DEI BASTIMENTI ISCRITTI NELLA ASSOCIAZIONE DI MUTUA ASSICURAZIONE MARITTIMA CAMOGLIESE, GENOVA: TIPOGRAFIA DELL'ISTITUTO SORDO-MUTI, 1883; *SULLE CONDIZIONI DELLA MARINA MERCANTILE AL 31 DICEMBRE 1891*; *SULLE CONDIZIONI DELLA MARINA MERCANTILE AL 31 DICEMBRE 1914; REGISTRO ITALIANO PER LA CLASSIFICAZIONE DEI BASTIMENTI. LIBRO REGISTRO 1902*; *REGISTRO NAZIONALE ITALIANO PER LA VISITA E CLASSIFICAZIONE DELLE NAVI E DEI GALLEGGIANTI. LIBRO REGISTRO 1916; REGISTRO NAZIONALE ITALIANO PER LA VISITA E CLASSIFICAZIONE DELLE NAVI E DEI GALLEGGIANTI. LIBRO REGISTRO 1921*

At the beginning of the twentieth century, Camogli's nautical resources were diminished, both in terms of numbers and tonnage. In 1902, the fleet was mainly composed of old iron-hulled vessels purchased on the British second-hand market. Their average age rose to 27 years (from 13 years in 1883), and only 13% of the ships were constructed after 1883. These characteristics were in line with the international standards of second-comers' (from a technological perspective) shipping industries: for instance, the same phenomenon has been noted for Norwegian shipowners.[56] The high costs of iron and steam-powered shipbuilding in Italy pushed shipowners—whose financial resources had been severely hampered by a freight crisis and increasing competition from steam—towards the cheaper second-hand market, from where

56 See, Berit E. Johnsen, "Cooperation across the North-Sea: the strategy behind the purchase of second-hand British iron and steel sailing ships by Norwegian shipowners, 1875–1925," *International Journal of Maritime History* 17, no. 1 (2005): 151–69.

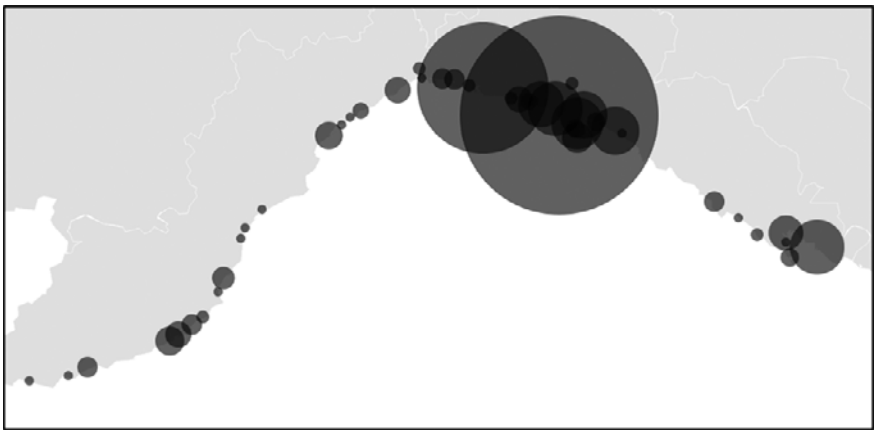
FIGURE 9.1 The sailing ship *Fortunato Figari* of Camogli in Melbourne, 1909
SOURCE: MUSEO MARINARO DI CAMOGLI

they were able to purchase large sailing vessels suitable for the slow transport of low-value commodities.

Furthermore, the slight recovery in international trade that occurred at the turn of the century encouraged shipowners to attempt transition; once more, they invested their marginal profits into second-hand steamers, which they employed on Mediterranean bulk trade. In 1902, the Camogli steam fleet consisted of four vessels; by 1915, the number of steamers reached thirteen units, composing almost 40% of the total tonnage owned in the Ligurian community. However, during the First World War, most of the fleet disappeared; in 1920, it was restricted to eleven sailing vessels and one steamer.

4 Maritime Labour

The last element to be examined, deviates slightly from the shipping business, that is, to embrace maritime labour—an attempt to grasp the impact



MAP 9.8 Birthplace of crew members on board Camogli-owned ships (1853–1865): Liguria
Note: The statistics are based on a sample of 1,880 seafarers that embarked on Camogli ships between 1853 and 1865
SOURCE: DATA PROCESSED FROM *ASGE, RUOLI DI EQUIPAGGIO*, 1853–65

of technological advancements from a social, rather than an economic perspective on the Camogli seafaring community. In so doing, the resilience of Camogli shipping is reinterpreted using the perspective of maritime labour. Throughout this section, the primary focus will be on the characteristics of the Camogli maritime labour market in the age of transition. Instead of focusing on seafaring communities ashore—in selected maritime towns and districts—for studying seafarers' social tensions and dynamics, our primary point of research is the ship, the seafaring community on board the vessel.

In the years of the Black Sea trade, the existence of a mostly endogenous labour market was a crucial characteristic of the Camogli maritime labour system. This concept draws upon the combination of ship ownership and maritime labour within the same space and human community, leading to a framework where local demand and supply for maritime labour tended to meet mutual satisfaction. The evidence seems to support this hypothesis, at least before Camogli vessels were regularly ousted from Mediterranean navigation.

Map 9.8 and Chart 9.4 display the origins of seafarers on board Camogli-owned ships between 1831 and 1865. Among them, seamen born in Camogli represent nearly half of the figure; in general, the Ligurian area provides 88% of the total maritime workforce. Out of this percentage, a significant share of towns and villages surrounding Camogli invites the researcher to expand the perspective to a broader sub-regional area, in which various neighbouring communities referred to Camogli as the primary source for maritime labour opportunities. The labour relationship established between Camogli and the

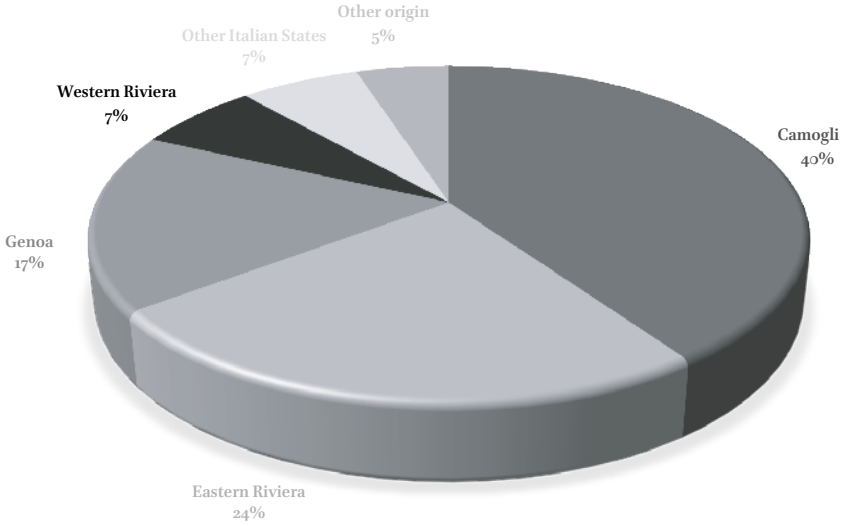


CHART 9.4 Birth-place of crew members on board Camogli-owned ships, 1850–1865
SOURCE: DATA PROCESSED FROM ASGE, *RUOLI DI EQUIPAGGIO*, 1853–1865

surrounding communities (mainly Recco, Santa Margherita, and Portofino) is certainly worth noting. Owing to the size of the merchant fleet, Camogli demanded exceptionally high quantities of maritime labour, which could not always be satisfied by local supplies. Therefore, several seamen were recruited from nearby villages, where long-standing maritime traditions had not achieved as exceptional results on the international stage, as Camogli. Therefore, the situation portrayed by Map. 9.8 and Chart 9.4 configures an almost endogenous labour market based on a slightly broader sub-regional labour pool, composed of Camogli and other local communities (that is, Recco, Santa Margherita, and Portofino) which supply two-thirds of the navigating personnel embarked upon Camogli ships.

The relative share of Genoese sailors (despite the administrative borders of the leading regional city blurring sources) sheds light on another characteristic of Camogli shipping, which has not been mentioned previously. Due to harbour structure and dimensions, the port of Camogli ceased to be frequented by local vessels from the early nineteenth century; instead, they based all operations in Genoa. Therefore, the presence of a discrete number of seamen born in Genoa cannot be explained without referring to the fact that parts of the recruiting operations were performed in the city, and therefore, for Genoese-born sailors, it was not a complicated process to find employment on Camogli ships. The relevance of other categories, for instance, "other Italian

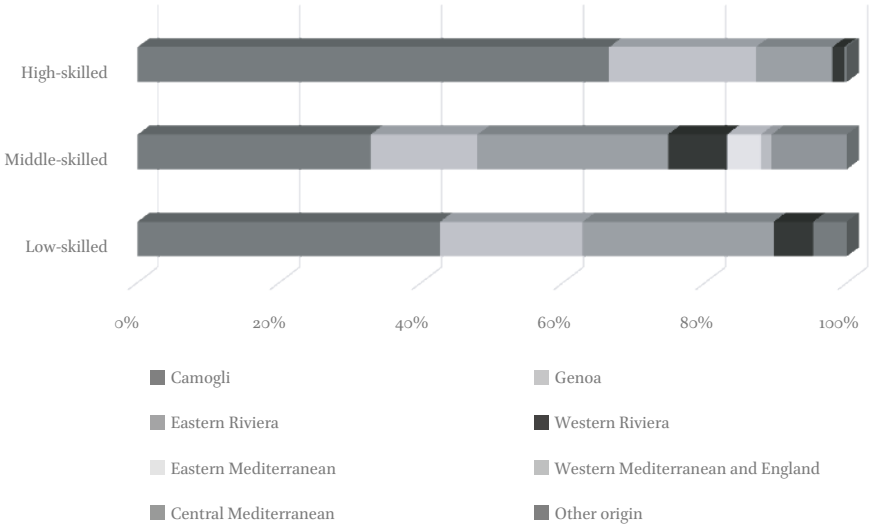


CHART 9.5 Birth-place by skill-levels
SOURCE: ASGE, *RUOLI DI EQUIPAGGIO*, 1831–65

states" and "other origin" is very low; until the last decades of the nineteenth century, the Camogli maritime labour pool was entirely Ligurian.

A division of crew members according to professional categories and skill-levels, provides the research with a more refined interpretation of the Camogli labour market.

According to Chart 9.5, the highest concentration of Camogli-born seamen was found in the high-skilled group, composed of shipmasters and mates. In their case, the figure accounted for 67% of records. Such evidence is fundamental to underline the familiar and communitarian dimension to the Camogli maritime labour pool; indeed, before becoming independent and founding single-ship enterprises, shipowners underwent nautical education, having spent many years at sea, often holding commanding positions on vessels owned by family members. In continuity with previous long-standing traditions, according to which shipowners served as masters over their ship (a custom that continued up to the early 1860s), in Camogli, master and shipowner relationships were very close, and usually, the appointment of masters and mates fell to the core members of the shipowners' households.[57] The remainder were sourced from Genoa and the eastern Riviera.

It is in low-skilled seafarer roles (ship-boys and ordinary seamen) that Camogli-born seamen accounted for slightly beyond the average (43%). Again,

57 See Scavino, "The Mediterranean Maritime Community of Camogli", 266–70.

particularly with ship-boys, the communitarian dimension was pivotal; their first steps in the maritime world constituted a fundamental stage in the sailors' practical education. Indeed, in sailing ship navigation, the transfer of seafaring knowledge was an intergenerational process involving all the members of the crew. Professional expertise was handed down from one generation to another, through observation and first-person repetition of the fundamental operations performed at sea. In broader terms, the ship—to be perceived as a communitarian human space—attended to its social responsibilities towards the younger members of the community, rather than demanding a cheap labour force. Ship-boys represented a transitional workforce; they were active members of the community, and their participation in maritime activities were part of their maturity to manhood and seamanship.[58] In this framework, the relationship between family and community overlapped, as testified by the broad recurrence of father-son relationships between masters and cabin-boys, observed in the crew agreements of the Black Sea period.

Subsequently, as Camogli's maritime activities expanded to the oceanic shipping market, the locally-based, endogenous and sub-regional labour market gradually changed, losing some of its main features, eventually reacting to international and global dynamics.

The intensification of seamen mobility can be included among the most notable and evident results of the historical evolution of Camogli shipping. Since the last phase of the Black Sea trade, Camogli-owned vessels, accustomed to navigating within the borders of the Inner Sea, moved beyond them, and established a firm foothold along northern European and oceanic routes. These vessels were manned by seafarers traditionally bound to the Mediterranean: this process began as intragenerational, with middle-aged seamen embarking on new challenges. Subsequently, it became intergenerational, as most of their descendants grew aware of their enlarged working environment, and perhaps became a little oblivious of the past.[59]

The radical change emerging from Chart 9.6 in comparison with the Black Sea phase of crew composition (Chart 9.4), is the fall of the Ligurian share from 88% to 63%. This gap was filled by other Italian seafarers (from 7% to

58 For an international comparison, see: Valerie Burton, "Apprenticeship regulation and maritime labour in the nineteenth century British merchant marine," *International Journal of Maritime History* 1 (1989): 29–50.

59 The registers of maritime workers (ASGe, *Matricole della gente di mare*) record all the careers of Camogli seafarers from 1843 to the First World War. For instance, within a sample of 100 seafarers born between 1825 and 1835, among them, 65 began in cabotage and concluded their careers in oceanic shipping. On the contrary, only 13% of the seafarers born between 1865 and 1875 began in cabotage, whereas the remainder embarked directly upon ocean-going vessels.

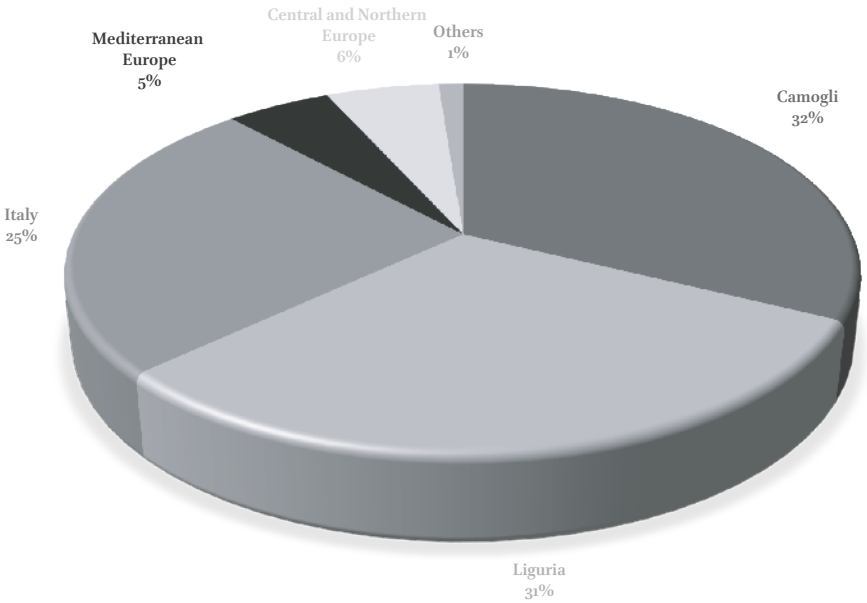


CHART 9.6 Birth-place of crew members on board of Camogli-owned ships, 1885–1905
SOURCE: DATA PROCESSED FROM ASGE, *GIORNALI NAUTICI*, 1885–1905

25%) and partially, from the more than double figure percentage of foreigners (from 5% to 12%). Non-Ligurian Italians reached almost the same share of those from Camogli; their increased numbers on board is a sign of the expansion of the Camogli labour market, whose local and endogenous characteristics were gradually supplemented by a national and global dimension. Within this framework, the interplay between the increased mobility of seafarers, and crew member desertion, accelerated the nationalisation and globalisation of Camogli crews. For instance, the presence of national communities in Latin American ports, such as Buenos Aires and Montevideo, facilitated the recruitment of Italian seamen to replace deserters, or emigrants.

The expansion of maritime labour to exogenous and foreign elements cannot only be the result of the growth of labour demands, and the inadequacy of the local maritime labour supply. Quite the contrary, throughout the last decades of the nineteenth century the Camogli fleet reduced on a continuous basis, both in size, and in labour needs, as technological advances in the field of rigging reduced the ton-man ratio.[60] Thus, Table 9.4 attempts an estimation of

60 Ibid., 286–287. See, also Yriö Kaukiainen, *Sailing into Twilight: Finnish Shipping in an Age of Transport Revolution, 1860–1914* (Helsinki: SHS, 1991), 106; Gerald P. Allington, "Sailing rigs and their use on ocean-going merchant steamships, 1820–1910," *International Journal of Maritime History* 16, no. 1 (2004): 125–52.

FIGURE 9.2 Captains of Camogli celebrating, 1895
SOURCE: MUSEO MARINARO DI CAMOGLI

TABLE 9.4 Estimation of the number of seamen employed on Camogli-owned vessels, 1853–1896

	Total tonnage	Ton/man ratio (100 t.)	Seamen employed
1853	25,045	6.99	1,751
1861	49,06	5.03	2,468
1879	182,774	2.25	4,112
1896	79,407	1.83	1,453

SOURCE: ASGE, RUOLI DI EQUIPAGGIO, 1861; CMMC, *ASSICURAZIONI VARIE*; ASGE, GIORNALI NAUTICI, 1896; *SULLE CONDIZIONI DELLA MARINA MERCANTILE*, ROMA, 1896; KJAER, *NAVIGATION MARITIME,* 12, TABLE N. 2

the consequences on labour demands for the fleet contraction, using ton-man ratios as a measurement.

The disaggregation of the communitarian forms of labour which had driven the Camogli shipping business for a significant part of its history cannot be linked to the increase of labour demand, but rather, with a progressive loss of attractiveness of seafaring as a career, both in terms of daily-life practices, and long-term perspectives. For instance, from the moment of formation of business links with British ports, in the 1860s, 13% of Camogli-born seafarers deserted in search of greater employment remunerative rates, or to emigrate to Latin America.[61] A few decades later, the human leakage towards the American continent increased at a yearly rate: 21% of seafarers deserted in Buenos Aires and Montevideo, others legally emigrated to the same locations.[62]

A further crucial element to understand the consequences of late nineteenth-century transformations in the sector of maritime labour, is professionalisation which, in limiting access to official positions, only worsened the already precarious attractiveness of working on Camogli vessels[63] Indeed, although all categories of maritime workers underwent profound transformations in this period, not all groups were affected to the same extent.

Table 9.5 demonstrates how, despite shipmasters losing their peer-to-peer relationship with shipowners, and the fact that their vertical mobility was severely affected by the shrinkage of the ship owning ranks, from an economic perspective, professionalisation increased inequality in terms of salary differentials in comparison with lower ranks.

On the contrary, ongoing transformations struck Camogli middle and low-skilled maritime workers more severely, both socially and economically. The growth of labour productivity onboard (expressed through the sharp decline of ton-man ratios) impacted on sailor wages, whose relative ratio in comparison with officers decreased by more than one-third. Moreover, while

61 Data processed from ASGe, *Matricole della gente di mare*, boxes 1–39.

62 This data was extracted from a statistical sample of 300 Camogli seafarers, divided into three cohorts according to their date of birth. The complete statistical procedure is shown in Scavino, "The Mediterranean Maritime Community of Camogli", 254–5.

63 On professionalisation, see Karel Davids, "Technological change and the professionalism of masters and mates in the Dutch mercantile marine, 1815–1914," *Colectanea maritima* 5 (1991): 282–303; Valerie Burton, "The making of a nineteenth-century profession: shipmasters and the British shipping industry," *Journal of the Canadian Historical Association* 1, no. 1 (1990): 97–118; Enric Garcia-Domingo, "Losing professional identity? deck officers in the Spanish merchant marine, 1868–1914," *International Journal of Maritime History* 26, no. 3 (2014): 451–70; Rodrigo De Oliveira Torres, "Handling the ship: rights and duties of masters, mates, seamen and owners of ships in nineteenth-century merchant marine," *International Journal of Maritime History* 26, no. 3 (2014): 587–99.

TABLE 9.5 Relative crew wages in relation to able-bodied seamen salary (AB Seamen=100)

	1850–65	1885–1905	+/–
Shipmasters	192	294	102
Mates	157	195	38
Boatswains	137	143	6
Stewards	122	134	12
Able Bodied seamen	100	100	0
Ordinary seamen	72	63	−9
Cabin-boys	37	33	−4

SOURCE: DATA PROCESSED FROM ASGE, RUOLI DI EQUIPAGGIO, 1853–1865; ASGE, GIORNALI NAUTICI, 1885–1905

masters' highly-specialised know-how and skills allowed them a smoother transition to more advanced labour markets (steam shipping), middle and low-skilled seafarers faced more obstacles in transition to steam, and therefore, continuance within the maritime labour market.

From the late 1880s, it is possible to observe an impressive rise in sail-to-steam mobility among Camogli seafarers. Although the earliest Camogli steamer services dated back to 1888, most transitional movement took place at the turn of the century. From the data, the research is able to observe some distinguishing traits. Firstly, the sharp difference in the percentages of highly-skilled seamen (64.71%) as opposed to middle-skilled seamen (25.75%). Secondly, no Camogli seamen engaged in the new professions of steam shipping (engineers, stokers, coal trimmers), but rather, maintained deck roles on steamers. Thirdly, once transitioned to steam, few if any, returned to sail.[64]

5 Conclusions

From charcoal cabotage to oceanic tramp shipping, the trajectory of Camogli throughout the nineteenth century is emblematic of the history of Mediterranean sail shipping communities in the age of transition.

As for the evolution of its shipping business, each step-forward by Camogli was determined by previously established relationships: similar to a chain,

64 This data was extracted from a cohort of 100 Camogli seafarers born between 1865 and 1875. Among them, 37 embarked onto steamers.

every phase was preliminary to the next one. The handling of traditional maritime activities sustained the community and prepared it for an international leap forward; the transport of grain for Sardinian merchants required a mature expertise for the Black Sea market; the integration with Greek networks was pivotal in accessing the British freight market; the establishment of a wheat-coal route opened the coal trade to Camogli; later, the international demands for coal unlocked other trades, particularly south-eastern Asian rice and North American timber.

The nature and size of the fleet progressed proportionally with maritime activities: ships represented the wealth of the community and constituted the most tangible evidence of status within international shipping. The business structure of Camogli ship ownership was maintained in a traditional shape, based on investment diversification and mutualistic association, until competition from stock-funded shipping companies made it unsustainable at the turn of the century.

Finally, Camogli's maritime labour underwent dramatic transformations. Locally-based market pools and a mutual integration between ship owners and the workforce, represented a distinguishing trait of the Camogli labour market for seafarers. The extraordinary rise of the community, from the Black Sea period onwards, required the opening of seamen' ranks to "exogenous" elements; nonetheless, until the last decades of the nineteenth century, no dramatic transformations occurred. Instead, more profound changes, such as the widening of routes, the closing of vertical mobility, the optimisation of labour productivity, and the Camogli crisis, worked together to disrupt the pre-existent sub-regional labour market. As a result, several seafarers abandoned navigation, or the community itself. The most qualified made the transition to steam; based at the local nautical school, founded in 1874,[65] Camogli produced deck and engine officials for the Italian merchant marine long after its demise as a shipping centre. Others abandoned the community and Italian shipping to find more profitable employment abroad; some embarked on foreign European fleets, many emigrated to Latin America.

Although an attempted transition occurred at the beginning of the twentieth century, as a final form of resilience within a profoundly transformed business, from the abandonment of the Black Sea trade onwards, the global competition between sail and steam affected the Camogli shipping trajectory in every aspect.

65 See Maria Stella Rollandi, *Istruzione e sviluppo nella Liguria marittima (1815–1921)* (Genova: Atti della Società Ligure di Storia Patria, 2005).

CHAPTER 10

From Traditional Maritime Communities to Maritime Centres. Urbanization, Social Hierarchies and the Labour Market in the Age of Steam

The Case Study of Galaxidi, 1850s–1910s

Katerina Galani

1 Introduction

The rise of European shipping in the early modern period, counter-intuitively, sprang from small coastal towns and islands rather than the big ports.[1] These maritime loci, *nautotopoi* (*naus = ship/topoi = loci in Greek*), were reliant almost exclusively on the sea for their welfare and provided the ships and the crews, the capital, and the business networks in shipping and trade. Despite their small size, maritime communities were complex and outward-looking societies that epitomized the connectivity of the local with the global through mobility and entrepreneurship. As traders and sea carriers across peripheral and international markets, the communities of seafarers flourished on maritime income and became niches of cosmopolitanism, as manifested in their architecture, houseware, technology, material culture, customs, and way

1 From a broad literature on local communities see indicatively, here: Gelina Harlaftis and Katerina Papakonstantinou (eds.), *Η ναυτιλία των Ελλήνων, 1700–1821* [*Greek Shipping, 1700–1821*] (Athens: Kedros, 2013); Amélia Polónia, "The northwestern portuguese seaport system in the early modern age," in *Making Global and Local Connections: Historical Perspectives on Ports*, eds. Bergholm Tapio, Lewis R. Fischer, and Elisabetta Tonizzi, Research in Maritime History 35, (Liverpool: Liverpool University Press, 2008), 113–136; Pierrick Pourchasse, "Les petits ports, acteurs essentiels de l'espace baltique au XVIII[e] siècle," *Revista da Faculdade de letras, Historia*, no. 3.9 (2008): 127–139; Werner Scheltjens, *Dutch Deltas. Emergence, Functions and Structure of the Low Countries' Maritime Transport System, ca. 1300–1850* (Leiden and Boston: Brill, 2015); David J. Starkey, David Atkinson, Briony McDonough, Sarah McKeon, and Elisabeth Salter (eds.), *Hull: Culture, History, Place* (Liverpool: Liverpool University Press, 2017); David J. Starkey and Morten Hahn-Pedersen (eds.), *Concentration and Dependency: The Role of Maritime Activities in North Sea Communities, 1299–1999* (Esbjerg: Fiskeri-og-Sofartmuseet, 2002); Gerard Bouedëc, "Small ports from the sixteenth century to the early twentieth century and the local economy of the French Atlantic coast," *International Journal of Maritime History*, no. 21.2 (2009): 103–126.

of living. The economic function of the seafaring communities interwove socio-economic relations and hierarchies based on wealth, occupation, status, and gender; maritime business ran on a family basis, while alliances and partnerships among shipping families were strengthened by endogamy and spiritual liaisons. In these communities, women were powerful economic and social agents as a consequence of the continual and lengthy absence of men at sea.[2]

Industrialization is unquestionably a watershed in the history of Europe that ushered in modernity and brought about sweeping changes in the everyday lives of people. The advent of steam, iron, and steel in navigation revolutionized the means of production, as the wooden sailing ships were replaced, at the height of their performance, by steamers. Maximization of speed, scale, scope, and regularization of transport created dense networks of communication, linking to an unprecedented degree the local with the global; globalization in the nineteenth century was attained through connectedness and integration.[3] The modes of production were also revolutionized, with the reorganization of business and trade, the introduction of the mass circulation of people, commodities, information and ideas, and the reshaping of the labour market. New professions made their appearance onboard (e.g. engineers, stokers, catering crews), nautical education was formalized, while deskilled labour was employed and seamanship was no longer a prerequisite for a career at sea. Along with the transformation of the shipping sector and maritime trade, industrialization transformed, in practice, people and their communities. Long-established social and economic structures were subverted, affecting the lives and works of people. This chapter, through the case studies of the maritime community of Galaxidi and the maritime centre of Piraeus, focuses on the changes that occurred ashore, as steam shipping had an impact on the natural landscape—through urbanization and the emergence of new ports—on economic activities, and the social hierarchies of the seafaring populations.

The complexity of the new era of transportation exalted the function of ports as nodal points for trade and navigation on a global scale. Ports grew

2 Stig Tenold and Bård Gram Økland, "Mermaids ashore: the Norwegian Mermaid Association, 1964–1989," *The Mariner's Mirror*, no. 105.2 (2019): 202–218; Amelia Polonia, "Women's participation in labour and business in the European maritime societies in the early modern period," in *The Economic Role of the Family in the European Economy from the Thirteenth to the Eighteenth Centuries*, ed. Simonetta Cavaciocchi (Florence: Firenze University Press, 2009), 705–720; Helen Doe, *Enterprising Women and Shipping in the Nineteenth Century* (Martlesham: Boydell & Brewer, 2009).

3 John Darwin, *Unlocking the World. Port-Cities and Globalization in the Age of Steam, 1830–1930* (London: Allen Lane, 2020).

physically and became more significant, in economic and political terms, in Europe and across the world. Some of these port-cities already existed (Amsterdam, London, Hamburg, Bremen, Calcutta, Jakarta) while others developed from scratch (Piraeus, Odessa, Singapore, Fremantle). Although in the long history of Europe, and the Mediterranean in particular, free ports and maritime commerce had precipitated urbanization, in the nineteenth century port-cities marked a dramatic growth of their population, predominantly through in-migration.[4] In 1850, seaports accounted for almost 40% of cities around the world, with more than 100,000 inhabitants.[5] During the long nineteenth century, ports, be they imperial, colonial, national, or industrial witnessed increased traffic, the expansion of port infrastructure, the development of urban planning, and the establishment of port-related industries.[6] Port-cities evolved into maritime centres, as they concentrated services by combining trade, warehousing, banking, insurance, industries, labour markets, and acted as hubs where the maritime and the land transport system converged. While port-cities have deservingly attracted scholarly attention, the maritime communities in the face of industrialization and globalization remain invisible. The appropriation, adaptation, or resistance of seafaring populations, on a local level, to technological innovation and to their altered socio-economic environment, remains to a large extent under-researched. A striking exception is the introduction of mechanical devices in fishing in the south-eastern Mediterranean and its repercussions on the economy and social fabric of the islands of the Dodecanese.[7]

4 Athanasios Gekas, "Migrants, merchants and philanthropists: hierarchies in nineteenth-century Greek ports," *Trade, Migration and Urban Networks in Ports Cities, c. 1640–1940*, eds. Adrian Jarvis and Robert Lee (Liverpool: Liverpool University Press, 2008), 109–126.

5 Robert Lee, "The socio-economic and demographic characteristics of port-cities: a typology of comparative analysis," *Urban History*, no. 25.2 (1998): 147.

6 John Darwin, *Unlocking the World. Port-Cities and Globalization in the Age of Steam 1830–1930* (London: Penguin Books Ltd, 2020); Sarah Palmer, "Ports," in *The Cambridge Urban History of Britain 1840–1950*, vol. 3, ed. Martin Daunton (Cambridge: Cambridge University Press, 2000), 133–150; Kenneth McPherson, "Port cities as nodal points of change. The Indian Ocean, 1890s–1920s," in *Modernity and Culture from the Mediterranean to the Indian Ocean*, eds. Leila Fawaz and Christopher Bayly (New York: Columbia University Press, 2020), 75–95; Miguel Suarez Bosa (ed.), *Atlantic Ports and the First Globalization, c. 1850–1930* (London: Palgrave, 2014), 1–18; Frank Broeze, *Gateways of Asia: Port Cities in the Thirteenth–Twentieth Centuries* (London & New York: Routledge, 1997).

7 Maia Fourt, Daniel Faget, and Thierry Perez, "Fighting the Minotaur: resistance to technological change in the Mediterranean sponge fishing industry (1840–1922)," *International Journal of Maritime History*, no. 32.2 (2020): 337–353; Evi Olympitou, "The introduction of maritime technology in Greek fisheries; diving suites in sponge fishing in the Aegean," in

More specifically in Greece, technological innovation in shipping and navigation challenged the traditional maritime communities in the Aegean and the Ionian seas, which were the backbone of the sailing-ship economy. As historical research has demonstrated, 38 loci that sprang up in the eighteenth century were not mere fishing villages, but unprovincial, complex, socio-economic entities, providing shipping with capital, labour, cargoes, technology, and sophisticated business know-how.[8] With the advent of steam, high demand in capital and technology, international competition, along with the restructuring of the labour force, depowered the old seafaring communities, exerting pressure on their economic and social structure. While the existing literature has placed emphasis on the introduction of novel technology and the metamorphosis of ships, the transition to steam affected entire communities in a holistic way.[9]

Galaxidi, a small, albeit dynamic, community in central Greece, thrived during the sailing ship era manifesting prolific wooden shipbuilding production and a sizeable fleet, that was deployed beyond the limits of the eastern Mediterranean. With the prevalence of technological innovation in shipping and navigation, Galaxidi has been portrayed as a defaulting paradigm *par excellence*, one that never made the successful transition from sail to steam.[10] This chapter challenges the pervasive idea of Luddism and conservatism among traditional seafaring communities by highlighting the complexity of a rapidly changing world, which invoked a variance of reactions, swaying between adjustment and resistance, fear and expectation. Drawing upon the latest research, the chapter reveals how Galaxidiots made several attempts to adapt to the novel socio-economic reality. However, fierce national and international competition in an ever growing, and ever globalizing market, undermined their endeavours.

Greek Maritime History. From the Periphery to the Centre, eds. Katerina Galani and Alexandra Papadopoulou (Leiden and Boston: Brill, 2022).

8 Gelina Harlaftis and Katerina Papakonstantinou (eds), *Η ναυτιλία των Ελλήνων, 1700–1821* [*Greek Shipping, 1700–1821*] (Athens: Kedros, 2013).

9 Apostolos Delis, "The advent of steam navigation in Greece in the nineteenth century," in *Greek Maritime History. From the Periphery to the Centre*, eds. Katerina Galani and Alexandra Papadopoulou (Leiden and Boston: Brill, 2022).

10 Gelina Harlaftis, *A History of Greek-Owned Shipping. The Making of an International Tramp Fleet, 1830 to the Present Day* (London &New York: Routledge, 1996); Gelina Harlafits, "Η εμπορική ναυτιλία. Η μετάβαση από τα ιστιοφόρα στα ατμόπλοια," ["Merchant shipping. The transition from sailing ships to steamers"] in *Ιστορία Νέου Ελληνισμού, 1770–2000* [*Greek Modern History*], vol. 5, ed. Vassilis Panagiotopoulos (Athens: *Ellinika Grammata*, 2003), 92.

While traditional maritime communities dwindled, economic, geographic, and political drivers fostered the emergence of novel port-cities in the Greek Kingdom, which were populated by immigrants, both local and foreign.[11] Patras in the Peloponnese, a gateway for the agricultural produce of the hinterland, was gradually transformed into an emporium and an urban centre for southern Greece with international connections.[12] Syros, an island located in the heart of the Aegean, sprang up in the aftermath of the Greek War of Independence (1821–27) as a maritime and financial centre of the eastern Mediterranean, with a multifarious commercial community and became the forerunner in steam shipping. In 1857, the first Hellenic Steam Navigation Company was founded in Syros.[13] Nevertheless, the most striking example is Piraeus. Originally a deserted bay on the seafront of the new capital of Athens, it evolved within a few decades into the centre of industrial production in Greece and the first national port, described as the "Greek Manchester".[14] Steamship companies, coaling stations, the railway, consulates and embassies, banks, and a vibrant market transformed the site into a modern city and an international maritime centre, with a distinct civic identity.

This chapter tracks the transformation of seafaring communities in Greece, under the pressure of technological innovation, through the case studies of Galaxidi and Piraeus, i.e. a traditional maritime community in decline and an emerging industrialised port-city respectively. By investigating the two sides of the coin, it follows the evolution of a seafaring population, i.e. the ship-owners and captains of the sailing ships of Galaxidi along with the process of industrialization, raising issues of mobility, employment, education, and social hierarchies. This demographic fraction, perceived as a local elite, were wealthy,

11 Constantine Papathanassopoulos, "The creation of new maritime centers in Greece with the emergence of steam, 1850–1870," *International Journal of Maritime History*, no. 5.1 (1993): 193–202.

12 Maria Christina Chatziioannou, "Greeks and foreigners in the port of Patras in the nineteenth century," in *Sailing in the Ionian*, eds. Evgenia Dracopoulou and Dimitris Dimitropoulos (Athens: National Hellenic Research Foundation, 2015), 17–27.

13 Apostolos Delis, *Mediterranean Wooden Shipbuilding. Economy, Technology and Institutions in Syros in the Nineteenth Century* (Leiden and Boston: Brill, 2015), 6–35; Apostolos Delis, "The advent of steam navigation in Greece in the nineteenth century," in *Greek Maritime History. From the Periphery to the Centre*, eds. Katerina Galani and Alexandra Papadopoulou (Leiden and Boston: Brill, 2022).

14 Vassias Tsokopoulos, *Πειραιάς 1835–1870. Εισαγωγή στην ιστορία του Ελληνικού Μάντσεστερ* [*Piraeus 1835–1870. Introduction to the History of the Greek Manchester*] (Athens: Kastaniotis, 1984). As kindly noted by Jordi Ibarz Gelabert, there are equivalent examples in Catalonia, where Sabadell and Poble Nou have been acknowledged as the "Catalan Manchester".

self-employed, worldly, and with social and political capital. Their ships were their business and they forged partnerships through intertwined social and economic relations. The prevalence of steamship navigation destroyed the sailing-ship economy and dictated their adjustment for survival. Migration, restructuring of business networks, and recourse to education were some of the courses taken. In their new settlement in the port of Piraeus, they would strive to redefine their social and economic status that was now converged with a civic identity in its making.

2 Galaxidi: A Traditional Maritime Community in the Eastern Mediterranean

Galaxidi, a small coastal town on the Corinthian Gulf in central Greece formed part of the economy of the Ionian and Adriatic Seas due to its geographical location. Cloistered by a mountainous and barren landscape, it was endowed with two natural harbours. The sea was the sole economic outlet turning Galaxidi, in the eighteenth century, into a maritime locus, i.e. a seafaring community where the majority of its population were engaged in sea-related professions.

In the aftermath of the Greek War of Independence, when the fleet of Galaxidi was burnt to ashes by the Turkish armada, Galaxidiots rebuilt their ships and resumed their maritime activities in the eastern Mediterranean and the Black Sea.[15] By the late nineteenth century, such a small maritime locus came to own 11% of the Greek-owned fleet, reaching a peak of 319 vessels in 1870 (see Table 10.1). These were predominantly medium-sized brigs, barques, or bratseras, while in their heyday sailing ships from Galaxidi come to exceed, on average, 200 tons, with a significant cargo capacity and speed.[16]

The fleet operated as an international sea carrier and the scope of its activities far exceeded the limits of the local or peripheral market. From a handful of logbooks and account books that have survived, it is evident that the ships from Galaxidi sailed across the Mediterranean and the Black Sea.[17] The integration of the Black Sea into the global economy in the nineteenth century, and its

15 Konstantinos Metallinos, *Ο Ναυτικός πόλεμος κατά την Ελληνική Επανάσταση 1821–1829* [*Naval War during the Greek Revolution*], vol. 2 (Athens: Andy's Publishers, 2016), 22–29; Gelina Harlaftis, *A History of Greek-Owned Shipping*, 115–121; Anastassios Skiadas, *Γαλαξείδι. Μια πανάρχαια πολιτεία* [*Galaxidi. An Ancient Maritime City*] (Athens, n.p., 1999), 151–178.

16 Data from Gelina Harlaftis and Nikos Vlassopoulos, *Historical Register Pontoporia* (Athens: ELIA, 2002).

17 Nautical Historical Museum of Galaxidi, f. 690, Account book of the brig *Aghia Paraskevi* (1858–1860), 1–55; f. 414, Logbook of the barco-bestia (barque) *Assimoula* (370 tons),

MAP 10.1 Galaxidi
SOURCE: FREE VECTOR

transformation into a leading grain-export market, had inflated sea transportation and inevitably attracted the Galaxidiots along with the adjacent Ionian fleets. Indicatively, the brig *Altana* (277 tons), in her consecutive long-distance voyages between 1871 and 1877, connected the Ottoman ports (Constantinople, Alexandria, Smyrna), the Danubian ports (Galatz, Sulina, Braila), Odessa and the Crimea (Kerch), and the Azov Sea (Berdyansk) with western markets.

1882–1885; f. 579, Logbook of the brig *Alexandros* (249 tons), 1884; f. 667, Provisions book of Aghios Pantelehmon, 1887; f. 698, Account book of *Aghios Pantelehmon*, 1873–1877.

TABLE 10.1 The fleet of Galaxidi's sailing ships (nineteenth century)

Year	Number of vessels	Tons
1830	10	1,668
1840	64	11,448
1850	163	33,662
1860	159	29,059
1870	319	64,034
1880	213	45,190
1890	130	29,879
1900	25	6,959

SOURCE: GELINA HARLAFTIS AND NIKOS VLASSOPOULOS, *HISTORICAL REGISTER PONTOPORIA* (ATHENS: ELIA, 2002). THE REGISTER INCLUDES SHIPS BIGGER THAN 60 TONS

Grain and timber were shipped to the Italian peninsula (Trieste, Castellamare di Stabia, Naples, Messina), Marseilles, Spain (Tarragona, Barcelona), and even beyond Gibraltar, to southern England and Wales. From the ports of Lowestoft, Falmouth, Newry, Swansea, and Cardiff coal was freighted on the *Altana* back to Trieste, Piraeus, or Galatz.[18]

This extended shipping business relied on 130 families and almost 1600 seafarers, who owned and manned the sailing ships of Galaxidi.[19] Shipping and trade was at its core a family business, and therefore family members provided the capital in joint ventures and worked onboard. An accurate demographic profile of Galaxidi is not an easy task due to the inconsistent nature of the official censuses and the discrepancies among the published statistics.[20] However, a safe assumption is that in the second half of the nineteenth century Galaxidi had marginal population growth with just over 4,000 residents. A significant drop is manifested in the early decades of the twentieth century, which corroborates with the outflow of the male population in response to the economic stagnation of this time, channelled through Patras to the United States or towards the new national port of Piraeus. The vast majority of the male

18 Nautical Historical Museum of Galaxidi, f. 691, Logbook of the brig *Altana* (277 tons).

19 Gelina Harlaftis and Katerina Papakonstantinou (eds.), *Η ναυτιλία των Ελλήνων, 1700–1821* [*Greek Shipping, 1700–1821*] (Athens: Kedros & Ionian University), 355–370.

20 Skiadas, *Γαλαξειδι*, 36–37. For example, in several cases, data from Galaxidi is merged in the statistics with data from the adjacent villages of the district of Parnassida.

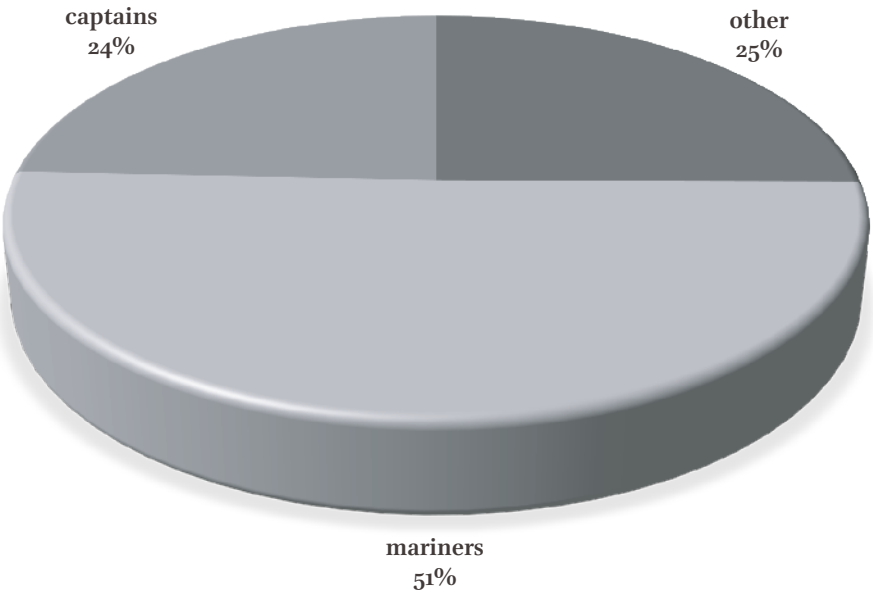


CHART 10.1 Division of male labour in Galaxidi (N of population = 1315)
SOURCE: GENERAL STATE ARCHIVE OF GREECE, VLACHOGIANNIS COLLECTION, ELECTION MATERIAL, F. 44, ELECTORAL REGISTERS FROM THE PROVINCE OF PARNASSIDA, GALAXIDI (1865)

population was involved in maritime occupations. Drawing upon the electoral registers of 1865 (see Chart 10.1), 50% of all males were registered as mariners, while one-quarter of the entire population were recorded as captains. The latter were also shipowners, as there is no distinctive category in the electoral registers. Among the remainder of the population, we can identify further sea-related professions, such as caulkers, carpenters, smiths, and shipwrights. From the division of male labour, the reliance of the entire community on the sea becomes apparent.

The numerous sailing ships of the coastal town had created a vibrant labour market. Crews were composed primarily of family members, as shown in the ledgers of the brig *Aghia Paraskevi*, where the three sons of the shipowner M. Papapetros appear on its crew list in 1858.[21] The crew lists and payrolls include, besides Galaxidiots, an elevated number of seamen from the Greek islands (Skopelos, Skiathos, Samos, Hydra, Ithaca) and coastal towns

21 Nautical Historical Museum of Galaxidi f. 690, Account book of the brig *Aghia Paraskevi*, 14.

(Messolongi, Kranidi) of the Aegean and the Ionian.[22] In addition to the abundant local labour force, foreign seamen were also employed on Galaxidiot ships: Spaniards and Portuguese were enrolled on the *Aghia Paraskevi* for several years.[23]

Although women are silent in the electoral registers, they were significant economic agents in local society, and their role and contribution to the business of shipping was substantial. The prolonged absence of the male population at sea empowered women in maritime communities, who were left behind to cater for the family and the business. Two widows were listed as the owners of the schooner *Demetrios* (139 tons) in the Ships' Register,[24] while the shipowner Lazaros Agouras declared in front of the notary that he wished to bequeath his vessel *Miltiades* solely to his wife, in the event of his death.[25] Women were educated in primary and secondary schools,[26] and as the notarial deeds manifest, women owned or partly owned ships,[27] undertook their management after the death of their spouses, and were entitled to buy or sell vessels. Through marriage and dowries, business partnerships were solidified and capital was invested in shipping. The dowries included money, jewellery, properties, clothing, and houseware, while the groom was obliged to make a counter-donation in response.[28]

Besides shipping and trade, maritime communities promoted further sea-related services, such as provisions or insurance. A special feature of Galaxidi was the shipbuilding industry that contributed significantly to the economic growth of the town.[29] The majority of the fleet was built locally, while Galaxidi was one of the most important wooden shipbuilding sites in the eastern Mediterranean, receiving orders predominantly from the Ionian

22 Nautical Historical Museum of Galaxidi, f. 690, Account book of the brig *Phoenix*, 29, 59, 43; f. 689, Draft book of payrolls of the brig *Taksiarhis*, 25.

23 Nautical Historical Museum of Galaxidi f. 690, Account book of the brig *Aghia Paraskevi*, 34–35.

24 Nautical Historical Museum of Galaxidi, f. 585, Register of second-class sailing ships of the port of Galaxidi, 15 September 1903, 190.

25 Historical Notarial Archive of Galaxidi, Notary El. Kamvyssis n. 3165, 15 December 1900.

26 Historical Notarial Archive of Galaxidi, Notary El. Kamvyssis n. 445, 23 May 1880.

27 Rodo Hardavela inherited properties and shares of the family-owned steamer from her brother: see Historical Notarial Archive of Galaxidi, Notary El. Kammenos, n. 5642, 2 March 1908.

28 Historical Notarial Archive of Galaxidi, Not. El. Kamvyssis, n. 2879, 9 April 1900; Notary Ch. Kyrkos, n. 61, 1 January 1865.

29 Maria Synarelli, *Δρόμοι και Λιμάνια στην Ελλάδα, 1830–1880* [*Roads and Ports in Greece, 1830–1880*] (Athens: ETVA, 1989), 121.

fleets.[30] The long-lasting shipbuilding tradition and the booming market attracted foreign craftsmen, who wished to learn the craft in situ, creating a diverse body of artisans and workers in the shipyards.[31] The chief shipwrights, without any theoretical training, were esteemed members of local society, and in several cases were directly related to shipping families. The chief shipwright Konstantinos Papapetros was originally a shipowner and captain of six vessels.[32] At a later stage of his life, inspired by his travels in foreign shipyards, he embarked on the design and construction of wooden sailing ships, while his designs gained acclaim across Europe. He was also elected mayor of Galaxidi for three consecutive terms as a token of his social and political capital.[33]

The prolific production of sailing ships required several sites designated for shipbuilding in Galaxidi. Besides the main port that was used for the construction of vessels, several sandy beaches at the outskirts of the town were designated shipyards on a seasonal basis. Two of the sites were municipal and rented out on demand, while the rest of the shipyards were private.[34] Until the first decades of the twentieth century, Galaxidiot shipyards would continue to deliver orders, although they were reduced in numbers. The strong ties between the wooden shipbuilding industry and local shipping families has been associated with the alleged reluctance of Galaxidiots to adopt the novel technology of steam, compared to other maritime communities in Greece, such as Cephalonia or Andros that swiftly appropriated the novel technology, whilst they did not share the shipbuilding tradition. The transition to steamers naturally had a detrimental impact on a vital sector of the local economy, ushering in stagnation, as mirrored in the dwindling figures of the fleet (see Table 10.1). However, the example of the chief shipwright is illustrative of a society struggling between continuity and change. The Papapetros family, in a joint venture with other local shipowners, invested in the iron steamship

30 There are quite a few cases in the Greek Register of ships built in Galaxidi and registered predominantly in the Ionian Islands, such as e.g., the brig *Aghios Ioannis* (174 tons) of A. Andreopoulos built in 1866 in Galaxidi and registered in Zante (Greek Register 1-9/1877). The connection with the Ionian Islands is further corroborated through the notarial archive of Galaxidi, through deeds on orders and purchase of vessels.

31 *Parnassos*, no. 56, 16 May 1872. The local newspaper describes a vivid community of shipwrights and artisans, out of whom 50 were locals and 250 foreign craftsmen; Efthimios Gourgouris, *Το Γαλαξείδι στον καιρό των καραβιών* [*Galaxidi in the Age of Ships*], vol. 2 (Athens, n.p., 1983), 441–451; 531–533.

32 K. Papapetros is not the sole example. Another documented chief shipwright is Anagnostis Michalopoulos. His son, Nicholas, followed in his father's footsteps and became one of the last great shipwrights, while the Michalopoulos family owned several sailing ships.

33 Stathaki-Koumari, *Ο Αρχιναυπηγός Κωνσταντίνος Μ. Παπαπέτρος*, 37–64.

34 Gourgouris, *Το Γαλαξείδι στον καιρό των καραβιών*, vol. 2, 452.

Andromache (2,017 grt) that was built in England and registered in Galaxidi in 1903.[35]

Despite its small size, Galaxidi, like all maritime communities, was an extrovert society, described by contemporaries as "similar to a European town", connected to the world through the sea. Since 1872 there was a telegraph office, a local branch of the National Bank of Greece, branches of insurance companies, and a local agency of the first Greek Register *Archangelos*.[36] In addition to shipbuilding, further sea-related services flourished in the town, such as marine insurance. Due to the sophistication of the shipping market, there was a rising assessment for risk, which made insurance imperative against all liabilities. Very high premiums in the national and international markets resulted in the idea of local clubs, where shipowners came together to insure each other.[37]

TABLE 10.2 Mutual insurance companies founded in Galaxidi (nineteenth century)

Name	Date of foundation
Galaxidi	1860*
Galaxidi [2]	1866**
Union	1870
Peace	1874
Fraternity	1880***
Concordia	1883
Oeanthe	1885
The Saviour	1886

SOURCE: NAUTICAL HISTORICAL MUSEUM OF GALAXIDI, COMPILATION OF DATA FROM F. 710, F. 721, F. 729.

NB: *"Statute of the mutual insurance company Galaxidi," *Journal of the Greek Government* (*FEK*) no. 29, 22 June 1860** Historical Notarial Archive of Galaxidi, Notary Ch. Kyrkos, n. 486, 31 December 1866. The two consecutive companies were founded under the same name: Galaxidi; *** Historical Notarial Archive of Galaxidi, Notary El. Kamvissis, n. 87, 15 January 1880

35 Nautical Historical Museum of Galaxidi, f. 585, Register of second-class steamers of the port of Galaxidi, 13 February 1903.

36 Michael Grigoropoulos, *Περιήγησις εν Ελλάδι* [*Travels in Greece*] (Athens: n.p., 1885), 46–47.

37 The idea of mutual insurance companies is originally attributed to Genoa. See, in the present volume, the contribution by Leonardo Scavino.

In Galaxidi, in the second half of the nineteenth century, there were several insurance cooperative companies in force (see Table 10.2), founded primarily by shipowners with the addition of local merchants and notables, and with quite a wide membership (e.g. *Galaxidi* with 100 members and *Union* with 85 members).[38] The mutual insurance clubs effectively replaced the commercial companies that operated at the time, and were embedded in personal relationships and trust among their members, as well as being involved in the close inspection of the conditions of insured ships. Initial capital was not required, and each member participated in the club with a percentage that was calculated upon his ship (s) size, the quality of its construction, and age. Liabilities covered the ship and not the cargo, in case of seizure, damage, or shipwreck. In the event of a calamity, the cost was assessed and apportioned to the members according to their percentage of participation in the club. The function of such cooperative ventures facilitated procedures, and assured swift indemnity to the shipowners.

3 The Challenge of Technology: Adaptation and Resistance

The prevalence of steam in navigation came rather late in Greece compared to western Europe. In the second half of the nineteenth century wooden sailing ships were omnipotent in shipping and maritime trade due to their speed and cargo capacity, and it was not until the turn of the twentieth century when the total tonnage of Greek steamers decidedly surpassed the tonnage of sailing ships.[39] In this transitory period, Galaxidi has been portrayed as a typical example of conservatism, i.e. a traditional maritime community fearful of innovation and attached to the traditional means and modes of production. The strong shipbuilding sector and the pride in their sailing ships, whose masts were painted white to stand out in international ports, had allegedly undermined the transition to steamers. However, a closer look at the composition of the fleet at the turn of the twentieth century disproves this allegation. In the course of this research project, from a compilation of primary and secondary sources, we witness a rather sizeable fleet of Galaxidiot steamers.[40] From the 1880s, shipowners from Galaxidi invested in steamers, and on the eve of

38 On the statutes of these companies, see "Decree on the foundation of the Public Insurance Company in Galaxidi," *Journal of the Greek Government* (FEK), no. 29 (22 June 1860): 165–170; Nautical Historical Museum of Galaxidi, f. 736, Mutual insurance, list of members of the "Union".

39 Gelina Harlaftis, *A History of Greek-Owed Shipping*, 135.

40 See the Appendix for the entire list of ships as well as the sources.

the First World War they owned more than 50 steam ships. The average size of the steamers has been estimated at 835 net tons, which was slightly below the national average of 976. The vessels were bought from the British market (e.g. Hull, Sunderland, Southampton), and due to a sparsity of information we can only presume they were bought second-hand. The vast majority of these were bulk carriers deployed in the sea routes of the Black Sea and the eastern Mediterranean, although there are several cases of passenger liners, such as the *Phokis* and *Doris* owned by El. Zacharias & Co, that served several ports on the Corinthian Gulf, including Galaxidi, Patras and the Ionian Islands, in the interwar period.

Unlike sailing ships, steamers were now preferentially registered in Piraeus, while only a few were registered in Galaxidi or the adjacent port of Patras (see Chart 10.2). The shift towards the new national port became imperative, as Piraeus was transformed into a transport node along with the centre of maritime trade and the headquarters of the shipping sector. The advent of steam and steel did not only affect the ship, it also revolutionized the conduct of everyday business, while international markets became interconnected and integrated. Galaxidiots relocated their business in Piraeus to access cargoes, coal, and freight.

From a body of 130 families recorded in the historical register as owners of sailing ships during the nineteenth century, thirty families invested in steam.[41] This fraction represents almost a quarter of the shipping population and mirrors a vivid interest by Galaxidiots in technological innovation in the sector. Therefore, the real question does not lie on the appropriation of new technology by the traditional community, rather on the endurance of Galaxidiots in the new economic environment of globalizing shipping, and on the longevity of their businesses. The evidence from the first half of the twentieth century attest to short-lived steam navigation companies that were smothered by international competition and the restructuring of maritime transport, networks, and markets.

Changes in maritime transport required excess capital for the construction and operation of steamers. The proper height of the investment was a deterrent for incomers in the market. However, the group of investors in steam shipping was composed of some of the most powerful local shipping families with numerous sailing ships, such as the Dedoussis, Kammenos, Papapetros, and Charopoulos families, as well as of smaller families, such as the Marlas, Therianos, or Zissimos, who saw perhaps in the new technology an opportunity

41 Data from Gelina Harlaftis and Nikos Vlassopoulos, *Pontoporeia. Historical Register of Sailing Ships and Steamers 1830–1939* (Athens, 2002), and Appendix.

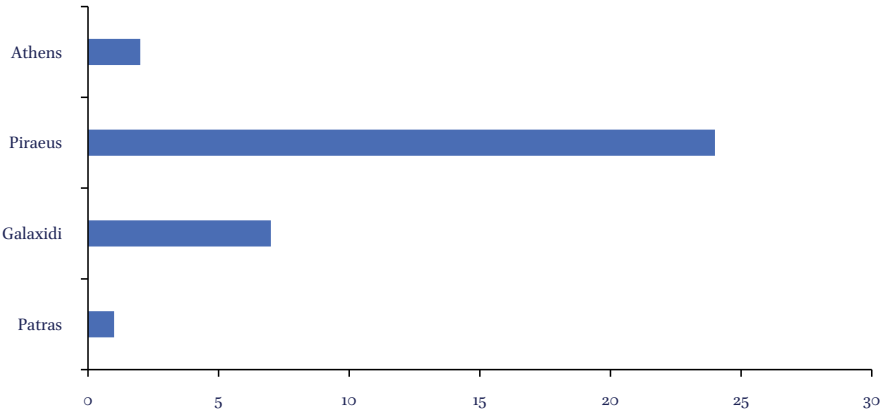


CHART 10.2 Ports of register of Galaxidi steamers
SOURCE: GELINA HARLAFTIS, HELEN BENEKI, AND MANOS HARITATOS, *PLOTO, GREEK SHIPOWNERS FROM THE LATE EIGHTEENTH CENTURY TO THE EVE OF WWII* (ELIA/NIARCHOS FOUNDATION, 2003); SEE ALSO ANASTASSIOS SKIADAS, *ΓΑΛΑΞΕΙΔΙ. ΜΙΑ ΠΑΝΑΡΧΑΙΑ ΠΟΛΙΤΕΙΑ*. [*GALAXIDI. AN ANCIENT MARITIME CITY*] (ATHENS, 1999), 202–203; NAUTICAL HISTORICAL MUSEUM OF GALAXIDI, F. 585, REGISTER OF SECOND-CLASS STEAMERS OF THE PORT OF GALAXIDI

to augment their share of the market. Limited capital reserves promoted cooperation among shipowners, a common practice already from the age of sail. Co-ownership of steamers was the rule, rather than the exception, as contemporary journals refer to "group(s) of shipowners from Galaxidi who negotiate in England the purchase of a new steamer".[42] Partners were primarily sought among the fellow Galaxidiots, among kith and kin, and thus related extended families join forces, as was manifested in the *Andromache*.[43] In a few cases partnerships were also formed with shipowners from the Greek diaspora (e.g. Constantinople) or Patras.[44] The high cost of the investment allowed also for the participation of minor investors, not necessarily of a maritime background. Captain George Douratsinos, in a letter to his wife in Galaxidi, happily announces the purchase of three shares in the postal steamer of his fellow countrymen, which is not only seen as a solid investment but as a first step towards ship-ownership.[45]

42 *Η Ναυτική Ελλάς* [*Maritime Greece*], no. 1 (15 April 1901).

43 Nautical Historical Museum of Galaxidi, f. 585, Register of second-class steamers of the port of Galaxidi, 13 February 1903.

44 *Sphera*, 18 November 1905.

45 Private Archive of the Douratsinos Family, Letter of George Dourastinos to his wife, Vassiliki. Piraeus, 29 September 1919. The shares cost 3,500 drachmas each.

The lack of liquidity was further mitigated by the operations of the Bank of Athens, the sole institution that became involved in investment in steam shipping. Since the late 1890s, the bank had issued loans for the purchase of steamers and retained ownership of the ship until the repayment of the loan. It is estimated that the bank fertilized the new shipping market by subsidizing approximately 50 Greek steamers by the first decade of the twentieth century.[46] Galaxidiots, along with other Greek shipowners, turned to the Bank of Athens for a loan and mortgaged their assets, such as properties or bonds.[47]

To reinforce the domestic shipping market, as well as to physically unite its territory and exert its power across its lands, the Greek Kingdom granted postal subventions. This was a common practice among European states, that ascribed great importance to the quick and reliable circulation of mail and information. Countries such as Britain, France, Germany, Austria, Denmark, Spain, Russia, and Greece offered concessions and tax exemptions to steamship companies in exchange for the delivery of mail and all other necessary activities for public service.[48] In 1903, S. Baltazzis and G. Marlas were among the few companies that were granted a yearly postal subvention. Their steamers *Epirus* and *Galaxidi* were placed in the service of domestic and international lines, as they would connect monthly the ports of the Black Sea, the Azov, and the Danube with the ports of the eastern Mediterranean.[49]

While the business community tried to adapt to the fluid economic circumstances and exploit the available resources, such as loans, state subsidies, and local networks to enter the market of steam, what seems more elusive are the reactions of the local community to this and their perception of technological innovation. In 1891, a nautical association was established in Galaxidi, under the name *Triton* with a progressive agenda, in an attempt to familiarize and reconcile the community with the novel socio-economic reality.[50] The aim of the association was: a) the maintenance, development, and promotion of

46 Christos Chatziiossif, *Η γηραιά Σελήνη. Η βιομηχανία στην Ελληνική Οικονομία, 1830–1940* [*The Old Moon. Industry in the Greek Economy, 1830–1940*] (Athens: Themelio, 1993), 55, 62.

47 Historical Notarial Archive of Galaxidi, Notary El. Kamvissis, n. 4496, 23 January 1905.

48 Marie-Françoise Berneron-Couvenhes, "La concession des services maritimes postaux au XIX^{e} siècle. Le cas examplaire des Messageris Maritimes," *Revue* 58.1 (2007): 259–276; Katerina Galani, "Coastal shipping," in *Ship Posters. Voyages in the Mediterranean and Across the Oceans, Nineteenth–Twentieth Centuries*, ed. Katerina Papakonstantinou, (Athens: Melisssa, 2011), 35–54.

49 "Agreement of the directory of post and telegraph," *Journal of the Greek Government* (*FEK*) no. 109 (29 May 1903): 330–340.

50 "Royal Decree on the approval of the statute of the Nautical Association Triton in Galaxidi," *Journal of the Greek Government* (*FEK*), no. 306 (4 November 1891): 1105–06; Historical Notarial Archive of Galaxidi, Notary El. Kamvissis, n. 2061/1891.

merchant shipping, reiterating the close connection of the town with the sea; b) the establishment of a maritime library in Galaxidi and the publication of books and treatises that would educate the population and assist seafarers on their duties; and c) the recommendation of the most fit and able masters to steamship companies and owners of steamers. This initiative permeated different levels of local society and it proactively promoted steam shipping on a local level. Along with the acculturation of Galaxidiots, it raises one of the issues most resonant among local society, related to the transition from sail to steam: the transfiguration of the labour market.

Changes in shipbuilding technology as well as the expulsion of sailing ships from the markets, led to the contraction of the labour force and alterations to working relations. In addition to shipwrights and other craftsmen that witnessed the decline of wooden sailing ships in the shipyards of Galaxidi, the crews underwent major changes. In the sailing-ship economy, the captain in the majority of cases was also the shipowner, while the ship was manned by local seafarers, who had developed close professional and personal relations over the years. These relations onboard were also transferred ashore, consolidating the coherence of the community. Families were interconnected through marriage, spiritual relations, business partnerships, and patronage links.[51]

From the entire population of shipping families of Galaxidi, those who did not invest in the new technology of steam were gradually driven off the market. Former shipowners and masters of sailing ships were in practice left unemployed, while the shift towards other professions was uncommon in a maritime community. In the new labour market of the steam era, captains, who represented one-quarter of the male population of Galaxidi, were now employed as waged, licensed officers in domestic or foreign steamers.[52] This tangible transformation in the labour market was accompanied by disruptions of the social fabric of the town and a more rigid stratification of society.

The new, bigger, and international labour market demanded the regularization and certification of nautical education and training. Therefore, nautical schools were widely spread across the Greek dominion in the islands and maritime communities (Hydra, Spetses, Argostoli, Ithaca) where seafarers originated. In Galaxidi, a nautical school was established in 1867 as an extension

51 For the social relationships created among the shipping families of Galaxidi, see, for example: Historical Notarial Archive of Galaxidi, Notary D. Mitropoulos, n. 3112/17 February 1870, Dowry Agreement.

52 The Nautical Historical Museum of Galaxidi holds in its collections several diplomas of captains (see f. 702, f. 357).

of secondary education and remained in operation for decades.[53] In addition, private tutors (nautical teachers), undertook the training of young seafarers. Nautical studies were upgraded through several legislative acts, combining both theoretical and practical courses in alignment with the developments of the industry.[54] From 1882 onwards, the curriculum was reorganized, with the introduction of steam-engineering, to train deck officers for a career in steamships.[55] Entry to higher education and advanced nautical studies was crucial for the local elite in Galaxidi to sustain its socio-economic status and improve its professional prospects.

The contraction of the labour market locally spurred the mobility of seafarers towards the port-cities, in seek of employment, while their families were left behind. Mobility was further prompted in seek of technical education. The introduction of technology onboard, the evolution of the ship and of navigation, and the new professions related to the steam engine, required new skills.[56] While nautical education was decentralised, technical training, and especially apprenticeships, were concentrated in ports and industrial sites. In Greece, until the late 1930s, the state had limited involvement in technical education, that relied on private initiatives. Municipalities, philanthropic organizations, as well as industrialists and shipowners, organized and funded technical schools as a response to the growing needs of the labour market. Technical institutions mushroomed in Piraeus, and combined theoretical modules with applied engineering, as they were mostly evening schools that allowed students to work their way through their studies in local machine shops, shipyards, and factories. Technical professions were an ideal career path for underprivileged young males, who did not have necessarily a maritime background.[57] It allowed social ascension and acknowledgement; wage

53 "Royal decree on the establishment of nautical schools," *Journal of the Greek Government* (*FEK*), no. 28 (4 May 1867): 204–5.

54 Stratis Bournazos, "Η εκπαίδευση στο ελληνικό κράτος, 1900–1922" ["Education in the Greek state, 1900–1922"], in *Ιστορία της Ελλάδας του 20ού αιώνα* [*History of Greece in the Twentieth Century*], ed. Christos Chatziiossif (Athens: Vivlioorama, 1999), 193.

55 "Law ΑΛΘ' on the establishment of nautical schools," *Journal of the Greek Government* (*FEK*), no. 60 (2 July 1882): 289–291; "Royal Decree on the establishment of nautical schools," *Journal of the Greek Government* (*FEK*), no. 23 (19 April 1867): 173.

56 Giannis Antoniou, *Έλληνες Μηχανικοί. Θεσμοί και Ιδέες, 1900–1940* [*Greek Engineers. Institutions and Ideas, 1900–1940*] (Athens: Vivlioorama, 2006), 141–145; Ioakim Paulidis, *Περί τεχνικής εκπαιδεύσεως και της εφαρμογής αυτής εν Ελλάδι* [*Technical Education and its Application in Greece*] (Athens: n.p., 1902).

57 Jari Ojala, Pirita Frigren, and Ann Ojala "'The poor man's goldmine?' Career paths in Swedish and Finnish merchant shipping c. 1840–1950," *Scandinavian Journal of History*, no. 42.5 (2017): 583–607.

data from Mediterranean countries (Greece, Spain, and France) corroborate an equation of earnings between engine and deck officers.[58]

4 Migration to Piraeus and the Formation of a National Port

In the second half of the nineteenth century, the central political planners nominated Piraeus, neighbouring the new capital of Athens, as the first port of the Greek Kingdom, overthrowing Syros and Patras.[59] Land was granted to settlers from the Greek dominion (the Peloponnese and the Aegean islands) and refugees from the Ottoman Empire, who swelled the population of the city.[60] Immigrants settled in designated quarters, based on their origin, in proximity to the port and articulated the cityscape.[61] On the waterfront, port infrastructure developed to accommodate the ever-growing port-traffic. This entailed dredging and dock works, the construction of customs, quarantine and port authority establishments, lights, warehouses, and floating cranes.[62] There were also three private shipyards in operation for the construction and repair of steamers, along with smaller shipyards for sailing ships. Staples were imported from the Greek dominion, the eastern Mediterranean and the Black Sea, while manufactured goods came from western Europe. Around the port, a maritime centre was being formed providing services to shipping and trade, including agencies and offices for domestic and international steam ships companies, insurance agents, banks, the Stock Exchange, coaling traders, and warehouses, ship chandlers, consulates and embassies, migration agencies et al.[63] The

58 Enric Garcia Domingo, "Engine drivers or engineers: ships' engineers in the Spanish merchant navy, 1834–1893," *Journal of Mediterranean Studies*, no. 19 (2010): 259.

59 Υπουργείον Οικονομικών, Στατιστικόν Γραφείον, *Εξωτερικόν εμπόριον της Ελλάδος κατά τα έτη 1881 και 1882* [*Ministry of Finance, Statistics Office, External Trade of Greece, 1881, 1882*] (Athens: n.p., 1884), 56–57, 96–97.

60 Vassias Tsokopoulos, *Πειραιάς 1835–1870*, 53–61, 83–95; Christina Agriantoni, *Οι απαρχές της εκβιομηχάνισης στην Ελλάδα τον 19ο αιώνα* [*The Begininig of Industrialization in Greece in the Nineteenth Century*] (Athens: Katarti, 1986), 108–110.

61 Marianthi Kottea, *Η βιομηχανική ζώνη του Πειραιά* [*The Industrial Zone of Piraeus*], (Athens: Panteion University Press, 1995), 13.

62 Maria Synarelli, *Δρόμοι και Λιμάνια στην Ελλάδα, (1830–1880)* [*Roads and Ports in Greece (1830–1880)*] (Athens: ETVA, 1989); Angeliki Pardali-Lainou, *Η εξέλιξη του λιμανιού του Πειραιά και η επίδρασή του στην ανάπτυξη της ευρύτερης περιοχής του Πειραιά (1835–1985)* [*The Evolution of the Port of Piraeus and its Impact on the Development of the Wider Region of Piraeus (1835–1985)*] (Ph.D. diss., Panteion University, 1990).

63 Spyros Spyridonidou, *Πειραικόν Ημερολόγιον του έτους 1895 μετά Οδηγού* [*Journal of Piraeus for 1895 Along with a City Guide*] (Athens: n.p., 1895); Georgios Alexakis, *Πλήρης Οδηγός του Πειραιώς* [*The Complete Guide of Piraeus, 1906–1907*] (Piraeus: n.p., 1906), reprinted in 1990.

industrial district expanded in the north front of the port, and Piraeus became the foremost industrialised Greek city. The steam engine was employed in textile factories, food processing, (flour, pasta, beverages), and metallurgy, while a number of machine shops operated in the industrial zone. The railway was launched in 1869, connecting the port-city with Athens, and combined the transport of products from the hinterland to the industries, the domestic, and the international markets.

Galaxidiots, along with other maritime populations from the islands and coastal towns (Hydra, Chios, Crete), were drawn to Piraeus at the turn of the twentieth century, in pursuit of the shipping market that became both national and global at the same time. Unlike other maritime populations that settled early on, the movement of Galaxidiots was not decreed by the central authorities;[64] it was therefore less organized and individual. During the first decades of the century, Galaxidiots were part of the floating population of the port; seafarers would remain in Piraeus for several months, in between voyages, to settle their accounts and seek their next enrolment. During this time their families would remain at home, and women and children would make occasional trips to the port-city and Athens, mostly for business or recreation.[65] The more permanent establishment of entire families was manifested in the interwar period, instigating a dramatic depopulation of Galaxidi.[66] This rather late permanent settlement in the national port can be attributed to the systematic, albeit short-lived, effort to participate in the steam shipping market while retaining their connection to their home town.

Galaxidiots who settled in Piraeus belonged to all social strata. Along with other settlers, they were integrated into this new, vigorous city and participated in its commercial and business life. This included industrialists, manufacturers, petty shopkeepers, owners of restaurants and coffee shops, doctors, and chemists. Notwithstanding, the majority of migrants, settlers, and sojourners were engaged in maritime professions: shipowners, mariners, insurance agents, brokers and ship chandlers, and coal and iron merchants.[67]

64 There are a number of royal decrees on the settlement of other maritime populations, e.g.: "Royal decree on the granting of land plots in Piraeus to Chiots," *Journal of the Greek Government* (*FEK*), no. 5 (27 February 1835), 43.

65 Private Archive of Vassileios Krikos. In an undated (1912?) letter to his wife, the chief engineer gives a detailed list of furniture to be bought to Piraeus for their new home, along with general instructions on her safe sojourn in the port.

66 Skiadas, *Γαλαξείδι*, 198.

67 Alexakis, *The Complete Guide of Piraeus, 1906–1907*; Ioannis Mitropoulos, *Γαλαξείδι* [*Galaxidi*] (Athens: n.p., 1970), 380.

One of the principal reasons for moving to Piraeus, either in a transient or permanent way, was the access to a more complex labour market. The recruitment process would combine both traditional and more modern ways. Word of mouth remained one of the most effective ways of securing a placement on a ship, embedded in a network of friends and relatives. Interpersonal relations, trust and reputation were instrumental in the composition of the crew, especially for deck and engine officers, to ensure untroubled and safe journeys. "You write that my friend Pilalis (captain) asked for me to be his first engineer on the *s/s Agios Ioannis*. I wish this too (…) Therefore, I enclose a letter to my friend Pilalis and let father hand it to him."[68] Galaxidiots, due to their long-lasting maritime tradition, had a good reputation as able deck officers and seamen. Therefore, they were preferentially employed on Greek steamers, such as in the case of the Courtgis Steamship Company from the island of Lesvos, that preferentially hired officers and crews from Galaxidi.[69] Shipowners from Galaxidi would unquestionably recruit their compatriots in their steamers, reproducing the practices of the sailing-ship economy. The crew list of the *s/s Raina*, when it sank in 1905, records 27 men: deck and engine workers all of the same origin.[70] As the crew lists manifest, Galaxidiots had entered the steam rooms both as engineers and stokers. While traditional modes of recruitment were still active, they coexisted with more progressive attempts to monitor the labour market. The regulations for the first Hellenic Steam Navigation Company (HSNC), issued in Syros in 1862, prohibited the employment of family members on steamers. In addition, sailors from a single place of origin could only compose up to half of the entire crew.[71]

In Piraeus, the port district was filled with workshops, offices, and agencies, where information circulated. The coal warehouse of fellow countryman E. Kammenos, or the homonymous coffee house Galaxidi, were transformed into unofficial shipping and recruitment offices, where Galaxidiots met, received news and letters from home and set up their business.[72] Following the prototype of Lloyd's Coffee House in London, several coffee houses in the

68 Private Archive of Vassilieios Krikos, Letter to his wife Assimo in Galaxidi, Sulina, 30 November 1911.

69 Michael Kaitatzidis, *Aegean Steam Navigation P.M. Courtgis & Co, 1883–1911* (Patras: n.p., 2009).

70 *Sphera*, 18 November 1905; *Sfera*, 19 November 1905. The ship was co-owned by Marlas and Papageorgiou, both from Galaxidi.

71 *Regulations for the Maritime Service of Greek Steam-Shipping* (Hermoupolis, 1862), articles 18–19, 9.

72 Private Archive of George Douratsinos, Letter to his wife Vassiliki in Galaxidi, Piraeus, 10 October 1911.

bustling roads of the port city attracted distinctive groups of maritime professionals, such as engineers or captains, students in the nautical schools, ship chandlers, and retired mariners.[73] The prices of cargo, freight, and international news were discussed, while business transactions took place. However, as the shipping sector grew bigger, international, and more impersonal, recruitment agencies made their appearance in the port, providing their services for a fee. Vassileios Krikos, first engineer, writes back to his wife in Galaxidi about his expenses at Piraeus, and records that he paid 60 francs to a designated office that recommended him to the *s/s Vrontados*, a Chiot steamship owned by Andreadis.[74]

With the globalization of the shipping sector, the labour market gradually became international; foreigners were brought onboard—especially engineers in the early stages of steam shipping—and Greek seamen were also employed on foreign steamers, which were presumably better paid placements.[75] In the transitory period during the second half of the nineteenth century, the introduction of technology onboard, the internationalization of the market, as well as the composition of crews, altered the working conditions onboard. On bulk carriers, the prolonged journeys and the absence of seamen from home, the especially hard conditions in the engine rooms, and the segregation and alienation of the crew, had a hard impact on seafarers and their families at home. As one seaman writing to his wife said: "it will be better for you if I work on a postal ship (…) Postal ships avoid long journeys, rough seas and the parting life from loved ones."[76]

Galaxidiots had an indelible imprint on the maritime circles of the city. The multifarious, mixed, maritime community of Piraeus underwent a series of changes brought about by governmental and private initiatives. In a fluid labour market, transformed under the pressure of industrialization, workers of the sea claimed their rights collectively through professional unions.[77] In the

73 Katerina Galani, *British Shipping in the Mediterranean During the Napoleonic Wars. The Untold Story of a Successful Adaptation*, (Leiden and Boston: Brill, 2017), 55–62; Brian Cowan, *The Social Life of Coffee: the Emergence of the British Coffeehouse* (New Haven: Yale University Press, 2005).

74 Private Archive of Vassilieios Krikos, Letter to his wife Assimo in Galaxidi, Piraeus, 27 February 1915.

75 *Sphera*, 17 July 1905 (foreigners on the crew lists of Greek merchant ships).

76 Private Archive of Vassilieios Krikos, Letter to his wife Assimo in Galaxidi, Sulina, 30 November 1911.

77 *Sphera*, 20 December 1906; idem., 23 December 1906. For equivalent initiatives in Europe, see Karel Davis, "Local and global: seafaring communities in the North Sea area, c. 1600–2000," *International Journal of Maritime History*, no. 27.4 (November 2015): 637–640.

city guide of 1906, there is already an active "Association of Stokers".[78] In the same year, sailors in a number of Greek steam ship companies went on strike for several days, creating havoc in the port and in the commercial community of the city, that led to a need for mediation from the Greek government. While a Seamen's Pension Fund was officially established by royal decree in 1861, the Union of Masters of the Merchant Marine was founded in Piraeus in 1903, on the initiative of the Galaxidiot Char. Primas, who was elected its first president.[79] Shipmaster associations arose in a number of ports, such as Rotterdam(1897), Amsterdam (1901), Liverpool (1881), and London (1889) to defend the interests of navigating officers against employers, governments, or even foreign seamen who contested the labour market.[80] But employers also formed their own professional associations. The Union of Greek Shipowners was founded in 1916 to fend for the interests of owners of Greek sailing ships and steamers around the world. Ioannis Charopoulos from Galaxidi sat on its governing board for five consecutive terms, until 1920.[81] Participation in professional unions, local associations, or philanthropic societies by incomer Galaxidiots were mechanisms for the formation of new urban hierarchies.[82] Furthermore, they advanced social cohesion and assimilation into urban society, that was amalgamated by the immigrants who had settled in Piraeus.

Yet, they also retained a sense of community, with strong ties with their place of origin. In 1912, 30 members residing in Piraeus and Athens founded the Association of Galaxidiots, which is still active today.[83] The aim of this body, as described in its statutes, is moral and practical support to all Galaxidiots, and the pursuit of the wellbeing of the homeland.[84] Such initiatives were frequent in the port-city; they were social mechanisms for the integration of migrants into their new environment, to help with the living conditions of the working class, the appeasement of social tension, as well as being part of the expression of an urban culture in its infancy.[85] Islanders from Spetses, Kythnos,

78 Alexakis, *The Complete Guide of Piraeus, 1906–1907*, 92.

79 Mitropoulos, *Γαλαξείδι*, 380. On the Seamen's Pension Fund, see the chapter by A. Kapokakis in the present volume. Galaxidiots also served as members of the governing board of the union: see *Sphera*, 27 December 1906.

80 Davis, "Local and global," 637–642.

81 *Sphera*, 10 February 1916; https://www.ugs.gr/gr/who-we-are/history/former-board-members/ (accessed 14 October 2021).

82 Gekas, "Migrants, merchants and philanthropists," 121–122.

83 *Sphera*, 28 April 1912.

84 Archive of the "Association of Galaxidiots", minutes of general assemblies, 29 April 1912.

85 Giannis Kokkinakis, "Φιλανθρωπία, Τεχνικές Σχολές και Εργατικά Ατυχήματα στον Πειραιά το τελευταίο τρίτου του 19ου αιώνα," ["Philanthropy, technical schools and work accidents in Piraeus in the last third of the nineteenth century"] *Mnimon*, no. 21 (1999): 87–107;

Crete, Syros, and Kythera had already formed fraternities and charitable associations, promoting a sense of community among compatriots.[86] Membership was open to all concerned, without any social or economic discrimination, promoting solidarity.[87] Within the first year of its operation more than 130 members had registered in the Association of Galaxidiots, which is a proxy for the numbers residing at the time in the port-city.[88] Among its members, there were industrialists, shipowners, merchants, doctors, and mariners. Due to the composition of its governing board and its broad membership, in due course the association attracted esteemed residents of Piraeus, especially shipowners, who did not share the same origin. The Cephalonian A. Giannoulatos, K. Psaharopoulos from the island of Sifnos, and John MacDowall, engineer and shipowner, all requested membership.[89] It is evident that the body, in due course, had a substantial societal and economic impact on the port-city, carrying out philanthropic work, while it actively lobbied for the development of the road network in central Greece, that would finally connect Galaxidi by land with adjacent towns in the 1950s.[90]

5 Conclusions

Industrialization in the long nineteenth century permeated every aspect of the life and work of seafaring people. This chapter probed the reaction of a traditional maritime community to the sweeping changes brought about by technological innovation, and unveiled the struggle to adapt to the novel socio-economic reality. However, as the steam shipping sector became robust, weak players were expelled from the market while strong stakeholders were concentrated in the port-cities, such as Piraeus and thereon London, the foremost maritime centre. Although Galaxidiots invested in the new technology, as corroborated by their fleet of steamers in this time of transition, their ventures were short-lived. Succumbing to domestic and international competition, they

Robert Lee, "Configuring the city. In-migration, labour supply and port development in nineteenth-century Europe," *International Journal of Maritime History*, no. 17.1 (2005): 112–118.

86 Alexakis, *The Complete Guide of Piraeus*, 93–94.

87 Giannis Giannitsiotis, *Η κοινωνική Ιστορία του Πειραιά* [*The Social History of Piraeus*] (Athens: Nefeli, 2006), 295.

88 Archive of the "Association of Galaxidiots", minutes of general assembly, 26 May 1913.

89 Archive of the "Association of Galaxidiots", minutes of general assembly, 8 July 1912.

90 Archive of the "Association of Galaxidiots", minutes of general assembly, 8 July 1912. A committee, consisting of members of the association, presented a petition to the Greek Parliament in support of the road works in Galaxidi.

failed to consolidate their position in steam navigation in the twentieth century. The tremendous developments in shipping and trade inevitably affected the economy and society of the maritime community. Depopulation, migration, and the collapse of the local wooden shipbuilding industry, were a few of the direct consequences. In addition, the local labour market that had developed in the sailing-ship era disappeared, followed by mobility and changing working relations. Former shipowners and captains were employed as waged officers, the local labour networks were replaced by impersonal international networks, while social relations and hierarchies within the small maritime locus were challenged.

While local maritime communities were buffeted by the waves of industrialization and globalization, port cities, whether in Greece, the eastern Mediterranean or around the globe, emerged to coordinate shipping and maritime trade. They were melting pots, where the local was fused with the global. As the case of Piraeus has demonstrated, these ports attracted seafarers who were mobilized in pursuit of employment. In-migration and the urban segregation of settlers in designated districts within the city, was the visual representation of the interplay between the separation and amalgamation of traditional maritime communities within the new maritime centre of Piraeus. Furthermore, it reflects the central political strategy of the newly founded Greek Kingdom to promote a national port and the cohesion of its territory over the localism that had prevailed during the Ottoman past. Galaxidiots, although they actively participated in the commercial and maritime life of the new port, contributing to its economic growth, they also safeguarded an affinity with their homeland through personal networks; for several decades they nurtured a community within another community. In their new settlement in Piraeus, through higher education, technical training, and their participation in professional unions, local associations, or philanthropic societies, they formulated new social hierarchies to replace the traditional ones, and assumed a new civic identity.

APPENDIX 10.1 Galaxidi steamers

	Ship name	Shipowner	nrt	grt	dwt	Register	Y. of constr	Place of constr	Type	Y. of mention
1	Agamemnon	Aggelis El.	682			Piraeus	1883			
2	Athena	Aggelis El.			7300	Piraeus				
3	Ioanna II	Aggelis El.			10000	Piraeus				
4	Ioanna	Aggelis El.			5200	Piraeus				
5	Karolos	Aggelis El.	1733			Piraeus				
6	Lefkosia	Aggelis El.	681			Piraeus				
7	Menelaos	Aggelis El.	1577/1716,05	2797		Piraeus	1894	Newcastle		
8	Menelaos II	Aggelis El.			2700	Athens				
9	Doris	Amfissa Steamship Co & E. Zacharia		322		Piraeus			passenger	
10	Amfitrete	Bombogiannis Andreas and partners							passenger	
11	Patirs	Bombogiannis Andreas and partners							passenger	1930
12	Astrape	Chalikiopoulos D.	345			Piraeus				1914
13	S. Chrysomalis	Charopoulos Ioannis	1460/ 1539,46	2415		Piraeus	1882	Sunderland	bulk carrier	
14	Th. Sifnaios	Charopoulos Ioannis			2200	Piraeus				
15	Zenovia	Chirolakas Steamship Co				Piraeus				1930
16	Ismene	Fouska Bros and partners		314		Galaxidi	1929		bulk carrier	
17	Elias Frantzis	Fouskas E. & A	200							1925
18	Panagiotis	Fouskas E. & A		143		Galaxidi			bulk carrier	

APPENDIX 10.1 Galaxidi steamers (*cont.*)

	Ship name	Shipowner	nrt	grt	dwt	Register	Y. of constr	Place of constr	Type	Y. of mention
19	Panagiotis F.	Fouskas E. & A, Skourletos Elias, Prokalamos Andreas	160							1934
20	Parnassos	Kammenos, Zissimos, Papapetros, Pavlatos, Sideropoulos	215	548		Piraeus	1894	Hull		
21	Efthymios	Katsoulis N. & D/Bank of Athens	968	1460		Athens	1881	Newcastle	bulk carrier	
22	Anastasios	Kourentis E. & S.G. Kourentis			6000					
23	Aglaia Kourenti	Kourentis-Kardiopoulos/Moris and Bank of Athens	1044			Piraeus	1900–1910	Newcastle		
24	Mytilene	Koutsouleri Bros								
25	Maria	Koutsouleri K.								
26	Bithenia	Levanti Bros			500					
27	Byron	Levanti Bros			550	Piraeus				
28	Christoforos	Levanti Bros	508			Piraeus				
29	Themistocles	Levanti Bros			3000	Piraeus				
30	Raina	Marlas G. & Kyriakides			1000					
31	Epirus	Marlas G. & S. Baltazzis			3200				postal	
32	Parnassos	Marlas-Katsouleris	587	922	2500	Galaxidi	1877	England		
33	Agamemnon	Marlas-Vlassopoulos			1200					

APPENDIX 10.1 Galaxidi steamers (*cont.*)

	Ship name	Shipowner	nrt	grt	dwt	Register	Y. of constr	Place of constr	Type	Y. of mention
34	Galaxidi	Marlas, Baltazzis, Vlassopoulos	1125						postal	
35	Aghios Nikolaos	Matsas Loukas and Sons		175		Piraeus				1930–1939
36	Evagelistria	Matsas Loukas and Sons		107		Piraeus	1935			
37	Marigo Matsa	Matsas Loukas and Sons		304		Piraeus	1935			
38	Amvrakia	Meritzos D, Georgantas, Levantis/Marlas P.	172	285		Piraeus	1896	South Prirton	passenger	
39	Ioannis	Mitropoulos El. Bros							Bulk carrier	
40	Irene	Mitropoulos Sp.							passenger	
41	Stahes	Papapetros Bros								
42	Leonidas	Papapetros Konstantinos	290	332		Patras				
43	Zeus	Sideropoulos N.P.		2201		Galaxidi				1905–1916
44	Evagelistria	Sideropoulos Sons	200			Galaxidi				
45	Stadion	Traikovic, Papageorgiou			1200				Bulk carrier	
46	Efthymios	Tsaplaris N.						England		
47	Parnassos	Tsipouras Kyriakos	502			Galaxidi	1900			
48	Elpis	Visviki and partners			220			England		1901
49	Maxuella	Vlassopoulos Bros, Spyros and Emmanouel					1890			
50	Anargyros Simopoulos	Vlassopoulos E.			4000					
51	Annika	Vlassopoulos E.	991			Piraeus				
52	Eleni Sifnaiou	Vlassopoulos E.	1479			Piraeus				
53	Lavrion	Vlassopoulos Sp.				Piraeus				

APPENDIX 10.1 Galaxidi steamers (*cont.*)

	Ship name	Shipowner	nrt	grt	dwt	Register	Y. of constr	Place of constr	Type	Y. of mention
54	Mina	Vlassopoulos Sp.								1912
55	Parnassos	Vlassopoulos Sp.							passenger	
56	Andromache	Vlassopoulos, Dedoussis, Hardavellas, Papapetros, Therianos, Galanis, Moraitis, Koumaris	1293			Galaxidi	1890	England	Bulk carrier	
57	Phokis	Zachariou Elias and partners	104	205		Piraeus	1886	Southampton	passenger	
58	Zeus	Zissimos Bros	130							

SOURCES: DATA COMPILED AND PROCESSED FROM GELINA HARLAFTIS AND NIKOS VLASSOPOULOS, *PONTOPOREIA. HISTORICAL REGISTER OF SAILING SHIPS AND STEAMERS 1830–1939* (ATHENS, 2002), NAUTICAL HISTORICAL MUSEUM OF GALAXIDI, F. 585 *REGISTER OF B-CLASS STEAMERS OF THE PORT OF GALAXIDI*, IOANNIS MITROPOULOS, *Γαλαξείδι* [*GALAXIDI*], (ATHENS, 1970), 265–266, HISTORICAL NOTARIAL ARCHIVE OF GALAXIDI, DAILY NEWSPAPER OF PIRAEUS *SPHERA*

CHAPTER 11

The Ottoman Port of Chania during the Transition from Sail to Steam

Petros Kastrinakis

1 Introduction

This chapter deals with the case of the Ottoman port of Chania, Crete, in the nineteenth century, a so far unexplored maritime community dominated by the Muslim element of the port population. The main focus is twofold: firstly, to highlight the role and function of the port of Chania in comparison with other big ports of Crete (Heraklion, Suda) within the economy of the Ottoman Empire, and in the south-eastern Mediterranean during the transition from sail to steam navigation in the second half of the nineteenth century. Secondly, to analyse the effects of improvements in navigation through the use of steam, for local communities, whose economic and everyday life was tightly connected with the port. More specifically, the chapter explores how the two largest communities of the city of Chania, those of Christians and Muslims (though there was also a small Jewish presence), were affected by the changes that were brought about by the use of steamships in commerce and shipping.

In general, there are several scholarly works on Ottoman ports, however, the emphasis is typically on the urban space of the most important ports of the Ottoman Empire, like Thessaloniki, Smyrna, and Alexandria, and their transformation (including the effects on port communities).[1] Some researchers focus on "cosmopolitanism" as a means of indicating co-existence at these port-cities.[2] However, there have been some recent works that focus on a

1 Sotiris Dimitriadis, *The Making of an Ottoman Port-City: The State, Local Elites and Urban Space in Salonika 1870–1912* (PhD diss., University of London, 2013); Sibel Zandi-Sayek, *Ottoman Izmir: The Rise of a Cosmopolitan Port, 1840–1880* (Minneapolis: Minnesota University Press, 2012); Jens Hanssen, *Fin de Siècle Beirut: The Making of an Ottoman Provincial Capital* (Oxford: Clarendon Press, 2005).

2 Malte Fuhrmann, "Cosmopolitan imperialists and the Ottoman port cities. Conflicting logics in the urban social fabric," *Cahiers de la Méditerranée*, no. 67 (2005): 1–12; Hans Driessen, "Mediterranean port-cities: cosmopolitanism reconsidered," *History and Anthropology*, no. 16.1 (March 2005): 129–141; Athanasios Gekas, "Class and cosmopolitanism: the historiographical fortunes of merchants in eastern Mediterranean ports," *Mediterranean Historical Review*, no. 24.2 (2009): 95–114. Edhem Eldem, "Istanbul as a cosmopolitan city: myths and

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more economic approach to port cities, emphasising commercial and shipping activities.[3] Furthermore, the topic of human labour in Ottoman studies is rarely explored, but in recent years there has been an effort to re-evaluate this topic.[4] There are even fewer works focusing on maritime labour, in particular, sailors and dockworkers.[5]

Maritime labour on the island of Crete, and specifically the port city of Chania, has not been widely examined thus far. Some research has focused on the economy of Crete, with reference to ports, commerce, and shipping, but concentrating mainly, on the early modern period.[6] There are also some works on the commercial activities of the communities of Heraklion (Ott. *Kandiye*) during the early modern period.[7] The focus during this research is on the port city of Heraklion (as it was the capital of the island until the nineteenth century), where a concentrated group of military households of janissaries resided, engaging in commerce and shipping.[8] These janissaries and other Cretan Muslim merchants developed commercial activities among

realities," in *A Companion to Diaspora and Transnationalism*, eds. Ato Quason, Girish Daswani (New Jersey: Wiley-Blackwell, 2013), 212–230.

3 Eldem, Sophia Laiou, Vangelis Kechriotis, *The Economic and Social Development of the Port Cities of the Southern Black Sea Coast and Hinterland, Late 18th–Beginning of the 20th century*, vol. 5 (Corfu: Black Sea History Project Working Papers, 2017).

4 Donald Quataert, Erik Jan Zürcher, *Workers and Working Class in the Ottoman Empire and the Turkish Republic, 1839–1950* (London and New York: Tauris, 1995); M. Erdem Kabadayı, Kate Elisabeth Creasy, "Working in the Ottoman empire and in Turkey: Ottoman and Turkish labor history within a global perspective," *International Labor and Working Class History*, no. 82 (Fall 2012): 187–200; Can Nacar, *Labor and Power in the Late Ottoman Empire: Tobacco Workers, Managers and the State, 1872–1912* (London: Palgrave Macmillan, 2019); Leda Papastefanaki, Kabadayı eds. *Working in Greece and Turkey: a Comparative Labour History from Empires to Nation-States, 1840–1940* (New York: Berghahn Books, 2020).

5 Shai Srougo, "The Jewish longshoremen in the Ottoman and Greek periods: cultural practices and shifting values in the port labor market of Thessaloniki, 1900–1925," *Journal of Modern Greek Studies*, no. 38.2 (October 2020): 501–532; Idem, "Professional characteristics of the Jewish guild in the Muslim world: Thessaloniki dockers at the end of the Ottoman era," *Mediterranean Historical Review*, no. 26.2 (December 2011): 115–133; Can Nacar, "Free trade or an alternative path: the queue system and struggle over the conditions of work in Ottoman ports, 1900–1910," *Middle Eastern Studies*, no. 52.5 (2016): 772–786.

6 Yolanda Triantafyllidoy-Baladie, *Το εμπόριο και η οικονομία της Κρήτης: από την αρχή της οθωμανικής κυριαρχίας έως το τέλος του 18ου αιώνα (1669–1795)* [*The Trade and the Economy of Crete: From the Beginning of Ottoman Sovereignty until the End of the 18th Century*] (Heraklion: Heraklion Municipality-Vikelaia Library, 1988).

7 Molly Greece, *Kandiye 1669–1720: The Formation of a Merchant Class* (PhD diss., University of Princeton, 1993).

8 For the janissaries of Crete, see Yannis Spyropoulos, *Κοινωνική, διοικητική, οικονομική και πολιτική διάσταση του οθωμανικού στρατού: Οι γενίτσαροι της Κρήτης, 1750–1826* [*Social, Administrative, Financial and Political Aspects of the Ottoman Army: the Janissaries of Crete, 1750–1826*] (PhD diss., University of Crete, Rethymnon, 2014); Antonis Anastasopoulos, Yannis

them was well as with French shipowners.[9] The dominance of Muslims in the ship owning of Heraklion is also attested by sources from 1751, pointing out that the greatest percentage of ship owners were Muslims, while captains were Christians.[10]

The only recent research focusing on Cretan ports is that of Perakis, who considers the advent of steam navigation at the ports during the final part of the long nineteenth century.[11] In his article, Perakis addresses the impact of steam navigation on the commerce of the ports, however, he did not examine the effects of this transition on the lives of the port communities, that is, merchants, shipowners, sailors, and dockworkers. By focusing on the port of Chania, this chapter will endeavour to shed light on this aspect that has often been overlooked in the past.

2 The Port of Chania (Ott. *Hanya*) and Its Role in the Nineteenth Century

2.1 *The First Steamship Connections of Crete*

From the late eighteenth century, the port of Chania in western Crete held a primary role in the island's trade with western Europe, including integration into the international economy. Chania connected Crete to the market of Marseilles through the export of olive oil and soap for the emerging industries of France at that time.[12] In eighteenth-century Crete, the transport of olive oil and other products were mostly performed by French ships as part of the *caravane maritime*; these were chartered by Muslim and non-Muslim merchants on the island.[13] However, there were also local Muslim ship owners,

Spyropoulos, "Soldiers on an Ottoman island: the janissaries of Crete, eighteenth–early nineteenth centuries," *Turkish Historical Review*, no. 8 (2017): 1–33.

9 For a bibliography on French shipping in the eastern Mediterranean, see Daniel Panzac, "International and domestic maritime trade in the Ottoman empire during the 18th century," *International Journal of Middle East Studies*, no. 24.2 (May 1992): 189–206.

10 Vassilis Kremmydas, "Καταγραφή των εμπορικών πλοίων του Ηρακλείου το 1751," ["Record of commercial ships of Heraklion in 1751"] *Mnemon*, no. 7 (1978–79): 12–17.

11 Manos Perakis, "Structural shipping transformation under radical political changes on the island of Crete, 1877–1913," *International Journal of Maritime History*, no. 25.1 (June 2013): 127–148.

12 Greene, *Kandiye 1669–1720*; Triantafyllidou-Baladie, *Το εμπόριο και η οικονομία της Κρήτης* [*The trade and the Economy of Crete*].

13 For the *caravane maritime*, see Panzac, "International and domestic maritime trade," 197; Gilbert Buti, "Aller en caravane: le cabotage lointain en Méditerranée, XVII^{e} et XVIII^{e} siècles," *Revue d'histoire moderne et contemporaine*, no. 52.1 (2015): 7–38.

who together with Greek orthodox captains, mostly engaged in the internal commerce of the empire.[14]

Almost all of the Ottoman ports in that period were integrated into the international economy via the export of a diverse range of products—in many cases raw materials—for the newly advanced industries of western Europe. In return, the empire was also importing manufactured goods, mostly from Britain and France. This economic pattern led to the stabilisation of free trade between the Ottoman and British Empire, through the Anglo-Ottoman Treaty of Baltan Liman in 1838. This accord removed all restrictions on the exportation of products previously imposed upon Ottoman trade by the Sublime Porte.[15] Among the key ports of the eastern Mediterranean that experienced considerable demographic and economic growth were Smyrna, Thessaloniki, Alexandria, and of course Istanbul, the Ottoman capital.[16] Prior to the first half of the nineteenth century, Chania became the seat of political authority in Crete, while the port became the centre of commercial activity on the island, experiencing steady demographic growth, along with the rest of Crete.[17]

Steam navigation, as a technological development of the Industrial Revolution in Britain, affected the manner in which sea transportation was taking place. Although the transformation from sail to steam was a slow process, due to the fact that sailing ships remained dominant in maritime transport, while steamship investment was a costly endeavour, gradually the advantages of steam navigation became clear. Trade became faster and safer, and the amounts of products being shipped increased, and trips became more regular.[18] Of course, this new reality also affected the human factor on board,

14 Kremmydas, "Καταγραφή," 12–17; Spyropoulos, "Κοινωνική, διοικητική," 276.

15 For the Ottoman-British Treaty of 1838, see Şevket Pamuk, *The Ottoman Empire and European Capitalism, 1820–1913* (Cambridge: Cambridge University Press 1987); Necla V. Geyikdayi, *Foreign Investment in the Ottoman Empire: International Trade and Relations 1854–1914* (London: I.B. Tauris 2011).

16 Reşat Kasaba, Çağlar Keyder, Faruk Tabak, "Eastern Mediterranean port-cities and their bourgeoisies: merchants, political projects and nation-states," *Review*, no. 10.1 (Summer 1986): 121–135.

17 Charles Ronchfort Scott, *Rambles in Egypt and Candia with Details of the Military Power and Resources of those Countries and Observations on the Government, Policy, and Commercial System of Mohammet Ali*, vol. 2, (London: H Colburn 1837), 260–261; Manos Perakis, *Το Νησί των προσαρμογών. Οικονομία και Κοινωνία τον 19ο αιώνα 1830–1913* [*Crete, the Island of Adjustment. Economy and Society During the 19th Century 1830–1913*] (Chania: Asini 2017), 501. For demographics in other ports, see, for example, ed. Richard Lawton, *Population and Society in Western European Port Cities 1650–1939* (Liverpool: Liverpool University Press, 2002).

18 Sarah Palmer, *Politics, Shipping and the Repeal of Navigation Laws* (Manchester and New York: Manchester University Press, 1990); John Armstrong, "Technological advance and

as incrementally, steamships encouraged the division and specialisation of labour, adding specialties like those of fireman and engineer, which did not exist on sail ships.[19]

In the case of Crete, Chania was already a nodal point for steam navigation from the 1830s, in the itineraries of the Austrian Lloyd Steam Navigation Company, between Syros and Alexandria in Egypt.[20] It seems that Crete was seen as an important hub in trade routes between Europe and Asia.[21] At that time, the government made capital investments to improve Cretan ports, focusing on the port of Chania.[22] As Perakis has demonstrated, the subsequent decades were crucial for the transition from sail to steam, and the effects on the economy of the island. At first, it was connected with Trieste and Alexandria by the liner steamships of Austrian Lloyd, which soon connected Crete with Syros, transferring passengers, mail, and some products.[23] Post 1858, the Hellenic Steam Navigation Company was included on the Syros-Crete route, creating antagonism between the two companies.[24] After the 1880s, the connections between Crete and other ports were complemented by the participation of more steamship companies, for example, Ottoman Kurci, and Idare-i Mahsusa. During the period of the Autonomous State of Kritiki Politeia (1898–1913) on

innovation: the diffusion of early steamships in the United Kingdom, 1812–1834," *The Mariner's Mirror*, no. 96.1 (2010): 42–61; Idem and David M. Williams, "The steamboat, safety and the state: government reaction to new technology in a period of laissez-faire," *The Mariner's Mirror*, no. 89.2 (2003): 167–184.

19 Eric Sager, "Ατμόπλοια του 19ου αιώνα. Ένας βιομηχανικός εργασιακός χώρος," in Ιστορία και Ναυτιλία *16ος–20ος αιώνας* [*History and Shipping 16th–20th Century*], ed. Harlaftis (Athens: Stachi, 2001), 453–480.

20 Konstantinos Papathanasopoulos, Ελληνική Εμπορική Ναυτιλία *1833–1856.* Εξέλιξη και Αναπροσαρμογή [*Greek Merchant Shipping 1833–1856. Evolution and Adaptation*] (Athens: MIET, 2008), 262.

21 Manos Perakis, *Κρήτη, το Νησί των προσαρμογών*; John Bowring, *Report on Egypt and Candia Addressed to the Right Hon. Lord Viscount Palmerston Her Majesty's Principal Secretary of State for Foreign Affairs* (London: W. Clowes and sons for Her Majesty's Stationery Office, 1840), 159.

22 Panagiotis Krokidas, Καινοτομίες και Εκσυγχρονισμός στην Κρήτη την περίοδο του Μεχμέτ Αλή [*Innovations and Modernization in Crete During the Reign of Mehmet Ali*] (PhD diss., University of Crete, Rethymnon, 2019), 63–68.

23 For the Austrian Lloyd Steam Navigation Company, see the chapter by Matteo Barbano in the present volume.

24 For the Greek (or Hellenic) Steamship Company, see Konstantinos Papathanasopoulos, *Εταιρεία Ελληνικής Ατμοπλοίας-1855–1872: Τα αδιέξοδα του προστατευτισμού* [*The Greek Steamship Company 1855–1872: the Dead Ends of Protectionism*] (Athens: MIET 1988); See also Apostolos Delis, "Modernizing seaborne communication in nineteenth century Greece: the role and the contribution of the Hellenic Steam Navigation Company, 1857–1893," in the present volume.

the island, connections by Ottoman companies were replaced by Greek companies, while new links also emerged, such as with the Russian Steam Navigation and Trading Company, connecting the port of Suda with Egypt.[25]

2.2 *Steamships and Sailing Ships at Cretan Ports*

In 1869, in both the ports of Chania and Suda,[26] steamship arrivals numbered 118, and sailing ships numbered 651, while the total tonnage was balanced at: 56,176 and 59,742 tons respectively. In the same year, at the port of Heraklion, steamship arrivals numbered 98 (44,883 tonnage), while sailing ships numbered 449 (23,247 tonnage). The flag that prevailed was firstly Ottoman, secondly Greek, and thirdly Austrian.[27] After the 1880s, the appearance of steamships in Cretan ports became more constant and their tonnage outnumbered that of sailing ships. For example, in 1885, the British consul recorded 828 sailing ships of 24,250 tons arriving in the port of Chania,[28] and 233 steamships of 107,268 tons. In the same year, in the port of Heraklion, 1,112 sailing ships arrived with 27,365 tonnage, while steamships numbered 228 of 101,942 tons.

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25 Perakis, "Structural shipping," 137; For the regular connections of Cretan ports through liner shipping companies, see idem, Table 2, 137; and *Salname-I Vilayet-i Girit* (*Provincial Yearbook of the vilayet of Crete*), (*1891*), 225. For the two steamship companies see, Evridiki Sifneos, "P.M. Courtgi and the birth of the Greek-Ottoman Liner Company. The Aegean Steamship Company," in *Following the Nereids. Sea Routes and Maritime Businesses 16th–20th centuries*, eds. Maria Christina Chatziioannou and Harlaftis (Athens: Kerkyra Publications, 2006), 121–136; Davut Hut, "Buharlı Gemiler Çağında Osmanlı Deniz ve Nehiryolu Ulaşımı," in *Osmanli'da Ulaşım. Kara—Deniz—Raylı*, eds. Vahdettin Engin, Ahmet Uçar, Osman Doğan (Çamlıça, Istanbul 2011), 71–102; Hande Yüce and Ahmet Güleryüz (eds.), *Şirket-i Hayriye'nin Boğaziçi Vapurları* (Istanbul: Denizler Kitabevi, 2002); Anna Sydorenko, "Ρωσικός Λαβύρινθος: Σκιώδης εμπλοκή της Τσαρικής Αυτοκρατορίας στα ναυτιλιακά και πολιτικά ζητήματα της Κρητικής Πολιτείας" ["The Russian maze: the shadowy involvement of the Tsarist empire in the shipping and political issues of the Cretan state"], in *Πρακτικά συνεδρίου "Η Ελληνική Εμπορική Ναυτιλία στα Χρόνια του Ελευθερίου Βενιζέλου"* [*Proceedings of the Conference "Greek Merchant Shipping in the Years of Eleftherios Venizelos"*], eds. Harlaftis, Nikolaos E. Papadakis (National Research Foundation "Eleftherios K. Venizelos"/Institute for Mediterranean Studies, Chania-Rethymnon, forthcoming 2022). For a general view of the activities of the Russian Steam Navigation and Trading Company in the Mediterranean, see Sydorenko, "Steam navigation and trading company: the transition from sail to steam in the Russian Black Sea (1856–1914)," in the same volume.

26 Suda is a natural port almost 7 km south-east of the city of Chania.

27 *Report by Consul Dennis on the Trade and Commerce of the Island of Crete for the Year 1869*, 314–316.

28 The table separates Chania from Suda, which has 176 sailing ships with 5,726 total tonnage, and 56 steamships with 14,276 total tonnage. However, it is not clear if short distance sailing ships are included in these statistics.

It is evident that the total tonnage of steamships was already significant from the 1880s, and increased through the years.[29] It seems that this predominance of steamships in total tonnage was a general trend in almost all the Ottoman ports in 1892–93.[30]

In 1897–98, in the total volume of shipping in Ottoman waters, sailing ships amounted to 6.37% while steamships were 93.63% of the total tonnage. In the case of the Ottoman ports of the Mediterranean, of the Aegean, and of the Red Sea, Ottoman sailing ships amounted to 78.96% of the total tonnage, while foreign steamships were 84.21% of the total tonnage of the steamships arriving to these ports. It seems that sailing ships continued to deal with the internal commerce of the empire, despite the appearance of steamships that dominated long-distance trade.[31]

An 1892 source provides information concerning the connections of the port, and the transportation of various goods. It seems that local sailing ships from Chania were sailing mainly towards North Africa (Libya), while steamships were primarily visiting key Ottoman ports following Chania.[32] However, it is reasonable to assume that local sailing ships, North African destinations apart, must have connected also to Cretan ports.

The appearance of steamships in Cretan ports was growing, and this can be demonstrated by twice the number of steamships counted at the port of Chania in 1905 (503), in comparison to 1885 (233). Simultaneously, the total tonnage of steamships increased even more markedly, reaching 447,115 tons, while in 1885 it was only 107,268 tons. The predominance of steamships is also

29 However, in his work, Perakis reports that in the period 1882–86 the proportion of the total tonnage of sailing ships reaching Cretan ports was 84.3%, while the tonnage of steamships was 15.7% of the total. Perakis, "Structural shipping," 136.

30 In the categorisation it can be seen that there are ports such as Smyrna, Thessaloniki, Beyrut, and Chios with a total tonnage of more than 700, then there are some Ottoman ports from the Black Sea, such as Samsun and Inebolu which have a total tonnage of around 400. Some ports of the northern and south-eastern Aegean, such as Gallipoli, Mytilene, Mersin, and Tripoli of Syria belong in the same category. Then there is a smaller category with ports with around 300 total tonnage, such as the bigger ports of Crete (Heraklion, Chania), Tripoli of Libya, Samos, Rodos, Alexandroupoli, and Sinop and Eregli from the Black Sea. However, if we add the numbers from Chania and Suda the number increases a lot: Cozzonis Effendi, *Bilan de l'exercice 1892–1893 from the Administration Sanitaire de l'empire Ottoman* (Istanbul: Typographie et Lithographie Osmanié, 1893).

31 Edhem Eldem, "Scanning the Ottoman Black Sea in 1900 through the *Revue Commercial du Levant*," in *Istanbul and the Black Sea Coast. Shipping and Trade (1770–1920)*, eds. Edhem Eldem and Sophia Laiou (Istanbul: Isis Press, 2018), 80–81.

32 This is a public custom office register, which has three categorisations of ships: *kayik* (caique), *sefine* (sailing ship), and *vapur* (steamship). Historical Archive of Crete, Turkish Archive, AAK 1908, (1892). (AAK is the number of the documentation of each register.)

FIGURE 11.1 Aspect of the port of Chania with sailing ships between 1886 to 1901
SOURCE: HISTORICAL ARCHIVE OF CRETE, CHANIA

evident by examining the number of sailing ships. In 1905, numbers sharply decreased, with only 271 sailing ships docking in the port of Chania, while twenty years earlier, 828 sailing ships had docked.

If consideration is given to the transportation connections of the port of Chania, these would involve the main Ottoman ports (Smyrna, Thessaloniki, Istanbul), and Greek ports, like Syros, and those in the Adriatic Sea (Trieste). The main flags entering Cretan ports up until the end of the nineteenth century were Ottoman, Greek, and Austro-Hungarian respectively. For imports, until the 1850s, products were sourced through ports based in the eastern Mediterranean, while subsequently, western and central Mediterranean ports became more dominant. Similarly, for exports, where in the 1850s the main ports were Ottoman, by the end of the nineteenth and beginning of the twentieth century, western and central European ports increased sharply.[33]

2.3 *Problems in Port Infrastructure and the Role of the Port of Suda*

One of the key issues that hindered the further development of Chania, and other Cretan ports, was infrastructure. The estimations of the size of ships that

33 Perakis, Κρήτη, 160–161.

could enter the port of Chania varied from 100 to 300 tons in 1837.[34] During that period, Austrian Lloyd, following an agreement with Crete, decided to dispatch smaller steamships in order to enter the port.[35] In the case of Chania, the three most important issues were size, depth, and winds at the entrance to the port. One of the first responses from the central Ottoman state was an attempt to clean the port (which often filled with sand from the northern winds) in order to facilitate larger steamships. This order was issued for the three larger ports of Crete, Chania, Heraklion, and Rethymnon.[36] In general, the initial pressure for infrastructure work at ports (in any location) was usually from shipping companies, who carried mail, passengers, and light cargo.[37]

Port problems were also evident among the press. In an article from 13 November 1882, it was argued that Crete could have been a superior commercial centre due to the geographical position of the island. However, the lack of infrastructure meant the relegation of Cretan ports, and an increase in the cost of shipping for various products. The journalist gives the example of Izmir and Patras, and proposes an extra tax burden on the population of the island so that port infrastructure be repaired.[38] During the year in question, foreign merchants refused to pay taxes that were due for infrastructure works—this caused a budget gap for repair funding at Chania quay.[39] These

34 John Purdy, *The New Sailing Directory for the Mediterranean Sea, the Adriatic Sea, or Gulf of Venice, the Archipelago and Levant, the Sea of Marmara, and the Black Sea* (London: R.H. Laurie, 1926), 220; Lewis Cass, *An Historical, Geographical and Statistical Account of the Island of Candia, or Ancient Crete* (London: Thomas W. White, 1839), 8.

35 Perakis, "Structural shipping," 140.

36 BOA, İ. MTZ. GR 12 374 (1869/1870).

37 Frank Broeze, "Λιμάνια και Λιμενικά Συστήματα των Ασιατικών Θαλασσών: Μια επισκόπηση με Ιστορική Διάσταση από το 1750" ["Ports and port systems of the Asiatic seas: a review with historical dimension from 1750"] in Ιστορία και Ναυτιλία *16ος–20ος αιώνας* [*History and Shipping 16th–20th century*], ed. Gelina Harlaftis (Athens: Stachi 2001), 492.

38 *Πατρίς* (*Patris*), 13 November 1882, 1. The local newspaper *Mesogeios* (*Μεσόγειος*) reported on the 20 October 1892 that the port of Chania was inadequate. It seems that during the previous winter around seven sailing ships had sunk inside the port: *Μεσόγειος* (*Mesogeios*), 20 October 1892, 1.

39 Manos Perakis, "Capitulations: abolition attempts in Crete during the Halepa Regime (1878–1889)," in *Contemporary Research in Turcology and Eurasian Studies. A Festschrift in Honor of Professor Tasim Gemil on the Occasion of his 70th Birthday*, eds. Stoica Lascu, Melek Fetisleam (Cluj: Cluj University Press, 2013), 505–518. A similar case appeared in Mytilene when western European merchants established themselves there, and refused to pay the dues for the construction of the quay; this worsened a conflict between local and foreign merchants: Elena Frangakis-Syrett, "The western Anatolian coast and the Aegean Islands in the late nineteenth and early twentieth centuries: an economic survey," in *The Port-City in the Ottoman Middle East at the Age of Imperialism*, ed. Elena Frangakis-Syrett (Istanbul: Isis Press, 2017), 158–159.

problems increased sailing ship freight, simply as a result of a lack of safety for steamships given the difficulty of approaching the port. Unfortunately, shipwrecks occurred frequently.[40]

Besides these issues, the road network of Crete was also problematic, and the absence of railways caused the local population to transfer goods to smaller ports with small sailing ships.[41] In the 1880s, Austrian Lloyd began to deal with coastal shipping in Crete, while in the 1890s, foreign companies operated together with local investors, such as Cretan businessman Alepoudelis-Sfakianakis who bought two steamships and operated along the Cretan coast on a weekly basis.[42] From indications in the local press referencing shipwrecks of small vessels at the beginning of the century, the study can assume that small sailing ships coexisted alongside steamships, either foreign or local, carrying products during times when steamships could not reach Cretan ports.[43]

However, it seems that the need for infrastructure work was widespread in order to keep up with technological changes.[44] The increase in the volume of trade illustrates the need for the construction of safer ports along with a railway system.[45] In the case of the Ottoman Empire, industrialisation and technological change appeared in a period when the state faced serious financial problems following large expenditure during the Crimean War. The outcome was the establishment of the Ottoman Public Debt Administration for the

40 *Κρήτη* (*Crete*), 4 October 1884, 3.

41 In Crete, they were shipping goods on small sailing ships to various small ports of Crete, such as Kissamos, Selino, etc. AAK 1908, (1892), HAC, Chania.

42 Perakis, "Structural shipping," 145.

43 *Ελεύθερον Βήμα* (*Eleftheron Vima*), 14 January 1912. It seems that this had been a practice since the first half of the nineteenth century or earlier: Bowring, *Report on Egypt*, 1840, 160. In Sicily, until the construction of the railroad in the nineteenth century, goods were also transferred through small ships: *Κήρυκας* (*Kirikas*), 26 October 1910.

44 Indicatively, see Broeze, *Λιμάνια και Λιμενικά Συστήματα*, 493; Cézar Honorato, Luis Claudio Ribeiro, "The emergence of port engineering in the light of capitalist modernization in Brazil 1860–1940," *The International Journal of Maritime History*, no. 32 (2020): 201–217; Anna Sydorenko, *Οικονομική Ανάπτυξη των πόλεων-λιμανιών της Κριμαίας, β' μισό του 19ου–αρχές του 20ου αιώνα. Ευπατορία, Σεβαστούπολη, Θεοδοσία* [*The Economic Development of the Port-Cities of Crimea, during the second half of 19th century-beginning of 20th century. Evpatoria, Sevastoupoli, Theodosia*] (PhD diss., Ionian University, Corfu, 2016), 90–117.

45 Katerina Papakonstantinou, "Transport and communication in southeastern Europe in the nineteenth century: the impact on trade," in *The Economic Development of Southeastern Europe in the 19th century*, eds. Edhem Eldem, Socrates Petmezas (Athens: Historical Archive of Alpha Bank, 2011), 349–395. For railways in the Ottoman empire, see Murat Özyüksel, *The Hejaz Railway and the Ottoman Empire. Modernity, Industrialization and Ottoman Decline* (London and New York: I.B. Tauris, 2014).

control of debt owed to western European powers.[46] In this way, investment in port facilities and railways was expedited by an influx of foreign capital into the Ottoman economy. German businessmen were in charge of the railways in the inner Ottoman territories, and French businessmen were in charge of reforming the old and suffering ports of the empire.[47] In the case of Smyrna, the infrastructure works at the port commenced in the 1860s, while in the port of Thessaloniki, the works started in the 1880s.[48] In the case of Crete, the inability to invest in infrastructure works was a consequence of the financial situation in Crete, alongside the internal political turmoil apparent in the second half of the nineteenth century.[49]

The problems at other Cretan ports increased the importance of the port of Suda. Already from the 1860s, Suda appeared as a natural port that could replace Chania and Heraklion as the main port of Crete, although it was only used as a port for emergencies in bad weather conditions.[50] The port of Suda in 1872 had its own custom office and some storage rooms, which assisted the commercial role. It also continued to remain as a naval base.[51] The commercial interests of merchants at other ports, along with Suda usage as a naval base, were the basic obstacles to the transformation of Suda into the main port of Crete.[52] A further problem was the insufficient internal road network, and the associated transportation costs; there were suggestions for construction of a railway, but this never managed to materialise.[53]

46 Edhem Eldem, "Ottoman financial integration with Europe: foreign loans, the Ottoman Bank and the Ottoman Public Debt," *European Review*, no. 13.3 (July 2005): 431–445.

47 Geyikdağı, *Foreign Investment*. According to Pamuk, the 1838 Anglo-Ottoman Treaty, the external loans due to the Crimean War, and finally the construction of railroads by foreigners, were the three most important turning points in the European penetration of the Ottoman economy: Pamuk, *The Ottoman Empire and European Capitalism*, 134.

48 Dimitriadis, "The making," 114–151; Sayek, *Ottoman Izmir*, 115–150.

49 Perakis, "Structural shipping," 138–142.

50 Report by Mr. Consul Dickson, 1868, 224.

51 Kallia Kalliataki-Mertikopoulou, *Ελληνικός Αλυτρωτισμός και Οθωμανικές Μεταρρυθμίσεις: Η περίπτωση της Κρήτης 1868–1877* [*Greek Irredentism and Ottoman Reforms: the Case of Crete 1868–1877*] (Athens: Estia, 1988), 75; Already from the 1870s a dock was constructed at Suda, and during the next decade there were repairs at the quarantine of Suda. See BOA, A} MKT. MHM. 467 13 (1873) and BOA, İ. DH 930 73713 (1884). There were also plans for a nautical school in Suda: BOA, MF. MKT. 45 136 (1877). (BOA is an abbreviation for Başbakanlık Osmanlı Arşivleri in Istanbul.)

52 Perakis, "Structural shipping," 141–142.

53 For a discussion about the railways in Crete, see Manolis Arkolakis, "Σιδηρόδρομοι Κρήτης: Νεωτερικότητα και ανολοκλήρωτοι σχεδιασμοί στην περίοδο της Κρητικής Πολιτείας (1899–1913)" ["Railroads of Crete: modernity and incomplete planning in the period of the *Kritiki Politeia* (1899–1913)"] in *Η Ελληνική Πόλη σε Ιστορική Προοπτική* [*The Greek City in Historical Perspective*], ed. Lydia Sapounaki-Drakaki (Athens: Dionikos, 2005), 233–241; Dimitris

FIGURE 11.2 View of the port of Chania from the Venetian Arsenal, 1919
SOURCE: FREDERIC DANIEL BOISSONNAS BAUD-BOVY. *DES CYCLADES EN CRÈTE AU GRÉ DU VENT*, GENEVA, BOISSONNAS & CO, 1919

The use of Suda assisted the trade of western Crete as it facilitated commerce with specific areas like southern Russia. In 1910, only one Russian steamship arrived at the port of Chania, while in the same year 23 Russian steamships arrived at Suda. One year earlier, in the records of both Chania and Suda, Russian steamships numbered 29.[54] In 1909, the port of Chania and Suda together had 43% of the import trade of Crete, while the same amount flowed through the port of Heraklion. As far as exports are concerned, 40% came through the port of Heraklion, while 28% went through the ports of Chania and Suda.[55] Although Suda did not replace Chania as the main port of Crete, it

Kypriotakis, "'Ενα από τα όνειρα της προόδου ...' Το ζήτημα της δημιουργίας σιδηρόδρομου στην Κρήτη (1880–1930)" ["'One of the dreams of prosperity' The issue of the construction of railways in Crete (1880–1930)"] in *Proceeding of the 12th International Congress of Cretan Studies*, eds. Klairi Mitsotaki, Lena Tzedaki-Apostolaki (Heraklion: EKIM, 2016), 1–15.

54 *Report on the Trade, Shipping and Agriculture of Crete for the year 1910 by Mr. Acting Vice-Consul Hubbard*, Annual Series, No. 4776, 1910, 16–17.

55 *Report on the Trade of Crete for the Year 1909 by Mr. Acting Vice-Consul Peckham*, Annual Series, No. 3603, 1909, 5.

started to work as a supplementary port, assisting the commercial activities of Chania, which continued to face problems with infrastructure.[56]

3 The Communities of Crete and the Investment in Trade and Shipping during the Transition from Sail to Steam Navigation

3.1 *The Demographics of Occupations Related to the Sea*

Ports were not the only sectors that were impacted by the introduction of safer and faster steam navigation. It also had an impact on people, whose occupations were strongly attached to the economy of the port. More specifically, the term "maritime communities" refers to the people whose financial activities were closely related to the sea, and their survival depended upon it, such as shipping, shipping-related industries, and fishing.[57]

In the case of Crete, the political situation on the island during the nineteenth century also affected the share of occupations, and the economic activities of the communities on the island.[58] The political situation, and the continuous conflicts between the two large communities (Christian and Muslim), negatively affected the demographic position in Crete, and forced the Muslim population to reside in cities, thus relying on urban occupations. Simultaneously, the majority of Christians resided in the rural areas of Crete. Following the Greek War of Independence (1821), and subsequent impact on Crete, a large contingent of local *agas* departed Crete in order to reside in other parts of the Ottoman Empire—this phenomenon helped Christians acquire

56 This is evident in the British consular reports, which in some cases count together, the ships arriving in the port of Chania and Suda. See for example those of 1869 and 1905.

57 For the term "maritime communities," see Gelina Harlaftis, "Maritime history: a new version of the old version and the true history of the sea," *The International Journal of Maritime History*, no. 32.2 (2020): 395; Katerina Galani, "From traditional maritime communities to maritime centres. Urbanisation, social hierarchies and the labour market in the age of steam. The case study of Galaxidi, 1850s–1910s," in the present volume.

58 For the rebellions in Crete, see Nikos Andriotis, "Χριστιανοί και μουσουλμάνοι στην Κρήτη, 1821–1924. Ένας αιώνας συνεχούς αναμέτρησης εντός και εκτός του πεδίου της μάχης" ["Christians and Muslims in Crete, 1821–1924. A century of constant conflict in and out of the battlefields"], *Mnemon*, no. 26 (2006): 63–94; Leonidas Kallivretakis, "A century of revolutions: the cretan question between European and Near Eastern politics," in *Eleftherios Venizelos: the Trials of Statesmanship*, ed. Paschalis Kitromilides (Edinburgh: Edinburgh University Press, 2006), 11–36; Stefanos Poulios, "The Muslim exodus from Crete: property destruction, urbanisation and counterviolence," in *Social Transformation and Mass Mobilisation in the Balkan and Eastern Mediterranean Cities, 1900–1923*, ed. Andreas Lyberatos (Heraklion: University of Crete Press, 2013), 245–265.

aga properties. When some of those Muslims returned some years later, they decided to work in urban occupations in city centres.[59]

Information on the occupations of Cretan communities were found in official sources, for example, censuses, however, it is not abundant.[60] The first source of such information, which related to employment at sea comes from 1813, and an estimation of the French traveller François Pouqueville. He records 2,300 sailors in Crete, which is most likely an exaggeration. At the same time, he numbers 5,400 seamen in Spetses, 2,700 sailors in Hydra, and 4, 400 sailors in Psara; all important maritime communities of the period.[61] The second important source for this issue is a report by the American diplomat Edmund Flagg, who provides the following information for Crete: in 1852, there were 146 merchant ships with 653 crew members.[62] The study can observe that the difference in numbers is enormous, in comparison with the Pouqueville report. In addition, Flagg estimates 166 fishermen out of the 653 total; it is unclear whether these fishermen worked occasionally as sailors. According to information from the census of 1857, the total number of residents in Crete was 280,000, and in the case of the city of Chania the population was 7,655.[63] The research can observe that seamen were a small part of Crete's population at this time. However, it may be that this information is related only to sailors working on ships, and not those who were unemployed ashore.

In relation to the origin of sailors, the study found that the majority were Cretan natives, while a small percentage were Africans; for example, 25 sailors at Chania and 24 at Heraklion were of Arabic origin. In the report by the *Giornale del Lloyd Austriaco* in 1845, there is a reference that indicates that most sailors in Crete were Cretan Muslims, while some were of African and

59 Perakis, *Κρήτη*, 28–29, 32.

60 In the nineteenth century, the Ottoman state tried to establish an organised census in its territories. Their first efforts began in the 1830s, they planned to count all the male population for military and tax reasons. However, it was only at the end of the century when the *nüfus tezkeresi* was introduced, a document that certified someone was involved in a census and could carry the document as his own identity card. This document had information about the occupation of each citizen. However, this measure was not implemented in Crete, as the status of the island was identified as autonomous. This limits the research information for occupations in Crete: Kemal H. Karpat, *Ottoman Population 1830–1880. Demographic and Social Characteristics* (London: University of Wisconsin, 1985); Şervet Mutlu, "Late Ottoman population and its ethnic distribution," *Turkish Journal of Population Studies*, no. 25 (2003): 3–38.

61 Athanasios N. Vernardakis, *Πέρι του εν Ελλάδι εμπορίου* [*On the Commerce of Greece*] (Athens: Attiko Museum, 1885), 211.

62 Edmund Flagg, *Report on the Commercial Relations of the United States with all Foreign Nations*, vol. 4 (Washington: A.O.P. Nicholson, 1857).

63 Anonymous, *La verité sur les événements de Candie* (Paris: E. Dentu, 1858), 9.

Aegean Islands Christian origin.[64] The Africans mentioned (in the two relevant sources) are probably those known as *Chalikoutes*, of North African origin (Libya or Sudan), who were transferred as slaves in the period of Mehmet Ali (1830–40) to work in new public works commenced by the state.[65] It is reasonable to suppose that some of them, residing in urban centres, were working as sailors for local shipowners.

In 1881, Muslims on the island numbered 73,234, while Christians numbered 205,284. Only 16.3% of the total population resided in cities, out of which 71.5% were Muslims. This meant that Muslims were often involved in urban occupations and those related to the sea, for example, sailors, ship-owners, boatmen, and port workers.[66] There are indications that Muslims were experienced sailors, but also important ship owners.[67] In general, the occupations that dominated the urban space of Chania were those of craftsmen, merchants, and workers. In the category of sailors, of 1,183 sailors in the three big ports, 953 were Muslim, and 230 Christian.[68] In the districts of Chania and Heraklion there were almost equal numbers of seamen, 365 and 369 respectively. However, if one excludes Sfakia (73 seamen), which is a village in the south of the Chania region, the city of Heraklion had a larger number of seamen, who were mostly Muslims (315 out of 365).[69] The total number of sailors in the city of Chania consisted of 2.76% of the male population, while in the city of Heraklion this figure was 3.21%.[70] However, it is not clear if, among the calculation of sailor numbers, whether captains, owners of small coastal

64 *Giornale del Lloyd Austriaco* (1845), vol. 5, 2.

65 For more information on *Chalikoutes*, see Charidimos A. Papadakis, *Οι Αφρικανοί στην Κρήτη: Χαλικούτες* [*Africans on Crete: the Chalikoutes*] (Rethymno: Grafikes Technes Karagiannaki 2008); Krokidas, *Καινοτομίες και Εκσυγχρονισμός στην Κρήτη*, 284.

66 Perakis, *Κρήτη*, 25–46.

67 Konstantinos Fournarakis, *Οι Τουρκοκρήτες* [*The Cretan Turks*] (Chania: I. Giannakoudaki Publishing, 1929), 11.

68 Nikolaos Stavrakis, *Στατιστική απογραφής του πληθυσμού μετά διάφορων γεωγραφικών, ιστορικών, αρχαιολογικών, εκκλησιαστικών κτλ ειδήσεων περί της Νήσου* [*Statistical Census of the Population Through Various Geographic, Historical, Archaeological, Ecclesiastic etc. News About the Island*] (Athens: n.p. 1890), 197; Kalliataki-Mertikopoulou suggests that after the 1870s some clear differences in the distribution of occupations among communities is evident. It is not completely clear how she confirms that before the 1870s Christians and Muslims had the same number of sailors. See Kalliataki-Mertikopoulou, *Ελληνικός Αλυτρωτισμός*, 79–80 and footnote 61.

69 Stavrakis, *Στατιστική*, 146.

70 Ibid., 4 and 146.

vessels (*kayik*), and fishermen, were included. The study assumes that boatmen were included in this category.[71]

In the census of 1881, 6,475 workers were recorded, out of which 4,013 were Christians, and 2,432 Muslims.[72] However, it should be borne in mind that in this category, the census officials included every worker and not specifically those working at the ports. The category does not refer to industrial workers, since Crete was not an industrialised region at this time. Unfortunately, the analysis cannot be sure of how many of these workers were employed at Cretan ports. However, it is known that some of the workers in the port, mostly porters, were Muslims from North Africa.[73] Their case was almost unique among the Ottoman port-cities, while in larger ports like Thessaloniki, which was well known for its Jewish community, the port workers were mainly Jewish.[74] In the case of Cretan merchants, it seems that both Christians and Muslims shared this occupation, with 1,956, and 1,858 respectively out of a total of 3,814. However, it can be assumed that both large and small merchants were included in this category. In 1881, Cretan olive oil merchants numbered 44: 34 were Muslim, seven were Christian, and three Jewish.[75] If one observes the most important merchants (*négociant*) of Chania, in 1885, from 32 examples, Muslim and Christian share an equal number, while two are of foreign origin, and two of local Jewish origin.[76] In 1894, from an Ottoman register of the port authorities of Rethymnon, merchants engaged in the important carob and acorn trade, in regions such as the Black Sea (Odessa, Braila), were both Muslim and Christian.[77]

However, in the period leading up to the beginning of the twentieth century, the percentage of Muslims on the island rapidly decreased, for example, approximately 30,000 Cretan Muslims were forced to leave following the end

71 For boatmen in Ottoman ports, see Can Nacar, "Free trade or an alternative path: the queue system and the struggle over the conditions of work in Ottoman ports, 1900–1910," *Middle Eastern Studies*, no. 52.5 (2016): 772–786.

72 In this case, many different occupations were probably included, for example, port workers, various carriers, and other ad hoc jobs, which did not include a stable salary.

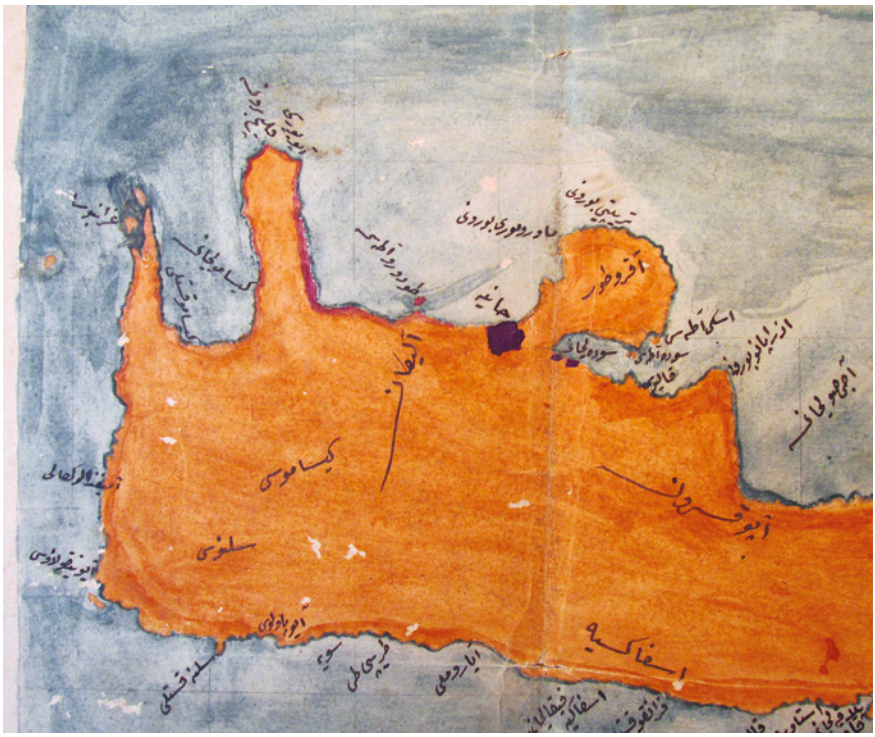
73 Papadakis, *Οι Αφρικανοί στην Κρήτη*, 52.

74 Shai Srougo, "Professional characteristics of the Jewish guild in the Muslim world: Thessaloniki dockers at the end of the Ottoman era," *Mediterranean Historical* Review, no. 26.2 (2011), 115–133.

75 Iosif Chatzidakis, *Περιήγησις εις Κρήτην υπό Ιωσήφ Χατζηδάκη Ιατρού* [*Travels in Crete by Doctor Iosif Chatzidakis*], (Hermoupolis: Nikolaos Varvaresos Publishing, 1881), 97.

76 *Annuaire Oriental du commerce, de l'industrie, de l'administration et de la magistrature* (Istanbul: Cervati Freres, 1885), 471.

77 AAK 3292, 87b (1894–95), HAC, Chania.



MAP 11.1 Ottoman map of the western part of Crete in the nineteenth century
SOURCE: HISTORICAL ARCHIVE OF CRETE, CHANIA

of the Greek-Ottoman War of 1897.[78] In the census of 1900, the total number of people listed in the category of ship owners, sailors, and boatmen in Crete, numbered only 634, almost half the number compared to the census of 1881. However, this decline was probably related to the distinct categorisation of fishermen at this time. If one adds the number of the fishermen, the total number is 1,005, a slight decrease in comparison to the 1881 census. It should be noted that the municipality of Chania counted 293 sailors, Sfakia 63 sailors, and Heraklion 161 sailors. In the category of fishermen, Chania counted

78 Perakis, *Κρήτη*. Among the areas of resettlement were the islands of Rhodes, Kos, but also Asia Minor, and Syria. There are a few cases, such as Kuşadası, where there is documentation on immigrant occupations. Among them only four were sailors, and three were owners of a kayik (*kayikçi*): see Metin Menekşe, "XX. Yüzyıl başlarında Kuşadası'nda Girit Muhacirlari," *The Journal of International Social Research*, no. 9 (2016): 715–734. For more information on the immigration of Cretan Muslims in the late nineteenth century, see Metin Menekşe, *Girit Müslümanlarının zorunlu göçü: Sevk ve İskan (1897–1913)* (PhD diss., Muğla Sıtkı Kocman University, Muğla 2018).

211, Sfakia 22, Heraklion 79, and Rethymnon with 20. Although the decline was small, in some areas it was more evident. For example, the number of seamen at Spinaloga, Merambelo, in the eastern part of Crete in 1881 stood at 173, but reduced to seven in the next census.[79] This indicates a mass departure of people involved in seafaring professions during the Muslim exodus at the end of the century. In the following years, this new reality is more evident. In the election catalogues of Chania in 1906, sailors and fishermen numbered only 56, which shows a very different picture of occupations related to the sea. The decline is more and more evident as steamships begin to acquire a more important position in transportation in Chania, and Crete more generally. The final blow for these occupations would be 1923, when the Muslim population of the island were forced to leave, and the Christian Orthodox people who arrived on the island, were mostly farmers.[80]

3.2 *Ship Ownership in Crete*

In the eighteenth century, according to an analysis of ships registered in Heraklion, in 1751, 39 out of 48 ships belonged to Muslims, while almost all captains were of Greek Orthodox origin.[81] This analysis also indicates that in Chania, in 1761, the French consul reported that the Muslims of Chania used to construct their ships in Sfakia, a well-known maritime region, and assign command to Greek orthodox captains of local origin.[82] Following the insurgencies of the Greek War of Independence (1821), many Christians departed Crete for Syros, and commenced occupations related to the sea—this was due to the fact that Syros was in the process of becoming the most important maritime centre in the newly-established Greek state.[83] This led to the concentration of the Crete Muslim population in the three big urban areas of the island (Chania, Rethymnon, Heraklion), and the engagement of Muslims in new occupations, among them, those related to the sea. Along with the parallel decline of Sfakia

79 *Επίσημος Εφημερίς της Κρητικής Πολιτείας* [*Official Newspaper of the Kritiki Politeia*], 12 March 1904, 11.

80 *Election Catalogue of Chania*, 1906, HAC, Chania. For the occupation by Muslims of various territories of Greece at 1912–23, see Giannis Glavinas, *Οι Μουσουλμανικοί Πληθυσμοί στην Ελλάδα (1912–1923). Αντιλήψεις και Πρακτικές της Ελληνικής Διοίκησης. Σχέσεις με Χριστιανούς Γηγενείς και Πρόσφυγες* [*The Muslim Population in Greece (1912–1923). The Perceptions and Practices of the Greek Administration. The Relationship between Local Christians and Refugees*] (PhD diss., University of Thessaloniki, 2009).

81 Kremmydas, "Καταγραφή," 12–17.

82 Ibid., 16, footnote 10.

83 Manolis Peponakis, *Ξένοι και Πένητες: Οι Κρήτες πρόσφυγες στην περίοδο 1821–1871* [*Foreigners and Beggars: Cretan Refugees during the period 1821–1871*] (Rethymnon: Metropolis of Rethymnon and Avlopotamos, 2018).

as a maritime region in the nineteenth century,[84] there is evidence to suggest Muslims started to become captains of vessels.

In the nineteenth century, Cretan Muslims could be found as captains and ship owners. For example, from the tables of the Greek consulate of Chania (1858), which recorded ship arrivals at Cretan ports, it is noticeable that Ottoman ships arrived at the port of Chania. Among them, there were ships with Cretan Muslim captains, for example, the *golet* of Captain Ahmet Arnautakis (75 tons), and the brig of Captain Musa Arapakis (125 tons), both arrived from Alexandria carrying wheat and other products.[85] It is evident that these ships were engaged in the internal commerce of the empire, transporting products to various Ottoman ports. In the merchant registers of 1866–70 there are many Cretan Muslim captains in ships like brigs connecting Crete with Alexandria. A similar situation can be found in the register of 1877–82, where information is present on Cretan Muslim captains carrying commodities between Thessaloniki and Chania, in small coastal vessels (*kayik*).[86]

Generally speaking, it is difficult to find information regarding ship ownership in Crete. The first set of information comes from the *Giornale de Lloyd Austriaco* from 1845.[87] In this report, 106 ships were registered, with a total tonnage of 3,705, out of which, ten were brigs of approximately 75–200 tons, twenty were *golets* of 25–75 tons, and 76 small ships of between 10–25 tons. The research does not have information for each port, but can conclude that this includes Chania and Heraklion mainly. According to the information supplied by Edmund Flagg some years later, there were 146 ships of a total of 4,721 tons, with a total crew of 653 men.[88] Out of these ships, ten brigs of 1,500 tons and 90 men, sixteen schooners of 800 tonnage and 76 men, twenty small coasters of 100 total tons and 60 men, and finally 25 fishermen boats of 20 tons

84 However, there were still Sfakians involved in shipping. See, for example, the commercial court AAK 521 (1878), n. 46, HAC, Chania.

85 *Port Traffic Inventory by Consular Authorities* (*1859–1862*), General State Archives (GAK), Athens. They also seem to have imported grain into Crete from Alexandria, as Crete had a chronic shortage of cereal production: Triantafyllidou-Baladie, *Το Εμπόριο και η Οικονομία*, 173.

86 AAK 2901, (1866–1870), AAK 1161, (1877–1882), HAC, Chania. Due to the private character of such books, it is difficult to extract relevant information. There is no reference to the ship owner or the tonnage of the ship, for example.

87 There is also a reference from 1813 that contains information about 40 ships of 13,000 total tonnage, which seems exaggerated: Verdardakis, *Πέρι του εν Ελλάδι εμπορίου*, 211; *Giornale del Lloyd Austriaco* (*1845*), vol. 5, 2.

88 Flagg, *Report on the Commercial* Relations, 411.

with 60 men, were registered in Chania.[89] This data indicates that there was an increase in larger ships, as in 1852 there were 22 brigs, while seven years earlier, only ten were recorded. As Flagg mentions, the ships were engaged with internal shipping for the empire, while eight transported fruit from Syros.[90]

At the same time, Flagg provides information on merchant shipping for other regions, such as the island of Hydra, which had 533 ships with a total of 19,702 tons; Piraeus, 365 ships with a total of 11,745 tons; Syros, 568 ships with a total of 83,501 tons; and finally Galaxidi, 288 ships with a total of 28,950 tons.[91] It is evident that Crete, and especially Chania, were not an equivalent maritime power as those other important maritime communities of the eastern Mediterranean of the mid-nineteenth century. For the following years there is no information on the total number of merchant ships from Crete or their ship owners, apart from a reference concerning a statistical survey completed by Sultan Abdulaziz (1861–76), who counted 360 sailing ships belonging to Cretans, mostly Muslims.[92] Although this testimony cannot be confirmed, it is possible that the number is exaggerated. During 1871, via British consular correspondence, there is reference to 28 small ships belonging to Cretan Muslims, suggesting a possible decline in ship ownership by the local population during the year.[93]

However, a clearer picture of those investing in shipping during this period comes from the *sened-i bahri* (maritime certificates).[94] Data of around 30

89 When Flagg refers to schooners, he means American golets, so in that case there was no change in the ship types as presented in the *Giornale del Lloyd Austriaco* in 1845. The golets of Syros, at the same time, have a larger tonnage (73.65), while Cretan golets are more closely related to Canadian ships for the period 1820–79. However, in the case of Crete, it is not known to which period this number refers: see Apostolos Delis, *Ερμούπολη* (*Σύρος*) *Το Ναυπηγικό κέντρο της Ιστιοφόρου Ναυτιλίας 1830–1880* [*Ermoupolis* (*Syros*) *The Shipbuilding Centre of Sailing Shipping*] (PhD diss., University of Corfu, 2010), 239; Trifonas Konstantinidis, *Καράβια, καπεταναίοι και συντροφοναύται 1800–1830. Εισαγωγή εις την ιστορία των ναυτικών επιχειρήσεων του Αγώνος* [*Ships, Captains and Co-Sailors 1800–1830. Introduction to the History of Maritime Businesses During the War of Independence*] (Athens: Istoriki Ypiresia, 1954).

90 Flagg, *Commercial Relations*, 411.

91 Ibid., 432.

92 Fournarakis, *Τα Χανιά Μας* [*Our Chania*], (Chania: Bortolis Publishing, 1928), 36.

93 It is not clear whether this refers to the ships of shipowners from Chania, or from the whole of Crete: Kalliataki-Mertikopoulou, *Ελληνικός Αλυτρωτισμός*, 74.

94 *Sened-i Bahri* were maritime certificates that were provided to Ottoman ship owners under the Ottoman flag, between the Greek War of Independence and the Crimean War. This research managed to find only a few examples, maintained in the BOA, Istanbul. For more information on the *Sened-i Bahri*, see Murat Çizakça, "The Ottoman empire: recent research on shipping and shipbuilding in the sixteenth to nineteenth centuries," in *Maritime History at the Crossroads: a Critical Review of Recent Historiography*, ed.

cases from 1852–62 indicates that ship owners were Cretans, almost all were Muslims. The type of sailing ship present were brigs and *golet*s, which were among the first choice for Greek shipowners at this time, but also generally across the Mediterranean, North Atlantic, and North Sea.[95] In some instances, the ships were constructed in Crete (with no references provided as to where exactly), while some evidence exists of Cretan ship construction on the island of Kasos in the Dodecanese.[96] Cretans also constructed brigs in Syros, which was the main shipbuilding centre of the Aegean; for example, fourteen Muslims (eight from Chania) appeared in the records between the years 1830–80.[97]

In most of these cases, the captain of the ship was a Cretan Muslim, while there are some fewer cases where the captain was a Christian.[98] Usually the religion of the ship owner was the same as that of the captain.[99] In one example, the *sened-i bahri*, the ownership of the ship was divided into shares (*pare*), a total capital of 40 shares. However, in most examples, ownership was divided into two or three shareholders. It is worth bearing in mind that in most

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Frank Broeze (Research in Maritime History 9) (St. John's Newfoundland: International Maritime Economic History Association, 1995), 216–217; Ekin Mahmuzlu, *An Institutional Analysis of the Ottoman Shipping Sector in the Black Sea Region Between 1829 and 1861: Merchants and Ships* (MA diss., University of Istanbul, 2009).

95 The brig was the main type of ship used by Greeks of the period. See also the average tonnage of brigs in Liguria and Provence: Apostolos Delis, *Mediterranean Wooden Shipbuilding: Economy, Technology and Institutions in Syros in the Nineteenth Century* (Leiden and Boston: Brill 2015), 140–141. However, the tonnage of Greek ships was greater than of those belonging to Muslims: Mahmuzlu, "An institutional analysis," 100.

96 Also, during this period registered ships in Syros or Kasos, like brigs, were constructed on the island of Kasos. There are also examples from ships registered in Crete: for example: eds Harlaftis and Nikos St. Vlassopoulos, *Ιστορικός νηογνώμονας Ποντοπόρεια. Ποντοπόρα ιστιοφόρα και ατμόπλοια 1830–1939* [*Pontoporeia, Historical Registry Book of Greek Cargo Sailing Ships and Steamships, 1830–1939*] (Athens: ELIA/NiarchosFoundation, 2002), 54, 219.

97 According to a reference by Chatzidakis in 1881, they constructed ships of 80–120 tons (sometimes larger) at the port of Chania: Chatzidakis, *Περιήγησις εις Κρήτην*, 98. Chania was used for shipbuilding—along with Sfakia and Siteia—from the end of the eighteenth century, when the Cretan merchant fleet was increased: Triantafyllidou-Baladie, Εμπόριο και Οικονομία, 79. For Syros, see Delis, *Mediterranean Wooden Shipbuilding*, 154.

98 It is interesting that there were Muslim captains present, as this was not so widespread given the dominance of Orthodox Christians in shipping: Gelina Harlaftis, *A History of Greek-Owned Shipping: the Making of an International Tramp Fleet, 1830 to the Present Day* (London/New York: Routledge, 1995); Idem (ed.), *Η Ναυτιλία των Ελλήνων, 1700–1821: Ο Αιώνας της Ακμής πριν την Επανάσταση* [*Greek Shipping, 1700–1821. The Heyday before the Greek Revolution*] (Athens: Kedros, 2013). For Muslims engaging in shipping, see Mahmuzlu, "An institutional analysis," 2009.

99 This is not the case with the brig *Hüdavend*, the captain, Giridli Ibrahim Musadaki had a share in the ship along with two Christians, Giridli Giorgis Belakis, and Alkis Psaroudakis.

examples, the captain owned a share of the ship, in fact, it is more than likely that captains of ships recorded by the Greek consulate, would own a share.[100] There are of-course, shareholders who owned a ship outright, for example, *Giridli* Ibrahim Halil,[101] who purchased the brig *Göl Bahri* (7,700 *keyl*; around 180 tons) from Greece.[102] However, in an example from 1856, a brig (8000 *keyl*; 206 tons) was owned by seven Muslim shareholders.[103] In this instance, it is not clear if all the Muslims were Cretan.

It also appears that in some cases one shareholder was a merchant, usually a *hayriye* merchant, who were Muslim merchants granted privileges from the Ottoman state during the first years of the nineteenth century—this would be in addition to Christian "merchants of Europe".[104] In the case of the *sened-i bahri* of the brig *Yıldız* (Star), constructed in Kasos in 1856, the captain and owner of a share in the ship was Emirakis Hüseyin, son of Osman from the *kaza* of Ierapetra in Heraklion. A further five people owned shares in the ship, among them a *hayriye* merchant called Mustafa Ağa from Heraklion. Another case is a *golet* constructed in Kasos in 1856, the captain was Hamitoglu Halil from Heraklion; it had seven shareholders. Among these shareholders was the merchant Haci Ali Efendi from Chania, who lived in Smyrna.[105] There is also an example of a brig (4000 *keyl*—around 100 tons) from 1852, whose captain was *Giridli* (Cretan) Musrinogli Hüseyin.[106] This ship was divided into five shares owned by the captain, fifteen shares by *Giridli* Ramazan Ağa, and twenty shares by a merchant from Tunis, Tunusli Haci Ali Ağa, who resided in Smyrna. These examples indicate the networks of Cretan Muslim merchants and ship owners,

100 Fournarakis indicates that in most cases Cretan Muslims owned sailing vessels alone, or in shares with others engaged in the export and import trade of the island: Fournarakis, *οι Τουρκοκρήτες*, 13.

101 In most of the cases in the *sened-i bahri*, the owners are mentioned as *Giridli* (Cretan) and not as *Hanyali* (from Chania) or *Kandiyeli* (from Heraklion).

102 BOA, A.DVN.173.78 (1861). *Keyl* was used as a means of measurement, 20 okkas was equal to 25,6 kg. For the Ottoman measures, see Halil İnalcık, "Introduction to Ottoman metrology," *Turcica*, no. 15 (1983), 311–348.

103 BOA, A.DVN.121 (1856).

104 For the merchants of Europe and *Hayriye* merchants, see Ali İhsan Bağış, *Osmanlı Ticaretinde Gayri Müslimler: Kapitülasyonlar, Avrupa Tüccarları, Beratlı Tüccarlar, Hayriye Tüccarları 1750–1839* (Ankara: Turhan Kitabevi, 1983); Bruce Masters, "The Sultan's entrepreneurs: the Avrupa Tuccaris and the Hayriye Tuccaris in Syria," *International Journal of Middle East Studies*, no. 24.4 (November 1992), 579–597; Sophia Laiou, "The Ottoman Greek 'merchants of Europe' at the beginning of the 19th century," in *Festschrift in Honor of Ioannis P. Theocharides. Studies on the Ottoman Empire and Turkey*, eds. Evangelia Balta, Georgios Salakidis, Theoharis Stavrides (Istanbul: Isis Press, 2014), 313–331.

105 BOA, A.DVN.121 (1856).

106 BOA, A.DVN.85.15 (1852).

together with other Muslims outside Crete, and the extent of business cooperation within the Ottoman Empire. It also demonstrates that, as for the whole Mediterranean, the collaboration between merchants and ship owners was uniquely important, in order to fulfil an investment in a ship.[107] Ship shareholding was a common practice in both the Ottoman Empire and Europe prior to the nineteenth century.[108] However, the fact that Cretan Muslims invested smaller than anticipated shares in ships, indicates there was a lack of capital investment.

During this period, joint ship ownership was also an important characteristic in Greece, mainly because of a lack of capital, and the inherent risks of the sea. In the 1870s, a different scenario emerged with the transition from the combined profession of merchant and ship owner, to the specialisation of ship ownership.[109] Unfortunately, sources are fragmentary and do not provide a stable picture of the situation. Nevertheless, in the case of Crete, it can be assumed that shareholding continued until the end of the nineteenth century. On the 24 May 1885, in the Greek-speaking newspaper Άμυνα [Defence], in Chania, a reference is made to an auction of an Ottoman flag ship, the *Hüdavend*, weighing 97 tons, with a Cretan captain, Ahmet Tsarkaki. The captain had a 15/40 share, a merchant from Chania, Rebeb Hacaki, had a 20/40 share, and Tusun Bey Kirkisizade (probably not a Cretan), had a small 5/40 share. The ship was sold to Ali Bey Vekilagadaki for 35,000 kuruş.

4 Conclusions

This chapter attempts to illustrate the interconnectedness of the ports of Crete, especially Chania, with the activities of local (mostly Muslim) communities in the shipping environment during the second half of the nineteenth, and the first years of the twentieth century. The paper demonstrates how the transition

107 Delis, "Ερμούπολη (Σύρος)," 51–52. This was a tactic from previous centuries: see for example, Kremmydas, *Αρχείο Χατζηπαναγιώτη* [*Archive of Chatzipanagiotis*] (Athens: private publication, 1973).

108 Murat Çizakça, "The Ottoman empire: recent research on shipping and shipbuilding in the sixteenth and nineteenth centuries," *Research in Maritime* History, no. 9 (December 1995), 224–225; Idem, *A Comparative Evolution of Business Partnerships. The Islamic World and Europe, with Specific Reference in the Ottoman Archives* (Leiden, New York, Köln: Brill, 1996), 91–94. For the Black Sea region, see especially Mahmuzlu, "An Institutional Analysis". An example of the endurance of this system is the case of Camogli and the *carati* (share) system, as presented by Leonardo Scavino, "Camogli as a maritime community in the age of transition (1850s–1914)," in the present volume.

109 Harlaftis, *History of Greek-Owned Shipping*, 141–142.

from sail to steam, and the new realities of the shipping industry, affected the port of Chania—and more widely, the ports of Crete—together with the lives of the local community, who were economically dependent on the function of the port.

It is clear that the port of Chania continued to attract steamships until the beginning of the twentieth century, while simultaneously, sailing ships declined, causing important changes in Cretan trade. The port of Suda operated as a supplementary port, and opened a new connection with Russia, through the Russian Steam Navigation and Trading Company. However, the basic problems with infrastructure at the port of Chania, and the disagreements regarding whether to transfer the main port of the island to Suda, created obstacles for the further development of shipping activities in Crete. While in other ports, these problems were overcome, in the case of Crete, they remained present until the inter-war period.

During the nineteenth century, the local communities of Crete were engaged in shipping activities as sailors and shipowners. There was local investment (mainly by Muslim investors) in popular ship types, for example, brigs and *golets*, transferring goods for the internal commerce of the empire, while also transferring goods from Syros, in order to be subsequently exported to western Europe. It can be assumed that gradually, investment and general engagement in shipping declined due to specific reasons. Firstly, the emergence of steamships (mainly foreign), which connected the ports of Crete with foreign ports, but also with those of the Ottoman Empire (in which routes the Cretan ships were operating). Gradually, the presence of sailing ships declined. Simultaneously, internal political conflicts between the Christian and Muslim population of the island created a period of transition into a new political reality—that of an autonomous state, and eventually to the union of the island with the Greek state—which affected the demographics of the local population, forcing some of the Muslim population to leave. This also created a difficult financial situation for the local Muslim population in Chania and in Crete generally, affecting, as a result, investment in shipping activities.[110] These reasons were crucial, and profoundly affected local communities, causing difficulties concerning steamship investment during the period studied.

110 See, for example, the case from the commercial court in 1876 of the bankruptcy of shipowner Ibrahim Kotsakis at Chania: AAK 3174, n. 30, HAC, Chania.

PART 3

Shipping

SECTION 1

Cargo Shipping

CHAPTER 12

Ship Operation in Transition: Greek Cargo Sailing Ships and Steamers, 1860s–1910s

Apostolos Delis

1 Introduction

The transition from sail to steam navigation was among the most important revolutionary phenomena of industrialization during the nineteenth century. It had a transformative impact on traditional sectors of maritime industries such as shipping, shipbuilding, and in related port trades. The speed and regularity of the steamship introduced new forms of shipping sectors such as the passenger liner and cargo liner, the precursor of container shipping. In the older sector, tramp shipping, the introduction of the steamship created economies of scale in tonnage capacity and in turnaround times of a voyage. The industrialization of ships, shipbuilding, and ports also necessitated new knowledge from new types of arts and professions working on new materials and processing methods, including engineers, firemen, stokers, boiler makers, and so on. In this transforming environment, shipping enterprises had to adapt to new demands in terms of capital, expertise, management, and skilled labour. Among the many aspects of the shipping firm that have been studied, ship operation constitutes a distinct and fundamental aspect of management that remains unexplored for this period of transition from sail to steam. This paper, therefore, aims at contributing to the study of the evolution of the shipping firm by analysing the ship operation of Greek cargo sailing ships and steamers in the transformative period between the 1860s to 1910s.

The transition to steam navigation was not a uniform process in time and level of development across the world. Great Britain, where the industrial revolution took place, was the most advanced in developments in shipping, shipbuilding, and marine engineering. The United States, France, Germany, and Spain and other western European countries followed far behind.[1] In Greece sail dominated for most of the nineteenth century. Greeks, as Ottoman, Venetian, or British subjects specialized in the transport of cereals already

1 A.N. Kiaer, *Statistiques Internationale. Navigation Maritime,* vol. 2: *Les Marines Marchandes* (Christiania: Bureau Central de Statistique du Royaume de Norvege, 1881), 44, Appendice X.

- 978-90-04-51419-5

in the late eighteenth century from the eastern Mediterranean.[2] During the period of the 1830s–1880s, that coincides with the apogee of the Black Sea grain trade, Greek-owned tramp shipping was engaged in it with a fleet of sailing ships, mostly from islands of the Ionian and the Aegean seas. These shipowners collaborated in the transport of cereals with Greek diaspora merchants based in the Black Sea, western Mediterranean, and north-western European ports, who controlled large shares of the traffic of Russian grain trade. Many of these merchants also came from the same Aegean and Ionian islands as the shipowners, thus creating a strong network based on common origin and kinship.[3] This specialization in the grain trade, and more generally in tramp shipping, remained a constant element of Greek-owned shipping throughout the periods of sail and steam as well as up to the present day. The introduction of passenger shipping from the *Hellenic Steam Navigation Company* in 1856 did not bring structural changes in Greek cargo shipping.[4] Greek shipowners began to invest in cargo steamers only from the 1880s, and more systematically from the 1890s. However, already by 1902, the tonnage of steamships in Greece, most of them cargo vessels, surpassed that of the sailing ships.[5] This transition to cargo steamers is divided into two main periods. The first was up to the middle of the 1890s, when wealthy diaspora capitalists from Istanbul, the Black Sea, and western European ports invested in newly built steamers in collaboration with shipowners from traditional maritime communities, such as Syros, Andros, Cephalonia, Ithaki, and Chios, that successfully shifted to the new technology of steam.[6] The second period up to the First World War

2 Gelina Harlaftis, "The 'eastern invasion'. Greeks in Mediterranean trade and shipping in the eighteenth and early nineteenth centuries," in *Trade and Cultural Exchange in the Early Modern Mediterranean: Braudel's Maritime Legacy*, eds. Maria Fusaro, Colin Heywood, Mohamed-Salah Omri (London: I.B. Tauris 2010), 223–52.

3 Gelina Harlaftis, *Creating Global Shipping. Aristotle Onasis, the Vagliano Brothers, and the Business of Shipping, c.1820–1970* (Cambridge: Cambridge University Press, 2019), 35–38; Gelina Harlaftis and Jesús M. Valdaliso, "Business groups and entrepreneurial families in southern Europe: comparing Greek and Spanish shipowners in the nineteenth and twentieth centuries," in *The World's Key Industry History and Economics of International Shipping* eds. Gelina Harlaftis, Stig Tenold, and Jesús M. Valdaliso (Basingstoke: Palgrave Macmillan, 2012), 247–48.

4 Apostolos Delis, "From parallel growth to great divergence: Greek shipbuilding from the late eighteenth to early twentieth centuries," *History of Technology*, no. 33 (2017) (Special Issue: History of Technology in Greece from the Nineteenth to the Twenty-first Century, eds. Stathis Arapostathis and Aristotle Tympas): 37–38.

5 Gelina Harlaftis, *A History of Greek-Owned Shipping. The Making of an International Tramp Fleet, 1830 to the Present Day* (London: Routledge, 1996), 112, 133; Vasilis Kardasis, Από του ιστίου εις τον ατμόν. Ελληνική Εμπορική Ναυτιλία (*1858–1914*) [*From Sail to Steam. The Greek Merchant Marine* (*1858–1914*)] (Athens: ETBA, 1993), 172.

6 Harlaftis, *A History of Greek-Owned Shipping*, Figure 1.1, 3.

was characterized by the transference of shipping headquarters to Piraeus and London and the entrance of many small or single ship owners. In this phase, Greek shipowners bought second-hand British-built steamers due to the low freight rates of the first decade of the twentieth century that also dropped ship prices.[7] British shipowners, who had before the fall of freight rates invested in new and large cargo steamers, faced competition from these old and smaller steamers sold to foreigners in a depressed freight period.[8]

The literature on Greek-owned tramp shipping has focused on many aspects, including the mapping of the Greek shipowners, their places of origin, the areas of operation, their business strategies and networks, their position in the international markets, as well as their relationship with the Greek State.[9] The transition from sail to steam in Greek-owned tramp shipping in the last third of the nineteenth century has also been analysed in terms of business strategies and methods of investment in the new technology.[10] Despite the fact that the organization, structure, and networking of Greek-owned shipping firms have been the subject of analysis by Greek historians, crucial issues,

7 Gelina Harlaftis, "Pattern of ownership and finance in the Greek deep-sea steamship fleet, 1880–1914," in *Management, Finance and Industrial Relations in Maritime Industries: Essays in International Maritime Business History*. eds. Simon P. Ville and David M. Williams (Research in Maritime History 6) (St. John's, Newfoundland: International Maritime Economic History Association, 1994), 143–45.

8 Robin S. Craig, "Aspects of tramp shipping and ownership," in *Ships and Shipbuilding in the North Atlantic Region*, eds. Keith Matthews and Gerald Panting (St. John's: Memorial University of Newfoundland, 1978), 223.

9 There is an extensive bibliography on these aspects, especially by Gelina Harlaftis, from which we cite a representative selection of works, among them: Harlaftis, *A History of Greek-Owned Shipping; Greek Shipowners and Greece, 1945–1975. From Separate Development to Mutual Interdependence* (London: Athlone Press 1993); idem, *Creating Global Shipping*; Gelina Harlaftis and Katerina Papakonstantinou (eds.), Η ναυτιλία των Ελλήνων, *1700–1821*. Ο αιώνας της ακμής πριν από την Επανάσταση [*Greek Shipping, 1700–1821. The Heyday Before the Greek Revolution*] (Athens: Kedros Publications, 2013); Gelina Harlaftis and Nikos Vlassopoulos, *Pontoporeia, Historical Registry Book of Greek Cargo Sailing Ships and Steamships, 1830–1939* (Athens: ELIA/Niarchos Foundation, 2002); Gelina Harlaftis, Helen Beneki, and Manos Haritatos, *Ploto. Greek Shipowners from the Late 18th Century to the Eve of World War II* (Athens: ELIA/Niarchos Foundation, 2003); Ioannis Theotokas and Gelina Harlaftis, *Leadership in World Shipping: Greek Family Firms in International Business* (Basingstoke: Palgrave/Macmillan, 2009). See also Alexandra Papadopoulou, Ναυτιλιακές Επιχειρήσεις, Διεθνή Δίκτυα και Θεσμοί στην Σπετσιώτικη Εμπορική Ναυτιλία, *1830–1870*. Οργάνωση, διοίκηση και στρατηγική [*Maritime Businesses, Networks and Institutions in Merchant Shipping of the Island of Spetses, 1830–1870. Organization, Governance and Strategy*] (PhD diss., Ionian University, 2010).

10 Harlaftis, *A History of Greek-Owned Shipping*, chapter 4; and Kardasis, Από του ιστίου εις τον ατμόν, 145–181.

such as the operation of the ship, that constitutes the flesh and bones of shipping activity, have not been studied yet. Ship operation in the tramp sector, a neglected subject also internationally, is instrumental for understanding the function and performance of the shipping business.[11] It illuminates key aspects, such as the organization of the firm, the deployment, and management of resources (capital, ships, labour) and the strategies in the shipping markets (the freight and shipbuilding market, suppliers, and the ship services market). The study of ship operation by Greek shipping firms will focus on specific case studies that span from the 1860s to the First World War, namely during the transition from sail to steam.

The period of sail is represented through the case of Ioannis and Stamatios Kaloyannis, father and son from Hydra in the western Aegean, who owned a small fleet of sailing ships from the 1840s to the 1880s. Hydra, from the late eighteenth and throughout to the nineteenth century, was one of the most developed maritime communities in the sailing ship economy, which did not make the transition to steam.[12] The evidence in this case is based on material regarding the Kaloyannis' ships: the schooner *Tripolina* from 1861 to 1864, and the brig *Eleni Koupa* from 1878 to 1887.[13] The period of cargo steamers is studied through the case of shipping firms from the island of Andros in the central Aegean, one of the traditional maritime communities that successfully made the transition to steam.[14] The Andros cases include the steamer *Georgios*

11 Among the few works on ship operation to my knowledge are two of Gordon Boyce, "Edward Bates and Sons, 1897–1915: recession and recovery," *International Journal of Maritime History*, 23 no. 1 (June 2011): 13–50; and idem, *The Growth and Dissolution of a Large-Scale Business Enterprise: the Furness Interest, 1892–1919* (Research in Maritime History 49) (St. John's Newfoundland: International Maritime Economic History Association, 2012).

12 Gelina Harlaftis, "Η 'ναυτική πολιτεία' του Ιονίου και του Αιγαίου. Ναυτότοποι, ναυτικές οικογένειες και επιχειρήσεις" ["The 'maritime city' of the Ionian and the Aegean. Maritime communities, families and enterprises"] in Harlaftis and Papakonstantinou, Η ναυτιλία των Ελλήνων, 353–405; in the same volume: Gelina Harlaftis, "Η 'ναυτική πολιτεία' του Ιονίου και του Αιγαίου. Στόλος και ανταγωνιστικότητα" ["The 'maritime city' of the Ionian and the Aegean. Fleets and competitiveness"], 407–43, and: Alexandra Papadopoulou, "Από το τοπικό στο παγκόσμιο: η ενσωμάτωση των ναυτότοπων του Αιγαίου στο μεσογειακό εμπορικό σύστημα τέλη 18ου–αρχές 19ου αιώνα" ["From local to global: the integration of the Aegean maritime communities in the Mediterranean commercial system, late 18th–early 19th century"], 703–34.

13 Private archive of Evangelos Rafalias, Hydra. I am very much indebted to Minas Antypas (PhD student, University of Crete), a specialist on Hydra's maritime past, for finding, collecting, and sending me this invaluable material.

14 Harlaftis, *A History of Greek-Owned Shipping*, Figure 1.1, 3. The evidence comes mainly from the maritime archives of Kaireios Library in Andros, and to a lesser extent from the Hellenic Literary and Historical Archive (ELIA) in Athens. I would like to thank for their work in the research missions in Andros: Popi Vasilaki, Petros Kastrinakis, Alkiviadis

M. Embiricos (1904–16), owned by Stamatios G. Embiricos, one of the largest and long-lasting Greek shipping companies, founded in 1896, which along with ship owning, provided all kinds of shipping services and management for ships, with offices in Athens and Cardiff.[15] This case is mainly compared with the steamer *Leonardos G. Goulandris* (1902–15) owned by the Goulandris Brothers, also from Andros, a single ship firm that lasted up to 1939, and to a smaller extent with the *s/s Andriana* (1906–10) owned by Alkiviadis Embiricos, a member of the most influential branch of the Embiricos business group in politics and shipping.[16]

The evidence derived from account books and papers, which constitute the common types of records in the archives of both sailing and steam shipping firms, offers the opportunity to study the changes and evolution in the operation of Greek-owned tramp shipping during the transition from sail to steam. The first part of this chapter treats the forms of ownership and the fleet of the firms, including the types and technology of the ships as well as the choices of the shipowners in the shipbuilding market. The second part analyses two hitherto unexplored aspects of ship operation management of the firms. One external: the "ship operation services", namely the suppliers and other professionals that provided all kinds of materials and services in the ports needed during the voyage; and the other internal: the accounting system. These aspects were of paramount importance in ship operation and reflect the level of expansion, market integration, organizational efficiency, and the overall performance of the firm. In the third part of the chapter, the analysis focuses on the operation and the performance of the ships by examining trade routes and cargoes, the turnover of voyages, the operation costs, and profitability. The final part, explores the labour force through an analysis of crew

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Kapokakis, and Thomas Kalesios, all PhD students of the University of Crete and members of SeaLiT.

15 Theotokas and Harlaftis, *Leadership in World Shipping*, 147–48.

16 Leonidas E. Bistis, Ο Ατμήρης εμπορικός στόλος της Άνδρου. Από της συστάσεώς του μέχρι της λήξεως του Β' Παγκοσμίου Πολέμου (*1882–1945*) [*The Steamship Fleet of Andros. From its Beginning to WWII* (*1882–1945*)] (Athens: Union of Andriots, 1982), 45–46, 59, 98, 102; Gelina Harlaftis and Jesús M. Valdaliso, "Business groups and entrepreneurial families in southern Europe: comparing Greek and Spanish shipowners in the nineteenth and twentieth centuries," in *The World's Key Industry. History and Economics of International Shipping* eds. Gelina Harlaftis, Stig Tenold, and Jesús M. Valdaliso (Basingstoke: Palgrave Macmillan, 2012), 243–44; http://www.teesbuiltships.co.uk/view.php?year_built=1896&builder=5027&ref=168757&vessel=CHISWICK, http://www.sunderlandships.com/view.php?official_number=&imo=&builder=&builder_eng=&year_built=&launch_after=&launch_before=&role=&type_ref1=&propulsion=&owner=&port=&flag=&disposal=&lost=&ref=103588&vessel=ANDRIANA (accessed 24 June 2020).

size, specialization, wages, and professional mobility. Labour questions are also examined in combination with the economic performance of the ships (freight rates, profitability).

2 Fleet and Ownership

2.1 *Ships, Maritime Technology and Shipbuilding Markets*

In the Mediterranean, during the period of activity of the Kaloyannis firm, tramp shipping was operated mainly by sailing ships. The fleet of Kaloyannis (Table 12.1) was composed mostly of brigs. The brig was the backbone of the sailing merchant fleet of Greek shipowners in the nineteenth century, and the most widespread type of commercial sailing vessel in the Mediterranean and in northern Europe.[17] Kaloyanni's ships were either built new in Syros, the largest shipbuilding centre in Greece, or bought second-hand in foreign shipyards. During the period 1830–80, Greek shipowners built most of their fleet in Greek shipyards. The shipyards in Syros not only built most of the tonnage in Greece during this period, but also in the middle of the nineteenth century were competitive at a Mediterranean level with entire areas, like Liguria and Provence.[18] According to Chart 12.1, there was a close interdependence between the two industries—shipping and shipbuilding—and Syros's output was very much influenced by the course of freight rates and the economic performance of Greek-owned shipping. In fact, peaks (1839, 1847, 1853, 1857, 1867) and troughs (1837, 1842, 1851, 1861, 1865, 1873) in Syros' shipbuilding output strictly correlate with the path of the freight rates and the shipping income of Greek ship owning firms.

17 Apostolos Delis, *Mediterranean Wooden Shipbuilding. Economy, Technology and Institutions in the Nineteenth Century* (Leiden and Boston: Brill, 2015), 142–45; idem, "Mediterranean wooden shipbuilding in the nineteenth century: production, productivity and ship types in comparative perspective," *Cahiers de la Méditerranée*, no. 84 (2012): 358–63; Laurent Pavlidis, "La construction navale traditionnelle provençale au XIX^{e} siècle. Sources et méthodes," *Cahiers de la Méditerranée*, no. 84 (2012): 345; Luciana Gatti, *"Un raggio di convenienza". Navi mercantili, costruttori proprietari in Liguria nella prima metà dell' Ottocento* (Genoa: Società Ligure di Storia Patria, 2008); David R. MacGregor, "The wooden sailing ship: under 330 tons," in *Sail's Last Century. The Merchant Sailing Ship, 1830–1930, Conway's History of the Ship*, ed. Robert Gardiner (London: Conway Maritime Press, 1993), 48; David R. MacGregor, *Merchant Sailing Ships, 1850–1875, Heyday of Sail*, (AnNapless: Naval Institute Press, 1984), 73–79.

18 Apostolos Delis, "Modern Greece's first industry? The shipbuilding center of sailing merchant marine of Syros, 1830–70," *European Review of Economic History*, 19, no. 3 (August 2015): 263; and idem, "Mediterranean wooden shipbuilding," 353–58.

TABLE 12.1 The Kaloyannis fleet

Ship Name	Ship Type	Tonnage	Place of Construction	Year of Construction	Period of Ownership
Θεοφάνεια (*Theofania*)	brig	216	Syros	1841	1841–55
Τριπολίνα (*Tripolina*)	schooner/ brig (1865)	186	London	1845	1855–65
Καμίτα (*Camita*)	brig	117	Danube	1845	1855
Κουντουριώτης (*Coundouriotis*)/ex *Lucia*	brig	299	Capo d'Istria	1853	1866–81
Παναγία της Ύδρας (*Panaya tis Ydras*)	brig	220	Syros	1867	1867–79
Ελένη Κούπα (*Eleni Koupa*)	brig	276	Syros	1878	1878–87

SOURCE: PROCESSED DATA FROM GELINA HARLAFTIS AND NIKOS VLASSOPOULOS, *PONTOPOREIA, HISTORICAL REGISTRY BOOK OF GREEK CARGO SAILING SHIPS AND STEAMSHIPS, 1830–1939* (ATHENS: ELIA/NIARCHOS FOUNDATION, 2002); PRIVATE ARCHIVE OF EVANGELOS RAFALIAS, HYDRA, ACCOUNT BOOK AND LOGBOOK OF *ELENI KOUPA* AND LOGBOOKS OF *COUNDOURIOTIS* AND *PANAYA TIS YDRAS*; *ANNUARIO MARITIMO PER L'ANNO 1854*, VOL. 4, (TRIESTE: LLOYD AUSTRIACO, 1854), 174; AND *1867*, VOL. 17, 82

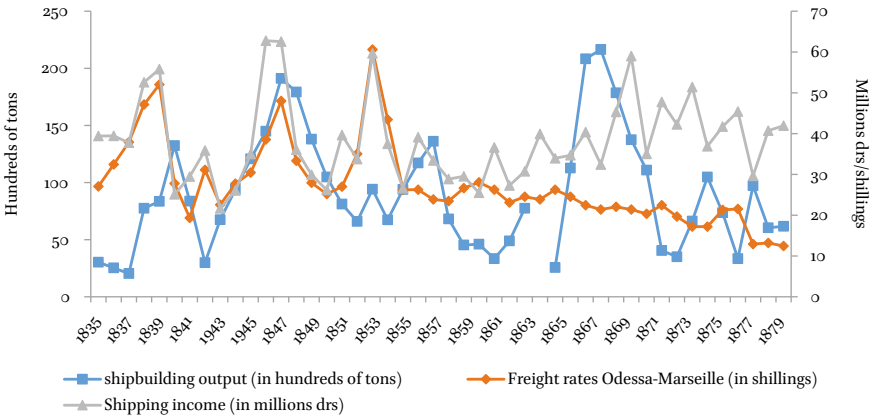

CHART 12.1 Syros shipbuilding output/shipping income (in drachmas)/freight rates Odessa-Marseilles

SOURCE: APOSTOLOS DELIS, *MEDITERRANEAN WOODEN SHIPBUILDING. ECONOMY, TECHNOLOGY AND INSTITUTIONS IN THE NINETEENTH CENTURY* (LEIDEN AND BOSTON: BRILL, 2015), 63

During the same period, the steamship was under continuous technical evolution. Up to the 1840s, it was a paddle-driven wooden vessel of limited tonnage capacity, employed in river and coastal routes, specialized in the transport of mail, people, and light cargo. Gradually from the late 1830s in Britain, steamers began to expand to longer and oceanic routes, but always carrying passengers, mail, and some cargo. From the 1850s up to the 1880s, technical developments in the engines and boiler, in the propulsion system from paddle to screw, and in the hull material from wood to iron, industrialized the steamship, which enabled her to capture the market in tramp shipping.[19] It was after the 1880s, when the steamship was in the most advanced stage of its technical development, that Greek shipowners began to shift from sailing ships to cargo steamers.

The building of the fleet of S.G. Embiricos is a typical example of this process. Georgios Michail Embiricos (1837–1902), father of Stamatios, was already an owner of sailing ships. He was also one of the first Greek shipowners who built an iron cargo steamer, the *Constantinos*, in the UK in 1884.[20] Before his death in 1902, he bought two more second-hand steel cargo steamers: the *Michail* and *Asimina*.[21] His son Stamatios Embiricos (1868–1934) established his own firm, S.G. Embiricos, in Cardiff in 1896, and was the major shareholder in his father's firm and carried the management of the fleet. In the years up to the First World War, Stamatios expanded the fleet only with newly-built steel screw steamers, among which there was the *Georgios M. Embiricos*, the first of a series of five built between 1904 and 1914. All vessels were ordered at Short Broers Ltd. of Sunderland, a medium-sized, but very long-lasting shipbuilding

19 The literature and sources on this subject are very extensive. We can cite some representative works such as: Robert Gardiner (ed.), *The Advent of Steam. The Merchant Steamship before 1900. Conway's History of the Ship* (London: Conway Maritime Press, 1993); John Armstrong and David M. Williams, *The Impact of Technological Change. The Early Steamship in Britain* (Research in Maritime History 47) (St. John's, Newfoundland: International Maritime Economic History Association, 2011); Anthony Slaven, "The shipbuilding industry," in *The Dynamics of Victorian Business*, ed. Roy Church (London: Routledge, 1980), 110–11; Anthony Slaven, "Modern british shipbuilding, 1800–1990," in *The Shipbuilding Industry: a Guide to Historical Records*, ed. L.A. Ritchie (Manchester: Manchester University Press, 1992), 2–3; Anthony Slaven, *British Shipbuilding: a History, 1500–2010* (Lancaster: Crucible Books, 2013); Crosbie Smith, *Coal, Steam and Ships. Engineering, Enterprise and Empire on the Nineteenth-Century Seas* (Cambridge: Cambridge University Press, 2018).

20 According to Bistis, Ο Ατμήρης εμπορικός στόλος, 90, *Constantinos* was owned by K.L. Embiricos based in Braila, and Georgios M. Embiricos was her captain and co-owner.

21 http://www.steniotes.gr/plegma/4/1/6005.html (accessed 31 March 2020).

yard (1850–1964), and was engined by J. Dickinson & Sons, a close collaborator of them (Table 12.2).[22]

TABLE 12.2 The *S.G. Embiricos* fleet up to the First World War[a]

Ship Name	Tonnage	Shipbuilder, Place of Construction/Engine Builder	Year of Construction	Engine details	Period of ownership
Constantinos	1727 grt/ 1109 nrt	McIntyre & Co, Hebburn/Blair & Co Ltd, Stockton-on-Tees	1884	C2cyl (32 & 60 × 39in), 188hp	1884–1900
Fulweel/ ***Michail***	2514 grt/ 1595 nrt	J.L. Thompson & Sons Ltd., North Sands/J. Dickinson, Monkwearmouth, Sunderland	1890	T3cyl (22, 36, 59 × 39in), 222nhp	1899–1916
Beechley/ ***Asimina***	2878 grt/ 1852 nrt	CS Swan & Hunter, Wallsend, Newcastle/ Westgarth, English & Co Ltd, Middlesbrough	1894	T3cyl (23, 37 & 61 × 39in), 250nhp	1899–1918
*Ardova/****Andros***	3139 grt/ 2012 nrt	Blyth Shipbuilding Co. Ltd., Blyth/Blair & Co. Ltd, Stockton-on-Tees	1896	T3cyl (24, 40, 65 × 42in), 281nhp	1901–13
Georgios M. Embiricos	3636 grt/2324 nrt	Short Brothers Ltd., Sunderland/J. Dickinson & Sons Ltd, Monkwearmouth, Sunderland	1904	T3cyl (25, 42, 68 × 45in), 324nhp	1904–16

a The firm purchased another nine steamers after the First World War, from 1920 up to 1938: Bistis, Ο Ατμήρης εμπορικός στόλος, 53; Kaireios Library, Inventory of the Maritime Archives of S.G. Embiricos.

22 L.A. Ritchie (ed.), *The Shipbuilding Industry: a Guide to Historical Records* (Manchester: Manchester University Press, 1992), 140–41; "Short Brothers of Sunderland", *Grace's Guide to British Industrial History*: https://gracesguide.co.uk/Short_Brothers_of_Sunderland (accessed 29 April 2020); and "John Dickinson and Sons", https://gracesguide.co.uk/John_Dickinson_and_Sons (accessed 29 April 2020).

TABLE 12.2 The *S.G. Embiricos* fleet up to the First World War (*cont.*)

Ship Name	Tonnage	Shipbuilder, Place of Construction/Engine Builder	Year of Construction	Engine details	Period of ownership
Eugenie S. Embiricos	4139 grt/ 2670 nrt	idem	1907	T3cyl (25, 42 & 70 × 48in), 364nhp, 1 Screw	1907–17
Ellin	4577 grt/ 2780 nrt	idem	1913	T3cyl (25.5, 42.5 & 72 × 48in), 386nhp	1913–36
Vasileus Konstantinos	4070 grt/ 2489 nrt	idem	1913	T3cyl (25, 42.5 & 69 × 45in), 353nhp	1913–17
Dorothy T. Short	4494 grt/ 2674 nrt	idem	1914	T3cyl (25.5, 43 & 72 × 48in), 386nhp	1915–17

SOURCE: PROCESSED DATA FROM HTTP://SHIPPINGANDSHIPBUILDING.UK/ 10 JULY 2021. IN ENGINE DETAILS COLUMN C STANDS FOR COMPOUND, T FOR TRIPLE EXPANSION ENGINE. THE NUMBERS IN PARENTHESIS STAND FOR THE ATMOSPHERIC PRESSURE OF THE CYLINDER AND THE NUMBER FOLLOWED BY IN, INDICATED THE LENGTH OF THE STROKE OF THE ENGINE. THE NUMBER OUTSIDE THE PARENTHESIS FOLLOWED BY THE NHP STANDS FOR THE NOMINAL HORSEPOWER OF THE ENGINE

The preference towards British shipyards is because Britain throughout the nineteenth and part of the twentieth century, was the biggest producer of steamships worldwide, and areas like the Clyde, the Thames, and north-east England were the most advanced in industrial shipbuilding and marine engineering. British shipyards produced steamships for domestic and foreign shipowners alike, and between 1856 and 1875, 24% of steam tonnage was produced for foreign flags. In the last two decades before the First World War, British shipyards built 60 to 80% of world production, out of which 25 to 30% was for foreign flags.[23] The few Greek shipbuilding establishments, one in Syros and

23 Slaven, "The shipbuilding industry", 124; Simon Ville, "Introduction," in *Shipbuilding in the United Kingdom in the 19th Century: a Regional Approach*, ed. Simon Ville (Research in Maritime History 4) (Saint John, Newfoundland: International Economic History Association, 1993), vii.

TABLE 12.3A Areas of construction of Greek (new and second-hand) steamers over 100 tons registered on 1 January 1912 (number of vessels)

Clyde	Wear	Tyne	Tees	Rest of UK (including eastern Scotland and Ireland)	Mediterranean	Northern Europe
59	58	50	64	23	8	12

SOURCE: PROCESSED DATA FROM *Δελτίον της Ελληνικής Ναυτικής Ενώσεως* [*BULLETIN OF THE HELLENIC SHIPPING UNION*] (ATHENS, 1912), 20–45.

TABLE 12.3B British areas of construction of newly-built Greek steamers over 100 tons up to 1939 (number of vessels)

Clyde	Wear	Tyne	Tees	Rest of UK (including eastern Scotland and Ireland)
32	72	24	46	7

SOURCE: PROCESSED DATA FROM HTTP://SHIPPINGANDSHIPBUILDING.UK/, 10 JULY 2021

two in Piraeus, were unable to compete in technological and economic terms, and they focused instead on small engineering and repair work. Thus, Greek shipowners sought in the British shipbuilding market either new or second-hand steamers, which caused a divergence between the two sectors of the shipping industry. Shipping and shipbuilding in Greece no longer, like in the age of sail, advanced hand-in-hand one depending on the other.[24]

Greek shipowners were oriented towards the shipyards of north-eastern England, which include the areas around the rivers Tyne, Wear, and Tees. Table 12.3a shows that 254 out of the total 274 steamships, purchased either new and second-hand, were built in Britain, and from them the 172 of the total 274 Greek Steamers (63%) were built in the north-eastern yards of Wear, Tyne, and Tees. Greek shipowners (Table 12.3b), including those of the islands of Chios and Oinousses integrated into Greece after the Balkan Wars, built their steamships at north-eastern yards in 142 out of 181 cases, with Wear shipyards receiving the highest number of orders (72 or 40%). This preference of Greek shipowners for north-eastern shipyards is related to the character of

24 Delis, "From parallel growth", 29–40.

both industries. Greek-owned shipping was specialized in tramp shipping and north-eastern shipyards were specialized in the period of steam in the construction of tramp cargo vessels; this was in contrast to Clyde, which was more specialized in liner ships and cargo-liner shipbuilding. This specialization was more profound in Wear and Tees, which perhaps explains why Greek shipowners built most of their steamers in those two areas.[25]

2.2 *Forms of Ownership*

The advent of steam brought changes in the form of ownership of vessels. In Greece after 1830, sailing ship ownership was based on the 24 shares (*carati*) system, which was also in use in the Italian peninsula, and had its origins back in the late medieval/early modern period. Shareholders enjoyed limited liability and the right to sell their shares without the consensus of the rest of shareholders. In a period of limited investment opportunities in Greece, ship shares were a flexible, moderate cost, and often-profitable investment option for investors outside the shipping industry, thus creating the distinction between active and passive shareholders.[26] The shift of Greek shipowners to cargo steamers from the 1880s, and the necessity to create joint shipping ventures to raise the necessary capital, changed the traditional way of ship co-ownership of 24 shares to that of 100 shares.[27] This change was influenced perhaps by the Company Act of 1862 in Britain, that introduced limited liability and led some British tramp shipowners to form limited single ship companies not in the traditional 64ths system, but in smaller denominations.[28] In fact, in the case of Andros cargo steamers in the early twentieth century, archival evidence reveals that the steamship ownership there was divided into 100 shares.[29] However, also in the steamship period it seems that certain fundamental characteristics of ship partnership were preserved from the sailing ship era, such as the flexibility and limited liability of shareholders, as well as the distinction between active and passive shareholders.

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25 Simon Ville, "Shipbuilding in the northeast of England in the nineteenth century," in *Shipbuilding in the United Kingdom*, 10; Slaven, "Modern British shipbuilding", 8.

26 Georgios A. Rallis, Ερμηνεία του Ελληνικού Εμπορικού Δικαίου [*Interpretation of Greek Commercial Law*], vol. Β′ (Athens: 1865), 73–74.

27 Vasilis Kardasis, Από του ιστίου εις τον ατμόν. Ελληνική Εμπορική Ναυτιλία*, 1858–1914* [*From Sail to Steam. The Greek Merchant Marine, 1850–1914*] (Athens, 1993), 158; Dimitra Kardakaris, draft chapter of an ongoing PhD thesis, at the Ionian University.

28 Gordon Boyce, "64thers, syndicates and stock promotions: information flows and fundraising techniques of British ship owners before 1914," *The Journal of Economic History* 52, no. 1 (March 1992): 189.

29 Kaireios Library, Andros, Νηολόγιο Άνδρου, 1878–1947 [Andros Port Registry], vol. B.

Family ties were an integral and diachronic component of the Greek ship owning firm, and rightfully Greek shipping can be characterized as a family business. Stamatios Kaloyannis served as captain on the *Tripolina* and on the *Coundouriotis*, both owned by his father Ioannis and Dimitrios Kaloyannis, while he owned the *Panaya tis Ydras* and the *Eleni Koupa*. Georgios Embiricos, father of Stamatios, in 1873, built the *Moscha* in Syros, a 439-ton barque, in partnership with his father Michail and three members of the extended Embiricos family, one of which was also the captain. Therefore, the partnership in the sailing ship era between family members extended beyond ownership, and into the operation of the vessel, and in key functions, such as that of captain, first or second mate, or back in the office. This was also the case in the early twentieth century with the Goulandris Brothers (Aristidis, Georgios, and Alkiviadis), alternating as captains, first, and second mates of their steamer the *Leonardos G. Goulandris*. All of these shipowners and partners that practised the maritime professions most of their lives, belonged to the seafaring people of their own communities. They were distinguished from the class of merchants who owned ships for carrying their cargoes, like those of the Greek Diaspora, since they were specialized exclusively in shipping.

Stamatios G. Embiricos on the other hand was a new type of ship operator of the steamship era, who, despite the fact that he belonged to this milieu of seafarers, never worked at sea and followed a different path, which also marked the type of management of his firm. After being trained in his uncles' Alciviades and Leonidas shipping firm in Braila, he set up a shipping office in the UK. This was the third Greek shipping management office established in Britain after the Vagliano Brothers and Zorzis Michalinos. The shipping management offices played a pivotal role in the modernization and development of Greek-owned shipping. They managed their own ships as well as those of other Greek shipowners by providing credit, capital, market information, and mediation for the purchase of new or second-hand steamers, the supervision of the construction, and guarantee of the payment, along with all kinds of operational services, such as chartering, insurance, etc. In the first decade of the twentieth century, other similar London offices were opened by previous close collaborators of the Vagliano Brothers, who set up the first Greek shipping management office in the 1860s. On the eve of the First World War their number grew to seventeen, among them the most important was the Rethymnis and Kulukundis from Kassos (R&K). The difference in ownership between these two contemporary steamship firms, Goulandris Brothers and S.G. Embiricos, is also illustrative through the list of shareholders. Aristidis and Georgios Goulandris held 42.5% and 39% respectively among eleven shareholders, two of which were their brothers who held together 8% and

the remainder came from their extended family or from other investors from Andros. In the Georgios M. Embiricos firm instead, there were in total 43 shareholders, of which Stamatios G. Embiricos was the managing owner holding 45.5%; members of his family held another 8%, 21 shareholders, mostly from Andros, had 24%, and seventeen foreign shipping professionals, mostly British, collaborating with S.G. Embiricos, had 22.5%. The social basis of the shareholders of S.G. Embiricos, clearly more cosmopolitan and wider in numbers, marks the deeper integration of the firm in the British and international markets. The establishment of the firm in a British port facilitated this integration, and demonstrates the expansive strategy of certain Greek shipping firms in the steamship era.

3 Ship Operation Management

3.1 *The Ship Operation Services Network*

Ship operation services are an unexplored, but fundamental aspect of shipping. Ship operation services were, since the age of sail, and have been up to now, a *sine qua non* component of the mechanism of the shipping industry. These services include the supply of food, bunkering, working materials and equipment, freight and insurance agency, ship repairing, towing, piloting, and everything else related to shipping operation.[30] The professions and businesses engaged in these services encompass specialized merchants in maritime stores, known as ship chandlers, as well as ship agents, coal/fuel merchants, ship repairing and engineering firms, tugboat companies, water suppliers, and stevedores among the most important. Ship operation services, an industry within an industry, played a vital role in the operation and economic performance of a ship, and occupied an important share of the operation costs. Despite that, the subject seems much neglected by historians and maritime economists alike.[31]

30 The term "ship operation services" was adopted here as the most appropriate to describe these types of services provided within the shipping industry. There is no established term for this to be found in scholarly works nor on business websites, except the term "ship side services" used in the website https://www.maritimeinfo.org/en/Maritime-Directory/ship-side-services (accessed 20 June 2021).

31 No mention of such businesses, not even those of the well-known profession of ship chandlers, can be found in reference works such as John J. Hattendorf (ed.), *The Oxford Encyclopedia of Maritime History* (New York: Oxford University Press, 2007); nor in Martin Stopford, *Maritime Economics* (London and New York: Routledge, 1997), or in any other publication. Among the very few publications to my knowledge that mention them are: Fritz Redlich, "Some remarks on the business of a New York ship chandler in the 1810s," *Business History Review*, 16, no. 5 (November 1942): 92–98; Orhan Emre Elma and Ahmet

The evidence for *s/s Georgios M. Embiricos* provides detailed information of the businesses and professionals the ship transacted during 33 voyages, from 22 July 1908 to 6 June 1916, when she visited 50 ports and carried out transactions with 257 firms of this sector.[32] Some of the professionals that served the ship maintained their collaboration throughout her working life, especially in regularly visited ports, like Cardiff, which were also the UK headquarters of the firm. These business ties were enhanced by the fact that some of these professionals, or members of their families, purchased shares in the ship. In fact, a list of shareholders of the *s/s Georgios M. Embiricos* includes foreign professionals who collaborated with the ship in the period 1908–16 such as: Pitman & Deane Ltd, London Underwriters and Brokers at Lloyds (5 shares), Short Brothers of Sunderland, the shipbuilders of the ship (3 shares), along with their family members Dorothy Thompson Short, Dora T. Short and Edith M. Short (1 share each), the ship chandlers Frazer & Co. of Cardiff (3 shares), the shipbroker W.H. Muller & Co of Rotterdam (1 share), the coal merchants Cory Brothers & Co. Ltd. of Cardiff (1 share), and F.H. Lambert of the coal exporters Lambert Brothers Ltd. of London (1 share).[33] This practice applied to all ships of the S.G. Embiricos as well as in ships of the extended family, like on the *s/s Leonidas* of Alkiviadis Embiricos, also built in 1896 by Short Brothers of Sunderland.[34] The purchase of shares of a ship by shipbuilders, contractors, or suppliers was not a novelty in the shipping industry; it existed already in the age of sail. However, the network of shareholders in some of the Greek ships—that included professionals and firms from ports ranging from the Black Sea to the Mediterranean and up to northern Europe and the UK—indicates the degree of integration of certain Greek ship-owning firms with their advent within the steamship economy.

3.2 *The Accounting System*

The condition of the account books of both sailing and steam ship firms from the 1860s to the 1910s reflects the level of organization, efficiency, and size of each firm. It shows not only the evolution of accounting during the transition

Hakan Özkan, "Turkish ship chandler companies: a marketing success or a disappointment?," *International Journal of Business and Management Invention*, 6, no. 6 (June 2017): 29–34.

32 A virtual reconstruction of the ship operation services network, created in the framework of the project SeaLiT (714437), is available at: http://www.sealitproject.eu/digital-seafaring http://isl.ics.forth.gr/FastCatTeam/templates/ship_chandlers.html.

33 Kaireios Library, Andros, Ναυτικά Αρχεία Εμπειρίκου, Folder Εξοφλήσεις [Quittances].

34 Kaireios Library, Andros, Νηολόγιο Άνδρου, 1878–1947, [Andros Port Registry], vol. B, αύξων αριθμός νηολογήσεως, reg. n. 1, 5, 6, 7, 8, 66, 67, 81 (in digitized form).

from sail to steam, but also the level of sophistication between contemporary firms. The book keeping of the examined case studies was based on a double entry system, including cost category and revenues-expenses analysis. The voyage was the unit of accounting analysis in tramp shipping. Its origins lay in the single ship voyage venture of the late medieval or early modern period, where ship partners and capital investors in the cargo at the end of the voyage cleared the accounts and divided profits and losses.[35] The voyage remained, however, the unit of accounting analysis also in tramp shipping in the period of steam, and dividends to shareholders were paid on this basis.[36] The expenses were calculated per each port the ship touched during the voyage and, according to Boyce, shipowners could compare the costs of using individual ports.[37]

In the accounts of the sailing ships *Tripolina* and *Eleni Koupa* the expenses per port were grouped in: wages; food expenses; equipment and repairs for the vessel; port, sanitary and consular expenses; extraordinary expenses, comprising commissions, brokerage, telegrams, steam ferries transfers, currency exchange costs, ballast costs, and sundry expenses, namely consumables like firewood, coal or matches, tools for cooking and cleaning, etc. Loading and unloading expenses were included within the extraordinary expenses, while insurance is completely missing. In the steamers, new cost categories were added, such as coal and insurance, as well as loading and unloading, shipping and agency costs, currency exchange costs, while hull and engine equipment and materials and repairing were listed as distinct categories. Only on the *s/s Georgios M. Embiricos* as in all ships of S.G. Embiricos, running costs (namely wages), coal, equipment, material and repairs, insurance, telegrams, administration, and dispatch were also calculated on a per day basis. This type of calculation of running costs, according to Boyce, permitted some British shipowners after 1900 to provide "the means to relate operating variables to financial plans".[38]

The comparison of the accounting systems between the two contemporary steamers *Georgios M. Embiricos* and *Leonardos G. Goulandris* shows the great

35 Gordon Boyce, "Accounting for managerial decision making in British shipping, 1870–1918," *Accounting, Business and Financial History*, 5, no. 3 (1995): 364–65; Giovanni Pellegrini (ed.), *'Salariato' della nave Girarda-San Nicolò per il viaggio da Venezia alla Sardegna (1594–1595)* (Rome: Viella, 2012); Robert Luther, "Uniform accounting periods: an historical review and critique," *Accounting History* 8, no. 5 (2003): 81.

36 Kaireios Library, Andros, Ναυτικά Αρχεία Εμπειρίκου, [Maritime Archives of Embiricos (S.G. Embiricos)], Μπαούλο ν. 1, [Box n. 1], α/π Γεώργιος Μ. Εμπειρίκος (1904–16), [ss Georgios M. Embiricos (1904–16)], Folder Μερισματαποδείξεις αρ. 35–38 (1913), αρ. 46, 48–49 (1916) [Receipts of paid dividends]; Boyce, "Accounting for managerial", 365–66.

37 Boyce, "Accounting for managerial", 368.

38 Boyce, "Accounting for managerial", 367.

differences in business organization and efficiency. The accounting system of the S.G. Embiricos was by far the most up to date, sophisticated, transparent, and complete, even by today's accounting standards. Captains and first engineers were provided with three types of standardized sheets to compile: one for the crew list and payroll, one log of the revenues-expenses, and one called the "abstract of sailing and engine logs", which included the route, the distance and time from port to port, weather conditions, and the performance and consumption of the engine. This information, along with the charter party, and all the receipts of the expenses made at each port, were processed in the offices of the firm and produced typed balance sheets, one in English and one in Greek. The balance sheets contained the period of the voyage, the time spent at sea and at shore, the freight, revenues and expenses per port and per category of cost, the profit and loss account, the reserve amount, and the dividends for each voyage. In the *Leonardos G. Goulandris* however, the registration of the accounts is in handwritten form in ledgers and books, and does not differ from those of the *Tripolina* and *Eleni Koupa* a few decades before. In addition, the accounts of this steamer are written in a disorganized and confusing manner. Vital cost categories, such as insurance (written in separate parts of the ledger) and sometimes even coal, were not included in the calculation of the voyage expenses. Profit and loss per voyage are registered among other calculations in various random parts of the books.

4 Operation and Performance

4.1 *Trade Routes and Voyage Turnover*

In the nineteenth century, Greek-owned ships operated mainly from the Black Sea to western Mediterranean ports carrying cereals and other bulk cargoes.[39] The two sailing ships of Kaloyannis also followed this same pattern. In four out of the six documented voyages of the *Tripolina* from 1861 to 1864 it carried cereals from the Danube, mainly Braila, to Naples, Livorno, Castellammare di Stabia, and Marseilles, one from Taganrog to Marseilles, and in one instance from Burgas to Castellammare di Stabia. The *Eleni Koupa*, in seventeen voyages from 1878 to 1887, carried cereals from the ports of Azov, mainly from Berdyansk (ten times), Yeysk (three times), Kosa Sazal'nikskaya (twice), and twice from Nikolayev (today Mykolaiv). The destination ports were principally Marseilles (eleven times), Tarragona (three times), and once to Messina, Malta, and Piraeus. It seems that early cargo steamers followed the same routes:

39 Harlaftis, *A History of Greek-Owned Shipping*, chapter 1.

the *Thiresia*, a rather small steamer of 580 tons, built in 1869, and bought by Foscolo & Mango in 1887, sailed exclusively within the Mediterranean and Black Seas between 1888 and 1890 (see Map 12.1a). However, at the turn to the twentieth century, Greek cargo steamers expanded their routes to the North Sea and UK ports, and occasionally beyond to South American ports.[40] The new pattern that emerged during the first two decades of the twentieth century (as in the trade routes of the *s/s Leonidas* of 1,748 tons, of Alkiviadis Embiricos in Map 12.1b) was the carrying of cereals from the Black Sea to north-western ports (Bremen, Rotterdam, Antwerp) and then with coal from UK ports, mainly Welsh ones (Cardiff, Newport) to the Mediterranean (Genoa, Marseilles, Piraeus). This pattern of the transport of Welsh coal (the best quality) to the bunkering stations in the Mediterranean was already operative in the last quarter of the nineteenth century. Evidence from recent research has also shown that sailing ships from the Italian port of Camogli were involved in the import of Black Sea cereals and the export of Welsh coal from Britain by the 1860s.[41] According to Robin Craig, the linkage between the Welsh coal trade to the Mediterranean and the Black Sea trade, played a vital role in the sustainability and growth of British tramp shipping, not only by eliminating intermediary voyages on ballast, but also by increasing profitability.[42]

The routes of the *s/s Leonardos G. Goulandris*, however, show a somehow different pattern. Most of the destinations of the cereals from the Black Sea were Mediterranean ports, as in the period of sail. Only once did the ship carry cereals to Rotterdam, and in eighteen voyages out of a total of 78 of the documented period 1902–15 did the ship sail to and from a British port (Map 12.2a). The routes of the *Georgios M. Embiricos*, on the other hand, not only correspond to the general pattern of the transport of cereals from the Black Sea to north-western European ports and of coal from UK ports to the Mediterranean, but also in some voyages expanded far beyond them. In fact, as Map 12.2b

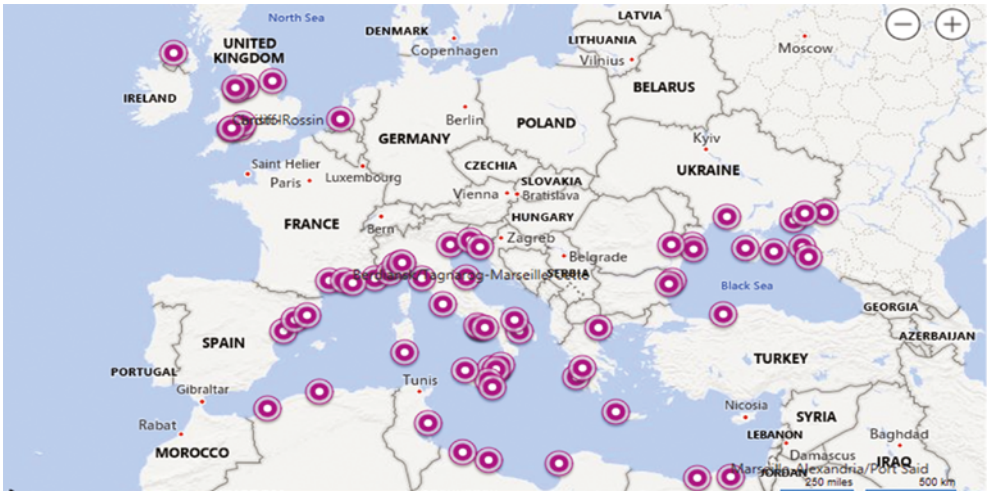
40 Hellenic Literary and Historical Archive, Athens, Αρχείο Σύρμα [Syrmas Archive], 4, Ημερολόγιο ΚΑΡΔΙΦ-ΡΙΟ ΙΑΝΕΡΙΟ-*BUENOS AIRES*-ΛΟΝΔΙΝΟ, Πλοίαρχος Αναστάσιος Σύρμας *18/2/1896–30/12/1896* [Logbook Cardiff-Rio de Janeiro-Buenos Aires-London, Captain Anastasios Syrmas], 5, Ατμόπλοιον Δ .Σ. Σκυλίτσης Βιβλίο Εσόδων Εξόδων *28/9/1895–19/10/1896*, 6, Ταμείον Ατμοπλοίου Δ .Σ. Σκυλίτσης 3/10/1898–16/5/1900, 7, Ταμείον Ατμοπλοίου Δ .Σ. Σκυλίτσης 8/5/1900–13/3/1903 [Account Books of the Steamer *Demetrio S. Schilizzi*, 1895–1903].

41 Leonardo Scavino, *The Mediterranean Maritime Community of Camogli: Evolution and Transformation in the Age of Transition from Sail to Steam (1850s–1910s)* (PhD diss., University of Genoa, 2020), 113, 116–18.

42 Craig, "Aspects of tramp shipping," 216–17. This pattern of cereal-coal freight is already attested in the 1860s.

MAP 12.1A Routes of the steamer *Thiresia*, 1888–1890

MAP 12.1B Routes of the steamer *Leonidas*, 1904–1906
SOURCES: PROCESSED DATA IN HTTPS://ISL.ICS.FORTH.GR/FASTCATTEAM/TEMPLATES/SHIP_MAP.HTML FOR THE *S/S THIRESIA*: MARIA KONSTANTINIDIS, *Δυο Ναυτικά Ημερολόγια του τέλους του 19ου αιώνα. Του Ιστιοφόρου* «Αλέξανδρος Γ΄» (*1884–1888*) από το Ναυτικό και Ιστορικό Μουσείο Γαλαξειδίου και του Ατμοπλοίου «Θηρεσία» (1888–1890) από τη Βιβλιοθήκη «Ο Κοραής» της Χίου» [*TWO SHIP LOGBOOKS OF THE LATE 19TH CENTURY. THE SAILING SHIP* ALEXANDROS THE THIRD (*1884–1888*) *FROM THE MARITIME AND HISTORICAL MUSEUM OF GALAXIDI AND THE STEAMSHIP* THIRESIA (*1888–1890*) *FROM THE KORAIS LIBRARY OF CHIOS.*] (MA DISS., IONIAN UNIVERSITY, 2007). FOR THE *S/S LEONIDAS*: HELLENIC LITERARY AND HISTORICAL ARCHIVE, ATHENS, Αρχείο Σύρμα [SYRMAS ARCHIVE], 9, Ημερολόγιον του ελλ. Ατμοπλοίου Λεωνίδας κυβερνούμενου παρά του Πλοιάρχου Λεωνίδα Κονδύλη [LOGBOOK OF THE STEAMER LEONIDAS, OF THE CAPTAIN LEONIDAS KONDYLIS], 17 JULY 1904–4 MAY 1906



MAP 12.2A Routes of the steamer *Leonardos G. Goulandris* 1902–1915
SOURCE: PROCESSED DATA FROM KAIREIOS LIBRARY, ANDROS, Ναυτικά Αρχεία, *Ισολογισμοί και Ταμείον Ατμοπλοίου Λ.Γ. Γουλανδρής* [BALANCE SHEETS AND GENERAL LEDGER OF THE SS *LEONARDOS G. GOULANDRIS*] AND *LEDGER* [A BOOK BELONGING TO THE *SS LEONARDOS G. GOULANDRIS* CONTAINING THE INVENTORY OF SHIP OPERATION SERVICES FIRMS, VOYAGE BALANCE SHEETS AND OTHER ACCOUNTS]

MAP 12.2B Routes of the steamer *G.M. Embiricos* 1908–1916
SOURCE: HTTP://ISL.ICS.FORTH.GR/FASTCATTEAM/TEMPLATES/SHIP_CHANDLERS.HTML

indicates, during the period 1908–16, the geographical areas of operation of the ship included the Black Sea (nine ports), the Mediterranean (thirteen ports), north-western Europe (21 ports), the North Atlantic (five ports), South Atlantic (one port) and India (one port).

Voyage turnover, usually calculated by the number of voyages per year, was a determining factor of a ship's performance. However, what was considered a complete voyage varied in each of the examined case studies. In the two sailing ships, the *Eleni Koupa* and *Tripolina*, a voyage started and terminated from the port where the ship did the necessary preparations: Hydra, Piraeus, or Istanbul. In fewer occasions, a voyage terminus was considered the port where the cargo was unloaded: Marseilles or an Italian port. On the *Georgios M. Embiricos* route, for example, from Britain to the Mediterranean and another from the Black Sea to northern Europe was counted as one voyage. On the *Leonardos G. Goulandris*, on the other hand, one voyage was considered a route from a Black Sea or British port to a Mediterranean port. This explains the fact that during their working lives the *Georgios M. Embiricos* registered 50 voyages and the *Leonardos G. Goulandris* 79 voyages.

The advent of cargo steamers greatly increased the performance of ships in the voyage turnover. The average duration of the voyages of the two sailing ships *Eleni Koupa* and *Tripolina*, was approximately 172 days, which means roughly two voyages per year. On the *Leonardos G. Goulandris* the average duration of the voyage was 45 days, which makes 7.5 voyages per year in peace time. In 1913, during the Balkan Wars, the *Leonardos G. Goulandris* made only two voyages, the rest of the year it was twice requisitioned by the Greek Navy and twice was under repair, whereas in 1914, after four voyages, it was damaged and under repair again. After five voyages, on 6 December 1915 the ship was torpedoed by the U-boat 39, 150 miles off Alexandria in Egypt.[43] The *Georgios M. Embiricos* made approximately four voyages per year lasting on average 90 days, double that of the *Leonardos G. Goulandris*, but this is due, as explained above, to the way the voyage was calculated. The *Georgios M. Embiricos* was also requisitioned in December 1912 for 21 days, and from May 1914 up to her last voyage in October 1916, when it was torpedoed by U-boat 29 on 22 October 1916 off the south-west coast of England, while carrying coal to Greek and Mediterranean ports from British and US ports, which was related perhaps to the war effort.[44]

43 http://www.teesbuiltships.co.uk/view.php?year_built=1896&builder=5027&ref=168757&vessel=CHISWICK ; https://uboat.net/wwi/ships_hit/3421.html (accessed 29 June 2020).

44 https://uboat.net/wwi/ships_hit/2429.html (accessed 19 September 2020).

4.2 *Voyage Operation Costs*

The importance of ship operation costs experienced structural change in the transition from sail to steam in Greek-owned shipping (Table 12.4). In the two sailing ships from 1861 to 1887, wages were by far the most important expense, reaching almost 40% of all expenses in the case of the *Tripolina*. In the two steamers, however, wages decreased to the fifth-most important expense, with less than 15% of all expenses. The decrease in the percentage of wages on steamers is even more remarkable since crew size on tramp steamers was almost double that of a sailing ship with the addition of the engine crew. In addition, food costs, which are related to the labour force, occupied a high share in both sailing ships; in the steamers, it took only a small percentage. The category of "extraordinary expenses", which comprised a variety of expenses in the sailing ship accounts, diminished considerably in the accounting of steamers, since many of these expenses, like commission costs, constituted a distinct category. In the new reality of the steamship economy, coal, and then insurance, occupied the highest percentage of the total cost. The case of coal in particular demonstrates the importance of energy as the most determining cost factor in ship operation up to the present day. In fact, coal was the highest voyage cost for British tramp shipping firms as well in the same period, with percentages very close to those of the Greek steamers in Table 12.4.[45] Insurance, on the other hand was totally absent as a cost in the case of the two sailing ships. Furthermore, the high percentage of loading and unloading costs in the accounts of the steamers, which occupied a small part of the extraordinary expenses in the sailing ship's costs, shows the further specialization and professionalization of the port services towards the necessity for higher turnover of ships in the steam era. In absolute numbers, the voyage operation costs increased enormously from the sail to the steam economy. The steamer *Leonardos G. Goulandris* had on average two-and-a-half times (23,585.50 francs), and the *Georgios M. Embiricos* (97,606.25 francs) ten-times higher operation costs, than the brig the *Eleni Koupa* (*c.*9,493 drachmas).

45 Boyce, "Edward Bates and Sons," 29. In the firms of Bates and Johnson's tramp operations, coal accounted for 27% and 23.6% respectively.

TABLE 12.4 Cost structure of the schooner *Tripolina* (*TR*) 1861–1864, of the brig *Eleni Koupa* (*EK*) 1878–1887 and of the steamers *Georgios M. Embiricos* (*GME*) 1904–1916 and *Leonardos G. Goulandris* (*LGG*), 1903–1915

Type of Expense	TR	EK	GME	LGG
Coal			22.7	21.53
Insurance Costs			16.8	16.19
Loading and Unloading			16.4	14.41
Port Expenses and Agent Costs	12.5	15.5	13.5	17.30
Wages	39.4	33.9	10.3	13.45
Commission Costs			8	5.60
Vessel Maintenance	17.2	13.2	5.6	5.28
Food Costs	18	14.1	3.6	4.20
Extraordinary Expenses	13.4	18.6	0.3	0.87
Currency Exchange Costs			0.2	0.69
Dispatch			1.7	
Administration Expenses			0.3	
Sundries	4.4	4.7		

SOURCE: PROCESSED DATA FROM PRIVATE ARCHIVE OF EVANGELOS RAFALIAS, HYDRA, «Κατάστιχον των εξόδων και εσόδων της ελληνοεμπορικής γολέτας Τριπολίνα» AND «Μισθοδοσίαι του πληρώματος της ελληνοεμπορικής γολέτας Τριπολίνα», [ACCOUNTS AND PAYROLL OF THE SCHOONER *TRIPOLINA*]; JOURNAL (ACCOUNT BOOK OF THE BRIG *ELENI KOUPA*, 1878–87; KAIREIOS LIBRARY, ANDROS, Ναυτικά Αρχεία Εμπειρίκου, Μπαούλο ν. 1, SS GEORGIOS M. EMBIRICOS (1904–16); Ναυτικά Αρχεία, *Ισολογισμοί και Ταμείον Ατμοπλοίου Λ.Γ. Γουλανδρής* AND *LEDGER*.

4.3 *Profitability*

Tramp shipping was a profitable business for both the sailing ships and the steamers in the examined case studies (Charts 12.2, 12.3a and 12.3b). The profit trend lines in all cases are clearly upward. The least upward trend is that of the *Tripolina*, of which there is evidence for only six voyages. However, it is important to note that both sailing ships in all but one voyage of the *Eleni Koupa*, made profits. During the years of available documentation for the *Eleni Koupa*, 1878–87, freight rates were in slight decline, on average 2.78 francs/kilo Istanbul,[46] and rose considerably only on two voyages from October 1881 to

46 1 Kilo of Istanbul equals 0.025 of a metric ton, according to Tryfonas Konstantinidis, Καράβια, καπεταναίοι και συντροφοναύται, *1800–1830*. Εισαγωγή εις την ιστορίαν των ναυτικών

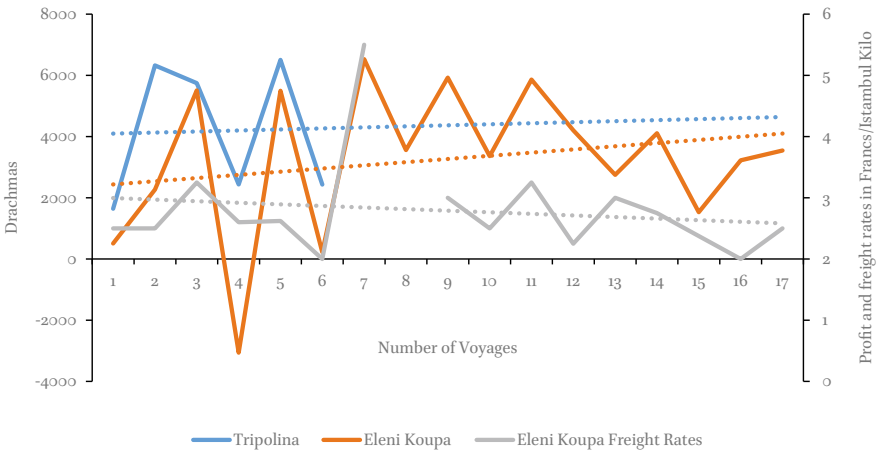


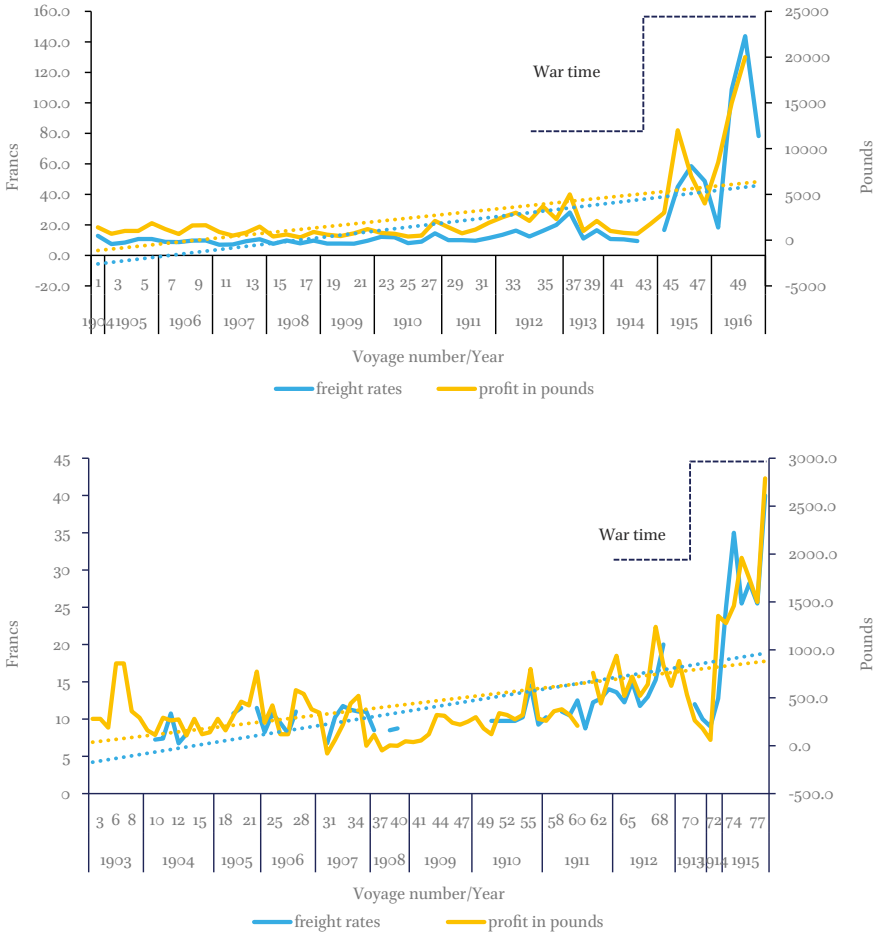
CHART 12.2 Net profit of *Tripolina* in drachmas (6 voyages, 1861–1864) and *Eleni Koupa* in francs (17 voyages, 1878–1887)
SOURCE: PROCESSED DATA FROM PRIVATE ARCHIVE OF EVANGELOS RAFALIAS, HYDRA, Κατάστιχον Των Εξόδων AND Μισθοδοσίαι; *JOURNAL*

September 1882 before returning to the previous rates. In contrast with the freight rates, the trend line of profit is clearly upward, indicating that sailing ships were able to be a sustainable and profitable business even in a period of lower returns and despite the growing antagonism of cargo steamers.

In the case of the two steamers, the *Georgios M. Embiricos* and *Leonardos G. Goulandris* the percentage of freight rates and net profits were steadily rising through the examined period (see Charts 12.3a and 12.3b). However, there is a clear difference between the first decade of the twentieth century and the war years from 1913 onwards. The period after the end of the Boer War in 1902 up to 1910 experienced a recession in freight rates due to the oversupply of tonnage at world level. This recession was reflected in the coal freight of some determining routes, such as South Wales to Genoa, as well as in the earnings of certain tramp shipping firms. The recovery in both freight rates and earnings of British tramp shipping firms came after 1910 and continued up to the First World War. This trend almost coincides with the case of the Greek steamers that begun slightly later, from 1913 and rocketed in 1915–16.[47] Despite the

επιχειρήσεων του Αγώνος [*Ships, Captains and Fellow Seamen, 1800–1830. Introduction to the History of Naval Operations during the Greek War of Independence*] (Athens: Edition of the History Service of the Greek Royal Navy, 1954), 559.

47 Boyce, "The growth and dissolution," 108, and Appendix 3a; idem, "Edward Bates and Sons," 42–43.



CHARTS 12.3A AND 12.3B Comparison between percentage of freight rates (in francs) and net profit (in pounds) of the *Georgios M. Embiricos, 1904–1916* (*above*) and the *Leonardos G. Goulandris, 1903–1915* (*below*)
SOURCE: PROCESSED DATA FROM KAIREIOS LIBRARY, ANDROS, Ναυτικά Αρχεια Εμπειρικου, Μπαουλο Ν. 1, S/S GEORGIOS M. EMBIRICOS (1904–16); Ναυτικά Αρχεια, *Ισολογισμοι* AND *LEDGER*

clear-cut upward trend for both ships, especially in wartime, the difference in the scale of profits in favour of the *Georgios M. Embiricos* is striking. Up to 1915, the average profit of that ship per voyage was 1,325 British pounds. From 1915 up to her last voyage in 1916, the average profit peaked at almost 10,000 pounds. For the *Leonardos G. Goulandris* in contrast, up to 1914 the average profit was almost 350 pounds and only once exceeded 1,000 pounds. During the war years

of 1914–15, in its last seven voyages, it surpassed again the 1,000 pounds limit, with an average profit 1,726 pounds. However, these great profit differences do not come as a surprise, given the size and the level of business organization of S.G. Embiricos reflected in the accounting system, the partnership strategy and network, as well as in the far greater number of global trade routes the firm operated. Besides this, S.G. Embriricos was also a shareholder and mediator to Goulandris Brothers for the acquisition of the *Leonardos G. Goulandris*.[48]

Both steamers paid dividends to shareholders quite regularly, however, data on these payments for both ships is incomplete. For the *Georgios M. Embiricos*, from the very first voyage's balance sheet up to the end, a non-fixed percentage, usually under 10%, of the profit was detracted for the reserve fund of the ship. Up to voyage 17, in 1908, no dividend payment is indicated on the balance sheets. From then on, up to the last fatal voyage, in every voyage's balance sheet the amount of dividend per share in pounds to be paid was indicated. For the *Leonardos G. Goulandris* the price per share of the dividends is given only after 1911. The ship did not pay dividends at the end of each voyage, and some of the passive shareholders received dividends at higher prices than the others. Often, Aristidis and Georgios Goulandris, major shareholders, managing owners, and captains of the ship, received dividends from voyages other than those they paid to the rest of the shareholders. They also received higher revenues than the net profit of the voyage, and above the percentage of their shares.

Chart 12.4 shows that the *Leonardos G. Goulandris* paid dividends at irregular periods and not at all between 1913 and 1915, while the *Georgios M. Embiricos* was very consistent on that. However, what is striking is the difference in the price of dividend per share between the two ships. On the *Georgios M. Embiricos* the average dividend price/share from 1908 to 1915 was approximately 15 pounds, which massively increased in the last seven voyages in 1915–16 to 100 pounds. Yet, on the *Leonardos G. Goulandris*, the average for the years 1911–13 was 6.5 pounds, double the amount of the last three voyages in 1915.

These earnings were far below those paid by the *Georgios M. Embiricos*, but still secured, even to minor shareholders, a respectable revenue. The four 1% shareholders of the *s/s Leonardos G. Goulandris* (see Table 12.5) during the years 1911–15 earned a total of 4,160 francs, which makes 1,040 francs, or 42 pounds, per year. Two of the minor shareholders who were among the initial owners—Dimitrios G. Kalivrousis holding 1% and Ioannis Stefanou holding 0.5%—earned, during the whole working life of the ship (1902–15) 6,874 and 4,144 francs respectively.

48 Kairis Library, Andros, Νηολόγιο Άνδρου, 1878–1947 [Andros Port Registry], vol. B, αύξων αριθμός νηολογήσεως, reg. n. 9 (in digitized form).

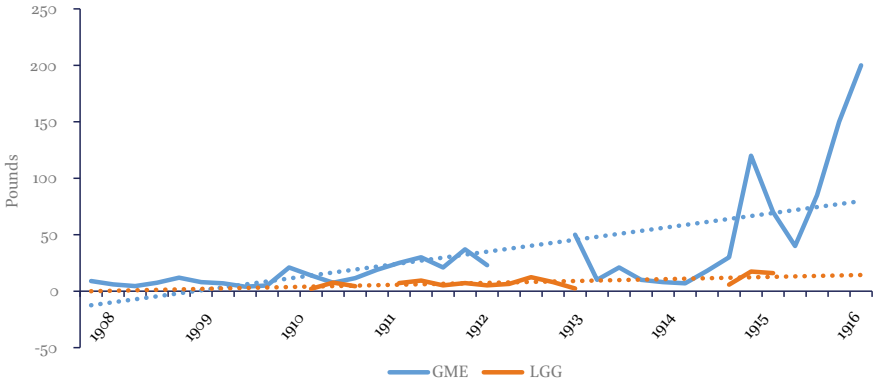


CHART 12.4 Price per share of dividends (in pounds) of *the Georgios M. Embiricos* (*GME*), 1908–1916 and the *Leonardos G. Goulandris* (*LGG*), 1911–1915
SOURCE: PROCESSED DATA FROM KAIREIOS LIBRARY, ANDROS, Ναυτικά Αρχεια Εμπειρικου, Μπαουλο Ν. 1, Γεωργιος Μ. Εμπειρικοσ, Εξοφλησεισ [QUITTANCES] AND Ναυτικά Αρχεια, *LEDGER*, 303–13

TABLE 12.5 Total revenues of the shareholders of the steamer *Leonardos G. Goulandris*

Shareholder	Percentage	Amount of dividends paid in French francs
Aristidis L. Goulandris	42.5%	163,776.40
Georgios L. Goulandris	39%	150,276.70
Alkiviadis L. Goulandris	4%	30,234.65
Epaminondas L. Goulandris	4%	33,664.32
Toouranio (Ourania) K. Goulandris	4%	33,664.32
Alexandros A. Embiricos	2%	24,082.75
Katina Z. Embiricos	1%	8,300.95
Dimitrios G. Kalivrousis	1%	6,873.60
Moscha S. Kambanis	1%	4,560.55
Michail A. Embiricos	1%	4,560.55
Ioannis Stefanou	½%	4,144.37

SOURCE: PROCESSED DATA FROM KAIREIOS LIBRARY, ANDROS, Ναυτικά Αρχεία, *LEDGER*, 303–13

5 Labour

Maritime labour experienced a great transformation during the transition from sail to steam. Steamships needed a distinct and specialized part of the crew for the working of the engines: engineers, firemen and trimmers, which formed a separate group working in a very different and harsh environment below deck, and not always in harmonious relations with the deck crew. In the passenger steamers a third category of personnel on board, that of the hotel and restaurant services, was added, which altered further the working environment, the nature of duties and skills, and the social and cultural composition of the maritime workers, if compared with the traditional complement of sailors in a sailing ship.[49] This transition to new realities for maritime workers is well depicted through the documentation of the above-mentioned cargo sailing and steamships from Hydra and Andros. This analysis addresses questions such as the size and synthesis of the crew, specialization, hierarchy, the wages and insurance of the crew, as well as career mobility and advancement.

5.1 *Size, Hierarchy, Wages and Labour Insurance*

In Table 12.6, the crew size and technical data of the four already mentioned ships are compared, in addition to two more Andros steamers, the *Nikolaos Vaglianos* and *Andriana*. *Nikolaos Vaglianos* was owned by the Vagliano Brothers, Argostoli, was sold in 1895 to Kleanthis A. Polemis, in partnership with the sons of Leonardos Goulandris, who bought second hand, in 1902, the *s/s Leonardos G. Goulandris*.[50] Alkiviadis Embiricos, uncle of Stamatios, owned *Andriana*,

49 The bibliography on the new forms of labour on board steamers is very extensive. Some of the indicative works include: R.G. Milburn, "The emergence of the engineer in British merchant shipping, 1812–1863," *International Journal of Maritime History*, 28, no. 3 (August 2016): 559–75; David M. Williams, "Industrialization, technological change and the maritime labour force: the British experience 1800–1914," *Collectanea Maritima*, no. 5 (1991): 317–30; Enric Garcia, "Losing professional identity? Deck officers in the Spanish merchant marine, 1868–1914," *International Journal of Maritime History*, 26, no. 3 (August 2014): 451–70; Enric Garcia Domingo, "Engine drivers or engineers: ship's engineers in the Spanish merchant navy (1834–1893)," *Journal of Mediterranean Studies* 19 no. 2 (2010): 249–70; Alston Kennerley, "Stocking the boilers: firemen and trimmers in British merchant ships, 1850–1950," *International Journal of Maritime History* 20, no. 1 (June 2008): 191–220; Conrad Dixon, "The rise of the engineer in the nineteenth century," in *Shipping, Technology, and Imperialism: Papers Presented to the Third British-Dutch Maritime History Conference*, eds. Gordon Jackson and David M. Williams (Brookfield, Vt.: Ashgate Pub. Co., 1996), 231–41; Laura Caruso Fermé, "Tripulantes del sur: trabajo y condiciones laborales en la navegacion mercante argentina (1890–1920)," *Drassana*, no. 24 (Desembre 2016): 27–44.

50 Bistis, Ο Ατμήρης εμπορικός στόλος, 50–51.

built in 1906 in Sunderland by the Short Brothers, like the s/s *Georgios M. Embiricos*.[51]

The size of the crew of the two medium tonnage sailing ships in the second half of the nineteenth century, the *Tripolina* and the *Eleni Koupa*, was between nine to eleven men. The composition of the crew included, on the *Tripolina*, a captain, a purser, a boatswain, a cook, four to seven seamen, and in two voyages one or two boys. On the *Eleni Koupa* a first mate also served in seven out of the fifteen voyages, and a purser and boys appeared in the crew list on six voyages. A captain, a cook, a boatswain, and almost the same number of seamen as on the *Tripolina* enlisted in all voyages. The addition of the engine crew on steamers a few decades later almost doubled the size of personnel on a cargo vessel. The size of the crew on a Greek-owned cargo steamer of the late nineteenth, early twentieth century was proportionate to age, tonnage, and engine power. The *Nikolaos Vaglianos* in 1898, built in 1883, the smallest of four steamers in terms of tonnage and engine power, and with a compound engine instead of a triple expansion one, had a crew of 21 men. Among the three contemporarily operating steamers, the older *Leonardos G. Goulandris*, built in 1896 and lower in tonnage and horsepower, had again the smaller crew. The relationship between tonnage/engine power and number of men is reflected in the number of seamen, firemen, and trimmers, since the rest of the specializations on board were covered by one person (See Table 12.9). In fact, the smaller number of firemen and trimmers on the *Nikolaos Vaglianos* and on the *Leonardos G. Goulandris* (3 and 2 respectively), vis à vis the other two ships (*Andriana* 4 and 4, *Georgios M. Embiricos* 4 and 3), must relate to the number of furnaces and boilers to feed, which is proportionate to the size of the engine.

The evidence for the wages from the two sailing ships of Kaloyannis shows that in both cases seamen received half the monthly wages of a captain. However, evidence from Syros from the period of the 1840s–60s, shows that the average monthly salary of a captain was remarkably stable over the course of the nineteenth century, between 100 to 120 drachmas.[52] In fact, according to Table 12.7a, from 1860s to 1880s, among the constantly present ranks on board,

51 http://www.sunderlandships.com/view.php?official_number=&imo=&builder=&builder_eng=&year_built=&launch_after=&launch_before=&role=&type_ref1=&propulsion=&owner=&port=&flag=&disposal=&lost=&ref=103588&vessel=ANDRIANA (accessed 19 November 2020).

52 Apostolos Delis, "Le rôle du capitaine et la figure du 'directeur' de navires dans la marine à voile à Syra au milieu du XIX^{e} siècle," in *Entrepreneurs des mers. Capitaines et mariniers du XVI^{e} au XIX^{e} siècle*, eds. Gilbert Buti, Luca lo Basso, and Olivier Raveux (Paris: Riveneuve Editions, 2017), 184.

TABLE 12.6 Crew size and technical data of two Hydra sailing ships and four Andros steamers

Ship name	*Tripolina* (*1861–64*)	*Eleni Koupa* (*1878–87*)	*Nikolaos Vaglianos* (*1898*)	*Leonardos G. Goulandris* (*1911–15*)	*Andriana* (*1908–09*)	*Georgios M. Embiricos* (*1908–16*)
Crew size	9–11	9–11	21	22–24	26–27	27–28
Tonnage	186	276	1693 grt/ 1101 nrt	2123 grt/ 1312 nrt	2958 grt/ 1769 nrt	3636 grt/ 2324 nrt
Engine type and horsepower			CI2cyl (33 & 62 × 42in), 170nhp	T3cyl (21, 34, 56 × 36in), 187nhp	T3cyl (24, 39, 65 × 42in), 298nhp	T3cyl (25, 42, 68 × 45in), 324nhp

SOURCE: PROCESSED DATA FROM PRIVATE ARCHIVE OF EVANGELOS RAFALIAS, HYDRA, Κατάστιχον των εξόδων AND Μισθοδοσία AND *JOURNAL*; KAIREIOS LIBRARY, ANDROS, Ναυτικά Αρχεία Εμπειρίκου, Μπαούλο ν. 1; Ναυτικά Αρχεία, *Ισολογισμοί* AND *LEDGER*; HELLENIC LITERARY AND HISTORICAL ARCHIVE (ELIA), ATHENS, Αρχείο Σύρμα, Βιβλίο Μισθοδοσίας Πληρώματος, Α/Π *Ανδριάνα, 23/6/1908–16/4/1909* [SYRMAS ARCHIVE, SALARY BOOK OF THE CREW OF THE *S/S ANDRIANA*]. HTTP://WWW.TEESBUILTSHIPS.CO.UK/VIEW.PHP?YEAR_BUILT=1896&BUILDER=5027&REF=168757&VESSEL=CHISWICK; HTTPS://UBOAT.NET/WWI/SHIPS_HIT/3421.HTML; HTTP://WWW.SUNDERLANDSHIPS.COM/VIEW.PHP?OFFICIAL_NUMBER=&IMO=&BUILDER=&BUILDER_ENG=&YEAR_BUILT=&LAUNCH_AFTER=&LAUNCH_BEFORE=&ROLE=&TYPE_REF1=&PROPULSION=&OWNER=&PORT=&FLAG=&DISPOSAL=&LOST=&REF=103588&VESSEL=ANDRIANA; HTTP://WWW.SUNDERLANDSHIPS.COM/VIEW.PHP?OFFICIAL_NUMBER=&IMO=&BUILDER=&BUILDER_ENG=&YEAR_BUILT=&LAUNCH_AFTER=&LAUNCH_BEFORE=&ROLE=&TYPE_REF1=&PROPULSION=&OWNER=&PORT=&FLAG=&DISPOSAL=&LOST=&REF=103572&VESSEL=GEORGE+M.+EMBIRICOS, HTTP://WWW.SUNDERLANDSHIPS.COM/VIEW.PHP?OFFICIAL_NUMBER=&IMO=&BUILDER=&BUILDER_ENG=&YEAR_BUILT=&LAUNCH_AFTER=&LAUNCH_BEFORE=&ROLE=&TYPE_REF1=&PROPULSION=&OWNER=&PORT=&FLAG=&DISPOSAL=&LOST=&REF=100267&VESSEL=NICHOLAS+VAGLIANO (ALL ACCESSED 29 JUNE 2020); GELINA HARLAFTIS, *CREATING GLOBAL SHIPPING. ARISTOTLE ONASIS, THE VAGLIANO BROTHERS, AND THE BUSINESS OF SHIPPING, C.1820–1970* (CAMBRIDGE: CAMBRIDGE UNIVERSITY PRESS, 2019), TABLE 5.3, 137

the captain and seamen had the lowest rate of increase in monthly wages, whereas boatswain and cook had the highest.

The evolution of the wages of the deck specializations from sailing ships to steamships over 25 to 30 years, as depicted in Table 12.7b, shows greater changes. The monthly salary of a captain on a steamship increased almost two-and-a-half times of that on a sailing ship, and more than any other among the deck crew, an important indication of the deepening of the differences of hierarchies on board. However, this remarkable rate of increase in the salaries of all ranks includes the almost doubling of wages during the war years, after 1913.

TABLES 12.7A AND 12.7B Average monthly wages of deck crew on sailing and steamships (12.7a in drachmas, 12.7b in French francs)

Rank	*Tripolina* (*a*)	Range of wages	*Eleni Koupa* (*b*)	Range of wages	% increase (a)/(b)
Captain	120	120	132.5	120–144	9.4
First mate			120	96–144	
Purser	82.5	60–140	94.3	70–120	12.5
Boatswain	70	60–75	89	80–96	21.3
Cook	56.4	50–70	73.3	55–72	23.0
Seaman	56	42–60	65.3	48–78	14.2
Boy	18.5	15–30	28.7	18–48	35.5

Rank	*Eleni Koupa* (*a*)	*Andriana* (*b*)	*Leonardos G. Goulandris* (*c*)	*Georgios M. Embiricos* (*d*)	% increase (a)/(average increase of b+c+d)
Captain	110.4	375.0	362.2	387.8	239.7
First mate	100.0	161.4	166.9	182.6	70.3
Boatswain	74.1	90.0	110.9	103.9	37.1
Cook	61.4	90.0	93.0	105.6	56.7
Seaman	54.5	64.8	80.1	85.0	40.7
Boy	20.7	36.4	30.6	36.9	67.3

SOURCES: PROCESSED DATA FROM PRIVATE ARCHIVE OF EVANGELOS RAFALIAS, HYDRA, Κατάστιχον των εξόδων AND Μισθοδοσία AND *JOURNAL*; KAIREIOS LIBRARY, ANDROS, Ναυτικά Αρχεία Εμπειρίκου, Μπαούλο ν. 1; Ναυτικά Αρχεία, *Ισολογισμοί* AND *LEDGER*; ELIA, ATHENS, Αρχείο Σύρμα, *Βιβλίο Μισθοδοσίας*

In fact, if the rate of increase of the rank of seamen, between the four ships of the Table 12.7b, was based only on peacetime wages (1878–87 and 1908–12) it comes out at a rate of just under 20%, half of what resulted if wartime wages are included.

The comparison of wages among the four Andros steamers (Table 12.9), from the earliest, the *Nikolaos Vaglianos* of 1898, and ten years later, it seems that the monthly wages of all ranks either remained the same or decreased. The wages per rank reflect the hierarchy on board all ships under examination. As Chart 12.5 illustrates, in both steamers, there is a great gap between the level of wages of the highest officers, captain and first engineer, and the rest of

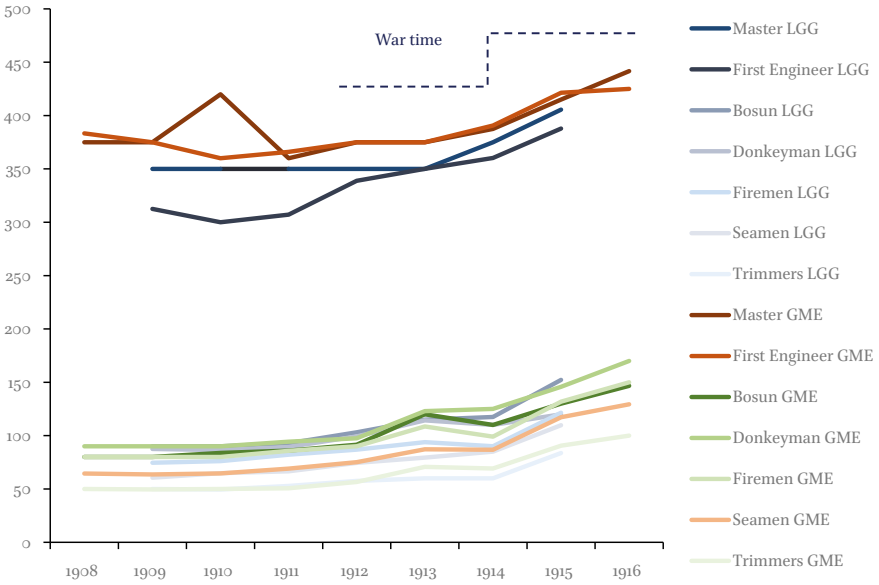


CHART 12.5 Course of wages (in French francs for specific ranks on the two steamers the *Leonardos G. Goulandris* (*LGG*) (1909–1915) and the *Georgios M. Embiricos* (*GME*) (1908–1916)
SOURCES: PROCESSED DATA FROM KAIRIS LIBRARY, ANDROS, Ναυτικά Αρχεία Εμπειρίκου, Μπαούλο N. 1; Ναυτικά Αρχεία, *Κατάσταση Μισθοδοσιών 1909* AND *LEDGER*

the middle and lower rank crew. The importance of the engine crew members vis à vis the deck ones is reflected in the higher wages of the second engineer against the first mate, of the third engineer against the second mate, and of the firemen against the seamen. Despite the declining trend in the percentage of labour costs, as discussed above (Table 12.4), the wages per rank (Chart 12.5) were rising after 1912 during the Balkan Wars and during the First World War. This considerable increase in wages in wartime must have been an international trend; this also occurred with British steamship firms, such as the Blue Funnel Line where wages during the First World War augmented by 50%.[53]

Crew members were paid in various instalments both on sailing ships and steamers, based on the evidence of the *Tripolina* and *Leonardos G. Goulandris*. They received the usual advance when they signed in, and had interim payments during the voyage in the ports of call. In addition, Kaloyannis, paid some

53 Malcolm Falkus, *The Blue Funnel Legend. A History of the Ocean Steam Ship Company, 1865–1973* (London: Macmillan, 1990), 114.

of the interim instalments directly to the families of the sailors from Hydra, while men were at sea. The payments in the ports of call were made in whatever currencies were available, usually those of the country of the port they arrived, such as kuruş (piasters) or Ottoman liras in Istanbul, French francs in Marseilles and in Italian Tyrrhenian ports, rubles in the Black Sea Russian ports, and pesetas in Spanish ports.[54] Often sailors received advances in kind, more frequently clothes on the *Tripolina*, tobacco on both ships, sugar, rice, and lottery tickets on the *Leonardos G. Goulandris* (when anchored in Andros). In the advances in kind, the equivalent amount was always registered in drachmas on the *Tripolina* and in French francs on the *Leonardos G. Goulandris*, the nominal currencies used in the two different periods the ships operated.

The Seamen's Pension Fund (Ν.Α.Τ. Ναυτικό Απομαχικό Ταμείο), founded in 1861, is the oldest worker's insurance fund in Greece and among the first worldwide. The history of the fund is analysed by Alkis Kapokakis in the present volume. However, for my research it is important to note that the payrolls of the *Tripolina*, which are contemporary with the foundation of the fund (1861–64), had registered the contributions of all men on board to the Seamen's Pension Fund. Yet, in the *Eleni Koupa's* payrolls, almost 15 to 25 years later, there is no mention of payment to the Seamen's Pension Fund.

Table 12.8 indicates the official contributions per rank to the Seamen's Pension Fund that reflects the hierarchies in salary on board, between higher, middle, and lower crew in the Greek cargo steamers in the early twentieth century. Despite the fact that the examined payrolls of the steamers *Andriana*, *Leonardos G. Goulandris*, and the *Georgios M. Embiricos* (Table 12.9), comply with the official rates of contributions, on the *Leonardos G. Goulandris* and *Georgios M. Embiricos* on some voyages, only in the ranks of second engineer and third engineer were some alterations upwards or downwards to the official rates recorded. Generally, the average cost of the contribution of the whole crew on the steamers (Table 12.9) was approximately 4–4.5%. However, based on the relationship between average monthly salary/rate of contribution per rank, it results that second mates paid the highest percentage (6.8% on average), the trainee seaman the second highest (5.8%), whereas the first engineer paid the lowest percentage (2.9%), followed by the captain (4%).

54 Data from Private Archive of Evangelos Rafalias, Hydra, Κατάστιχον; Kairis Library, Andros, Κατάσταση Μισθοδοσιών 1909.

TABLE 12.8 Monthly contributions to the Seamen's Pension Fund per rank on Greek ships

Rank	Drachmas per month
Master	15
First Engineer	10.5
Second Engineer	9
First Mate	9
Third Engineer	6
Second Mate	7.5
Bosun	4.5
Chief Fireman (Donkeyman)	4.5
Cook	3
Carpenter	3
Firemen	3
Steward (Θαλαμηπόλος)	3
Seamen	3
Trimmers	3
Trainee Seaman (*Μαθητευόμενος/Ναύτης μαθητευόμενος*)	3
Engine Steward/Servant/Cabin Boy of the Engineers (*Θαλαμηπόλος μηχανής ή μηχανικών/καμαρότος μηχανής/ Υπηρέτης μηχανικών*)	1.5
Boy (*Παις/Ναυτόπαις*)	1.5

SOURCE: *Εφημερίς της Κυβερνήσεως του Βασιλείου της Ελλάδος* [GOVERNMENT GAZETTE OF THE GREEK KINGDOM], Τεύχος Α', Αριθμός Φύλλου, 144, 21 Ιουλίου 1907, [ISSUE A, N. 144, 21.7.1907], 609–10. I AM VERY MUCH INDEBTED TO ALKIVIADIS KAPOKAKIS FOR PROVIDING ME WITH THIS SOURCE

5.2 *Recruitment and Mobility of the Crew*

The employment strategy and the management of the crews are reflected in the recruitment, the career pattern, and in the mobility of the men. In Greek ships, paternalistic strategies of the age of sail—to employ relatives, those from the same maritime community or the surroundings—also persisted on cargo steamers.[55] The data from the examined steamers unfortunately do not mention the origin of the crews. However, an examination of the family names indicates that an important number of them must have been from Andros, the place of origin of the shipowners. Yet, on the brig *Eleni Koupa*, the data shows that from out of 153 men that served on the ship from 1878 to 1887, 106 had

55 Harlaftis, *A History of Greek-Owned Shipping*, 178.

TABLE 12.9 Crew size per rank, salary (in French francs) and pension fund contribution in the Andros steamers: *Andriana* (*A*) (1908–1909), *Leonardos G. Goulandris* (*LGG*) (1909–1915), *Georgios M. Embiricos* (*GME*) (1908–1916), and the *Nikolaos Vaglianos* (*NV*) (1898)

Rank	Number of men				Range salary			Average salary				% Pension fund		
	NV	A	LGG	GME	A	LGG	GME	NV	A	LGG	GME	A	LGG	GME
Master	1	1	1	1	375	350–425	350–500	400	375	362.20	387.80	4.0	4.2	3.9
First Engineer	1	1	1	1	375–78	300–450	360–425	400	376	337.70	387.70	British engineer	3.1	2.7
Second Engineer	1	1	1	1	225	115–250	200–375	250	225	182.80	246.30	4.0	4.6	3.8
First Mate	1	1	1	1	160–70	120–250	140–250	200	161.4	166.90	182.60	4.8	5.9	5.2
Third Engineer	1	1	1	1	150	100–220	120–180	150	150	138.50	145.70	4.0	5.0	4.2
Second Mate	1	1	1	1	110	100–150	85–210	150	110	101.80	126.80	6.8	7.5	6.0
Bosun	1	1	1	1	90	90–162.50	80–150	100	90	110.90	103.90	5.0	4.2	4.5
Chief Fireman (Donkeyman)	1	1	1	1	90–95	85–150	90–170	100	90.7	101.50	112.30	5.0	4.2	4.0
Cook	1	1	1	1	90	70–150	70–180	85	90	93.0	105.60	3.3	3.4	3.0
Carpenter	1	1	1	1	85	80–95	75–160	90	85	83.70	103.80	3.5	3.6	3.3
Firemen	3	4	3	4	80	70–163	80–150	80	80	90.20	102.40	3.8	3.4	5.0
Steward (Θαλαμηπόλος)	1	1	1	1	75	40–130	70–150	90	75	82.70	92.40	4.0	3.7	2.9
Seamen	4	4–5	3–5	4–5	60–65	20–160	60–140	70	64.80	80.10	85.0	4.6	3.9	3.8
Trimmers	2	4	2	3	60	45–100	45–100	60	60	59.80	65.40	5.0	5.2	3.1
Trainee Seaman (Μαθητευόμενος/Ναύτης μαθητευόμενος)		1	1	1	50	25–80	40–90		50	43.60	56.70	6.0	6.2	5.0

TABLE 12.9 Crew size per rank, salary (in French francs) and pension fund contribution in the Andros steamers: *Andriana* (*A*) (1908–1909) (*cont.*)

Rank	Number of men				Range salary			Average salary				% Pension fund		
	NV	A	LGG	GME	A	LGG	GME	NV	A	LGG	GME	A	LGG	GME
Engine Steward/Servant/ Cabin Boy of the Engineers (Θαλαμηπόλος μηχανής ή μηχανικών/ καμαρότος μηχανής/ Υπηρέτης μηχανικών Θαλαμηπόλος μηχανής ή μηχανικών/καμαρότος μηχανής/Υπηρέτης μηχανικών)	1	1	1	1	30–35	15–70	20–60	50	30.60	28.0	35.80	4.3	6.8	5.1
Boy (Παι(Παις/Ναυτόπαις) ς/Ναυτόπαις)			1	1	35–45	20–45	20–60		36.40	30.60	36.90	4.0	5.3	4.9
Cadet (Δόκιμος Δόκιμος)				1			30–130				68.90			5.0
Steward of the Officers (Θαλαμηπόλος Αξιωματικών)		1		1			60				60.0			5.0

SOURCE: PROCESSED DATA FROM KAIREIOS LIBRARY, ANDROS, Ναυτικά Αρχεία Εμπειρίκου, Μπαούλο ν. 1; Ναυτικά Αρχεία, Κατάσταση Μισθοδοσιών 1909 AND LEDGER; ELIA, ATHENS, Βιβλίο Μισθοδοσίας; GELINA HARLAFTIS, *CREATING GLOBAL SHIPPING. ARISTOTLE ONASIS, THE VAGLIANO BROTHERS, AND THE BUSINESS OF SHIPPING, C.1820–1970* (CAMBRIDGE: CAMBRIDGE UNIVERSITY PRESS, 2019), TABLE 5.3, 137

their origin registered; from them 41 were from Hydra, 27 from the surrounding areas (Spetses, Kranidi, Poros, and Ermioni), and 38 were from other areas, mostly from the Aegean and a few foreigners. The areas of recruitment were Hydra, the port of departure and registry port of the ship, Istanbul, the *sine qua non* port of call for the Black Sea and Marseilles, and the most usual destination port. The high crew turnover for a medium sized sailing ship, and the fact that a considerable percentage of the men (35.8%) were recruited from distant areas, indicates a crack in the paternalistic practices of Greek shipowners. In addition, mobility enhances this hypothesis, since 85% of men only sailed one or two voyages, and only Stamatios Kaloyannis and his brother Michail, the owners, sailed more than ten voyages, alternating as captains, first mates, or pursers.[56]

The two best-documented steamers, the *Georgios M. Embiricos* and the *Leonardos G. Goulandris*, in a period of eight and six years respectively, employed a large number of men. However, the difference between them is huge: 511 in the former, 280 in the latter (see Table 12.10). Such a high turnover of the labour force, especially in the case of the *Georgios M. Embiricos*, reflects a stricter managerial policy towards labour costs and efficiency. In fact, as indicated in Table 12.4, the *Georgios M. Embiricos'* wage percentage in the cost structure was lower (10.3%) than that of the *Leonardos G. Goulandris* (13.45%), despite the fact that the former paid better wages, as shown in Table 12.9. Another indicator in the management of the ship is the number of captains: in the case of the *Georgios M. Embiricos* there were eight different ones from July 1908 to June 1916, and all of them were wage dependent employees. However, for the *Leonardos G. Goulandris*, the three brothers and owners of the ship alternated in the captaincy, a system that preserved traditional managerial practices of the period of sail.[57]

Half of the fully employed men on board the *Georgios M. Embiricos* worked for only one voyage, whereas on the *Leonardos G. Goulandris* the percentage with a single voyage accounted for 38%. Almost 14% of the fully employed men on the *Georgios M. Embiricos* worked for five voyages or more, whereas on the *Leonardos G. Goulandris* this percentage is 19%. Higher percentages also appear for the *Leonardos G. Goulandris* in the case of men who worked for three and four voyages (Table 12.10). Labour relations seem to be more stable in the latter ship, and are reflected in the much higher number of consecutive

56 Processed data from Private Archive of Evangelos Rafalias, Hydra, Journal [Account Book of the brig *Eleni Koupa*, 1878–87].

57 From December 1914 up to the sinking of the ship a year later, a Ioannis I. Goulandris took command; he was probably a family member, but has not been exactly identified.

TABLE 12.10 Career and mobility of the crew of the *Leonardos G. Goulandris* (*LGG*) (1909–1915), and the *Georgios M. Embiricos* (*GME*) (1908–1916)

Range of Voyages	Number of Voyages		% Number of Voyages		Rank Upgrade		% Rank Upgrade		Salary Upgrade		% Salary Upgrade		Fired		Jumped Ship	
	LGG	GME	LGG	GME	LGG	GME	LGG	GME	LGG	GME	LGG	GME	LGG	GME	LGG	GME
over 15	10	3	3.6	0.6	3	1	30.0	33.3	8	2	80.0	66.7	2			
11 to 15	3	6	1.1	1.2	2	4	66.7	66.7	2	6	66.7	100.0	1	1		
5 to 10	40	61	14.3	11.9	13	26	32.5	42.6	33	45	82.5	73.8	4	11		
4	27	30	9.6	5.9	4	11	14.8	36.7	15	18	55.6	60.0	4	2		
3	35	45	12.5	8.8	2	7	5.7	15.6	13	13	37.1	28.9	8	7		
2	58	109	20.7	21.3	2	10	3.4	9.2	12	19	20.7	17.4	14	14		1
1	107	257	38.2	50.3									11	32	3	3
total number of workers	**280**	**511**			**26**	**59**	**9.3**	**11.5**	**83**	**103**	**29.6**	**20.2**	**44**	**69**	**3**	**4**
total number of voyages	**46**	**33**														

SOURCE: KAIREIOS L SOURCES: PROCESSED DATA FROM KAIREIOS LIBRARY, ANDROS, Ναυτικά Αρχεία Εμπειρίκου, Μπαούλο ν. 1; Ναυτικά *Αρχεία, Ισολογισμοί και Ταμείον Ατμοπλοίου* Λ.Γ. Γουλανδρής AND *Κατάσταση Μισθοδοσιών 1909*

voyages of many crew members than on the. The percentage of men that advanced in rank during their working period on both ships is relatively low (11.5% on the *Georgios M. Embiricos* and 9.3% on the *Leonardos G. Goulandris*). Usually the advancement was by one rank, from trimmer to fireman, from fireman to donkeyman, from seaman to bosun, or from second mate to first mate, but did not exceed the ladder of hierarchy between lower crew, middle officers, and high officers. Salary upgrading on the *Leonardos G. Goulandris* reached almost 30% of the fully employed men, while on the *Georgios M. Embiricos* the figure was 20%. The percentages of fired men on both ships are similar (16% for the *Leonardos G. Goulandris* and 13.5% for the *Georgios M. Embiricos*), and is impressive given the much higher turnover of crew of the *Georgios M. Embiricos*. Finally, men on board the *Georgios M. Embiricos* spent almost twice as much time as those of the *Leonardos G. Goulandris* on voyages (86 days in the former and 44 in the latter), due to the far more distant trade routes the former operated.

6 Conclusions

This chapter has examined the evolution of ship operation in Greek-owned tramp shipping during the transition from sail to steam. The analysis included a medium sailing ship firm, for Greek standards, from a traditional maritime community, Hydra, that operated for almost 50 years from the heyday to the decline of the sailing ship. Moreover, two steamship firms, both started from Andros, of the two very different types, were examined: one large, long-lived and internationally based; the other a single ship company, of limited capital base and traditional in all respects. The evidence, based on accounting material, demonstrated structural changes and continuities in key aspects of their operation, such as organization and structure, performance, and labour.

In terms of ownership, the Greek-owned shipping firm developed from an average small-sized company, owned by a few persons and based on the Mediterranean system of 24 shares, into an enlarged base of shareholders of the 100 shares system. This enlargement, as seen in the case of S.G. Embiricos, was accompanied by structural innovations in the scope and function of the firm. The company established headquarters in the UK as well as in Greece, expanded to ship management along with ownership, and integrated as shareholders foreign, mainly British, partners from the shipbuilding and the ship operation services sector. The sophistication and complexity of the shipping business in the transition to the steam era is reflected in the accounting

methods and in the costs. The bookkeeping system, based on expenses and revenues per voyage, remained the same throughout the transition. However, new cost categories introduced in the steam era and the calculations became more detailed, accurate, and transparent. Of course, there was a difference between contemporary firms such as Goulandris Brothers and S.G. Embiricos, the latter having attained a very high level of sophistication in its accounting system, something that is absent in the former. The importance of cost factors had a structural impact on shipping management. In the sailing ship period, labour was the overwhelming cost factor, forming between one-third to less than half of the total expenses. The industrialization of shipping transformed cost factors, and before labour, coal, as today oil, became the most important cost, along with insurance, loading and unloading, agency, and port costs.

The impact of industrialization on shipping was also tangible in maritime technology, trade routes, and the labour force. Greek shipowners in the nineteenth century operated with two-masted sailing ships, mostly built in Greece. By the turn of the twentieth century this had shifted to many more steel built, screw driven cargo steamers from Britain, able to sustain economies of scale in the volume of transported cargo. This technical development widened the trade routes of Greek ships to northern Europe and to the Atlantic Ocean, and thus, in turn, the level of integration of Greek shipping firms in international markets. The ship operation network, as seen in the case of the *Georgios M. Embiricos*, expanding from India to the South Atlantic up to North America and back to Europe, is another very illustrative aspect of this integration at the world scale, attained by Greek shipping firms. In labour, the industrialization of the ship more than doubled the size of the crew on Greek tramp vessels, while at the same time decreased considerably the importance of labour as a cost factor. Wages were remarkably stable throughout the examined period, and only during the war years doubled along with profits and freight rates. The most significant salary upgrade from sailing ships to steamers was that of the captain, who, along with the first engineer, created a large gap in terms of wages and hierarchy with the rest of the crew. Recruitment maintained its principal characteristics, as in the age of sail, and most men came from a local or regional labour force, whereas mobility was also of limited scale, and only between the same sub group of the crew (upper, middle, or lower).

The profitability of the examined cases of Greek ships, both in the sailing and in the steamship period, explains the viability and continuity of the Greek shipping sector. The Kaloyannis firm operated for almost half a century and S.G. Embiricos for almost a century, while even passive shareholders in the steam period received respectable returns. Moreover, the massive loss of

Greek steamers in the First World War by German submarines did not stop many Greek shipowners from continuing in the industry.[58] In fact, from a fleet of eight steamers of the S.G. Embiricos company before the First World War, only one survived, one was sold, one was stranded, and the rest, along with the *Georgios M. Embiricos*, were sunk by German submarines. It took a few years from 1920 to rebuild a fleet of six more steamers and three more in the 1930s, while most of the ships took the same names as those lost in the First World War. The same fate befell the *Leonardos G. Goulandris*, only Goulandris Brothers needed ten more years to replace her, with two ships, one sold soon after and one kept up to 1939, all indicating the difference in the capital base and strategy, size, and development between the firms.[59]

This study of the operation of Greek ships is an exploration into the anatomy of the shipping business, in the structure, function, and performance of the shipping firm. It has demonstrated how Greek shipowners evolved in the transitional period from sail to steam from different starting points and traditions, and the different strategies and business methods they employed to succeed. It also illustrates the world of other actors involved in ship operation, namely the partners, shareholders, business collaborators, and maritime workers of all ranks. All these seafaring lives contributed to the changes in Greek shipping in the transition from sail to steam.

58 Based on https://uboat.net/wwi/ships_hit/search.php (accessed 6 October 2020), 272 Greek sailing ships and steamers were sunk by German U-boats during the First World War.

59 http://www.sunderlandships.com/view.php?year_built=&builder=&ref=103592&vessel=EUGENIE+S.+EMBIRICOS (accessed 6 October 2020); Bistis, Ο Ατμήρης εμπορικός στόλος, 53, 59.

CHAPTER 13

Navigating in the Age of Transition: A Voyage Analysis of Greek Sailing Ships and Steamers 1860s–1920s

Apostolos Delis

1 Introduction

Navigation is the most essential and delicate operation in shipping. It is the reason the ship is paid for the safe, fast, and efficient transport of cargo and people. However, this fundamental part of the shipping business is overlooked by historians, who tend to focus on other aspects, like types of trades, merchant networks, business organization, ships and shipbuilding, ports, shipping finance, marine insurance, and many others. Most of the existing works on navigation are related to the development of the art of navigation, the explorations of the seas, and discoveries,[1] but only a few deal with specific aspects of navigation in relation to the operation and the performance of the ship in maritime trade.[2] This paper aims to do this; to analyse aspects of the navigation of cargo sailing ships and steamers from the 1860s to the 1920s, and to examine changes in navigation and the impact they had on Mediterranean seafarers and shipping during this period of transition from sail to steam. The analysis will be based on information from logbooks, and secondarily from the account books of Greek sailing ships and steamers, and may offer an exemplary case of the evolution of navigation of one of the most rapidly emerging Mediterranean merchant marines in the nineteenth and early twentieth centuries. The main documentation from logbooks concerns five sailing ships (four brigs, one barquentine) and five cargo steamers. The sailing ship data stretches from 1866 to 1889 covering the last period of the apogee of sail in the Mediterranean. Steamship data covers the period from 1888 to 1927, from the

1 J.B. Hewson, *A History of the Practice of Navigation* (Glasgow: Brown, Son & Ferguson, 1983); John Horace Parry, *The Discovery of the Sea* (Berkeley, Los Angeles and London: University of California Press, 1981).

2 Jaap R. Bruijn and Femme S. Gaastra (eds.) *Ships, Sailors and Spices: East India Companies and their Shipping in the 16th, 17th and 18th Centuries* (Amsterdam: NEHA 1993); Robert Parthesius, *Dutch Ships in Tropical Waters. The Development of the Dutch East India Company (VOC) Shipping Network in Asia 1595–1660* (Amsterdam: Amsterdam University Press, 2010).

earliest Greek cargo steamers to their great diffusion in the first decade of the twentieth century, up to the reconstitution of the Greek steamship fleet after the massive losses of the First World War in the 1920s (Table 13.1).[3]

The data from the logbooks is processed within a novel application called *Ship Voyages*, (http://www.sealitproject.eu/digital-seafaring), a map visualization, which enables us to follow the routes of ships, visit the related transcribed data, and check the information or find other information that does not appear within the map visualization, such as events that took place during a particular ship voyage.[4] The analysis of the main questions on navigation is based on this new instrument of map visualization, which enables us to examine, compare, and assess, accurately and clearly, various aspects of navigation. Therefore, the data visualization from *Ship Voyages* is structurally integrated into the following axes of analysis: a) the development of trade routes and of areas of navigation; b) the duration of voyages and the time spent at sea and ashore; c) the navigation patterns and the conditions of the voyages; d) the day-to-day events at sea and ashore (accidents, strikes, illnesses, desertions), which affected the performance of the voyage and the lives of the seafarers.

2 Trade Routes

During the nineteenth century, Greek-owned shipping was composed of medium-sized sailing vessels, of which the brig was the dominant ship type, carrying mainly cereals and other bulk cargoes from the Black Sea to Mediterranean ports.[5] The majority of Greek-owned sailing ships were built in Greek shipyards (Syros, Spetses, Galaxidi, Skopelos), but there were also a number of purchased second-hand vessels built abroad—like the brig

3 Apostolos Delis, "From parallel growth to great divergence: Greek shipbuilding from the late eighteenth to early twentieth centuries," *History of Technology*, no. 33 (2017) (Special Issue: History of Technology in Greece from the Nineteenth to the Twenty-first Century, eds. Stathis Arapostathis and Aristotle Tympas): 37–38; Gelina Harlaftis, *A History of Greek-Owned Shipping. The Making of an International Tramp Fleet, 1830 to the Present Day* (London: Routledge 1996), 187–95.

4 Petrakis Kostas, Georgios Samaritakis, Thomas Kalesios, Enric García Domingo, Apostolos Delis, Yannis Tzitzikas, Martin Doerr, and Pavlos Fafalios, "Digitizing, curating and visualizing archival sources of maritime history: the case of ship logbooks of the nineteenth and twentieth centuries," *Drassana*, no. 28 (March 2021): 60–87, https://doi.org/10.51829/Drassana.28.649.

5 Harlaftis, *A History of Greek-Owned Shipping*, chapter 1; Apostolos Delis, *Mediterranean Wooden Shipbuilding. Economy, Technology and Institutions in Syros in the Nineteenth Century* (Leiden: Brill, 2015), 142–45.

TABLE 13.1 List of ships from the examined logbooks

Ship Name	Ship Type	Tonnage	Year Built	Place Built	Port Registry	Shipowner	Logbook period of voyages
Coundouriotis (ex *Lucia*)	Brig	352 and 86/94 tons	1853	Capo d'Istria	Hydra	G. Kaloyannis	1866–74
Stratigos Favieros	Brig	362	1874	Skopelos	Skopelos	G.D. Zacharias, and Panayotis Siskos	1876–89
Eleni Koupa	Brig	276	1878	Syros	Syros	G. Kaloyannis	1878–88
Theofania	Brig	232	1865	Spetses	Spetses	Anargyros V. Komnas	1873–76
Asimoula	Barquentine	307	1880	Galaxidi	Galaxidi	D.E. Katsoulis	1882–85
Thiresia (ex *Charles Tennant*)	Cargo steam ship	874 grt/ 580 nrt	1869	Low Walker, Newcastle upon Tyne	Piraeus	A. Mango & D. Foscolo	1888–90
Demetrio S. Schilizzi	Cargo steam ship	2034 grt/1277 nrt	1893	West Hartlepool	Piraeus	A. Mango & D. Foscolo	1 March 1896–20 June 1896
Leonidas	Cargo steam ship	2751 grt/1750 nrt	1896	Sunderland	Andros	A. Embiricos	1904–06
Andriana	Cargo steam ship	2958 grt/1769 nrt	1906	Sunderland	Andros	A. Embiricos	1908–09
Konstantinos (ex *Strathearn*)	Cargo steam ship	4419 grt/2845 nrt	1906	Greenock, Glasgow	Piraeus	Panagos C. Lemos	1924–27

SOURCE: I WOULD LIKE TO THANK DR. ANNITA PRASSA, DIRECTOR OF THE GENERAL STATES ARCHIVES OF MAGNESIA, VOLOS, AND ELENI SPILIOTI FOR SENDING ME A COPY OF THE LOGBOOK OF THE *STRATIGOS FAVIEROS*. ALSO I WOULD LIKE TO THANK MINAS ANTYPAS, A PHD CANDIDATE AT THE UNIVERSITY OF CRETE, FOR SENDING ME AN ELECTRONIC COPY OF THE LOGBOOKS OF THE *COUNDOURIOTIS* AND *ELENI KOUPA* FROM HYDRA. THE DATA FOR THE *COUNDOURIOTIS* AND *ELENI KOUPA* IS FROM THE PRIVATE ARCHIVE OF EVANGELOS RAFALIAS, HYDRA; *ASIMOULA* FROM MARITIME MUSEUM OF GALAXIDI; *STRATIGOS FAVIEROS* FROM PRIVATE ARCHIVE OF THE FAMILY OF NIKOS ZACHARIADIS, SKOPELOS; *THEOFANIA*, A PHOTOCOPY FROM AN ORIGINAL KEPT AT THE AEGEAN MARITIME MUSEUM, MYKONOS; *DEMETRIO S. SCHILIZZI LEONIDAS*, AND THE *ANDRIANA* FROM SYRMAS ARCHIVE, HELLENIC LITERARY AND HISTORICAL ARCHIVE (ELIA), ATHENS; *THIRESIA* FROM MARIA KONSTANTINIDI, *Δυο Ναυτικά Ημερολόγια του τέλους του 19ου αιώνα. Του Ιστιοφόρου '«Αλέξανδρος Γ΄»* (*1884–88*) *από το Ναυτικό και Ιστορικό Μουσείο Γαλαξειδίου και του Ατμοπλοίου «Θηρεσία»* (*1888–90*) *από τη Βιβλιοθήκη «Ο Κοραής» της Χίου»* [*TWO SHIP LOGBOOKS OF THE LATE 19TH CENTURY. THE SAILING SHIP* 'ALEXANDROS THIRD' (*1884–1888*) *FROM THE MARITIME AND HISTORICAL MUSEUM OF GALAXIDI AND THE STEAMSHIP* 'THIRESIA' (*1888–1890*) *FROM THE KORAIS LIBRARY OF CHIOS*.] (MA DISS., IONIAN UNIVERSITY, (2007); THE *KONSTANTINOS* FROM THE ASSOCIATION OF FRIENDS OF OINOUSSES ISLAND, *ANNUARIO MARITIMO PER L' ANNO 1854*, VOL. 4 (TRIESTE: LLOYD AUSTRIACO, 1854), 174; AND *1867*, VOL. 17, 82

Coundouriotis (see Table 13.1)—which increased after 1860s, when western European-built wooden sailing ships were available at competitive prices.[6]

In the examined logbooks of sailing ships, the evidence shows that they operated mainly within the Mediterranean and Black Sea waters, reflecting the main trading pattern of the Greek-owned shipping industry. The most typical examples following this pattern are the two brigs *Coundouriotis* and *Eleni Koupa*, both owned and operated by Ioannis and Stamatios Kaloyannis from Hydra.[7] Both sailed almost the same routes, especially from Berdyansk to Marseilles, indicating the business network of the Kaloyannis firm with these ports (Table 13.2).

TABLE 13.2 Routes of the *Coundouriotis* and *Eleni Koupa*

***Coundouriotis* 1866–74**		***Eleni Koupa* 1878–88**	
Route	**Number of voyages**	**Route**	**Number of voyages**
Berdyansk-Marseilles	6	Berdyansk-Marseilles	10
Berdyansk-Skikda (Algeria)	1	Berdyansk-Marseilles/ Tarragona	2
Mariupol to Port Napoleon/ Marseilles	1	Berdyansk-Messina	1
Odessa to Trieste	1	Berdyansk-Malta	1
Varna to Frioul/Marseilles	1	Henichesk (Sea of Azov)-Marseilles	2
Foça-Surmene-Yevpatoria-Poti-Redout Kale-Istanbul and Berdyansk	1	Henichesk-Malta	1
		Henichesk-Tarragona	1
		Mykolaiv-Marseilles	1
		Mykolaiv-Piraeus	1

SOURCE: PROCESSED DATA FROM THE LOGBOOKS OF THE RESPECTIVE SHIPS

6 Harlaftis, *A History of Greek-Owned Shipping*, 121; Apostolos Delis "Modern Greece's first industry? The shipbuilding centre of sailing merchant marine of Syros, 1830–70," *European Review of Economic History* 19, no. 3 (2015): 263.

7 Apostolos Delis, "Ship operation in transition: Greek cargo sailing ships and steamers, 1860s–1910s", in the present volume.

MAP 13.1 Routes of the brig *Coundouriotis* 1866–1874

MAP 13.2 Routes of the brig *Eleni Koupa* 1878–1888

The *Coundouriotis* in eight years sailed six times from Berdyansk to Marseilles, while the *Eleni Koupa* in ten years had even a greater dependency on Berdyansk and the Sea of Azov, by sailing fifteen times from Berdyansk, three from Henichesk, in the north-western corner of the Sea of Azov, and only twice outside of it, from Nikolayev (today Mykolaiv). Marseilles was for both ships the most frequent destination (Maps 13.1 and 13.2).

MAP 13.3 Routes of the brig *Asimoula* 1882–1885

The *Asimoula* on the other hand, a 307-ton barque owned by Demetrios Katsoulis, a traditional ship owning family of Galaxidi,[8] despite also sailing throughout the Mediterranean over three years, never sailed the same route twice. She sailed from Berdyansk to Catania and to Malta, from Batoum to Istanbul and to Berdyansk, and then to Marseilles. She also sailed from Batoum to Trieste, from Varna to Marseilles, from Sulina to Marseilles, and one inter–Mediterranean voyage from Marseilles to Alexandria-Limassol and from there to Tarragona (Map 13.3).

The Skopelos-built and owned brig the *Stratigos Favieros* represents a rather different case of trade strategy. The ship sailed the usual Black Sea-Mediterranean routes, but also went to Britain and was engaged in West African trade as well (Map 13.4). The *Stratigos Favieros* sailed from seven different Black Sea ports to Marseilles: Sevastopol, Berdyansk, Mariupol, Yeysk, Varna (twice), Burgas, and Constanta. She also sailed from Taganrog to Venice and from Yeysk to Barcelona. Outside Azov, she sailed once from Mykolaiv to Torre Annunziata, from Varna and the nearby Balchik to Livorno, and from Braila to Venice and Trieste. In September 1878, she also sailed from Mariupol to Falmouth with cereals and back via Cephalonia to Trieste carrying coal. This was to become the typical route-cargo pattern (Black Sea to north-western Europe with cereals; Britain to the Mediterranean with coal) in the following

8 Gelina Harlaftis, Manos Charitatos, and Eleni Beneki, Πλωτώ. Ελληνες καραβοκύρηδες από τα τέλη του *18ου* αιώνα έως τον Β' Παγκόσμιο Πόλεμο [*Ploto. Greek Shipowners from the End of the 18th Century to World War 2*] (Athens: Hellenic Literary and Historical Archive, 2002), 111–14.

MAP 13.4 Routes of the brig *Stratigos Favieros* 1876–1889

years for both sailing ships and cargo steamers, as we will see below in the cases of the Greek steamers of the late nineteenth and early twentieth century.[9]

The involvement of the *Stratigos Favieros* and *Theofania* (see below) in West African trade was not an exception. Other Greek ships of that period were also engaged in this trade. The *Stratigos Favieros* made four round voyages from Marseilles or the nearby Port Napoleon, to carry mainly peanuts and secondarily palm kernels. These raw materials were necessary for the soap industry of Marseilles, for the production of peanut oil and palm oil and their mixing with olive oil, the main raw material for soap making, of which there was a shortage already from the 1830s. French enterprises that controlled the production and transport of these materials in West Africa already from the 1840s also had a shortage of French vessels, and thus often chartered foreign ones, among them mainly Greek, Italian, and British ships.[10] The *Stratigos Favieros*

9 Robin S. Craig, "Aspects of tramp shipping and ownership," in *Ships and Shipbuilding in the North Atlantic Region*, eds. Keith Matthews and Gerald Panting (St. John's: Memorial University of Newfoundland, 1978), 216–17; Leonardo Scavino, *The Mediterranean Maritime Community of Camogli: Evolution and Transformation in the Age of Transition from Sail to Steam (1850s–1910s)* (PhD diss., University of Genoa, 2020), 113, 116–18; see also Apostolos Delis, "Ship operation in transition", in the present volume.

10 Xavier Daumalin, *Marseilles et l'ouest Africain. L'outre-mer des industriels (1841–1956)* (Histoire du commerce et de l'industrie de Marseilles XIXe–XXe siècles 8) (Marseilles: Chambre de commerce et d'industrie Marseilles-Provence, 1992), 13–50.

MAP 13.5 Loading ports in West Africa of the brig *Stratigos Favieros*

sailed back and forth always between October to April, which coincided with the period of the harvest and transport of peanuts. The first voyage went from Marseilles to Benty in Guinea between November 1876 and May 1877 carrying salt on the outward leg. The other three voyages were carried out consecutively from October 1880 to February 1882. On two of them, the ship sailed from Port Napoleon/Marseilles respectively to Gorée Island, a few miles south-east of the Dakar Peninsula in Senegal, where it unloaded part of its cargo, consisting of salt and other merchandise. It then continued south to Rio Nunez in Guinea, a place where several French trading stations were established, and loaded peanuts and other goods for Marseilles.[11] For the remaining voyage in 1881 it sailed to Gorée and Rufisque, opposite the peninsula of Dakar, where it loaded peanuts bound for Marseilles (Map 13.5).

A similar story is that of the 232-ton brig the *Theofania* built and registered in Spetses in 1865, and owned and captained by Anargyros V. Komnas. During the documented period of the logbook, 1873–76, the ship followed a different trade route pattern compared to most Greek ships of the period. In fact, the *Theofania*, for three consecutive years, sailed only once in the Mediterranean (a voyage from Marseilles to Sfax, in Tunisia) and never to the Black Sea. Instead, she sailed across the northern Atlantic, chartered in British ports, and Marseilles to West Africa (Sierra Leone, Rio Nunez, Brass River in Nigeria

11 *Africa Pilot, or Sailing Directions for the West Coast of Africa, part 1: From Cape Spartel to the River Cameroon, Including the Azores, Madeira, Canary, and Cape Verde Islands*, 3rd edition (London: Hydrographic Office, Admiralty, 1880), 179; Daumalin, *Marseilles et l'ouest Africain*, 94.

MAP 13.6 Voyages of the brig *Theofania* 1873–1876

and Gabon), to the Demerara River in Guiana, and to Philadelphia in the USA (Map 13.6).

Yet, the first Greek-owned cargo steamers during this period seem to follow similar trade routes to most of the sailing ships. The *Thiresia*, was a rather small steamer, 580 tons, built in 1869 in Newcastle, and bought second-hand in 1887 and registered in Piraeus by the Istanbul-based firm Foscolo & Mango. During its two years of operation (1888–90) recorded in the logbook, the ship sailed exclusively within the Mediterranean and the Black Sea (Map 13.7). The ship operated mainly from Danube ports, Braila, Galatz, and Sulina to Marseilles (three times), Algiers (twice), Savona (twice), Genoa, Naples, and Barcelona, and from Taganrog in the Sea of Azov to Patras (twice), Messina, Trapani, and La Goulette in Tunisia. She made only a few voyages outside this pattern; once from Balchik to Genoa, from nearby Pomorie to Marseilles, from Novorossiysk via Mersin also to Marseilles, and from Şarköy in the Sea of Marmara to Sète.

The steamer *Demetrio S. Schilizzi* on the other hand, also owned by Foscolo & Mango, and newly-built in 1893 in West Hartlepool, based on a logbook and account books of the period 1895–90 sailed to far wider seas (Table 13.3). The *Demetrio S. Schilizzi*, 1277 tons, had twice the capacity of the *Thiresia* and sailed most of the time between the Mediterranean and Black Sea ports. However, she also sailed to northern Europe, Rotterdam, the UK, European Atlantic ports like Oporto, Lisbon, and Bilbao, and as far as Buenos Aires and Rio de Janeiro. This pattern of trade routes between the Mediterranean/Black Sea and northern Europe/the UK, and occasionally to ports on the other side of the Atlantic, became the norm in the following years for Greek cargo steamers.

MAP 13.7 Routes of the steamer the *Thiresia*, 1888–1890

TABLE 13.3 Voyages of the steamer *Demetrio S. Schilizzi*

Mediterranean/Black Sea	16
Barcelona/Bilbao/Rotterdam/UK/Mediterranean/Istanbul	1
Black Sea/Lisbon/Bilbao/Rotterdam/UK	1
Black Sea/Oporto/Istanbul/UK	1
Black Sea/UK/Istanbul	1
Istanbul/Black Sea	1
UK/Mediterranean	1
UK/South America/Northern Europe/Istanbul	1
Total	23

SOURCES: PROCESSED DATA FROM LOGBOOK AND ACCOUNT BOOKS FOUND IN Αρχείο Α. Σύρμα, E.L.I.A., ATHENS. HTTP://WWW.TEESBUILTSHIPS.CO.UK/VIEW.PHP?YEAR_BUILT=&BUILDER=&REF=166336&VESSEL=DEMETRIO+S.+SCHILIZZI (ACCESSED 5 MARCH 2021)

The evidence from two steamers that operated in the first decade of the twentieth century—the *Leonidas* and *Andriana*, both owned by the Andros shipowner Alkiviadis Embiricos (based in Braila), and built by Short Brothers in Sunderland in 1896 and 1906 respectively—corroborate this trade route-pattern (Maps 13.8 and 13.9). The *Leonidas* carried cereals mainly to north-western European ports: Antwerp (three times), Rotterdam, Amsterdam, Birkenhead, and London (all once), from the ports of Azov, Taganrog, Akhtari (both twice) and Heniches`ka (once), from the Danube, Galatz and Braila (both once), and from Novorossiysk and Burgas. She always returned from Cardiff with coal to Italian ports: Savona (three times), Naples (twice), Torre Annunziata, Genoa, and Venice. During the two examined years she made only

MAP 13.8 Routes of the steamer the *Leonidas* 1904–1906

MAP 13.9 Routes of the steamer the *Andriana* 1908–1909

one round trip on the old Mediterranean/Black Sea route from Taganrog to Marseilles, and from there to Novorossiysk. The *Andriana* in a year and a half carried out diverse voyages, but always within the pattern. She carried cereals to Rotterdam only three times from the Black Sea ports of Galatz, Braila, and Taganrog. Instead, from September 1908 to April 1909 she made five consecutive round trips from Barry (three times), Newport, or Penarth to the Italian ports of Livorno, La Spezia, Brindisi, Naples, and Venice.

The last stage of the expansion of Greek-owned steamers before the Second World War came in the 1920s with their involvement in the routes between

MAP 13.10 Routes of the steamer *Konstantinos Lemos* 1924–1927

Britain and Rio de la Plata. This development occurred because of the declining presence of the British fleet in this market after the shortage of vessels during the First World War, the consequent rise of the freight rates, and the reconstruction and growth of Greek-owned tonnage after its heavy losses during the war.[12] The evidence in navigation of this new trading route comes from the steamer the *Konstantinos Lemos*, a second-hand ship of 2,845 tons, built in 1906 and owned by Panagos C. Lemos. The Lemos is another remarkable Greek ship owning family from Oinousses, a tiny island next to Chios, a very important maritime community that managed successfully to shift to steamers.[13] The *Konstantinos Lemos*, made its first two round trips from September 1924 to July 1925 from Penarth and Falmouth to Buenos Aires. Then, up to 1927, continued to sail on the usual routes between the Black Sea/Mediterranean and northern Europe/the UK, from Novorossiysk, Odessa and Poti to Rotterdam (three times), Bremen and Hull, making only one round trip on the traditional Mediterranean/Black Sea route (Map 13.10). It is the first of the examined ships that in almost three years of activity never touched Marseilles and sailed only twice to Italian ports: Livorno and Genoa.

12 Harlaftis, *A History of Greek-Owned Shipping*, 189–94.
13 Harlaftis, Charitatos, Beneki, Πλωτώ, 267–71.

3 Duration of Voyages

The duration of the voyage was subject to many factors: the sailing season, the particular weather conditions on each voyage, the state of the ship, and the seamanship of the captain, officers, and crew. For sailing ships, the above factors had an even greater impact on the performance of the vessel and the duration of the voyage. The analysis of sailing ship voyage duration and conditions will centre on Marseilles, which was the most frequent port of departure and destination, not only of the sample of the examined sailing ships but also of most of the Mediterranean ships involved in the Black Sea trade and beyond. In the 1880s, Marseilles was the fifth port in the world both in terms of registered tonnage and in ship traffic behind London, New York, Liverpool, and Cardiff.[14] The two main trading areas of the examined sailing ships in relation to the port of Marseilles are the Black Sea and West Africa. Despite the latter being far less important for Greek shipping, it may offer a useful point of comparison with the Black Sea, and is also a route that seems to have been far more frequented by Greek ships than the current research so far has demonstrated. It is worth noting that despite the impression given by the map, the distance from the Sea of Azov ports like Mariupol and Berdyansk to Marseilles is even greater than from the Dakar ports, Gorée and Rufisque, and a little shorter than the central Black Sea ports like Mykolaiev and Sevastopol (Table 13.4).

TABLE 13.4 Distances to Marseilles

Route to Marseilles	Nautical miles
Benty, Guinea	3,013
Rio Nunez, Guinea	2,900
Mariupol	2,549
Berdyansk	2,476
Dakar (Gorée, Rufisque), Senegal	2,439
Mykolaiev	2,283
Sevastopol	2,242
Constanta	2,004
Varna	1,988
Burgas	1,975

SOURCE: HTTP://PORTS.COM/SEA-ROUTE/ (ACCESSED 24 MARCH 2021)

14 A.N. Kiaer, *Statistiques internationale. Navigation maritime,* vol. 2: *Les marines marchandes* (Christiania: Bureau Central de Statistique du Royaume de Norvege, 1881), 41; idem, vol. 4: 1892, viii–ix.

In fact, the fastest route of the *Stratigos Favieros* from the Black Sea was the 2,242 nautical miles voyage from Sevastopol to Marseilles, in May 1878, in 28 days, whereas the 2,439 miles route from Marseilles to Gorée, in March 1881, was completed in 21 days. The longest West African voyage was the 3,014 miles from Benty to Marseilles in 71 days in early spring 1877, whereas the two consecutive round voyages between the Dakar ports Gorée, Rufisque, and Marseilles from February 1881 to February 1882, was made on average in 37 days. On the route from Marseilles to Rio Nunez, the *Theofania* took 42 days on the outward passage and 76 on the homeward one, this latter leg being the most difficult. The *Theofania* also sailed from Swansea to the Brass River, a distance of 4552 nautical miles (nm), in 55 days, and on the return passage from Gabon Estuary to Falmouth, 4,643 nm in 82 days. This same ship also sailed the 5629 nm from Dunkerque to Demerara in 127 days in the winter of 1875, while on the return voyage to Liverpool, it did the 5500 nm in the summer of the same year in only 45 days. Distance and duration were not proportionate in navigation and in the enclosed seas it seems that often conditions affected the duration of the voyage more than in the oceans. In fact, the *Stratigos Favieros*, on five voyages from the Black Sea ports of Berdyansk, Seavastopol, Constanta, Varna and Burgas to Marseilles, took on average 55 days, the longest being from Varna in the winter of 1884 that took 73 days. Similar records from Black Sea ports are registered for the other ships too. The *Eleni Koupa* in twelve voyages from Berdyansk to Marseilles needed on average 58 days; the *Coundouriotis* for the same route in seven voyages needed 65 days; while the *Asimoula* took 42 days from Berdyansk in summer 1884, and 70 from Varna in winter 1882 (Table 13.5). These figures show that the Black Sea and the Mediterranean, despite being closed seas, presented special conditions and dangers that affected the duration of voyages. A correct assessment of voyage duration between the two areas in comparison, requires a distinction between winter and summer navigation. Winter navigation is considered to be from November to March and summer from April to October, valid for the northern hemisphere. Practically, the ports of Azov were closed to navigation from the end of November to the end of March/beginning of April due to ice.[15] In fact, the latest departure from Azov is recorded at Berdyansk on 6 November 1870 by the *Coundouriotis*, while the earliest recorded arrivals into Azov were those of the *Coundouriotis* and *Eleni Koupa*,

15 Apostolos Delis, "Navigating perilous waters: routes and hazards of the voyages to the Black Sea in the nineteenth century," in *Linkages of the Black Sea with the West. Navigation, Trade and Immigration*, eds. Maria Christina Chatziioannou and Apostolos Delis (Black Sea History Working Papers, 7) (Rethymnon: 2020), also published on www.blacksea.gr, 19.

again at Berdyans, on 29 March 1874 and 27 March 1888 respectively. In the Black Sea ports outside Azov, ice had less severe consequences, like in Odessa where the port was frozen for shorter periods during December, January, or February.[16] Thus, the *Coundouriotis* was able to depart from Varna to Frioul on 16 November 1871 and from Odessa to Trieste on 29 November 1872, as well as the *Stratigos Favieros* on three occasions in November from Varna, Balchik and Mykolaiv in 1883, 1884, and 1885 respectively. The severe conditions and the almost complete absence of trade in most of the Black Sea ports in winter may lie behind the strategy of the *Asimoula* to work from September 1884 to April 1885, namely the winter, between Marseilles, Alexandria, Limassol, Tarragona, Zakynthos, and Istanbul before departing again for Berdyansk for the usual Black Sea-Mediterranean trade route. However, the ship that epitomized this strategy of profiting in the winter pause in the Black Sea, was the *Stratigos Favieros*. All of her four round voyages in West Africa took place between October to April, which was the period of the peanut trade. The *Stratigos Favieros* in two more winters between 1877–78, sailed from Marseilles to Volos, Preveza, Lefkada and Salaora before departing for Sevastopol, where it arrived in early April, and in 1879 when it arrived at Falmouth on 4 February from Mariupol, and returned to Cephalonia on 18 April in 66 days, before sailing to Istanbul for the Black Sea.

The passage from Berdyansk and Mariupol to Istanbul in the four sailing ships[17] took, on average, nine days, while from the ports outside Azov, Mykolaiv, Varna, Burgas, Sevastopol, and Constanta, approximately three days. In 1845, sailing ships from Odessa took on average six days to get to Istanbul and from the harbourless Taganrog, in the far north-east corner of the Azov Sea, 23 days.[18] The ships stayed ashore on average sixteen days, most of which were usually in Istanbul, the inevitable route and the great maritime centre, or to nearby anchorage in the Bosporus, usually Büyükdere, for bureaucratic procedures, commercial transactions, repairs, supplies, crew discharge, and new recruits.[19] In 1845, the average stay at Istanbul was three times less (5.6 days) than the much longer period of stay from the mid-1860s onwards, probably due to the increased ship traffic in the growing Black Sea trade routes.[20] Ships

16 Delis, "Navigating perilous waters," 19.

17 The brig *Theofania* did not sail in the Black Sea during the 1873–76 period of the logbook.

18 Delis, "Navigating perilous waters," 21.

19 Gelina Harlaftis and Vassilis Kardasis, "International shipping in the eastern Mediterranean and the Black Sea: Istanbul as a maritime centre, 1870–1910," in *The Mediterranean Response to Globalization Before 1950*, eds. Sevket Pamuk and Jeffrey G. Williamson (London and New York: Routledge, 2000), 249–63.

20 Delis, "Navigating perilous waters," 21–23.

TABLE 13.5 Duration of passages in days to and from Marseilles

SEA OF AZOV

Ship	Total Duration	Under Sail	Ashore	Black Sea-Istanbul	Istanbul-Mediterranean
Eleni Koupa	**Berdyansk-Marseilles**				
Summer	36	33	3	7	26
	42	36	6	8	28
	44	30	14	8	22
	50	43	7	13	30
	55	52	3	12	40
	61			8	53
	68	62	6	10	52
Winter	37	27	10	8	19
	55	49	6	14	35
	62	33	29	11	22
	76	44	32	8	36
	115	32	83	7	25
Coundouriotis					
Summer	41	28	13	9	19
	51	39	12	10	29
	56	49	7	7	42
	57	52	5	11	41
	59	43	16	9	34
Winter	78	56	22	7	49
	112	80	32	6	74
Asimoula					
Summer	42	29	13	6	23
Stratigos Favieros					
Summer	51	43	8	10	33
Coundouriotis	**Mariupol-Port Napoleon/Marseilles**				
Summer	59	47	12	11	36
Stratigos Favieros					
Summer	49	35	14	7	28

TABLE 13.5 Duration of passages in days to and from Marseilles (*cont.*)

SEA OF AZOV					
Ship	**Total Duration**	**Under Sail**	**Ashore**	**Black Sea-Istanbul**	**Istanbul-Mediterranean**
BLACK SEA					
Eleni Koupa	**Mykolaiv-Marseilles**				
Summer	50	40	10	5	35
Coundouriotis	**Varna-Frioul**				
Winter	49	31	18	3	28
Asimoula	**Varna-Marseille**				
Winter	70	32	38	2	30
Stratigos Favieros	**Sevastopol-Marseilles**				
Summer	28	23	5	3	20
	Constata-Marseilles				
Summer	68	55	13	2	53
	Burgas-Marseilles				
Winter	56	30	26	2	28
	Varna-Marseilles				
Winter	73	55	18	3	52
WEST AFRICA					
Stratigos Favieros	69	**Marseilles-Benty**			
	71	**Benty-Marseilles**			
Stratigos Favieros/ Theofania	32/42	**Marseilles-Rio Nunez**			
	35/76	**Rio Nunez-Marseilles**			
Stratigos Favieros	21	**Marseilles-Gorée**			
	38	**Rufisque-Marseilles**			
	40	**Marseilles-Gorée**			
	49	**Gorée -Marseilles**			

SOURCE: PROCESSED DATA FROM HTTPS://ISL.ICS.FORTH.GR/FASTCATTEAM/TEMPLATES/SHIP_MAP.HTML

also had to usually stay for shorter periods at Kerch, when they departed from Azov ports, due to the shallowness of the water, which demanded the use of lighters and barges, that not only caused delays and raised transport costs, but also led to a frequent loss of cargo stolen from the lighters in the Yenikale.[21] Sailing ships also often had to stay at Mediterranean anchorages due to weather conditions, usually at Malta, Messina, or Cagliari in the middle of the Mediterranean passage, and at some French anchorages before their arrival at Marseilles, more frequently at Hyères Island, but also at Toulon, Frioul, Cassis, or Cannes.[22] Sometimes they also stopped at their homeports like Hydra for the *Coundouriotis* and *Eleni Koupa*, or *Skopelos* for Stratigos Favieros for technical, business, or social reasons, and would sometimes spend much of the winter there before starting a new voyage. The four sailings ships performed the longest leg of the voyage from Istanbul to Marseilles on average in 35 days, which almost coincides with the 1845 ship data.[23]

In Table 13.6, the performance of the four sailing ships is compared with the data on the arrivals of brigs to Marseilles from specific ports in 1875; all but one of the samples are brigs and the only barquentine, the *Asimoula*, is closer to a brig in sailing performance than to a full-rigged ship. In the best documented route, Berdyansk/Mariupol-Marseilles, in the summer, the average duration of three out of the four ships is slightly above the general average seen in the 1875 data. Only the *Asimoula* performed much better in her only voyage of this category. In the winter, the *Coundouriotis* almost matches the 1875 average, but the *Eleni Koupa* in this period performed far better, with an average of 69 days. On the Burgas/Varna-Marseilles winter route, all ships took less time than the 1875 general average, especially the *Coundouriotis*, where her only voyage from Varna took 49 days.

The advent of cargo steamers reduced dramatically the duration of the voyages, and drastically changed the navigation patterns. In 1875, the time employed by steamers from Azov ports to Marseilles was three to four times less than the summer performance of sailing vessels, and almost more than six times less than their winter performance. Similar results can also be seen from other important ports like Odessa, which concentrated the bulk of cargo steamer traffic to Marseilles. Twenty years later, the duration further improved by two to three days from the Azov ports, and up to five or six days from the rest of the Black Sea (Table 13.7).

21 Delis, "Navigating perilous waters," 14–18.

22 Processed data from the logbooks of the four Greek sailing ships and from Delis, "Navigating perilous waters," 22.

23 Delis, "Navigating perilous waters," 21.

TABLE 13.6 Voyage duration in days. In parenthesis the number of voyages

	Berdyansk /Mariupol-Marseilles/ Port Napoleon		Burgas/Varna-Marseilles/ Frioul	
	Summer	**Winter**	**Summer**	**Winter**
1875 data	49.05 (113)	97.32 (24)	42.37 (22)	74.88 (10)
Eleni Koupa	50.85 (7)	69 (5)		
Coundouriotis	53.8 (6)	95 (2)		49 (1)
Asimoula	42 (1)			70 (1)
Stratigos Favieros	50 (2)			64.5 (2)

SOURCE: PROCESSED DATA FROM THE NEWSPAPER *SEMAPHORE DE MARSEILLES* AND FROM THE LOGBOOKS OF THE FOUR GREEK SAILING SHIPS

TABLE 13.7 Duration of passages of steamers from the Black Sea to Marseilles. In parenthesis the number of voyages

PORTS	**1875**	**1895**
Berdyansk	15.5 (2)	13.3 (28)
Burgas	21 (2)	16.0 (2)
Braila	20.36 (11)	14.7 (39)
Mariupol	14.88 (8)	12.1 (10)
Odessa	15.84 (100)	13.11 (70)
Taganrog	16.76 (29)	13.11 (44)

SOURCE: DELIS, "NAVIGATING PERILOUS WATERS," TABLE 4, 22–23

The steamer *Thiresia*, in service almost contemporarily with the sailing ships operating between the Mediterranean and the Black Sea, needed only nine and ten days, respectively, from Braila and Galatz to Marseilles in 1888; one of the Braila voyages was made in December of that year after the breaking of the ice in the Danube. The voyage from Pomorie (Anchialos), on the south-eastern Bulgarian coast, to Marseilles, in January 1890, also took nine days, which is between five-and-a-half to eight times less time than that required by the sailing vessels from Burgas and Varna to the same destination in winter (see Table 13.4). This performance is even better than the average from the data on 1895 steamers working from the Black Sea to Marseilles (see Table 13.7).

The much larger and more modern steamships the *Leonidas* and *Andriana*, operating almost two decades after the *Thiresia*, no longer carried cereals to the Mediterranean but rather to North Sea ports. They managed to cover the distances of almost 4,000 to 4,500 nm from the Black Sea to Rotterdam, Amsterdam, Antwerp, and London in twenty days on average. In the return voyage from Cardiff, or nearby Barry, Newport and Penarth (where the steamers always went after discharging their cereals in North Sea ports for repairs and supplies), carrying coal mainly to Italian ports, both the *Leonidas* and *Andriana* showed surprising regularity and precision. In fact, they covered the almost 2,400 nautical miles on average in ten days, exactly half the time they needed to cover the twice the distance voyage from the Black Sea to the North Sea ports: twenty days. Only Venice, which is slightly more than 3,100 miles from the coal ports, needed five to six days more (Table 13.8).

TABLE 13.8 Duration of the voyages of the steamers *Leonidas* and *Andriana*

Route in nautical miles	**Leonidas (days)**	**Andriana (days)**	**Leonidas (miles/day)**	**Andriana (miles/day)**
Sulina-Rotterdam (4061)	21	18	193.4	225.6
Galatz-Rotterdam (4116)		19		216.6
Taganrog-Rotterdam (4534)		21		215.9
Taganrog-Amsterdam (4569)	19		240.5	
Sulina-Antwerp (3970)	19		208.9	
Taganrog-London (4419)	23		192.1	
Burgas-Antwerp (3833)	21		182.5	
Cardiff-Torre Annunziata/Naples (2471)	10		247.1	
Cardiff-Savona (2268)	10		226.8	
Cardiff-Venice (3184)	16		199.0	
Barry/Newport-Naples (2412)		10.5		229.7
Barry-Genoa/La Spezia (2256)		9.6		235.0
Barry-Livorno (2292)		12		191.0
Barry-Venice (3125)		15		208.3
Penarth-Brindisi (2753)		11		250.3

SOURCE: PROCESSED DATA FROM THE LOGBOOKS OF THE *LEONIDAS* AND *ANDRIANA*

TABLE 13.9 Voyage duration of the steamer *Konstantinos*

Route in nautical miles	Days	Miles/day
Black Sea-Northern Europe		
Novorossiysk-Rotterdam (4344)	25	173.8
Odessa-Rotterdam (4161)	22	189.1
Poti-Hull (4443)	25	177.7
UK/**Northern Europe-Buenos Aires**		
Barry/Penarth-Buenos Aires (7468)	30	248.9
Buenos Aires-Falmouth (7358)	36	204.4
Buenos Aires-Cuxhaven (8060)	35	230.3
Northern Europe-Mediterranean		
Vlaardingen-Livorno (2621)	11	238.3
Rotterdam-Piraeus (3299)	15	219.9
Viborg-Alexandria (5259)	26	202.3

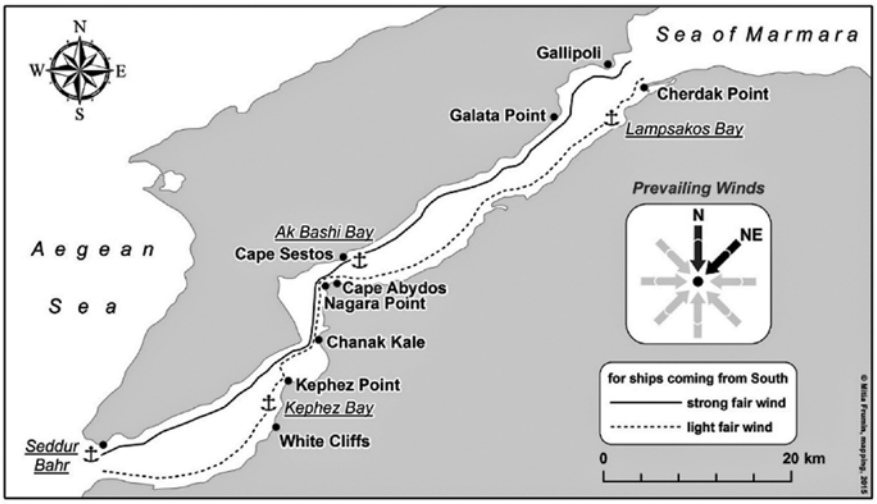
SOURCE: THE LOGBOOK OF THE *KONSTANTINOS*

The *Konstantinos*, a steamer built in 1906 like the *Andriana*, but larger at 2,845 nrt, sailed in the 1920s the same distances of 4,000 to 4,500 nautical miles from the Black Sea to the North Sea ports at a slower speed, taking two to five more days to get to its destination, as she was almost twenty years old. The ship sailed the northern Europe-Mediterranean routes in almost the same time as the then new *Andriana* twenty years earlier, while it had the best performances on the Atlantic route from the UK/northern Europe to Rio de la Plata, covering a distance of 7,500 to 8,000 nm in a little more than a month (Table 13.9).

4 Navigation Patterns and Conditions

Navigating to and from the Black Sea was very demanding due to the special sailing conditions in confined waters like the Dardanelles, the Sea of Marmara, and the Bosporus. Sailing ships bound to Istanbul had to wait in Tenedos or Troada for favourable southern winds to enter the Dardanelles, as occurred with the *Asimoula* in April 1883 in a voyage from Valencia to Batoum, when the ship waited ten days, first in Tenedos and then in Cape Giaour further north, before entering the channel.[24] When in the Dardanelles, ships had

24 Delis, "Navigating perilous waters," 1–2.



MAP 13.11 Crossing the Dardanelles
SOURCE: DELIS, "NAVIGATING PERILOUS WATERS", 4

to face the prevailing north and north-east winds and again had to wait for a favourable wind that would enable them to shift from one anchorage to another up to the Sea of Marmara.[25] This is exactly what the *Stratigos Favieros* faced in September 1888 with adverse north-west/north/north-east winds in a trip from Marseilles to Braila, where it had to anchor at Beşik Bay then at White Cliffs before she was towed at Nagara Point, then was anchored again up at Lampsakos Bay before departing with a favourable southern wind (see Map 13.11).

The data from the sailing ships shows that in their efforts to transverse the channel, they used different anchorages always on the Asiatic side of the Dardanelles, more frequently at Beşik Bay (*Stratigos Favieros, Eleni Koupa,* and *Coundouriotis*) and White Cliffs in the southern part (*Coundouriotis, Stratigos Favieros, Asimoula*), and at Lampsakos (*Stratigos Favieros, Eleni Koupa, Coundouriotis*), and Cherdak Point in the northern entrance (*Eleni Koupa, Coundouriotis*). Another important delaying factor was the sanitary and administrative procedures to enter and leave the channel. The central health office was at Chanak Kale, but ships could also obtain pratique at Seddul Bahr, the northern entrance of the Dardanelles from the Aegean Sea, at White Cliffs and at Gallipoli or Lampsakos. In fact, the *Coundouriotis, Asimoula*, and *Stratigos Favieros* used to stop for these procedures most of the time at Chanak Kale,

25 Delis, "Navigating perilous waters," 2.

MAP 13.12 Sea of Marmara anchoring and passing points

the *Eleni Koupa* at Nagara Point, while the *Stratigos Favieros* and *Asimoula* also stopped at White Cliffs. At Nagara Point and Chanak Kale, ships also used to call for a steam tug service when facing adverse winds.

The passage of the Sea of Marmara was the easiest of all tasks of the voyage since the weather was usually good, something which is also reported in most of the weather observations in the logbooks of the sailing ships. Similarly, as in the Dardanelles, north-east winds are prevalent the whole year, but in autumn and early spring the south and south-east winds are frequent, fresh and the weather clear.[26] According to the sailing ship's logbook data most of the time ships passed by Marmara Island in the middle of the enclosed sea. However, often they followed the northern coast in combination with or without Marmara Island. All the ship data showed that they passed the same locations namely: Marmaraereglisi (Herakleia), Silivri, Gaziköy, Büyükçekmece, and Küçükçekmece and they only once sailed on the southern side (see Map 13.12). Ships usually needed one, or a maximum of two, days to cross the Sea of Marmara passing by one or two of the above-mentioned points. Despite the good weather conditions, however, the *Coundouriotis*, being the oldest of the sailing vessels, on certain occasions needed four days to cross the Sea of Marmara, taking one day from one location to another.

The last challenge for sailing ships bound for the Black Sea was the Bosporus channel, 17 miles long and from 0.4 to 1.5 miles wide. The examined sailing ships usually after crossing the Sea of Marmara anchored at Samatya (Psamatheia), south-west of Istanbul. From there they often had to be towed by a steam tug to get to the Bosporus due to the prevailing NE winds as well as of the

26 Delis, "Navigating perilous waters," 4–5.

MAP 13.13 Navigating the Black Sea
SOURCE: DELIS, "NAVIGATING PERILOUS WATERS", 10

strong current of the channel, unless south or south-west winds blew.[27] In the Bosporus they anchored at Büyükdere before setting sail for the Black Sea.

Ships from the Bosporus bound for the ports of Azov, according to the sailing pilots (Map 13.13), sailed with the prevailing east to north-east winds in the eastern part of the Black Sea, and in order to avoid the adverse current coming from the southern shores of the Crimea, had to follow the course along the Anatolian coast up to Sinope before turning north to the Straits of Kerch. However, the data from the logbooks of the sailing ships offers a different picture. Except on very few occasions, all of them headed from the Bosporus to the south and south-east coasts and anchorages at Crimea before entering the Straits of Kerch. More frequently, the ships headed to the capes of Aytodor, Ayudag, and to Theodosia in eastern Crimea, and occasionally to Cape Sarych and to Balaklava in the south. Most of these routes followed a straight north-east direction to the Crimea, as illustrated in Map 13.14, but there were also a number of alternative courses.

In the most frequent of these alternative courses, ships sailed from the Bosporus in a north-westerly direction along the Bulgarian coast and between the 43° N and 44° N parallels, and at the 28°E and 30°E meridians turned in a north-east direction towards Crimea (Map 13.15). The *Stratigos Favieros*, in

27 Delis, "Navigating perilous waters," 6–7.

MAP 13.14 The *Eleni Koupa*: Marseilles-Berdyansk-9 March 1886–22 April 1886

the three-recorded voyages to the Azov, always followed this course,[28] while the *Coundouriotis* did that in only two out of ten, and the *Eleni Koupa* in five out of 16, recorded passages. The *Eleni Koupa* attempted three more times the western course, but due to adverse weather and winds off the Bulgarian coast had to return to a south-east direction, and then headed up in a north-east direction to reach south-eastern Crimea.[29] The *Coundouriotis* once and the *Asimoula* in two passages from the Bosporus to Azov, followed an opposite eastern course to Kerch On the first passage of the *Asimoula*, the ship, facing north-east winds, took an almost straight north-east course to Anapa, a small port north of Novorossiysk, and 20 miles from the shore headed to Kerch. On the second journey from Istanbul to Berdyansk, it sailed with south-east winds in a north-east direction up the middle in a straight line between Sinope and

28 https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Stratigos Favieros*, Trieste-Berdyansk: 23 October 1879–30 May 1880; Marseilles-Taganrog: 6 March 1884–19 April 1884; Torre Annunziata-Yeysk: 21 February 1885–11 April 1885.

29 https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Eleni Koupa,* Piraeus-Berdyansk: 10 March 1882–6 April 1882; Marseilles-Henichesk 3 August 1883–18 September 1883; and Marseilles-Berdyansk: 14 July 1888–22 September 1888. In the last of the three mentioned voyages, the ship, due to changes in the wind, manoeuvres off Varna to the south towards the Asiatic Turkish coast off Zonguldak, then heads in a north-westerly and north-easterly direction, then turns to the south-west and then north-east straight to Kerch under strong north-east winds.

MAP 13.15 The *Stratigos Favieros*: Torre Annunziata-Yeysk 21 February 1885–11 April 1885; the *Coundouriotis*: Istanbul-Berdyansk 13 September 1867–7 October 1867 (highlighted); and the *Asimoula*: Istanbul-Berdyansk 2 April 1885–13 April 1885 in the centre of the map

Theodosia (43° N and 44° N parallels, 34°E and 36°E meridians) before heading north to Kerch (Map 13.15).[30]

Ships bound for Odessa, already from the 1830s, according to pilots, followed a north-westerly direction to Cape Kaliakra, then went north-east to Serpent Island off the mouth of the Danube and then to Cape Fontana, aided in case of adverse weather by shelters in Cape Iniada and the Gulfs of Bourgas or Varna. An alternative course in the later part of the nineteenth century, in order to avoid the often-frequent northerly winds, was to head for the Crimean shore taking advantage of the north-east and east-north-east prevailing winds (Map 13.13).[31] The *Eleni Koupa* has two recorded voyages to Mykolaiv or Nikolayev; on the first one, during October 1878, it followed an intermediate course compared to the above-described ones, in the middle of the western basin, under strong north-west and later south-west winds and rain. In the second voyage, instead, it followed the suggested north-westerly direction, covering, in one day between 28 and 29 March 1879, 191 miles, before passing the Yerna Lighthouse and anchoring the following day in Ochakov.[32] The *Asimoula* in August 1885 bound for Sulina, took a distant off shore course,

30 https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Coundouriotis*, Marseilles-Berdyansk: 7 September 1870–15 October 1870; Asimoula, Istanbul-Berdyansk: 7 August 1883–26 August 1883; and Istanbul-Berdyansk 2 April 1885–13 April 1885.

31 Delis, "Navigating perilous waters," 9–10.

32 https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Eleni Koupa*, Syros-Mykolaiv: 8 October 1878–29 October 1878; Piraeus-Mykolaiv: 17 March 1879–31 March 1879.

MAP 13.16 The *Asimoula*: Istanbul-Batum 12 May 1883–22 May 1883; the *Coundouriotis*: Foça-Surmene 5 February 1869–2 March 1869 (highlighted)

but near Constanta, due to strong north-west winds, switched to an easterly course for two days before managing to set a north-west course again to her destination.[33] The only two recorded voyages to the east coast of the Black Sea, are recorded by the *Asimoula*, bound to Batoum. It shows that the ship, in both voyages, followed the course indicated by the pilots (Map 13.13) where it faced calms and light winds. However, on a similar route, Foça–Surmene, in winter 1869, the *Coundouriotis* sailed in a north-easterly direction, and between 43° N and 44° N and 32°E and 34°E switched to a south-easterly course up to its destination (Map 13.16).

On the return voyage, from the Black Sea ports to the Bosporus, ships followed the same reverse patterns. From the Straits of Kerch exiting the Sea of Azov, most of the routes of sailing ships headed straight in a south-westerly direction to the Bosporus with little variation according to the weather (Map 13.17). The *Stratigos Favieros* again is the exemption, by taking the western route along the Bulgarian coast in its three passages from Berdyansk, Taganrog, and Yeysk to the Bosporus. In the first one from Berdyansk, she headed to the Bulgarian coast and sailed along down to the Bosporus. In the second she sailed from Cape Aytodor in south-westerly direction up to just off Varna, covering 213 miles in one day, and two days later anchored at Büyükdere. In the third voyage from Yeysk she took an oblique south-westerly course up to off Burgas, when she turned south-east to Büyükdere. The *Coundouriotis* also on two occasions

33 https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Asimoula*, Istanbul-Sulina: 18 August 1885–24 August 1885.

MAP 13.17 The *Coundouriotis*: Berdyansk-Marseilles 19 September 1873–30 October 1873; the *Stratigos Favieros*: Yeysk-Barcelona 30 April 1885–2 July 1885 (highlighted)

followed the western course, in both passages heading to Cape Kaliakra, north of Varna, and in the second passing off Sozopol and Cape Iniada before entering the Bosporus, probably unable to beat the blowing southern winds.[34] In all recorded passages from the ports of the northern or western coast of the Black Sea (Mykolaiv, Odessa, Sulina) the ships followed the western route to the Bosporus, as defined in Map 13.13.[35] Ships bound for Istanbul from the eastern coast, like the *Asimoula* in the only recorded voyage from Batoum, had to sail counter-clockwise with light south-west and then north-west winds up to southern Crimea before taking the usual south-west course to the Bosporus (Map 13.18). The ship followed the current formed by the rivers of the northern coasts, which travels along the Anatolian coast and then north to the Caucasian coast up to the strait of Kerch (Map 13.13).[36] The *Coundouriotis* also followed

34 https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Stratigos Favieros*, Berdyansk-Marseilles: 18 June 1882–8 August 1882; Taganrog-Venice: 9 May 1884–15 June 1884; Yeysk-Barcelona: 30 April 1885–2 July 1885; the *Coundouriotis*, Berdyansk-Istanbul: 22 October 1866–11 November 1866; Berdyansk-Skikda: 21 September 1869–24 December 1869.

35 https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Eleni Koupa*, Mykolaiv-Piraeus: 12 November 1878–24 December 1878; Mykolaiv-Marseilles: 20 April 1879–9 June 1879; the *Stratigos Favieros*, Mykolaiv-Torre Annunziata: 20 November 1884–22 January 1885; the *Coundouriotis*, Odessa-Trieste: 29 November 1872–22 January 1873; the *Asimoula*, Sulina-Istanbul: 2 October 1885–5 October 1885.

36 Delis, "Navigating perilous waters", 9. In the logbook of the *Asimoula* for 22 June 1883, the captain confirms the sailing directions stating that: "In order to sail to Batoum you have to steer eastwards because you have the currents in your favour, when you return you keep the (....) because the currents are favourable until New Russia".

MAP 13.18 The *Asimoula*: Batoum-Istanbul 8 July 1883–23 July 1883 (highlighted); and the *Coundouriotis*: Surmene-Yevpatoria 3 April 1869–8 April 1869

the same pattern but on a straighter course to southern Crimea in her trip from Surmene to Yevpatoria (Map 13.18).

Ships entering the Aegean from the Dardanelles sailed in a south-west direction from Tenedos or off western Mytilene, occasionally making short stops at homeports (the *Stratigos Favieros* at Skopelos; the *Coundouriotis* and *Eleni Koupa* at Hydra) then passing Cape Kafireas, the Mirtoan Sea, and the southern Peloponnese, before entering the open Ionian Sea up to Malta. The analysis of this last leg of the return voyage will only consider the routes to Marseilles since this port is the most frequent destination and the only port for which the examined ships followed variable navigation patterns. In the summer, sailing ships from the Black Sea bound for Marseilles, usually sailed through the Strait of Sicily heading to Cape Spartivento in south Sardinia, passing either by the southern Sicilian coast, amid the channel, or, as in most of the recorded cases, via Cape Bon in Tunis. From southern Sardinia ships continued up north to the last open leg to Marseilles (Map 13.19). In the winter, due to the prevailing strong westerly winds, sailing ships bound for Marseilles passed through the Straits of Messina and then north of Corsica (Map 13.19).[37]

This latter route, however, was not recommended in the summer due to calms and light winds east of Corsica and in the Straits of Messina.[38]

37 *Mediterranean Pilot, The Coast of France and Italy from Cape Cerbere to Cape Spartivento, Together with the Islands of Corsica, Sardinia, Sicily and Malta*, vol. 2, 2nd edition (Washington: Hydrographic Office under the authority of the Secretary of the Navy, 1925), 77.

38 *Mediterranean Pilot*, 75.

MAP 13.19 Typical summer/winter routes. The *Coundouriotis* summer route: Berdyansk-Marseilles 14 June 1872–4 August 1872 (highlighted); the *Eleni Koupa* winter route: Berdyansk-Marseilles 20 October 1879–14 December 1879

However, on certain occasions, captains opted for the exact opposite of the recommended route in the specific season. The *Eleni Koupa* in November 1884, despite facing adverse north-westerly winds and waves in Malta and in the Strait of Sicily, continued through the summer route sailing west of Sardinia.[39] The opposite also occurred sometimes on all of the examined ships, which, due to weather difficulties, took the winter route during the good season.[40] The *Asimoula* and *Stratigos Favieros* in particular in these occasions, faced bad weather after Messina northward along the Italian coast, especially the latter, which suffered damage on the ship and the cargo from the water that entered the vessel due to strong south-west winds, and had to stop for three days at Genoa before departing for Marseilles. Apart from the two above-described established routes, ships followed alternative ones when encountering difficulties en route, like when in the Strait of Sicily, instead of heading west of Sardinia and continuing up through the Tyrrhenian Sea. More frequently in this case, ships followed a route northward of Corsica. The *Eleni Koupa* in

39 https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Eleni Koupa*, Berdyansk–Marseilles: 8 October 1884–14 November 1884.

40 https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Countouriotis*, Berdyansk–Marseilles: 19 September 1873–30 October 1873; the *Eleni Koupa*, Berdyansk–Marseilles: 13 May 1880–20 July 1880; the *Asimoula*, Berdyansk-Marseilles: 21 July 1884–1 September 1884; the *Stratigos Favieros*, Mariupol-Marseilles: 18 August 1876–6 October 1876.

MAP 13.20 Alternative routes. North of Corsica the *Eleni Koupa*: Berdyansk-Marseilles 13 October 1887–28 December 1887; through the Bonifacio Straits (highlighted): Berdyansk-Marseilles 9 October 1886/–1 February 1887

December 1887, due to strong south-west winds and big waves in the exit of the Strait of Sicily, headed to the eastern side of Sardinia where she faced stormy north-west winds, sleet and very big waves along the eastern coast of Corsica that damaged the cargo and ship (Map 13.20). The *Coundouriotis* in a similar situation was pushed into the Tyrrhenian Sea by south-west winds at Maritimo Island near Trapani, and then into the Ligurian Sea until Saint Tropez, and faced very strong south-west winds and great waves, with damage to ship and cargo.[41] Another variation to this route was followed again by the *Eleni Koupa* in January 1887, when off Marsala, she turned to the middle of the Tyrrhenian Sea, and directly between Latina and the Bonifacio Straits faced stormy north-east winds and huge waves that pushed her through to the Bonifacio Straits, reaching the south-western coast of Corsica, and covering in a single day a distance of 133 miles (Map 13.20).[42]

The *Stratigos Favieros*, also in the Mediterranean passage, followed a different pattern in almost half of her voyages to Marseilles. In five out of six instances in which the ship followed the route west of Sardinia, she sailed in a north-west direction close to Menorca and to the Spanish coast, approaching the Gulf of Lions and Marseilles from the south-west (Map 13.21), which

41 https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Coundouriotis*, Istanbul–Marseilles, 18 November 1866–9 January 1867.

42 Similar north-east winds also led the *Stratigos Favieros* to enter the Bonifacio Straits in November 1887, https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Stratigos Favieros*, Yeysk-Marseilles: 27 September 1887–1 December 1887.

MAP 13.21 The *Stratigos Favieros*: Berdyansk-Marseilles 18 June 1882–8 August 1882 (highlighted); Burgas-Marseilles 23 October 1882–18 December 1882

none of the other examined ships did in the western route, simply following, as indicated, a straight northerly course. Also in some of these voyages, the ship faced strong north-west, south-west and northerly winds in the Strait of Sicily, between Lampedusa and Pantelleria (which is a frequent phenomenon), and had to return to Malta or to southern Sicily anchorages (Cape Passaro) until the weather improved.[43]

The second area of navigation is West Africa, in which the only available data comes from the *Stratigos Favieros* and *Theofania*. Sailing from Marseilles to West Africa must have been an easier and faster task than the return voyage. The *Stratigos Favieros* took on average 40.5 days to get to West Africa and 48 days on the return voyage, while the *Theofania* almost needed double the period of time on its homeward passage, namely 80 days on average against 39 on the outward passage. In the outward voyage, in the leg sailed along the Spanish Mediterranean coast and up to the Strait of Gibraltar, in all three recorded passages of the *Stratigos Favieros*, the ship faced more difficulties than in the Atlantic Ocean. In two of these outward voyages, both in October, the ship faced adverse westerly winds in the Spanish Mediterranean coast, and in the 1880 voyage, strong eastern winds and heavy rain in Gibraltar.[44] In the following October, the conditions were even worse and the ship had to make

43 https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Stratigos Favieros*, Sevastopol-Marseilles: 26 April 1878–24 May 1878; Berdyansk-Marseilles: 18 June 1882–8 August 1882; Constata–Marseilles 11 June 1883–18 August 1883; *Mediterranean Pilot*, 75.

44 https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Stratigos Favieros*, Port Napoleon-Gorée: 3 October 1880–4 November 1880; and Marseilles-Gorée: 30 September 1881–9 November 1881.

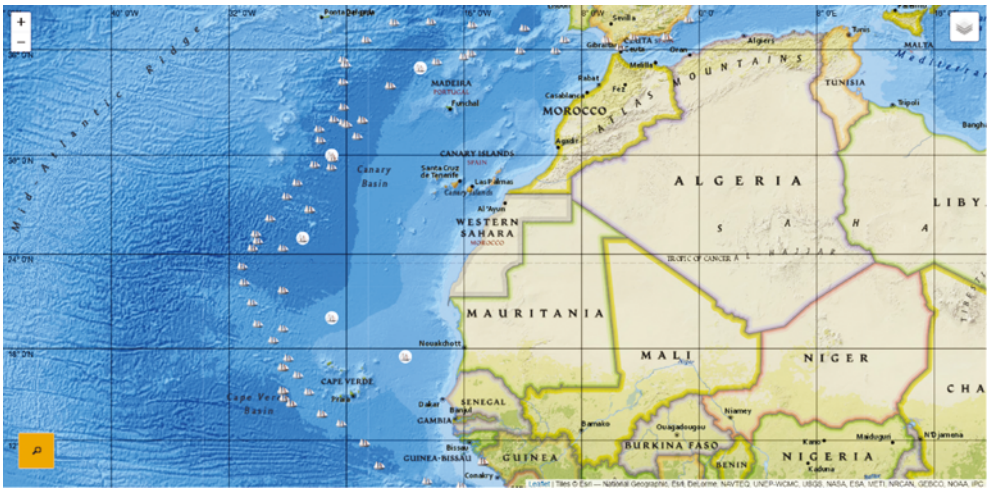
MAP 13.22 The *Stratigos Favieros*: Marseilles-Gorée 3 October 1880–4 November 1880 (highlighted); the *Theofania*: Swansea-Brass River 20 December 1875–13 February 1876

many manoeuvres to straighten her course all along the Mediterranean passage, and was in danger somewhere near the Straits of Gibraltar, a notorious area for violent southern gales and rough weather conditions.[45] Once in the Atlantic Ocean, the ship in all of the three-recorded outward voyages passed between Madeira and the Canary Islands.[46] Then, in the two October voyages of the *Stratigos Favieros*, passed west of the Canary Islands, and only on the March 1881 voyage did she pass between Tenerife and Gran Canaria, and in all three instances the ship sailed from the Canary Islands to Gorée with the prevailing favourable north winds making fast passages.[47] A similar sailing pattern is also followed by the *Theofania* in two outward voyages from Swansea, in autumn 1873 to Sierra Leone, and in winter 1876 to Brass River (Map 13.22).

45 Mons, F. Labrosse, *The Navigation of the Atlantic Ocean* (translated at the United States Hydrographic Office from the French by Lieut. Comd'r J.B. Coghlan, U. S. N.) (Washington: Government Printing Office, 1873), 13.

46 Labrosse, *The Navigation of the Atlantic*, 63.

47 Labrosse, *The Navigation of the Atlantic*, 13; https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Stratigos Favieros*, Marseilles-Gorée: 28 February 1881–21 March 1881. On this voyage, the ship, with north-west winds starting at the height of 25° N latitude to 20° to 22° W, sailed 337 miles on one day. In the two October voyages at approximately the same height the ship sailed 243 miles in one day with north-east winds in 1880, and 440 miles in two days with north-west winds in 1881.



MAP 13.23 Winter homeward route. The *Stratigos Favieros*: Rio Nunez-Marseilles 16 December 1880–20 January 1881 (middle); the *Theofania*: Sierra Leone-Marseilles 28 December 1873–21 March 1874 (left); highlighted on the right is the pilot's suggested itinerary

In the winter return voyage the two examined ships always sailed west of the Cape Verde Islands, then steered to a north-west or northerly direction up to between the 24° N and 30° N parallels, when she steered again to the north-east to Gibraltar, always passing north of Madeira and in any case west of the suggested itinerary of the sailing pilots (Map 13.23). The course of the ships during each voyage was subject to the North Atlantic trade winds (north-easterlies), their geographical limits changing every season. In the winter the trade winds extend from 40° 26′N to 5° 41′N east of the 35° W meridian, an area that corresponds to the middle of the coast of Portugal to the Sierra Leone basin, the average being at 28°N 8′ at the level of the Canary Islands. From July to September the limits shift north from 49° N 25′ to 19° N 19′ from Bretagne to the middle of Mauritania, the average being at 36°N 21′ at the latitude of Gibraltar.[48]

In spring and summer, a period that sailing ships had more difficulties because the trade winds reach farther north, the *Stratigos Favieros* in May 1881, in a voyage from Rufisque, after encountering north-east trade winds for three consecutive days reached the furthest north-west point of all her recorded voyages, between 30° N and 33° W, before steering north-east to Gibraltar under

48 Labrosse, *The Navigation of the Atlantic*, 6–10.

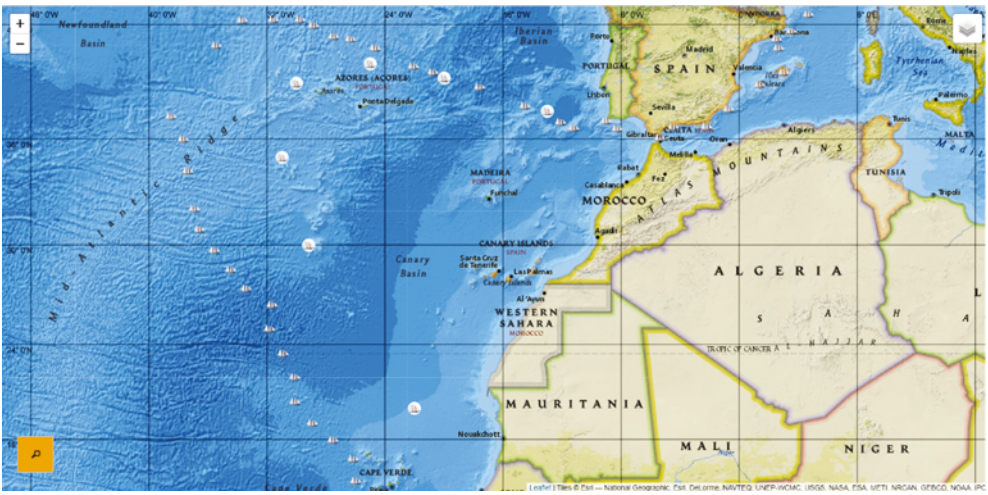
MAP 13.24 *Summer homeward route*. The *Stratigos Favieros*: Rufisque-Marseilles 25 April 1881–2 June 1881. Highlighted is the pilot's suggested itinerary, *from Labrosse*, The Navigation of the Atlantic, *64–66*

north winds.[49] The ship sailed more west than the suggested itinerary for sailing directions for a voyage from Senegal to Gibraltar in May,[50] and passed also west of the Cape Verde Islands, instead of the suggested course between the Islands and the African coast (Map 13.24). The *Theofania* at the end of June, July and August 1874, with the trade winds further north, under north winds, headed in a north-westerly direction far more west than the suggested itinerary. The ship reached its maximum north-western point at 39 W meridian and north of the 37 N parallel, while the suggested itinerary did not surpass the 31 W meridian and the 35 N parallel. Later the ship met favourable south-west winds to Gibraltar passing north of the Azores but again beyond the 35 W meridian and more north than the suggested itinerary, to meet with the suggested route only east of the Azores (Map 13.25).

The evidence for the return voyages shows that the ships never sailed between Cape Verde and Senegal as suggested by the sailing pilots of the period, but always westwards of Cape Verde along the northbound passage. In addition, the *Stratigos Favieros* always set an easterly course for Gibraltar far more south-east than suggested by the pilots, like on the voyage from Rio Nunez when she steered 230 miles south-east from the suggested point, saving

49 Labrosse, *The Navigation of the Atlantic*, 7 (30° N being the average latitude limit of the trade winds in spring), 64.

50 Labrosse, *The Navigation of the Atlantic*, 64–65.



MAP 13.25 *Summer homeward route*. The *Theofania*, Rio Nunez-Marseilles: 21 June 1874–5 September 1874. Highlighted is the pilot's suggested itinerary, *from Labrosse*, The Navigation of the Atlantic, *64–66*

a lot of time and distance (Map 13.24).[51] Again, on the return voyage, the most difficult part was the passage along the Spanish Mediterranean coast. In late April 1877, the *Stratigos Favieros*, coming from Benty, faced stormy north winds off Valencia, and in May 1881, coming from Rufisque, variable strong winds and stormy weather, that put the ship at great pains, with water coming into the hold and fear for cargo damage.[52]

Steamers on all but one of the recorded voyages in the Mediterranean-Black Sea trade route, with Marseilles as a clearing or destination port, always passed through the Bonifacio and Messina Straits, before continuing from Bonifacio in a north-westerly direction to Marseilles or from Messina to the southern Peloponnese, and then once in the Aegean taking a north-east route to the Dardanelles.[53] Only once did the *Thiresia*, on a voyage from Pomorie to Marseilles in 1890, after the Straits of Messina, follow the route north of Corsica and not through the Bonfacio Straits (Map 13.26).

51 Labrosse, *The Navigation of the Atlantic*, 66. The pilot suggested to cross at 36° N, 25° W, but the ship crossed at 34° N 21° W, see https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Stratigos Favieros*, Rio Nunez-Marseilles: 16 December 1880–20 January 1881.

52 https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Stratigos Favieros*, Benty-Marseilles: 20 February 1877–2 May 1877; Rufisque-Marseilles: 25 April 1881–2 June 1881.

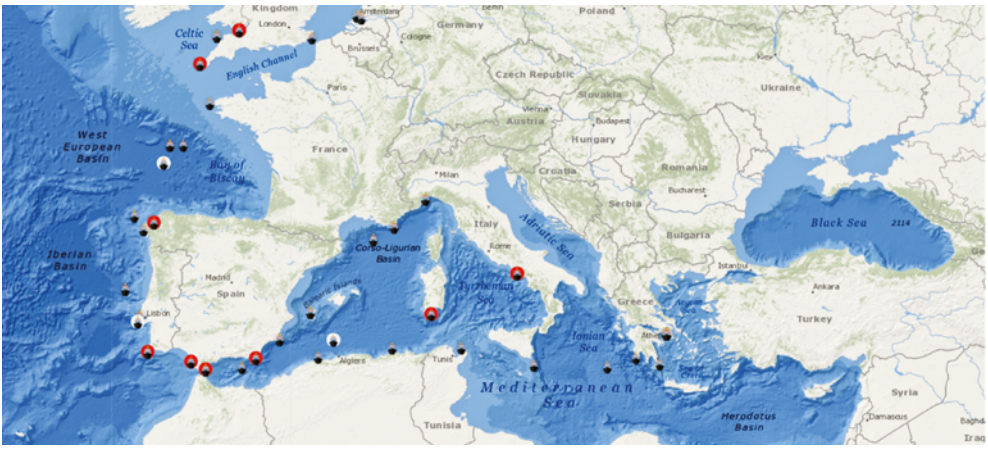
53 *Mediterranean Pilot*, 75.

MAP 13.26 The *Thiresia*: Galatz-Marseille 30 May 1888–9 June 1888; Pomorie-Marseilles 7 January 1890–16 January 1890 (highlighted)

MAP 13.27 The *Andriana*: Galatz-Rotterdam 22 April 1908–11 May 1908

In the very established route in the first decade of the twentieth century between the Black Sea and north-western Europe, steamers after Malta and Cape Bon sailed all along the North African coast up to Gibraltar. In most of the recorded cases, steamers, when in Algiers, headed far from the African coast towards Cape de Gata in the eastern entrance of the Gulf of Almeria, before entering the Straits, probably to avoid the eastern bound current along the African coast (Map 13.27).[54] Exiting Gibraltar, steamers sailed along the

54 *Mediterranean Pilot*, 74.



MAP 13.28 The *Leonidas*: Cardiff-Savona 3 August 1905–12 August 1905; the *Andriana*: Barry-Naples 4 June 1908–14 June 1908 (highlighted); the *Konstantinos*: Rotterdam-Piraeus 11 December 1925–27 December 1925

Iberian Atlantic coast, following a straight north to north-east course, passing from the Isle of Ushant off Brest before entering the English Channel to Rotterdam, Amsterdam, or Antwerp (Map 13.27). After the discharge of the cargo in one of the aforementioned ports, ships were heading to UK ports, usually Cardiff, for repairs and supplies and for taking coal to the Mediterranean. From Cardiff, steamers headed in a straight southerly course along the Iberian coast passing Cape Villano and Cape Finisterre in Spain, Berlengas or Burling Islands and further south to Cape Roca before the mouth of Tagus in Portugal, and Cape St. Vincent before Gibraltar (Map 13.28). Once in the Mediterranean, steamers bound to north Italian ports, Genoa, Savona, or Livorno, steered a north-easterly course through the Balearic Islands (Map 13.28). Those bound to Naples or Torre Annunziata sailed far from the North African coast and south of Sardinia via Cape Spartivento, and those bound to Piraeus passed north of the Alboran Island and then, helped by the eastward current, sailed along the African coast up to Cape Bon, when they continued through Malta and the Sicilian coasts to the southern Peloponnese (Map 13.28).[55]

The *Konstantinos*, in the two round voyages from the UK to Rio de la Plata between September 1924 and July 1925, always had easier and faster passages on the outward leg. On both occasions from Penarth and Barry, the first in September and the second in January, the ship encountered stormy southerly

55 *Mediterranean Pilot*, 74.

winds, heavy seas, and big waves in the North Atlantic until she entered the trade winds zone, just before or along the Spanish coast, according to the part of the season.[56] Once in the trade winds zone the ship encountered good weather until Cape Verde, passing, on the Penarth voyage, east of Madeira, off Gomera Island in the Canaries and east of the Cape Verde Islands (Map 13.29), whereas on the Barry voyage she followed a course west of Madeira and the Canaries and between Santo Antão and St. Vincent in the Cape Verde Islands.[57] In the Penarth voyage, after Cape Verde, the ship exited the trade winds and crossed towards the South American coast under strong south-west winds for three days. Then on the South American coast up to Rio de la Plata (Map 13.29) the ship sailed under south-east winds and good weather, except between the 21°S and 23° S parallels, where she faced strong south-west winds, big waves, and stormy weather, an expected occurrence at this time of the year between Bahia and Rio de Janeiro.[58] In the Barry voyage, the ship exited the trade winds zone after the equator at 2° S, 32° W, where she faced a strong south-east wind and stormy weather up to the latitude of Florianopolis, when the weather turned to favourable north-east prevailing winds that blow in January in that area up to Rio de la Plata.[59]

On both of the return voyages, the *Konstantinos* did not follow the suggested route of the sailing vessels bound for the English Channel, as indicated in Map 13.29, but rather the reverse route of the outward voyage, indicating the breaking of the limits with the previous technology of sail. In both passages from Rio de la Plata, the ship faced difficult weather. In the first journey bound for Falmouth in November 1924, she sailed under south-east winds, and stormy weather with big waves that put her in danger up to Rio Grande. These calmed to south-west winds and they then turned to the south up to Parangua until Rio de Janeiro, instead of the prevailing north-north-east winds that blow in the area in November.[60] In Rio de Janeiro, the winds turned to the north-east, which prevailed this time of the year in the area.[61] The weather alternated from

56 Labrosse, *The Navigation of the Atlantic*, 7. The trade winds zone limits in September are from 49° 25′ N to 19° 19′ N and in January from 40° 26′ N to 5° 41′ N east of the 35° W meridian, which explains the difference in latitude the ship entered and exited the trade winds zone in the two examined voyages.

57 https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Konstantinos*, Barry-Buenos Aires: 21 January 1925–20 February 1925.

58 Labrosse, *The Navigation of the Atlantic*, 125–126.

59 Labrosse, *The Navigation of the Atlantic*, 123.

60 Labrosse, *The Navigation of the Atlantic*, 126.

61 Labrosse, *The Navigation of the Atlantic*, 126.

MAP 13.29 The *Konstantinos*: Penarth-Buenos Aires 6 August 1924–6 October 1924; highlighted the suggested course of sailing vessels bound for the English Channel, from: *Labrosse*, The Navigation of the Atlantic, *85*

stormy with big waves to calm, clear, and cloudy up to south of Cape Verde. On the second voyage to Cuxhaven, Germany, in June 1925, the ship sailed most of the South American coast, under strong south-east winds, stormy weather, big waves, and a rising temperature near the equator despite the strong wind. In both voyages, the ship in the trade winds zone also had troubling passages. On the Falmouth voyage, the ship made bunkering at St. Vincent and from there passed west of the Canaries and close to Madeira, up to the Portuguese coast, encountering alternatively storms with big waves and clear weather. Out of the

trade winds, the winds turned to the south, south-west and south-east, with very rough and stormy seas and water coming onto the deck up to Falmouth.[62] In the Cuxhaven voyage, the ship entered the trade winds at Cape Verde with stormy weather and big waves, stopped at Las Palmas on Gran Canaria for coal and water, and then continued under strong north-east winds, rough weather and waves coming onto the ship up to the Bay of Biscay, with damage and losses in the cargo of cereals and oxen. In the English Channel up to Cuxhaven she faced foggy weather and further difficulties with more losses of oxen.[63]

5 Events

The success of a voyage and the experience gained were very much subject to the day-to-day events that occurred, affecting the three interlinked categories of material and human capital at stake: the ship, the cargo, and the people on board. The most common problems for both sailing ships and steamers were the rough seas and big waves that put the ship in great danger. There was barely a voyage from the Black Sea where the *Eleni Koupa* and *Coundouriotis* did not meet such situations—especially in the central and western Mediterranean, and in all areas from the Ionian Sea to Marseilles—throughout the year. Almost routinely, in those waters, big waves entered onto the hold, damaged the cargo of cereals, and often parts of the ship. Men pumped out the water for hours or even for days for it to come out mixed with grain. However, the *Eleni Koupa* faced the worse situation on two occasions. The first was at Cape Matapan in December 1881, in a voyage from Berdyansk to Malta, when the ship was flooded twice by waves to such an extent that the men believed they were about to be lost, but were saved only thanks to the intervention of "the divine power".[64] On the return voyage from Malta to Piraeus in February 1882, the ship, again at Cape Matapan, could not sail against the stormy north-east winds that drove her towards the African shore damaging the rigging and sail, which forced the captain to throw 400 paving stones of the cargo into the sea so as to withstand the wind. However, the day before that, the worst happened when, eight miles from Cape Matapan, after midnight, the sailor Spyros

62 https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Konstantinos*, Buenos Aires-Falmouth: 19 November 1924–25 December 1924.

63 https://isl.ics.forth.gr/FastCatTeam/templates/ship_map.html: the *Konstantinos*, Buenos Aires-Cuxhaven: 17 June 1925–22 July 1925.

64 Logbook of the *Eleni Koupa*, 3 December 1881.

Merkouris from Ermioni, working the topsail along with others, fell overboard and drowned in a stormy sea; his fellow seamen were unable to provide any help on a vessel running with the storm at 10 mph.[65] However, even steamers faced similar situations. The *Leonidas*, in November 1904 on a voyage from Taganrog to Marseilles, near the Isle of Hyeres, was almost ungovernable due to strong north-west winds, stormy weather, and the impetuous sea.[66] The *Konstantinos* had worse in the North Sea on a voyage from Leith to Viborg, when the ship remained ungovernable for eight hours and there was a danger to collide with the shore, until captain and crew decided to fill the hold with 400 tons of water in order to enable the vessel to steer against the wind.[67] A month later in the next voyage from Viborg to Alexandria, along the Tunisian coast, the ship was again ungovernable, and had to throw out part of the cargo of timber to avoid disaster.[68]

Stranding was another danger that caused damage, delays, and further expense. The *Coundouriotis* was stranded on a reef in Yenikale in April 1874, and needed to unload part of the cargo in order to raise the ship's draught, and required a steam tug to tow her due to contrary winds.[69] Some 52 years later, the steamer the *Konstantinos*, near Kiel, was stranded on a reef and had to throw bunkers overboard to enable the ship to leave.[70] Ship collision was another frequent accident at sea and in ports, with very serious financial and legal consequences. However, very few are recorded in the examined logbooks, such as that of the *Coundouriotis*, which was struck by an Italian ship 4–5 miles outside the Bosporus straits coming from the Black Sea. The captain and crew abandoned ship, jumping onto the Italian one, but after a while they noticed that their ship was not sinking, so they returned, took a steam tug to Therapia, where after a review by experts, it was decided to transport the cargo to another ship. A smaller part of the cargo that did not go onto the other ship was sold at auction in Istanbul, and the *Coundouriotis* was under repair there from 20 January to 9 March 1868.[71] None of the examined ships faced a wreck. However, the *Andriana* in October 1908, north of Cape Villano in the Bay of Biscay, rescued sixteen of the 21 men of the sinking steamer the *Provvidenza*

65 Logbook of the *Eleni Koupa*, 10–11 February 1882.
66 Logbook of the *Leonidas*, 12 November 1904.
67 Logbook of the *Konstantinos*, 10 November 1926.
68 Logbook of the *Konstantinos*, 5 December 1926.
69 Logbook of the *Coundouriotis*, 17 April 1874.
70 Logbook of the *Konstantinos*, 20 November 1926.
71 Logbook of the *Coundouriotis*, 27–28 October 1867.

of Genoa, in a voyage from Cardiff to Tunis with coal, an event which was also reported in the Italian press.[72]

The correct and quick loading and unloading of the cargo was another determining factor for the success of a voyage. Captains of both sailing ships and steamers, in the examined logbooks, complained about delays due to festivities, national holidays, and other reasons. However, further danger and damage could come from the incorrect stowage of the cargo. This is what happened to the *Konstantinos*, in Poti, then in the Soviet Union, where the dockworkers had no experience of proper stowing of cottonseed, and threatened the first mate who supervised them and complained about their work. The freighters replied to the captain's complaints by saying they were unable to impose themselves on the dockworkers because they were communists.[73] The incorrect stowage of cargo and rough weather during a voyage up to Hull, the destination port, cost the ship very dear when, during the discharge, the temperature in the hold rose due to the injection of the cottonseed, and fire broke out in two holds, which took from 6–17 September 1926 to extinguish, at the same time as unloading was taking place, at great pains and raised costs.[74] The *Konstantinos* also had another cruel experience carrying a cargo of 326 oxen from Buenos Aires to Cuxhaven, along with cereals, bones, tallow, and other goods in 1925. Along the Brazilian coast, the animals broke a tank from which the water from rough seas came in and rendered the potable water undrinkable. In the crossing of the Atlantic near the equator, the very high temperatures led to, perhaps in combination with the little available water, the death of eleven oxen (three more died during the rest of the voyage) and forced the ship to stop at Las Palmas on the Canary Islands to take on fresh water and coal.[75] However, sailing vessels also had difficulties with dangerous cargo in rough waters. The *Asimoula*, carrying nitric acid from Alexandria to Limassol, in rough seas the glass containers broke, and the cargo burned the materials on the deck endangering the ship and the health of the men from the smoke and the strong smell.[76]

Political circumstances could also affect the course of the business of a ship. The *Coundouriotis* in December 1868, after remaining idle at Istanbul for three months due to the Cretan War and the broken relationship between Greece and the Ottoman Empire, was sold to K.A. Mavrogordatos, a Greek-in-origin

72 Logbook of the *Andriana*, 30–31 October 1908; ELIA Archive of Syrmas, Extract from *La Domenica del Corriere*, 22–29 November 1908.

73 Logbook of the *Konstantinos*, 2–11 November 1926.

74 Logbook of the *Konstantinos*, 2–17 September 1926.

75 Logbook of the *Konstantinos*, 25 June–22 July 1925.

76 Logbook of the *Asimoula*, 26 November 1883.

Russian subject, who chartered her to the Ottoman government to carry salt from Foça to Surmene.[77] The *Stratigos Favieros* also remained idle from 2 May to 6 October 1877 at Marseilles, paying the consequences for the 16 May 1877 constitutional crisis in France.[78]

Men must have suffered different hardships on board as well as ashore. Accidents must have been frequent, although not many were recorded in the examined logbooks. Among the recorded ones on the sailing vessels, falling from the masts onto the deck was the most common accident. On the *Coundouriotis* two such accidents were recorded: in the first, a sailor trying to lower the topsail in a stormy sea fell onto the deck and injured his hip and genitals; while in the second, another sailor broke his ribs.[79] On the *Eleni Koupa*, off south Crimea, a sailor fell from the mainmast and injured his chest, while on two other occasions ashore, in Marseilles, a sailor was injured during the discharging of cargo, and in Büyükdere another sailor was injured while working a rope to move the ship in order to avoid a collision with other ships moored nearby. Both ended up hospitalised.[80] However, a greater number of accidents are recorded on the *Konstantinos*. Most of them took place during works in port, either Buenos Aires or Novorossiysk, especially during the construction of partitions in the hold to accommodate new cargo.[81] Other work accidents at port, like falling from the scaffold, being injured while painting the chimney, or being struck by objects while working or cleaning parts of the engine, are also recorded.[82] Only two accidents are recorded at sea on the *Konstantinos*, both under severe weather conditions: one that swept the captain from the ladder; and the other that dislocated the first mate's arm during night work with the sailors on deck.[83] In all of these accidents, sailors received medical treatment, and in some of them they were hospitalised, or alternatively were accommodated in hotels (especially in Argentina) or in houses.

Illness was another great issue on board, especially since merchant ships carried no doctors. The most common was the cold, which was the case on the *Konstantinos* when four men fell ill when it arrived in Algiers after a bad voyage in December 1926; the same happened to another sailor at Odessa in March of that same year.[84] Tropical or swamp fevers were another cause of

77 Logbook of the *Coundouriotis*, 17 December 1868.
78 Logbook of the *Stratigos Favieros* 2 May 1877–13 October 1877.
79 Logbook of the *Coundouriotis*, 9 November 1866, 22 April 1874.
80 Logbook of the *Eleni Koupa*, 25 June 1879, 25 April 1887, 4 November 1887.
81 Logbook of the *Konstantinos*, 14 January 1925, 9 March 1925, 6 March 1926, 22 July 1926.
82 Logbook of the *Konstantinos*, 17 April 1925, 14 May 1925, 18 December 1926.
83 Logbook of the *Konstantinos*, 18 January 1927, 10 August 1925.
84 Logbook of the *Konstantinos*, 1 December 1926, 15 March 1926.

illness in specific areas. The *Stratigos Favieros*, on the voyage from Rio Nunez to Marseilles in December 1880 and January 1881, experienced the serious consequences of typhoid fever in African waters. The crew was already stricken ashore during the discharge and loading of the cargo in the river, one falling ill after the other. The ship managed to depart, but the crew, nine men in all including the captain, kept falling ill, recovering, and becoming ill all over again, during the whole passage up to Marseilles. It is indicative of their sufferings that none of the crew, except for the captain, were included on the muster roll for the following voyage from Marseilles to Gorée and Rufisque.[85] Five men from the *Konstantinos* also fell ill from swamp fever at Poti in August 1926, and followed a healthy diet and took quinine to recover.[86] Chronic diseases also caused trouble, like with the first mate on the *Andriana*, who suffered cardiac problems and was relieved of his duties and fired in Andros, or the radio operator on the *Konstantinos* at Buenos Aires who felt ill in the head, almost fainted, and was hospitalized due to a chronic problem.[87]

The examined logbooks do not record a particularly high number of deaths, something which is also seen within the evidence for a fleet of windjammers in the late nineteenth and early twentieth centuries.[88] We have already mentioned the only case of a sailor lost after falling overboard from the *Eleni Koupa* in a gale. But there was also a Dimitrios Ant. Vogiatzis, a seaman of the *Stratigos Favieros*, who fell ill with a cold near the coastal Bulgarian village of Stagouni, near Berdyansk, walked with the captain for an hour to visit the village's doctor who diagnosed "inflammation of the intestines". The captain suggested that the sailor should stay in the village for treatment, but neither he nor the villagers welcomed the idea, and he returned to the ship where he died nine days later. The captain reported the death to the local authorities and buried the sailor there, his belongings consisting of work clothes, a knife, two razors, and two drachmas.[89] Tropical diseases were also lethal for the captain of the *Theofania*, Anargyros V. Komnas. The ship was discharging at Brass River, Nigeria, where most of the crew fell ill, and later the captain as well, who felt a headache and angina (chest pain or pressure). He died the following day, and was buried in the nearby village, and his son took command of the ship.[90]

85 Logbook of the *Stratigos Favieros*, 5 December 1880–28 February 1881.
86 Logbook of the *Konstantinos*, 10 August 1926.
87 Logbook of the *Andriana*, 22 July 1908, the *Konstantinos*, 5 March 1925.
88 Alan Villiers, *The Way of a Ship. The History of the Square-Rigged Sailing Ship* (London: White Lion Edition, 1974), 202, where eight deaths were reported from a total of 600 men serving in 22 windjammers between 1903–04.
89 Logbook of the *Stratigos Favieros*, 10 June 1880–20 June 1880.
90 Logbook of the *Theofania*, 17 March 1876–19 March 1876.

Infringing and offensive or violent behaviour, desertion, theft, and fights are all part of the popular imagination about life on board. However, not many of these behaviours are recorded in the examined logbooks, indicating that perhaps sailors conducted themselves well under the ethical and social constraints of their environment. In most of the recorded cases of desertion, sailors jumped ship after receiving an advance upon signing up or receiving an instalment of their wages for their expenses in the ports. This is what happened on the *Konstantinos*, when one of the three hired British firemen in Liverpool in 1924, did not appear after receiving his advance of two pounds.[91] Even worse, on the *Theofania*, at Swansea, a cook from Spetses and a sailor from Psara jumped ship after they received an advance on their wages from the captain, and they also stole clothes from the captain and from two other crew members.[92] On the *Eleni Koupa*, on two different occasions, a foreign sailor jumped ship at Büyükdere, but the captain did not bother to mention anything more than this, or to search for them.[93] On the contrary, when a Greek seaman from the *Stratigos Favieros* jumped ship in Marseilles, and was arrested soon afterwards, he remained in jail up to the time of the departure of the vessel, and the captain paid 35 francs to the authorities, and took him on board again.[94] A similar story occurred on the *Konstantinos* many years later in Buenos Aires. The donkeyman Ioannis Baristas (probably a transcription of an Italian name) asked for a ten-day permission to treat his syphilis, but he did not return, and when the captain looked for him he was informed by the agent that the missing donkeyman also received 25 pesos from him for his ticket expenses to return to the ship. The captain reported the desertion to the local authorities, and the consulate of Greece a few days later announced the arrest of the deserter. Again, the man had to stay in prison up until the ship's departure, when the police, along with the man, also returned the guarantee the ship paid based on Argentinian migratory law.[95]

The strangest case of desertion, however, was that which occurred on the *Asimoula* on a voyage from Limassol to Tarragona when, due to contrary weather, the ship anchored at Naples, where the whole crew deserted "because of this infamous boatswain P. An. Aggouras or Tsovolis".[96] On the same ship a few days later, an old sailor from Hydra, recruited in Naples, got into a dispute

91 Logbook of the *Konstantinos*, 26 August 1924.
92 Logbook of the *Theofania*, 6 October 1873.
93 Logbook of the *Eleni Koupa*, 21 October 1878, 25 April 1882.
94 Logbook of the *Stratigos Favieros*, 10 October 1877–13 October 1877.
95 Logbook of the *Konstantinos*, 27 April 1925, 7 May 1925, 9 May 1925, 3 June 1925.
96 Logbook of the *Asimoula*, 12 January 1885.

with the boatswain and pulled out a knife to hurt him.[97] On the Brass River, a little while after the death of the captain of the *Theofania*, the newly appointed captain, and son of the deceased, got into a dispute with an Italian sailor who did not obey orders, the latter reacting to the captain by injuring him with a knife. The sailor went ashore and was arrested by the captain of a stationed steamship and put in irons. The captain of the *Theofania* asked for the sailor to remain in irons until their departure, because he could not hire new recruits in Africa and the rest of the crew was stricken with illness.[98] Some 50 years later, in Buenos Aires, during the unloading of the *Konstantinos* on the river, a dockworker who was stealing things belonging to the ship, and was carrying them to attending boats, was caught by a fireman, who informed the first mate, who admonished the dockworker. During the lunch break, the dockworker waited for the fireman outside his cabin and stabbed him in the arm, which raised protests from the captain to the cargo consignees.[99]

One of the least expected sorts of information to find in logbooks, also due to its juridical validity as a document, is about the psychological status of the people on board. Despite that, on the *Asimoula* the captain very often expresses his psychological situation in relation to the events on the voyage. On some occasions he is overwhelmed by the delays, accidents, and difficulties, he confronts during the voyage in the margin of the logbook, and writes about his melancholy.[100] He gets desperate when he cannot take measurements of their position due to the breaking of the instrument.[101] He also insults people (the boatswain, the old sailor from Hydra) and the weather for causing them trouble on the voyage,[102] while he almost erupts on another occasion by stating "I tell you gentlemen that on this trip we suffered as much as we did in all our other trips".[103]

97 Logbook of the *Asimoula*, 28 January 1885.
98 Logbook of the *Theofania*, 25 March 1876.
99 Logbook of the *Konstantinos*, 27 June 1925.
100 Logbook of the *Asimoula* 3/15 September 1882, 7/19 September 1882.
101 Logbook of the *Asimoula* 16/28 July 1883 "the screw (of the instrument) broke and I do not know what to do, one difficulty after the other. God help me because I am going to lose my mind!".
102 Logbook of the *Asimoula* 12/24 July 1883.
103 Logbook of the *Asimoula* 30/11 December 1882.

6 Conclusions

The transition from sail to steam brought structural changes to multiple aspects of the navigation of Greek ships. First in trade routes, the advent of the steamship in Greek-owned tramp shipping in the last decades of the nineteenth century, had a determining impact on the expansion to new and more distant markets. Greek steamships were no longer confined to Mediterranean waters, but were now integrated into the Atlantic and North Sea trade routes of the most developed economies, ports, and trades (the UK, Netherlands, Belgium, and Germany). However, the involvement of Greek sailing ships in Atlantic trade, before the advent of the steamship in Greek cargo shipping, as the case of the *Stratigos Favieros* and *Theofania* demonstrates, is a question that requires further research. In any case, the employment of Greek sailing ships in West African and American trade already in the 1870s, must probably be related to the competition with steamers and the oversupply of tonnage on the most traditional Black Sea trade routes, in parallel with the growing marginalisation of the sailing ship onto more peripherical trade routes and low-value cargoes.[104] The duration of voyages shows in a more emphatic way the impact and transformations the steamship had in the operational turnover of Greek-owned shipping. The comparison even between the early steamers like the *Thiresia* with contemporary sailing ships (the *Eleni Koupa*, *Stratigos Favieros*, and *Asimoula*) on the same trade routes, shows the great advantages the steamship offered, by completing eight to ten round voyages per year, whereas the sailing ship was only able to complete approximately two round voyages per year. A critical factor in this difference, apart from the power of the engine, was the time spent ashore in the ports of loading and discharge, as well as in the ports of call.

Table 13.10 shows that sailing ships spent double the time of steamships at ports. The *Thiresia* in particular, which operated on the same routes as the sailing ships, spent six-times less time ashore, and the *Leonidas* and *Andriana*, also employed in the North Atlantic, spent three and a half times less time ashore compared to the sailing ships. Only the *Konstantinos* and *Demetrio S. Schilizzi*, spent more time ashore in the South American ports for repairs, supplies, and for cargo discharge and loading. The same trend is also present in the case of Spanish merchant sailing ships and steamers during this period.[105] This

104 See Leonardo Scavino, "Camogli as a maritime community in the age of transition (1850s–1914)", in the present volume.

105 Enric García-Domingo "The impact of mechanization on Spanish maritime labour (1834–1914): from seamen to sea workers", Table 1.2, in the present volume.

TABLE 13.10 Time spent ashore in sailing ships and steamers

Ship	Days
Eleni Koupa	32.3
Asimoula	22.0
Coundouriotis	33.7
Stratigos Favieros	33.7
Sailing ships average	30.4
Thiresia	5.4
Demetrio S. Schilizzi	26.3
Leonidas	9.1
Andriana	9.1
Konstantinos	28.5
Steamships average	15.7

SOURCE: HTTPS://ISL.ICS.FORTH.GR/FASTCATTEAM/TEMPLATES/SHIP_MAP.HTML

factor of course affected and transformed not only the commercial success of the voyages, but also the lives of the seafarers, who no longer enjoyed long stays at ports, often their homeports, but were subjected to more industrialised rhythms, with longer days at sea and shorter intervals ashore.[106]

The analysis on navigation shows that the ships did not always follow the suggested sailing patterns, and that the captain's decision, seamanship, and knowledge of the navigating area played a primary role. The *Stratigos Favieros* followed a different sailing pattern to the rest of the ships and to the sailing directions printed by the British Admiralty, either in the Black Sea or in the western Mediterranean, but also on the West African trade routes. The analysis of the two areas—the Black Sea–Mediterranean/West Africa—shows also that the enclosed seas caused more trouble to ships due to the abruptly changing weather conditions, and the severity of the north-west winds especially. Navigation in West Africa was more predictable, thanks to the trade winds, and ships like the *Stratigos Favieros* had relatively easy passages. However, the breakthrough again comes with the steamers. Despite the fact that steamers also suffered in rough weather conditions, their far greater independence from the wind, enabled them to sail in calms as well as in adverse wind conditions, saving time in manoeuvring and by following more straight direct routes. The cases of the *Andriana* in her voyages from the Black Sea to northern Europe

106 Villiers, *The Way of a Ship*, 204.

(Map 13.27), and of the *Konstantinos* from the UK to Rio de la Plata (Map 13.29) prove this dramatic change from the established routes of the sailing ships.

The examination of everyday life onboard and ashore has revealed that the reality was less spectacular than the fiction and the myths surrounding seafaring life. Deaths, accidents, and illnesses occurred of course, but to a very much lower degree than one would expect to find in the crews of ten ships over approximately 46 years of recorded operation in the logbooks. Equally very low is the rate of unsocial or violent behaviour among the numerous men sailing on those ten ships during these 46 years. Despite the popular belief that saw sailors as an unruly and troublemaking class of men, the evidence shows quite the opposite. They are proved to be very hard working, devoted to the success of their voyage, and some kept working on the same ships or with the same shipowners for years. Perhaps the fact that Greek ships were manned mostly by Greek sailors, and were often from the same particular homeport of the owners (invariably on sailing ships as well as on steamers), must have played a primary role in the social cohesion and good behaviour of the men.[107]

Overall, navigation and the experience of the voyage was greatly altered during the transition from sail to steam. Greek shipowners, crews, and their families back home felt the impact of the change in technology and the navigational improvements, and gradually became more integrated into a global economic circuit, becoming citizens of the world over the course of only a few decades.

107 Delis, "Ship operation in transition" in the present volume.

SECTION 2

Passenger Shipping

CHAPTER 14

Modernizing Seaborne Communication in Nineteenth-Century Greece

The Role and the Contribution of the Hellenic Steam Navigation Company, 1857–93

Apostolos Delis

1 Introduction

The introduction and establishment of steam navigation in Greece in the nineteenth century can be attributed to the Hellenic Steam Navigation Company (hereafter HSNC or the company). The company was founded in 1857 after long and persistent efforts by the Greek state to institute steam navigation communications within domestic waters. The HSNC was founded as a private joint stock company, with the state being the major shareholder, and having as a principal aim "the establishment and maintenance of regular (sea) transport by at least five steamships between the coasts of Greece and between them and abroad, without (this latter causing) any harm to domestic communications".[1] Therefore, the company from the outset had the character of a public interest entity in the service "of the nation", an expression that is to be found repeatedly in public documents and newspapers of the period discussing issues related to the HSNC.

The company was bankrupt by 1893, and contemporaries, as well as Greek historiography, addressed severe criticism on the causes of the failure of the company, ranging from mismanagement, involvement in politics, to problematic relations between the state and domestic capitalists.[2] However, during

1 Ελληνική Ατμοπλοΐα. Προκαταρτικά Β. Διατάγματα και Καταστατικόν [Hellenic Steam Navigation Company. Preliminary Royal Decrees and Articles of Association], *Εν Ερμουπόλη, Τύποις Γ. Μελισταγούς Μακεδόνος* (Ermoupolis: 1857), 20.

2 Among the several articles in Syros, Piraeus and Athens newspapers in the nineteenth century, I also cite an influential essay by Aristides Dosios, *Κρίσεις και σκέψεις περί της ελληνικής ατμοπλοΐας* [*Criticism and Reflections concerning the Hellenic Steam Navigation*], (Athens: 1869). The most representative secondary bibliography on this topic, includes Konstantinos Papathanassopoulos, *Εταιρεία Ελληνικής Ατμοπλοΐας (1855–72). Τα αδιέξοδα του προστατευτισμού* [*Hellenic Steam Navigation Company (1855–72). The Impasse of Protectionism*] (Athens:

- 978-90-04-51419-5

these 36 years of service the company contributed to multiple aspects of the modernization of the country and brought structural changes to the economy, society, and everyday life; it is thus unjust to treat her story as a plain failure. In fact, the HSNC introduced passenger shipping, and unified a fragmented national territory of many islands and extensive coastline that was sparsely populated. In parallel, it was instrumental for the state and its ability to exercise sovereignty in the domestic territory. It also enhanced trade and communication with the Greek merchant diaspora, established in the ports of the Ottoman Empire and Egypt, to the extent to which the geopolitical conjunctures between Greece and the Ottoman Empire allowed. The steamships that operated its lines were of the most up to date technology and proved to be very reliable vessels, most of them outlasting the company itself. The company also introduced modern shipbuilding and marine engineering into Greece, and trained the very first generation of artisans and engineers in the country. The arsenal of the company, built in 1861, not only established a ship repairing and marine engineering centre of prime importance in the eastern Mediterranean, but also functioned as a centre of education and apprenticeships for future Greek engineers.[3]

The aim of this chapter is to show that the HSNC, despite being a typical joint stock company, was in essence an undertaking of national scope and of public character, that established steam navigation and contributed to the modernization of seaborne communications of Greece. The analysis will focus on: the role of the state in instituting and supporting steam navigation; on the impact of the contractual obligations between the HSNC and the state in the economic performance of the company; and the change in public policy from the 1880s, which promoted competition among the HSNC and other Greek steamship companies, a period when the centre of gravity was shifting towards Piraeus at the expense of the declining Syros. In the first part of the paper the analysis will take into consideration specific aspects, such as the forms of state support in the development of steam navigation. The second part will

Cultural Foundation of National Bank, 1988); Vasilis Kardasis, *Από του ιστίου εις τον ατμόν. Ελληνική Εμπορική Ναυτιλία (1858–1914)* [*From Sail to Steam. The Greek Merchant Marine (1858–1914)*] (Athens: ETBA, 1993); Georgios Dertilis, *Ιστορία του Ελληνικού Κράτους* [*History of the Greek State*], vol. B′ (Athens: Estia, 2005), 787–794. On the issue of the criticism towards the company, see also Apostolos Delis, "The advent of steam navigation in Greece in the nineteenth century", in *Greek maritime history from the periphery to the center* eds. Alexandra Papadopoulou and Katerina Galani (Leiden and Boston: Brill, 2022).

3 Apostolos Delis, "From parallel growth to great divergence: Greek shipbuilding from the late eighteenth to early twentieth centuries," *History of Technology*, no. 33 (2017) (Special Issue: History of Technology in Greece from the Nineteenth to the Twenty-first Century, eds. Stathis Arapostathis and Aristotle Tympas): 33–38.

deal with the fleet, the lines, and the economic performance of the company, always in comparison with case studies from Britain, the Mediterranean, and the Black Sea. The concluding part will offer a final assessment of this state-HSNC relationship; the factors that led to the bankruptcy of the company but also its contribution and impact on Greek seaborne communications.

2 The Role of the State on the Development of Steam Navigation

The development of regular domestic and international seaborne communications was already a primary concern for the Greek state from the early years of its constitution (1830). In 1833, the Greek government contracted the French banker François Feraldi to establish lines of sailing packets between Greece and foreign ports of high political and commercial interest where a Greek population resided. The service, that cost the Greek government 4,000 drachmas per month, included lines to Trieste via Brindisi, to Livorno via Messina, to Marseilles via Malta, to Smyrna and to Alexandria via Chania (Crete).[4] The service, despite having performed quite satisfactorily for two years was gradually superseded by the penetration of French and Austrian steamers in Greek ports.[5] In 1837, the Arsenal of the Royal Hellenic Navy in Poros, built two wooden paddle steamers, the *Maximilianos* and *Otho*, for a mail and passenger service on the domestic lines between Piraeus, Nauplion, and Syros; based on another source this line also included Kalamaki, Tinos, and Kythnos.[6] In 1843, the main Greek seaports of Piraeus, Syros, and Patras were served by *Lloyd*

4 Konstantinos Papathanassopoulos, *Ελληνική εμπορική ναυτιλία (1833–1856). Εξέλιξη και αναπροσαρμογή* [*The Greek Merchant Marine, (1833–1856). Development and Readjustment*] (Athens: Cultural Foundation of National Bank, 1983), 99, 352–59; Arthur de Rothschild, *Histoire de la poste aux lettres et du timbre-poste depuis leurs origines jusqu'à nos jours* (Paris: Calmann Lévy, 1880), 177; Tryfonas Evangelidis, *Ιστορία του Όθωνος Βασιλέως της Ελλάδος (1832–1862): Κατά τας νεωτάτας πηγάς ξένων τε και ημετέρων ιστορικών* [*History of Othon, King of Greece (1832–1862) Based on the Most Recent Sources of Foreign and Domestic Historians*], (Athens: Aristides Galanos, 1894), 85–86.

5 Godfrey Levinge, *The Traveller in the East; a Guide* (London: 1839), 82–83; John Murray (Firm), *A Hand-Book for Travellers in the Ionian Islands, Greece, Turkey, Asia Minor, and Constantinople ... including a Description of Malta; with Maxims and Hints for Travellers in the East. With Index Maps and Plans* (London: 1840), 14; Rothschild, *Histoire de la poste*, 177; Great Britain. Foreign and Commonwealth Office, *British and Foreign State Papers 1834–1835*, vol. 23 (London: H.M. Stationery Office, 1852), 445.

6 Μαρία Στ. Πανοπούλου, *Οικονομικά και τεχνικά προβλήματα στην ελληνική ναυπηγική βιομηχανία 1850–1914* (Athens: ΚΕΠΕ, 1993), 202–203; Rothschild, *Histoire de la poste*, 177; Jean Alexandre C. Buchon, *La Grèce continentale et la Morée: voyage, séjour et études historiques en 1840 et 1841* (Paris: Ch. Gosselin, 1843), 53–54, 57; Papathanassopoulos, *Ελληνική εμπορική*, 100.

Austriaco, based on a convention signed between the company and the Greek government. This convention was renewed in 1852 after a three-year long debate between the political parties that supported the creation of a domestic navigation company and those who wanted to secure a reliable seaborne communication service even if it was through a foreign company. In fact, in 1849, the director of the National Bank of Greece, Georgios Stavros, and the wealthy diaspora entrepreneur and Greek Ambassador of Egypt in Alexandria, Michail Tositsas, made a first attempt to institute a steam navigation company, named the *Societé de navigation a vapeur grecque et pour la canalisation du Detroit de l' Eubee*, which failed after the assignment of the postal convention to *Lloyd Austriaco*.[7] In 1853, another group of capitalists, mainly from Patras, with the collaboration of Greek entrepreneurs based in Britain, sought the purchase of steamers, once again unsuccessfully.[8]

Finally, in 1855, prior to the constitution of the company, the Greek Parliament passed a bill for the purchase of steamers, financed by the National Bank of Greece and commissioned to the same group of British–based entrepreneurs that were entrusted by the merchants of Patras a few years earlier.[9] This time the effort succeeded, and three new steamers were ordered from British shipyards on the account of the National Bank of Greece. Two of them, the Βασίλισσα της Ελλάδος (*Queen of Greece*) and Ύδρα (*Hydra*), arrived in 1856 and begun service in August under the General Direction of the Post Offices of Greece, before the creation of the company.[10] Meanwhile, fierce competition over the location of the imminent Steam Navigation Company's headquarters had already begun between the capitalist elites of Patras and Syros and to a lesser extent Piraeus. Syros prevailed due to its position as an international commercial and maritime crossroads in the eastern Mediterranean, but also due to the National Bank of Greece's strategy to penetrate this very important market, where the merchant class was traditionally hostile to the bank.[11]

The efforts of the Greek government to institute reliable seaborne communications within and beyond the country are related to specific needs of the

7 Papathanassopoulos, *Ελληνική εμπορική*, 99–100, 113–169.

8 Papathanassopoulos, *Ελληνική εμπορική*, 204–211.

9 Papathanassopoulos, *Εταιρεία Ελληνικής*, 26, 35; *Ελληνική Ατμοπλοΐα. Προκαταρτικά Β. Διατάγματα* [*Hellenic Steam Navigation Company. Preliminary Royal Decrees and Statute*] (Hermoupolis: 1857), 47; IAETE [Historical Archive of the National Bank of Greece], XXv ΕΡΓΑ, Α' Ναυτιλιακά, φάκελος 32, υποφάκελος 4, 1856–72.

10 *Κανονισμός της Υπηρεσίας των Ελληνικών Ατμοπλοίων* [*Regulation of the Greek Steamers Service*] (Athens: 1856), 1. The newspaper *Αίολος*, n. 623, 11 August 1856, p.3; and n. 620, 28 July 1856, published in Papathanassopoulos, *Εταιρεία Ελληνικής*, 212–214.

11 Kardasis, *Από του ιστίου*, 27–30.

modern state that emerged in the nineteenth century. These included a mail service, for government and private correspondence, along with the transport of officials, civil, and military personnel and materiel. Before the advent of the steamship sailing packets under direct state jurisdiction or under contract, a private entrepreneur, like Feraldi, provided these kinds of services. In Britain, the Post Office ran the mail service in overseas destinations like the North Atlantic, the West Indies, and the Iberian Peninsula through government sailing brigs. The French state, on the other hand, contracted private shipowners of sailing ships, usually brigs, to carry the mail to the West Indies and South America. In all cases, sailing ships proved an unreliable means for a regular service, run either directly by the state or through a private contractor.[12] By the early 1830s, the steamship was already a viable means of transport, and in Britain steamships connected large parts of national territory, including also foreign ports in the North Sea.[13] At that time, state authorities in many, mostly European, countries realized the potential of the steamship for the development of domestic and overseas communications and mail services. Despite its imperfect stage of technical advancement, the wooden paddle-driven steamer offered regularity, that was the fundamental condition required for scheduled voyages. Early steamers suffered from a lack of space due to the size and weight of the engines, the great amount of coal required for those engines, and the low-uneconomical pressure operating boilers, due to the fear of explosion due to the uneven quality of their fabricated material.[14] Notwithstanding all these constraints, the steamship revolutionized maritime transport in terms

12 David Howarth and Stephen Howarth, *The Story of P&O: the Peninsular and Oriental Steam Navigation Company* (London: Weidenfeld and Nicolson, 1995), 16, 18; Robert G. Greenhill, *British Shipping and Latin America, 1840–1930: the Royal Mail Steam Packet Company* (PhD diss., University of Exeter, 1971), 17–18; Robert Greenhalgh Albion, *Square-Riggers on Schedule: The New York Sailing Packets to England, France, and the Cotton Ports* (Hamden CT: Archon Books, 1965), 17–18; Marie-Francoise Berneron-Couvenhes, *Les Messageries Maritimes. L'essor d'une grande compagnie de navigation française 1851–1894* (Paris: PUPS, 2007), 39–40.

13 John Armstrong and David M. Williams, *The Impact of Technological Change on the Early Steamship in Britain*, Research in Maritime History 47, (St. John's, Newfoundland: International Maritime Economic History Association, 2011), 23–24, 66, 151–152, 155.

14 Denis Griffiths, "Marine engineering development in the nineteenth century," in *The Advent of Steam. The Merchant Steamship before 1900*, ed. Robert Gardiner (London: Conway Maritime Press, 1993), 164; David J. Starkey, "The industrial background of the development of steam," in *The Advent of Steam*, ed. Gardiner, 133; Anthony Slaven, "The shipbuilding industry," in *The Dynamics of Victorian Business*, ed. Roy Church (London: Routledge, 1980), 110–111; Anthony Slaven, "Modern British shipbuilding, 1800–1990," in *The Shipbuilding Industry: a Guide to Historical Records*, ed. L.A. Ritchie (Manchester: Manchester University Press, 1992), 2–3; Freda Harcourt, *Flagships of Imperialism. The*

of speed and regularity, and states adopted her as a powerful tool of control in domestic and overseas-colonial possessions, and for political, military and economic expansion and penetration into foreign areas and markets.[15]

The support by various states for the development of steam navigation followed different forms and patterns, which depended upon the special political and economic aims and conditions of each country. One form of development was the creation of a state-owned fleet of steamships. A second one was that of the state granting a postal subvention or mail contract to a private ship owning company with an annual subsidy, in exchange for specific services performed for the state, such as the conveyance of mail and the use of steamers as auxiliary ships for the navy.[16] A third form was that in which the state granted to a private company not a postal convention with the payment of an annual subsidy, but rather indirect aid in the form of privileges, such as a monopoly of navigation on specific routes, exemption from import duties on shipbuilding materials, exemption on port taxes and dues, and preferential treatment in ports, loans, etc.[17]

The first form of the development of steam navigation was followed by France in 1837, when a fleet of ten state-owned steamers operated from Marseilles via Tyrrhenian Sea ports to the eastern Mediterranean (one line to Istanbul and a second to Alexandria) under the jurisdiction of the French Post Office. The steamers were assimilated with French Navy ships, operated by naval personnel under martial legislation, but since they were not designed for commercial exploitation they were not attractive to shippers and passengers

P&O Company and the Politics of Empire from its Origins to 1867 (Manchester and New York: Manchester University Press, 2006), 176.

15 Greenhill, "British shipping", 19; Francis E. Hyde, *Cunard and the North Atlantic 1840–1973: A History of Shipping and Financial Management* (London and Basingstoke: Springer), 1975, 36; Freda Harcourt, "British oceanic mail contracts in the age of steam, 1838–1914," *The Journal of Transport History*, no. 9.1 (1988), 1; eadem, *Flagships of Imperialism*, 1–2, 16; Berneron-Couvenhes, *Les Messageries Maritimes*, 152–59; Matteo Barbano, "Steamers for the empire: the Austrian Lloyd and the transition from sail to steam in the Austrian merchant marine (1836–1914)", in the present volume; Anna Sydorenko, "Russian Steam Navigation and Trading Company: the transition from sail to steam in the Russian Black Sea (1856–1914)", in the present volume.

16 Grosvenor M. Jones, *Government Aid to Merchant Shipping. Study of Subsidies, Subvention, and other Forms of State Aid in Principal Countries of the World* (Special Agents Series 119) (Washington: Government Printing Office, 1916), 8. Jones distinguishes between the term "subvention", that is used in an agreement between the state and a private company in exchange for a service, and the terms "subsidy" and "bounty" as synonymous with financial support by the state without an expected service or return. However, later historians used the terms "subvention", "subsidy" and "mail contract" quite interchangeably.

17 Jones, *Government Aid*, 8–9; Harcourt, "British oceanic mail", 5.

alike, and thus not competitive against British and Austrian steamers. Soon this service proved inefficient and constantly in debt, which led the French government to the decision to end this arrangement, and to search for a solution involving postal subvention to a private company.[18]

The second form of steam development was the most widespread and perhaps the most successful in terms of service for the state and for the sustainability of steamship navigation. In Britain, the ineffectiveness of mail sailing brigs and an awareness of the viability of the steamship for longer routes, led the government to the solution of granting mail contracts to private steamship companies. The first mail contract was awarded by the Post Office to the General Steam Navigation Company (GSN) for a service to Rotterdam and Hamburg in 1834.[19] In 1837, the administration of mail contracts passed from the Post Office to the British Admiralty, and a series of contracts were granted for domestic lines, but more importantly for oceanic routes. In the same year, the Peninsular Steam Navigation Company was awarded a mail contract for a service to Spain and Portugal, which, in 1840, was extended to the Mediterranean, and in 1845 to India and later to China, and altered its name to Peninsular and Oriental (P&O). In 1839, the British and North American Royal Mail Steam Packet Company (better known as Cunard) was granted a contract to carry mail from Liverpool to Halifax and Boston and later to New York. In 1840, the Royal Mail Steam Packet Company was awarded the mail contract for the West Indies and South America, in 1845 the Pacific Steam Navigation Company the contract for Pacific South America, and in 1856 the Union Line for South Africa.[20] With the exception of the General Steam Navigation Company, that had operated since 1824 on Channel and North Sea routes and the Union Line that was founded as a collier line in 1853, the rest of the companies were formed ad hoc, with the sole objective of obtaining mail contracts. In fact, these companies begun to operate only after they were awarded mail contracts. The high initial capital investment and running costs of a steamship enterprise before the 1860s, when the steamship was neither technologically advanced nor economically efficient, rendered steamship operation without

18 Berneron-Couvenhes, *Les Messageries Maritimes*, 50–53, 78–81.

19 Sarah Palmer, "'The most indefatigable activity' The General Steam Navigation Company, 1824–50," *Journal of Transport History*, no. 3.2 (1982), 11; Harcourt, "British oceanic mail", 1.

20 Harcourt, "British oceanic mail", 2; Harcourt, *Flagships of Imperialism*, 4, 68, 191–92; Hyde, *Cunard and the North*, 8; Greenhill, "British shipping," 13; Marischal Murray, *Union-Castle Chronicle 1853–1953* (London, Cape Town, and New York: Longmans, Green and Co, 1953), 12–13.

a mail contract an almost unsustainable undertaking.[21] In some companies, certain members of the founding groups were already experienced shipowners of steam ship companies in British waters (the Scottish Burns and MacIver in Cunard, and the Irish Bourne and Williams in P&O), but in others, like the Royal Mail, no previous experience of steamship navigation existed.[22]

Similarly, in France and in the Russian Empire, the mail contract or postal subvention was the *sine qua non* condition for the creation and viability of steam navigation companies. After the failure of its state-owned postal steamers, the French government, in 1851, assigned to *Messageries Nationales*, a company of stagecoaches from Paris, the contract for the sea transport of mail, specie, passengers, and merchandise in the Mediterranean. With no previous experience except in river steam navigation, *Messageries Nationales* created in 1852 as *Messageries Maritimes*, had as its initial fleet previously state-owned postal steamers; its administrative headquarters were in Paris, its fleet base in Marseilles, and the shipbuilding and ship-repairing establishment was in nearby La Ciotat. The annual subvention guaranteed the sustainability of the service and the expansion of the company, which very soon took subsequent mail contracts for Atlantic South America in 1857, for Indochina in 1861, and from Indochina to China and Japan in 1864.[23]

In Russia, the government and mercantile elites of Odessa, since the 1830s, had sought to establish their own steam navigation communications within the Black Sea up to Istanbul. Finally, the Russian Steam Navigation and Trading Company (RSNTC) was founded in 1856, with the aim of promoting Russian shipping and commercial interests in the area, along with the carriage of mail, passengers, and merchandise. The government paid a subvention per mile and also granted extensive privileges and financial support to the company, including duty free import of ships and of shipbuilding material, tax exemption on goods transported on the company's ships, financial assistance for annual ship repairs, free concession of land for the establishment of the company's infrastructure, etc. Thanks to this kind of overwhelming state support and to a very flexible policy based on the profitability of the lines, RSNTC gradually managed

21 Harcourt, *Flagships of Imperialism*, 1, 3, 228; Greenhill, "British shipping," 15, 51; Hyde, *Cunard and the North*, 9–12.

22 Crosbie Smith and Anne Scott, "'Trust in providence': building confidence into the Cunard line of steamers," *Technology and Culture*, no. 48.3 (July 2007), 473, 478–80; Hyde, *Cunard and the North*, 9; Harcourt, *Flagships of Imperialism*, 3, 22–34, 38; Greenhill, "British shipping," 151.

23 Berneron-Couvenhes, *Les Messageries Maritimes*, 60–146; Kalliopi Vasilaki "The port of La Ciotat and its maritime community towards industrialization (1836–1916)," in the present volume.

to expand and to sustain lines in the Mediterranean, northern Europe including the Baltic Sea, and as far as the Persian Gulf.[24]

In the third form of indirect aid for steam shipping lies the case of *Lloyd Austriaco*, at least in the early period of its history. The company was formed in 1836 in Trieste by a group of local businessmen supported by the magnate Salomon Mayer von Rothschild. The interest of Rothschild in investing in a new technology related to state interests, in parallel with Vienna's policy of extending the imperial intelligence system in the eastern Mediterranean through the mail service, led to the granting of the first contract to *Lloyd Austriaco* in 1837 to carry mail to the Adriatic, Greece, the Ottoman Empire, and to Egypt. The Austrian government did not offer an annual subvention to the company but rather privileges, such as a navigation monopoly of the Trieste-Venice line, fiscal equality with Austrian Navy ships, facilities for quarantine procedures, state guarantees for loans, and all the revenues from the transport of mail. From 1855 up to the First World War, when the previous system proved no longer efficient, the Austrian government took a more direct role in the affairs of the company, and paid an annual subvention on specific lines. During this period, *Lloyd Austriaco* expanded beyond the Mediterranean to Bombay in India in 1872, and from there to Ceylon, Calcutta, and Singapore in 1877, to Hong-Kong and Shanghai in 1881, to Brazil in 1882, and to Japan in 1893.[25]

The case of *Lloyd Austriaco* presents resemblances with that of the HSNC in Greece. In fact, in the latter's first twelve-year contract with the Greek government in 1857, the company, instead of any subvention, received a set of privileges. These included: a) a navigation monopoly within domestic waters; b) a security of payment of 5% interest per year up to two-thirds of the paid-in capital; c) a duty exemption on imported ships and material used for the repairing and outfitting of the company's ships; d) assimilation of privileges of the company's steamers with naval ships, namely exemption of payment of port and sanitary dues and of the time-consuming controls of shipping papers by the port authorities; and e) concession of public land for the construction of its arsenal and other company's buildings.[26] Very soon, however, also in this case, the payment of an annual subvention proved to be the only solution for the company in order to overcome the constant deficit from the service. In 1861, the Board of Directors claimed that the company was on the verge of collapse, and obtained 150,000 drachmas in temporary government aid, but

24 Sydorenko, "Russian steam," in the present volume.

25 Barbano, "Steamers for the empire," in the present volume.

26 *Ελληνική Ατμοπλοΐα. Προκαταρτικά Β. Διατάγματα*, 23.

not a commitment for an annual subvention.[27] In 1862, after a turbulent year during which the company's operations were interrupted and damaged due to political troubles that led to the dethronement of King Otho, the managing directors obtained from the new government a permanent annual subvention of 300,000 drachmas "absolutely necessary for the subsistence of our national company … as happens in other nations in favour of steam navigation companies executing postal services".[28] The annual subvention increased to 370,000 drachmas in 1864, due to the incorporation the year before of the British-protected Ionian Islands to the Greek Kingdom as a dowry by Britain to the new King George I, which expanded the lines and increased the mileage of the HSNC.[29] In 1871, after two years of negotiations with the government for the renewal of the contract that expired in 1869, the company was granted a new five-year contract that raised the amount of the annual subvention to 650,000 drachmas. This considerable increase was given in exchange for the opening to foreign competition of the most commercial lines—that of the Ionian Islands, the Syros-Piraeus and the Patras-Piraeus routes—to which the company strongly objected. This concession to foreign competition by the Greek government was forced by Britain in exchange for the lowering of the import duty on currants, the staple export commodity of Greece in the nineteenth century. In fact, two days before the signing of the new contract with the HSNC, the Greek government signed another contract with Burns and MacIver, managing directors of Cunard and of The British and Foreign Steam Navigation Company, an unsubsidized steamship company that traded directly from Britain to the Mediterranean, and also acted as feeder to the transatlantic lines of Cunard. The contract conceded to the British company the right to include in their Mediterranean lines the ports of Patras, Corfu, and Syros.[30] The 1871

27 Γενική Συνέλευσις της Ελληνικής Ατμοπλοΐας, Έκτακτος και Τακτική. Συγκροτηθείσα εν Ερμουπόλει την 25 Οκτωβρίου 1862, [General Assembly of the Shareholders of the Hellenic Steam Navigation Company. Held at Hermoupolis on 25 October 1862], 4–5.

28 Γενική Συνέλευσις … 1862, 3–6.

29 Γενική Συνέλευσις της Ελληνικής Ατμοπλοΐας, Συγκροτηθείσα εν Ερμουπόλει την 15 Απριλίου 1865 [General Assembly of the Shareholders of the Hellenic Steam Navigation Company. Held at Hermoupolis on 15 April 1865], 4–5; Periodical Πανδώρα [*Pandora*], no.16.363 (1865): 81–82.

30 IAETE [Historical Archive of the National Bank of Greece], XXv ΕΡΓΑ, Α' Ναυτιλιακά, φάκελος 32, υποφάκελος 4, 1856–72, Έκτακτος Γενική Συνέλευσις των Μετόχων της Ελληνικής Ατμοπλοΐας (Συμπεριλαμβάνουσα και τας τακτικάς εργασίας των ετών 1868 και 1869) Συγκροτηθείσα εν Ερμουπόλει τη 20η και 22α Ιανουαρίου 1872, [General Assembly of the Shareholders of the Hellenic Steam Navigation Company. Held at Hermoupolis on 20 and 22 January 1872], 2; Papathanassopoulos, Εταιρεία Ελληνικής, 109–110, 122, 130–132, 169–173, 175–180; Hyde, *Cunard and the North*, 16–18.

contract was renewed in 1877 for three more years and for the same amount of annual subsidy; it continued also in its last twelve–year contract, from 1880 up to 1892, shortly before the dissolution of the company in the middle of 1893.[31]

It becomes clear that state subvention through mail contracts was instrumental, almost a *sine qua non* condition, for the development of steam navigation, especially in the early stages of the technical development of the steamship, but also during the second half of the nineteenth century. Up to the 1860s, the factors that restricted the viability of a steamship enterprise without state support were not only technical, but also institutional, and financial. During this period, the prevalent system of partnership in shipping in the Mediterranean was to divide the ownership of the ship into 24 shares (called *quirats* in French or *carati* in Italian), between active and passive shareholders, whereas in Britain the 64th system of shares prevailed, suitable for tramp shipping operations.[32] However, these institutional forms of partnership were not adapted for steamship liner enterprises that needed to attract large capital and to offer investment security. Initial heavy expenditure on a fleet of steamships, coal stations, technical establishments and numerous, maritime, technical, and administrative staff needed for a steamship liner company, were beyond the reach of individual resources and of the ship partnership forms of the age of sail. In fact, in order to overcome these constraints, steamship liner companies either formed as partnerships (Cunard) or most of them were joint stock firms (P&O, GSN, Royal Mail, *Messageries Maritimes*, *Lloyd Austriaco*, RSNTC, HSNC), which for the period 1830s to 1850s was highly unusual in shipping, both in Britain and in the Mediterranean. Furthermore, the limited liability often granted to some of these companies offered greater investment security.[33]

However, the operation of a shipping firm within the protective framework of state support and subventions created a peculiar status of privileges as well as constraints. Steamship liner companies created to provide a service of national or public importance, despite the fact that they enjoyed privileges along with subventions, faced many constraints at the same time resulting from contractual obligations. In order to maintain the regularity of scheduled

31 *Εφημερίς της Κυβερνήσεως του Βασιλείου της Ελλάδος* [*Government Gazette of the Greek Kingdom*], no. 50.2 (July 1877), 226; no. 125 (19 December 1880), 593–594.

32 Gordon Boyce, "64thers, syndicates and stock promotions: information flows and fundraising techniques of British ship owners before 1914," *The Journal of Economic History* 52, no. 1 (March 1992), 183; Berneron-Couvenhes, *Les Messageries Maritimes*, 53–55.

33 Boyce, "64thers, syndicates," 188; Palmer, "'The most indefatigable," 2–3; Harcourt, "British oceanic mail," 2; Berneron-Couvenhes, *Les Messageries Maritimes*, 112–13; Barbano, "Steamers for the empire," in the present volume; Sydorenko, "Russian steam," in the present volume; Greenhill, "British shipping," 204.

steamship voyages, they had to perform at a certain specified speed and often at a higher cost than a tramp or a non-subsidized operator. Then, in order to maintain the schedules at designated ports and to avoid delays, which caused penalties, steamships often had to abandon potential profits from cargo or passengers or catch market opportunities that sailing to non-designated ports would offer. Furthermore, public servants and military personnel and materiel travelled on discount fares. In the British case, Admiralty officers, often with some assistants, responsible for the mail conveyance constantly carried on board, sailed along to supervise the correct conduct of the postal service, at the expense of the company for lodging and food. In addition, the ships of the subsidized companies had to be built with the specific requirements of the naval authorities, since they were used as auxiliary ships in case of necessity.[34]

In Greece, in similar fashion, the government dictated the number, size, and speed of the ships, as well as the itinerary under the jurisdiction of the Post Office. In the first 1857 contract, the company had to employ five steamers with no less than 70 hp engines and capable of at least 10 mph in speed. In the 1880 contract, the company had to add within a year from the beginning of the contract, three more steamers, two of them of no less than 700 tons and the other one of no less than 600 tons, and they all had to attain the speed of at least 11 mph. No change in the itinerary was possible without the consent of the government and prior consultation with the Post Office, and the company had to pay penalties for unjustified delays or omissions at designated ports. Furthermore, civil, military, and naval personnel and convicts travelled with a 30% discount and government material with a 50% discount, and public money, as well as public and private correspondence, were carried free of charge. In the 1857 contract, Post Office personnel, when on board for work purposes, were allowed free passage, and from the 1871 contract, and in all other contracts afterwards, the company had to accept on board a postal clerk, for whom they had to provide lodging and food, and a working room, and his authority was equivalent to that of the ship's officers. In case of necessity, the government could order the transport of troops with the company's ships in exchange for a compensation, and from 1871 a Royal Commissioner was appointed to control the company's affairs at its headquarters in Syros.[35]

34 Robert E. Forrester, *British Mail Steamers to South America, 1851–1965. A History of the Royal Mail Steam Packet Company and Royal Mail Lines* (London and New York: Routledge, 2016), 4; Harcourt, "British oceanic mail," 5; Harcourt, *Flagships of Imperialism*, 2, 70; Jones, *Government Aid*, 16; Hyde, *Cunard and the North*, 45; Berneron-Couvenhes, *Les Messageries Maritimes*, 683–684.

35 *Εφημερίς της Κυβερνήσεως του Βασιλείου της Ελλάδος* [*Government Gazette of the Greek Kingdom*], no. 24.3 (August 1857), 178–80, no. 50.2 (July 1877), 226–28; no. 125 (19 December 1880), 593–95; Papathanassopoulos, Εταιρεία Ελληνικής, 175–80.

In fact, this array of obligations caused the Board of Directors of the HSNC to complain systematically to the Greek government about certain issues, such as the unprofitability of specific lines, like the Cyclades and western Greece, and the compensation for expenses and lost profits for the use of its ships as transports for troops and refugees during the Cretan War (1866–69).[36] Therefore, state subsidized steamship companies had to balance incompatible requirements, on the one hand, to perform an often-non profitable service for which they received the subvention, and on the other, to pursue profit opportunities as business firms naturally do.[37] The only exception to this scheme was the case of the RSNTC a few years after its foundation, whose General Assembly in 1861 voted to pursue a policy dictated by commercial interests and not by geostrategic priorities. In 1864, the government sold all its shares and withdrew from its ownership of the company, even though it continued to pay an annual subvention.[38]

A further issue was the renewal of the contract with each government, its terms, duration, and the amount of subvention. In many countries, since the middle of the nineteenth century, the policy of public spending in exchange for steamship services from a particular company, was severely criticized and was under scrutiny, including accusations of monopoly, high costs, and inefficiency every time the renewal of a contract was at stake. In Britain, the Post Office took back the responsibility for the mail contract in 1860 from the Admiralty, and changed the policy towards more competitors for the same line, while at the same time offered lower amounts of subvention and shorter contracts.[39] Generally, the renewal of the contract was an arduous process that took a great deal of time, and negotiations with government institutions and often its renewal put at stake the continuity or the dissolution of a business.[40] This concern with the risk of dissolution of the company was expressed in the correspondence of the Board of Directors of the HSNC with the government during the negotiations for the renewal of the expired contract in 1869, and in

36 Gennadius Library, Ελληνική Ατμοπλοΐα*:* Έγγραφα της Ελληνικής Κυβερνήσεως και του Διοικητικού Συμβουλίου της Ελληνικής Ατμοπλοΐας:. αφορώντα εις τας περί ανανεώσεως της συμβάσεως διαπραγματεύσεις (Ερμούπολις: 1869), [Hellenic Steam Navigation Company: Documents of the Greek Government and of the Board of Directors regarding the negotiations for the renewal of the new contract] 66; Γενική Συνέλευσις … 1862, 3; … 1870, 4, 6; … 1874, 4; … 31 March 1877, 5.

37 Harcourt, *Flagships of Imperialism*, 68; Berneron-Couvenhes, *Les Messageries Maritimes*, 683–684.

38 Sydorenko, "Russian steam," in the present volume.

39 Harcourt, "British oceanic mail," 7–9, 14–15; Harcourt, *Flagships of Imperialism*, 196; Greenhill, "British shipping," 39–40; Forrester, *British Mail Steamers*, 13–14, 40.

40 Harcourt, *Flagships of Imperialism*, 2, 229; Greenhill, "British shipping," 15.

1862 when mounting debts and a lack of more funding from the government threatened the existence of the company.[41] Public accusations of mismanagement, overspending, and inefficiency against the HSNC took many forms, either through articles in the press or the publication of studies lobbying to challenge certain privileges, like the navigation monopoly, the type of management, or the change of headquarters of the company from Syros to Athens.[42] This type of lobbying was instigated by competitors interested in obtaining the contract themselves, but also reflected a new form of government policy towards privileged companies like the HSNC after the 1870s, when steam navigation reached a mature stage and more companies entered into domestic communications. This was the case with the clause of the 1880 contract, which provided that after the first three years of the contact, if another company with at least 15 million drachmas capital could offer better terms than the HSNC, then the government should make a competition call.[43] Unsurprisingly, already in 1881, an effort was made by Stefanos Skouloudis, an entrepreneur and politician tied to interests in the Panellinios Steam Navigation Company, to merge the two companies and create a greater one with a large capital base. This project however proved to be against the interests of the shareholders and directors of the HSNC, since Skouloudis could neither maintain the promise to ensure large capital or to keep the headquarters of the new company at Syros. Besides, the HSNC, as the prime mover in steam navigation which had greater assets (ships, an arsenal, and other infrastructure) and investments than anyone else from 1857, could only lose in any merger.[44]

3 The Economic Performance of the HSNC

The first fleet of the HSNC was built in British shipyards between 1856 and 1860. Five steamers were built at the Clyde, two in the north-east and two at the

41 Gennadius Library, Ελληνική Ατμοπλοΐα: Έγγραφα της Ελληνικής, 80; Γενική Συνέλευσις … 1862, 2.

42 Such articles were often published in Syros newspapers, such as Ένωσις [*Enossis*] in 1861, Πατρίς [*Patris*] from 1866 to 1893, and Πανόπη [*Panopi*] from 1871 to 1890. Aristides Dosios, a journalist and economist, published a libelous study against the HSNC during the 1869 negotiations for the renewal of its contract entitled *Κρίσεις και σκέψεις περί της ελληνικής ατμοπλοΐας* [*Criticism and Reflections Concerning Greek Steam Navigation*] (Athens: 1869).

43 Εφημερίς της Κυβερνήσεως, 19 December 1880, 592–593.

44 Γενική Συνέλευσις … 1882, 6–7; Syros newspaper Ναυτίλος [*Nautilus*], no. 2, 12 December 1881; Πανόπη, no. 783, 14 November 1881.

Thames, in renowned shipbuilding firms and with the cutting-edge technology of the period, all but one with an iron hull and all but two with a screw propeller (see Table 15.1). Two more, old second-hand steamers, were purchased by the Greek government in 1864 for the service to the recently annexed Ionian Islands. In the 1850s, steamship technology experienced structural changes with shifts from wood to iron, from paddle to screw, and the invention of the compound engine that improved navigation and economic performance.[45] However, subsidized companies in Britain like the Royal Mail, Cunard, and P&O, due to objections from the Admiralty with the adaptation to iron and screw, were resistant to these innovations. In fact, iron-screw steamers were initially built for lines outside the mail contract of the subsidized companies, or from unsubsidized companies like Inman Lines in the Atlantic and the British and Foreign Steam Navigation Company of the Cunard group operating in the Mediterranean.[46] The second group of steamers were purchased partly as an obligation of the 1880 postal convention, and were integrated into the fleet between 1881 and 1883, as well as the *Sfaktiria* and *Mykali*, which were initially purchased by the Greek Navy and sold in 1887 to the HSNC. All but one of the steamers were built in Britain, six of them were second-hand, there was one new build from Britain, the *Pelops*, and another new build from France, the *Theseus*, probably the finest vessel (Table 14.1).[47]

The company begun operation in July 1857 with the *Hydra*, *Queen of Greece* and *Panellinion*. The first two, in the previous year, operated under the Post Office administration awaiting the foundation of the company. These three steamers ran five lines embracing most of Greece at the time, up to Chalkida in the northern borders, around the Peloponnese, and the major islands of the Cyclades.[48] In 1858, the arrival of the *Omonoia* and *Karteria* extended the lines to Crete and Thessaloniki, and increased the number of voyages by

45 Simon Ville, "The transition to iron and steel construction," in *Sail's Last Century. The Merchant Sailing Ship, 1830–1930*, ed. Robert Gardiner (London: Conway Maritime Press, 1995), 53; Greenhill, "Steam before," 21–22; Anthony Slaven, "The shipbuilding industry," in *The Dynamics of Victorian Business*, ed. Roy Church (London: Routledge, 1980), 110–112; idem, "Modern British shipbuilding, 1800–1990," in *The Shipbuilding Industry*, ed. Ritchie, 2–3; Griffiths, "Marine engineering," 169–71; Basil Greenhill, "Steam before the screw," in *The Advent of Steam. The Merchant Steamship Before 1900*, ed. Robert Gardiner (London: Conway Maritime Press 1993), 16–17; Ewan C.B. Corlett, "The screw propeller and merchant shipping 1840–1865," in *The Advent of Steam*, ed. Gardiner, 85, 96.

46 Hyde, *Cunard and the North*, 29–31; Harcourt, *Flagships of Imperialism*, 12; Greenhill, "British shipping," 186–187; Forrester, *British Mail Steamers*, 40–41.

47 Newspaper *Πατρίς*, no. 898, 8 October 1883, 2; *Πανόπη*, no. 968, 1 October 1883, 2; no. 974, 22 October 1883, 1–2.

48 Γενική Συνέλευσις ... 1858, ισολογισμός [balance sheet].

TABLE 14.1 The fleet of the *Hellenic Steam Navigation Company*

Ship Name	Hull Material	Propulsion	Dimensions in metres and length/ max breadth ratio	Tonnage (nrt/grt/bm)*	Horse power	Shipbuilder, location and year of construction
Queen of Greece	Timber	Screw	41.45×8.53×5.02 (4.85/1)	274/521/–	70	Pile Jr., W., Sunderland, 1855
Panellinion	Iron (4 compartments)	Screw	47.64×6.7×3.77 (7.11/1)	181/267/354	70	J Henderson & Son, Glasgow, 1856
Hydra	Iron (5 compartments)	Screw	47.79×6.73×3.62 (7.13/1)	189/278/354	70	Blackwood & Gordon, Glasgow, 1856
Omonoia	Iron (4 compartments)	Screw	56.38×7.65×4.57 (7.36/1)	315/464/565	120	John Reid & Co. Glasgow, 1858
Karteria	Iron (4 compartments)	Screw	58.52×7.68×4.54 (7.61/1)	278/469/565	120	J & G Thomson, Glasgow, 1858
Otho	Iron (4 compartments)	Paddle wheel	66.23×8.38×4.48 (7.90/1)	404/641/748	180	C. Lungley & Co, London 1860
Amalia	Iron (4 compartments)	Paddle wheel	66.20×8.35×4.45 (7.92/1)	–/640/748	180	C. Lungley & Co, London, 1860
Eptanisos	Iron (4 compartments)	Screw	56.38×8.07×4.72 (6.98/1)	322/488/631	120	Pile, Spence and Co, West Hartlepool, 1860
Byzantion	Iron (4 compartments)	Screw	60.31×7.74×4.78 (7.79/1)	247/477/613	120	Lawrie, J.G. Glasgow, 1860

TABLE 14.1 The fleet of the *Hellenic Steam Navigation Company* (*cont.*)

Ship Name	Hull Material	Propulsion	Dimensions in metres and length/ max breadth ratio	Tonnage (nrt/grt/bm)*	Horse power	Shipbuilder, location and year of construction
Ionia	Timber	Paddle wheel	38×5.79×– (6.56/1)	220	80	Fletcher Fearnall, Limehouse, London, 1836
Athinai/ex Otho	Timber	Paddle wheel		430	150	Poros Naval Arsenal, 1837, engine by Maudslay Sons & Field
Elpis/ ex Truthful	Iron	Screw	73.2×9.1× 4.88 (8.04/1)	956/606	218	Barrow SB Co, Barrow in Furness, 1878
Ermoupolis/ex Galata (*1869*) *Wicklow* (*1872*)	Iron	Screw	67.3×8.9× 4.6 (7.56/1)	978/602	162	Blackwood & Gordon, Glasgow, 1869
Pineios/ex Raven	Iron	Screw	65.5×8.65× 4.72 (7.57/1)	778/490	150	J & G Thomson, Glasgow, 1869
Chios/ex Portland	Iron	Screw	70.19×9.35× 4.75 (7.50/1)	923/537	150	Robert Steele & Co, Glasgow, 1876
Pelops	Iron	Screw	70.10×9.1× 4.72 (7.70/1)	973/613	208	Thomas Royden & Sons, Liverpool, 1883

TABLE 14.1 The fleet of the *Hellenic Steam Navigation Company* (*cont.*)

Ship Name	Hull Material	Propulsion	Dimensions in metres and length/ max breadth ratio	Tonnage (nrt/grt/bm)*	Horse power	Shipbuilder, location and year of construction
Theseus	Iron and Steel	Screw	71.30×9×5.5 (7.92/1)	1004/632	180 (720 expanded hp)	Forges et Chantiers, La Seyne-sur-Mer, 1883
Sfaktiria/ex Buzzard	Steel	Screw	64.16×9.9 (6.45/1)	831/271	260	J & G Thomson, Glasgow, 1884
Mykali /ex Eldorado	Iron	Screw	71.6×9.1×4.5 (7.8/1)	935/427	289	Earle's SB & E Co, Hull, 1885

SOURCE: *LLOYD'S REGISTER OF SHIPPING*, 1863, 75, 158, 220, 258, 261, 344, 351, 375; HTTP://SHIPPINGANDSHIPBUILDING.UK/ ACCESSED ON 20 MAY 2021; MARIA PANOPOULOU, Οικονομικά και τεχνικά προβλήματα στην ελληνική ναυπηγική βιομηχανία *1850–1914*, [*ECONOMIC AND TECHNICAL PROBLEMS IN THE GREEK SHIPBUILDING INDUSTRY, 1850–1914*] (ATHENS: KEPE, 1993), 203; HTTPS://EN.WIKIPEDIA.ORG/WIKI/GREEK_STEAMER_OTHON ACCESSED ON 20 MAY 2021

* NRT (net registered tons/GRT (gross registered tons)/BM (builder's measurements)

one-and-a-half times and the number of passengers by three and a half times (see Table 14.2).[49] In 1860 new steamers arrived, the *Otho Amalia, Eptanisos*, and *Byzantion*, and more domestic lines were added, plus external lines to Crete, Constantinople, southern Turkey, as it was called, and a line that linked Constantinople to Corfu. Consequently, the traffic increased to 120,000 passengers on 367 voyages. The reduction in traffic in 1862 was due to the political turmoil that led to the expulsion of King Otho, but in 1864, when the steamers *Athinai* and *Ionia* were added to the fleet, new lines opened to the recently annexed Ionian Islands and to the Ottoman Empire. One that called to European Turkey, more likely included ports of the Aegean, like Volos and Thessaloniki, and the other that called in Asiatic Turkey probably included

49 Υπόμνημα Συνοπτικόν, 10–11.

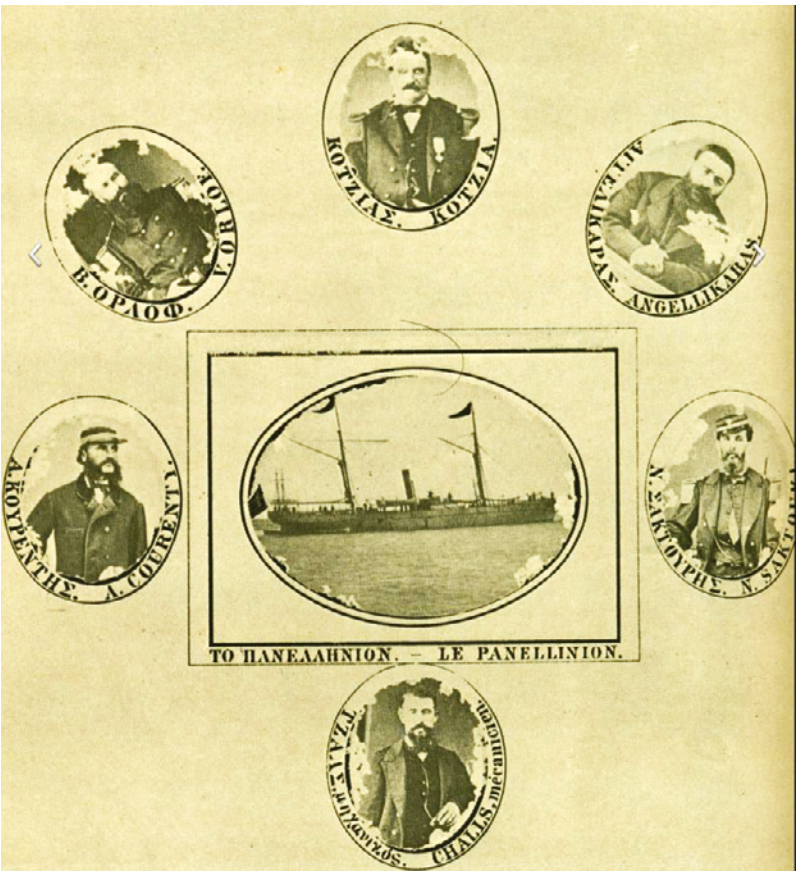


FIGURE 14.1 The steamship *Panellinion* and her officers
SOURCE: *Ιστορία του Ελληνικού Έθνους* [*HISTORY OF THE GREEK NATION*], VOL. ΙΓ (ATHENS: EKDOTIKI ATHINON, 1970–80), 270

Smyrna and other eastern Aegean islands, which led passenger traffic to reach its peak with 145,000 people.[50] From 1865 to 1880, the company made approximately 450 voyages and carried between 106,000–125,000 passengers per year. Only in 1881, after the arrival of three more steamers (*Elpis, Ermoupolis* and *Pineios*) and the inauguration of the new itinerary with more lines, did the traffic increase to 607 voyages, carrying 247,000 passengers (see Table 14.2). The average number of passengers per voyage up to 1864 was 370 people. After that year, and up to 1880, this figure decreased to almost 250 passengers per voyage,

50 Γενική Συνέλευσις ... 1865, 4, and ισολογισμός [balance sheet].

TABLE 14.2 Traffic of the HSNC fleet, 1857–1881

Year	Number of voyages	Number of passengers	Passengers per voyage
1857	49	14,167	309.5
1858	116	52,189	449.9
1859	210	82,466	392.7
1860	276	94,416	342.1
1861	367	119,254	324.9
1862	270	91,984	340.7
1863	328	125,603	382.9
1864	344	145,490	422.9
1865	456	126,180	276.7
1866/67	918	212,010	230.9
1868/69	878	225,090	256.4
1870	452	106,268	235.1
1871	448	107,450	239.8
1875	456	124,578	273.2
1880	461	112,817	244.7
1881	607	246,791	406.6

SOURCE: PROCESSED DATA FROM Γενική Συνέλευσις ..., ισολογισμός [*BALANCE SHEETS*], 1857, 1862, 1865, 1866, 1868, 1870, 1872, 1877, 1882; AND GENERAL STATE ARCHIVES, SYROS, Γακ/Ανκ Συρου, I Στατιστικα, VOL. 1: Ελληνική Ατμοπλοΐα. Στατιστικός πίναξ από του έτους 1857 μέχρι του έτους 1865. [STATISTICAL TABLE FROM 1857 TO 1865]

most likely due to the interruptions on the lines with the Ottoman Empire after the Cretan War of 1866–69.

The analysis of the revenues of the HSNC from 1861 to 1881 shows that approximately three-quarters came from passengers. Commodities were not a negligible share, but never more than a quarter of the total revenues, while the specie occupied a very low percentage (Table 14.3). This must be attributed to the fact that most commercial ports of the company's lines, like Syros, Patras, or Piraeus were also served by foreign steam navigation companies taking part in the trade of commodities and specie. The large number of passengers carried per voyage as Table 14.2 indicates, the share of revenues from passengers as presented in Table 14.3, and the limited number of cabin passengers on the HSNC's steamers, reveals that most of the revenues came from

TABLE 14.3 Percentage of category of revenues

Year	Passengers	Commodities	Specie	Extraordinary Revenues
1861	69.2	26.7	3	1.1
1864	64.6	22.7	2.1	10.6
1865	73.4	23.8	2	0.8
1866/67	66.2	20.5	1.8	11.5
1868/69	76.4	20.2	1.4	2
1870	79.2	18.7	1.3	0.8
1871	79	18.9	1.4	0.7
1875	78.3	19.5	1.5	0.1
1880	77.7	20.9	1.3	0.1
1881	76.5	22.1	1.4	0.1
Average	**74.1**	**21.4**	**1.7**	**2.8**

SOURCE: PROCESSED DATA FROM Γενική Συνέλευσις ..., ισολογισμός [BALANCE SHEETS], 1857, 1862, 1865, 1866, 1868, 1870, 1872, 1877, 1882

steerage passengers.[51] Passenger revenues were the most important even for the largely subsidized British companies operating in ocean navigation. For the Royal Mail, in the period 1844–90, passenger receipts accounted on average for 38% of the total, freight from specie and cargo 29%, and mail contract receipts 30.6%.[52] For Cunard, in 1846, passenger receipts accounted for more than half of the total, cargo receipts for less than an eighth, while from the 1860s onwards steerage passengers from Liverpool to the United States constituted the principal revenue for the most important transatlantic companies.[53]

The most profitable lines for the HSNC were the external ones with the Ottoman Empire, including major ports like Smyrna, Constantinople, or Thessaloniki. In fact, in 1861 and 1864, the lines of "southern Turkey" and "European Turkey" were the most profitable respectively, while in the latter year the "Asiatic Turkey" line also had an important contribution (Table 14.4). In 1865, an outbreak of cholera in the ports of the Ottoman Empire interrupted

51 Even the largest steamers of the HSNC still in service after the dissolution of the company, in 1902, had a capacity of between 38 to 56 first class, and 35 to 51 second class, passengers: see Antonios P. Foustanos, Ημερολόγιον της Σύρου, [*Syro's Directory*] (Syros: 1902), 242–45.

52 Processed data from Greenhill, "British shipping," Appendix 1, 417–18.

53 Hyde, *Cunard and the North*, 80–81.

TABLE 14.4 Percentage of the total revenues of voyages of the HSNC per line, 1857–1881

LINES	1857	1861	1864	1865	1867	1869	1870	1871	1875	1880	1881
Peloponnese	57.22	20.1	18.75	24.98	27.28	33.37	33.2	33.44	34.33	41.18	42,42
Argolis Gulf	27.6	12.26	11.41	8.87	7.95	10.13	10.22	9.52	9.85	3.95	3,78
Gulf of Corinth and Ionian Islands	3.13	8.97	7.78			3.38			7.42		
Gulf of Corinth				7.05	2.66		3.53	3.44		1.97	1.03
Ionian Islands				14.57	16.58	17.48	14.64	13.76	21.75	27.29	18.71
Kalamaki (Corinth area)		4.92	4.06	1.9	7.59	11.25	11.86	12.38	3.35	3.92	2.91
Akarnania		0.7	0.58	1.78	1.76	2.69	3.11	2.61	2.96	4.61	5,37
Cyclades	4.92	1.9	1.54	1.87	2.11	2.51	3.06	3.11	3.79	2.82	11.40*
Constantinople-Corfu		8.05									
Cyclades and Crete				0.85							
Crete		5.58									
Euboea and Maliakos Gulf	7.12				7.64	15.2			12.37		
Gulf of Euboea							14.64	13.76		12.4	
Gulf of Euboea and Gulf of Volos											14.23
Constantinople		9.67									
Southern Turkey		24.38									
European Turkey			26.43	20.13	6.92						
Asiatic Turkey			15.63	8.93	5.26						
Piraeus				1.79	2.04	3.11	2.66	2.75	3.08	0.89	
Extraordinary voyages		3.15	13.76	7.27	12.22	0.87	0.85	1.17	1.09	0.98	0.16

SOURCE: PROCESSED DATA FROM ANNUAL BALANCE SHEETS FROM Γενική Συνέλευσις της Ελληνικής Ατμοπλοΐας, 1858, 1862, 1865, 1866, 1868, 1870, 1872, 1873, 1877, 1882.

* Crete included from 1881

the service for months and reduced the revenues of the company.[54] In 1866, the outbreak of the Cretan Revolution (1866–69) led to the disruption of the lines with Ottoman ports up to 1881 when Crete reintegrated into the service, and in 1887–88 when new lines extended up to Constantinople, Thessaloniki, Smyrna, Mytilene, Alexandria, and to the lower Adriatic up to Brindisi.[55]

54 Γενική Συνέλευσις της Ελληνικής Ατμοπλοΐας, Συγκροτηθείσα εν Ερμουπόλει την 28 Απριλίου 1866, 3.

55 Γενική Συνέλευσις της Ελληνικής Ατμοπλοΐας, Συγκροτηθείσα εν Ερμουπόλει τη 10 Ιουνίου 1868, 2–3; Αναχωρήσεις της Ελληνικής Ατμοπλοίας εκ Πειραιώς, Εν Αθήναις εκ του τυπογραφείου του Ανδρέου Κορομηλά, 1882; Κων. Φ. Σκόκου, Ετήσιον Ημερολόγιον, Χρονογραφικόν, Φιλολογικόν και Γελοιογραφικόν του έτους *1887*, 28, 31–33; John Edwin Sandys, *An Easter Vacation in*

Among the domestic lines, that of the Peloponnese was the most profitable throughout the examined period of 1857–81. The Ionian Islands line proved the second-most profitable, whereas the Gulf of Euboea and the Argolis Gulf lines had an important share for most of the period. These lines included important commercial cities and towns of Greece, like Syros, Piraeus, Patras, Kalamata, Nauplion, Corfu, Cephalonia, and Zakynthos, which carried not only larger numbers of passengers but also a higher quantity of goods that raised the revenues. On the other hand, the lines of the Cyclades and western Greece, outside the big ports of Syros or Patras, were consistently the least profitable, since they comprised of small rural ports that served undeveloped economies. In fact, it was not a coincidence that the Board of Directors of the HSNC systematically complained about the unprofitability of the line of the Cyclades, and that their two unsubsidized competitors in the 1880s (Panellinios and Goudis) did not include the Cyclades in their itineraries.[56]

The "energy expenses of the steamers" as they were referred to, including coal and labour, were by far the largest outlay for the company during the twenty-year period from 1861 to 1881 (Table 14.5). However, this percentage of running expenses decreases steadily throughout this period, and up to 1881 by almost 19%. The most important cost item of the running expenses was coal, that had a determining impact on the economy of steamship navigation, both in liner and tramp shipping throughout the nineteenth century, inaugurating the prime importance of fuel (coal, oil) in ship operation up to the present day.[57] In fact, coal was also the biggest running cost item in the nineteenth century for several passenger/liner steamship companies, like P&O, Cunard, and the RSNTC.[58] In the Royal Mail's running expenditures, during the period 1844–90, coal, despite its decreasing percentage, constituted on average 37.5% of the total costs, wages 17%, provisions 23% and the rest included port dues,

Greece (London and New York: Macmillan, 1887), 154–155, 164. Newspaper Ήλιος, no. 109, 28 August 1888, 1; Πρόνοια, no. 1285, 4 August 1888, 3.

56 Έγγραφα της Ελληνικής Κυβερνήσεως και του Διοικητικού Συμβουλίου της Ελληνικής Ατμοπλοία. Αφορώντα εις τας περί ανανεώσεως της συμβάσεως διαπραγματεύσεις, [Documents of the Greek Government and of the Board of Directors regarding the negotiations for the renewal of the new contract] 66; Γενική Συνέλευσις … 1862, 3; … 1870, 4, 6; … 1874, 4; … 31 March 1877, 5; Σκόκου, Ετήσιον Ημερολόγιον, 35–39.

57 Apostolos Delis, "Ship operation in transition: Greek cargo sailing ships and steamers, 1860s–1910s," in the present volume.

58 Christopher J. Napier, "Fixed asset accounting in the shipping industry: P&O 1840–1914," *Accounting, Business and Financial History* 1, no. 1 (1990): 49; Harcourt, *Flagships of Imperialism*, 187; Hyde, *Cunard and the North*, 128; Sydorenko, "Russian steam," in the present volume.

salaries, legal and office overheads, etc.[59] In the case of the HSNC, coal seems to determine the reduction of running expenses (Table 14.5) since its percentage dropped from 42% in 1861 to 20% in 1881. Despite contemporary accusations of non-efficient use of ship engines and of the high consumption of coal, the evidence (Table 14.6) shows that from 1861 to 1881 the consumption of coal was reduced by more than 50% in terms of consumed tons/voyage and 63% in terms of paid value of consumed coal/voyage.[60] This steady and impressive decrease in coal consumption over the twenty-year period must be mostly attributed to improvements and changes in the engines, like the introduction of new condensers to the *Hydra* and *Panellinion*, and of a compound engine to the *Omonoia* in 1874.[61] Labour expenses, despite accounted for an important share of the running costs, were far less than fuel costs and were relatively stable throughout the examined period, oscillating between 14 and 18%.

Administration expenses, in which agencies costs must have occupied a conspicuous part, had even a lower percentage, increasing up to the Cretan War period, and then decreasing again after the withdraw of the external lines up to 1875. The intensification of lines after that year could have caused the increase in administration costs from 1875 to 1881. Ship repairs and maintenance costs, another important cost category, had a linear increasing trend of 19% during the whole period, due to the ageing of the fleet and the growing necessity not only for regular maintenance, but also for improvement of the ships' efficiency with the introduction of new and up to date engines, condensers, and boilers.

Annual fixed charges, insurance, and depreciation occupied an important share in the costs. In 1860, an insurance fund was created to act as a "self-insurer' for the fleet. This was a common practice in other passenger/liner steamship companies of the period (P&O, Royal Mail) due to uneconomic insurance rates and to the low risk of incidents for ships of this category.[62] In practice, the HSNC's ships were partially insured by external insurers and in parallel, a sum

59 Data from Greenhill, "British shipping," Appendix 1, 417–418.

60 Dosios, Κρίσεις και σκέψεις, 139–146.

61 Γενική Συνέλευσις των Μετόχων της Ελληνικής Ατμοπλοΐας, Συγκροτηθείσα εν Ερμουπόλει τη 10η Ιουνίου 1874, [General Assembly of the Shareholders of the Hellenic Steam Navigation Company. Held at Hermoupolis on 10 June 1874], 2. The fuel economy, through the introduction of the compound engine, also became evident in the accounts of the Royal Mail by early 1870s: see Forrester, *British Mail Steamers*, 67.

62 A.J. Arnold and Robert G. Greenhill, "Contractors' bounties or due consideration? Evidence on the nature of the Royal Mail Steam Packet Company's mail contracts, 1842–1905," in *Management, Finance, and Industrial Relations in Maritime Industries: Essays in International Maritime and Business History*, eds. Simon. P. Ville and David M. Williams (Research in Maritime History 6) (St. John's Newfoundland: International Maritime

FIGURE 14.2 The steamship *Omonoia* in the port of Syros, in front of the custom house (unknown date)
SOURCE: HTTPS://GREEKSHIPPINGMIRACLE.ORG/ISTORIA/%CE%B7%CE%B5%CF%80%CE%B9%CE%BA%CF%81%CE%AC%CF%84%CE%B7%CF%83%CE%B7%CF%84%CF%89%CE%BD%CE%B1%CF%84%CE%BC%CF%8C%CF%80%CE%BB%CE%BF%CE%B9%CF%89%CE%BD-1901-1911/

corresponding to 4.5 to 5% of the remaining (usually higher) uninsured part of the vessels was set aside for the fund. From 1870 onwards, a special analysis of ship insurance accounts and of the insurance fund no longer appears on the balance sheets, but instead a reserve fund is created, probably from the same resources and for the same purpose, namely for the replacement, damage, and loss of ships. A significant consequence of the policy of self-insuring is that the percentage of insurance costs steadily decreases from 8% in 1861 to just 1.5% in 1875 (Table 14.5). Thereafter the company no longer paid for ship insurance from externals, nor is the insurance fund mentioned in the balance sheets, assuming that ship insurance was covered by the general reserve fund. Fleet depreciation was regularly applied to the accounts of liner steam navigation companies as another resource, mostly for asset replacement rather than

Economic History Association, 1994), 119–20; Forrester, *British Mail Steamers*, 21; Napier, "Fixed asset", 33.

as a cost of using a fixed asset, while it was not calculated at all in the accounts of tramp shipping companies.[63] British companies like P&O and Royal Mail used an annual rate of 5%, the HSNC initially adopted a 6% rate, which was considered very high by the Board of Directors. In fact, in 1862, the company obtained from the government a reduction from 6 to 3% on ships' depreciation that remained the same up to the end.[64] Overall, the percentage of depreciation was quite stable, under 10%, rising only after 1875 above 6% of the total costs (Table 14.5).

The economic performance of the HSNC is based mostly on the balance sheets of thirteen years and on aggregate data of another five years, namely covering the 1857 to 1871 period, and leaving aside most of the 1870s and all the years after 1881, which are half of the years of the company's activity. The available data demonstrates the role of annual subventions in the economic performance of the company in multiple ways. Firstly, in the receipts of the company, in which the percentage of the annual subvention rose steadily throughout the years, from 8% in 1861 to 32% in 1880 (Table 14.7). During the period of the first contract up to 1871, the average percentage of the subvention to receipts was approximately 15%, while after this and up to 1881, when the annual subvention doubled, the percentage reached 28.5%. The rate of dependency on the receipts from the subvention in the case of *Messageries Maritimes* was on average at 32% for the period 1852–90, decreasing only in the 1870s to 24%, before rising again in the 1880s.[65] For the Royal Mail, the average percentage of the subsidy to receipts from 1844 to 1854 was slightly above 50%, and gradually as the economic performance of the company improved, it was reduced to just above 30% up until 1875, when it further decreased below 15% up to 1890.[66] At P&O, the average percentage for the period 1840 to 1914 was 22.5%, which lowered to under 20% only after 1890.[67]

In terms of contribution to profitability, the annual subvention also had an important impact. Only six out of its eighteen years of activity were profitable, in 1862, 1864, and the years after the signing of the second mail contract, namely 1871, 1875, 1880, and 1881 (Table 14.7). The fact that the HSNC was performing

63 Napier, "Fixed asset", 43, 48; Forrester, *British Mail Steamers*, 21; Gordon Boyce, "Accounting for managerial decision making in British shipping, 1870–1918", *Accounting, Business and Financial History* 5, no. 3 (1995): 364–366; see also the Greek steamship tramp companies in Delis, "Ship operation," in the present volume.

64 Γενική Συνέλευσις ... 1862, 6.

65 Processed data from Berneron-Couvenhes, *Les Messageries Maritimes*, Table 41, 323 and Table 99, 610.

66 Processed data from Greenhill, "British shipping," Appendix 1, 417–418.

67 Processed data from Harcourt, "British oceanic mail," Table 1, 6.

TABLE 14.5 Cost structure of the years 1861–1881 (as a percentage)

Cost category	1861	1864	1865	1866–67	1868–69	1870	1871	1875	1880	1881
Energy expenses of the steamers	70.9	66.9	66.4	62.8	55.8	56.7	64.8	57.5	55.9	52.1
Administration expenses	8.4	8.6	8.5	9.1	10.1	8.2	9.4	12.7	14.0	13.3
Insurance	8.1	7.0	6.9	8.0	7.7	3.0	3.1	1.5		
Ship repairs and maintenance	5.3	6.2	9.5	8.7	14.9	17.2	13.6	16.0	20.0	24.0
Arsenal	1.3	1.5								
Slipway	0.4	1.2	0.3	0.4	0.6	0.5	0.4	0.7	1.0	0.9
Depreciation	0.3*	5.1	4.8	5.6	5.6	4.8	3.1	6.3	7.3	6.9
Budget forecast deviation	0.3			0.6	0.3	0.2	0.04	0.6	0.4	
Interest paid to various thirds	4.3	2.9	2.8	4.3	4.7	3.4		3.8		2.1
Exchange rate losses and compensation to various shippers	0.6	0.7	0.5	0.4	0.3	0.3	0.2	1.0	0.3	0.4
Losses from previous years						2.1				
Employees Fund						0.2	0.1	0.1	0.1	0.1
COST SUBCATEGORIES										
Coal	42.0	40.4	40.0	30.3	26.0	31.2	33.9	31.3	24.5	20.0
Labour	16.4	14.0	14.6	18.2	17.0	15.4	18.2	15.1	17.1	14.1
Labour and food	23.9	20.1	20.9	26.4	24.6	22.3	26.2	21.6	24.1	20.0

SOURCE: PROCESSED DATA FROM ANNUAL BALANCE SHEETS FROM Γενική Συνέλευσις της Ελληνικής Ατμοπλοΐας, 1858, 1862, 1865, 1866, 1868, 1870, 1872, 1873, 1877, 1882

* 1861 depreciation only includes the company's infrastructure, not the ships.

better after the 1871 contract, when the subvention was doubled, can be seen also in the return on capital, where the rates, despite the fact that they were below 10%, increased in ten years from 2.8 to 7.3%. The annual subvention played a significant role in all years but especially in the profitable ones, which without the subvention would have been at a loss. Bigger companies, like *Lloyd Austriaco*, also faced a similar situation, which, without the annual subvention,

TABLE 14.6 Coal consumption, 1861–1881

Year	Number of voyages	Coal in tons	Tons of coal consumed/ voyage	Value of coal (drachmas)	Value of coal consumed/ voyage
1861	367	20,766	56.6	819,144	2232
1862	270				
1863	328				
1864	344	17,776	51.7	910,379.3	2646.5
1865	456	20,218	44.3	941,009.1	2063.6
1866–67	918	31,497	34.3	1,233,141	1343.3
1868–69	878	26,099	29.7	921,798.7	1049.9
1870	452	15,952	35.3	664,105.9	1469.3
1871	448	14,986	33.5	612,400.7	1367.0
1875	456	12,933	28.4	623,433.5	1367.2
1880	461	11,289	24.5	403,690.6	875.7
1881	607	15,586	25.7	500,536.2	824.6

SOURCE: PROCESSED DATA FROM ANNUAL BALANCE SHEETS FROM Γενική Συνέλευσις της Ελληνικής Ατμοπλοΐας, 1858, 1862, 1865, 1866, 1868, 1870, 1872, 1873, 1877, 1882

would have been at a loss in all the years between 1855 and 1910.[68] British companies like the Royal Mail, from 1844 to 1858 and from 1867 to 1870, were constantly at a loss without the subsidy, while P&O from 1846 to 1868 was also at a loss without the subsidy in all but four years.[69] The RSNTC, on the other hand, was again different, by presenting a profit in all but two years during the period 1857–1913, with the subvention only having a major impact in the early years up to 1876, on average 48% of the profit. From 1880 onwards, the subvention was reduced considerably, under 1 million rubles, while the average contribution to the profits dropped to 32% in the 1880s, to rise gradually again, from 1890 to 1913, to 54%.[70]

68 Barbano, "Steamers for the empire," in the present volume, Table 1.

69 Data from Greenhill, "British shipping," Appendix 1, 417–418; and from Harcourt, *Flagships of Imperialism*, 193.

70 Data from Sydorenko, "Russian steam," in the present volume.

TABLE 14.7 Economic performance of the HSNC (in drachmas), 1857–1881

Year	Revenues	Subsidy	Revenues + subsidy	% of subsidy to revenues	Expenses	Profit	Loss	Equity	% of return on equity
1857	186,293,40				217,911,61		31,618,25	1,804,500	
1858	530,527,40				609,261,29		78,733,85	1,971,500	
1859	1,179,342				1,306,120,02		126,778	3,100,500	
1860	1,458,033				1,822,808,56		364,775,80	3,761,500	
1861	1,696,053	150,000	1,846,053	8,1	2,190,132		318,004,10	4,063,000	
1862	2,152,332	300,000	2,452,332	12,2	1,919,691	532,640,90		4,063,000	13.1
1863	1,946,894	300,000	2,246,894	13,4	2,251,572		4,678,03	4,062,500	
1864	2,307,367	300,000	2,607,367	11,5	2,556,994	50,373,07		3,951,500	1.3
1865	2,028,478	370,000	2,398,478	15,4	2,685,412		286,934,60	3,955,000	
1866/67	3,448,326	740,000	4,188,326	17,7	4,631,181		442,855,30	4,651,886	
1868/69	2,897,038	740,000	3,637,038	20,3	4,085,271		448,232,70	4,583,922	
1870	1,767,867	370,000	2,137,867	17,3	2,349,003		211,136	4,583,922	
1871	1,484,929	650,000	2,134,929	30,4	2,009,003	125,925,80		4,482,500	2.8
1875	1,,669740	650,000	2,319,740	28	2,182,789	136,950,80		4,552,500	3
1880	1,393,758	650,000	2,043,758	31,8	1,885,823	157,935,20		4,735,500	3.3
1881	2,142,339	660,000	2,802,339	23,6	2,504,997	297,342,40		4,083,973	7.3

SOURCE: PROCESSED DATA FROM ANNUAL BALANCE SHEETS FROM Γενική Συνέλευσις της Ελληνικής Ατμοπλοΐας, 1858, 1862, 1865, 1866, 1868, 1870, 1872, 1873, 1877, 1882 AND Γακ/Ανκ Συρου, I Στατιστικα, VOL. 1: Ελληνική Ατμοπλοΐα. Στατιστικός πίναξ από του έτους *1857* μέχρι του έτους *1865*

4 Conclusions

The establishment and development of steam navigation in Greece in the middle of the nineteenth century was a state affair. The state laid all the groundwork for the foundation and growth of the HSNC in order to provide a public service, through privileges, subventions, and concessions. The company in its turn responded perfectly to the aims of a public service. It provided seaborne connections to almost the entire country, from the most commercial to the least-developed and thinly-populated coasts and ports. It also provided its ships, personnel, and materials for the state as needed during war or peace, for the transport of troops, refugees, state representatives, officials and personnel, contributing to a national cause, for the enforcement of the law, and for the political and social control of Greek territory. The company, for all these services it provided, often contrary to a rational business policy, had to bear financial losses over the years. Moreover, the state had paid, since 1861, a much lower subvention for these services compared with the subsidies paid by other governments to their own respective companies.[71] The state had limited resource capacity, delaying those payments, sometimes for years. Furthermore, every diplomatic dispute or war with the Ottoman Empire cost the company its most profitable lines, either with trading ports and conspicuous diaspora merchants, or with populations like at Thessaloniki, Volos, Smyrna, and Istanbul. Despite all that, the company did maintain a fleet that was able to connect all domestic ports and coasts. It also maintained another costly establishment within the same enterprise, the Arsenal of Syros, essential for the maintenance and improvement of the fleet. The state renewed its contract with the company several times from 1857 to 1880, but gradually, from the 1870s onwards, curtailed certain privileges under public criticism influenced by liberal policies and external pressure, which favoured foreign steam shipping, like the abovementioned case of the contract with Burns and MacIver.

Overall, the company could not easily develop and sustain its external lines, not only due to the tensions between Greece and the Ottoman Empire, but also due to competition from the much better state-supported western European steamship companies. In the 1880s, the company also had to face internal competition; two new non-subsidized companies, Panellinios and Goudis, emerged on the domestic lines in 1881. Panellinios, the larger of the two, was founded by a group of powerful Greek diaspora capitalists who were established in Greece in those years, and played a key role in the economy and politics of the country during the period of the *belle epoque*.[72] During

71 Pierre A. Moraitinis, *La Grece tell qu'elle est* (Paris: 1877), 372.

72 Kardasis, Από του ιστίου, 66–68; Christos Hadziiossif, "Η μπελ επόκ του κεφαλαίου," ["The *Belle Epoque* of capital"] in Ιστορία της Ελλάδος του 20ου αιώνα. Οι απαρχές *1900–1922*,

the 1880s they lobbied constantly for the creation of a "Great Steamship Navigation Company" through a merger with the HSNC, as described in the project proposed by Stefanos Skouloudis. It was during this period of intense speculative activity by Greek Diaspora capitalists in every sector of the Greek economy, when the state changed its priorities towards investing in a steam navigation project with headquarters at Piraeus, the capital's port. Piraeus, which was barely inhabited in 1830, gradually became the biggest Greek port by the 1870s, while Syros, the commercial and maritime centre of the eastern Mediterranean, was still important but in continuous decline. Therefore, the state, thanks to the growth of the port of Piraeus and the diaspora capitalist group settled in Athens, no longer needed Syros and its local merchant class as much as it did in the 1850s. The HSNC was no longer a national business but rather a Syros company, and the last important bulwark of Hermoupolis in its struggle to retain its position in the national division of shipping labour.[73]

From the signing of the second contract in 1871, and until 1881, the company performed quite well, having a fund of 400,000 drachmas and 800,000 from the government owed as Cretan War compensation. However, the 1880 contract demanded the purchase of three steamers (the *Elpis, Ermoupolis*, and *Pineios*) for the new extended itineraries to the Lower Adriatic, Ottoman Empire, and Egypt. Moreover, the pressure from the competition, and the threat of a merger into the "Great Steam Navigation Company" that begun in 1881, led, in 1883, to heavy investment in three more steamers (the *Theseus, Pelops*, and *Chios*) and in infrastructure for Neorion on Syros, in order to accommodate the new bigger ships. The cost of investment reached almost 6 million drachmas, which the company never managed to cover and which led to its financial ruin in 1893.[74] The tariff war, the threat of the merger, and the inadequate Greek institutional framework in shipping finance, still based on high interest maritime loans, proved disastrous for the survival of the company.[75] Britain had to rescue P&O and Cunard, the two passenger line giants in two circumstances, in 1867 and 1902 respectively.[76] In Greece the state had no intention of saving the Syros-based HSNC and in retaining its former status and privileges.

During the 36 years of its activity, the company not only fulfilled all the objectives and requirements given to it by the state, but also had a great impact

[*History of Greece in the Twentieth Century. The Beginnings 1900–1922*], ed. Christos Hadziiossif, vol. A1 (Athens: Vivliorama, 1999), 324–326.

73 Newspaper, Πανόπη, no. 1006, 22 February 1884, 1; no. 1029, 12 May 1884, 1; no. 1096, 9 January 1885, 2.

74 Newspaper, Ήλιος, no. 86, 20 March 1888, 1; no. 301, 12 June 1890, 2–3; Πανόπη, no. 1018, 4 April 1884, 1; no. 1029, 12 May 1884, 1.

75 Newspaper Ο Οικονομολόγος, no. 50, 22 March 1884, 1; Πανόπη, no. 1029, 12 May 1884, 1; Ήλιος, no. 86, 20 March 1888, 1.

76 Harcourt, *Flagships of Imperialism*, 3, 191–222; eadem, "British oceanic mail," 15.

FIGURE 14.3 Steamships under repair in the Arsenal of Syros, 1904
SOURCE: Ενθύμιον Σύρου [*SOUVENIR FROM SYROS*] (ATHENS: GNOSIS PUBLISHERS, 1993), 261

on the modernization of the country. It introduced and established passenger shipping, which unified a fragmented geographical territory, stimulated and facilitated transactions, shortened the distances, and contributed crucially to the political, economic, and cultural integration of the country. It also introduced industrial shipbuilding and marine engineering through the establishment of Neorion, where several engineers, artisans, and specialized workers trained and worked. After the collapse of the HSNC, several passenger steam navigation companies in Piraeus and Syros sprang up, but none of them—with the exception of the short-lived Oceanic Hellenic Steam Navigation Company and also Oceanic National Steam Navigation (1908–37) both from Andros—managed to reach the size and impact of the HSNC on Greek seaborne communications.[77] The Neorion shipyards at Syros, the first ship building establishment in Greece, and the only one that survives today despite its financial difficulties, stands as an unequivocal testimony to this legacy.

77 Anastasios I. Tzamtzis, "Τα ελληνικά υπερωκεάνια: Από την πρώτη υπερπόντια γραμμή το 1907, έως το τελευταίο ταξίδι του «Αυστραλίς», το 1977," [The Greek Ocean Liners. From the first line of 1907 to the last voyage of *Australis* in 1977] *Elzoni*, 28 March 2013, http://elzoni.gr/html/ent/674/ent.32674.asp (accessed 9 February 2021).

CHAPTER 15

Steamers for the Empire: Austrian Lloyd and the Transition from Sail to Steam in the Austrian Merchant Marine (1836–1914)

Matteo Barbano

1 Introduction

In the uneven framework of the transition from sail to steam, the Austrian Lloyd Steam Navigation Company represents an extremely interesting case. The particular founding premises of the company, as well as the close correlation between its rise and the affirmation of this new technology in the Austrian Empire, offer stimulating grounds to explore a peculiar path of development of steam shipping during the nineteenth century. On the one hand, the exclusive privileges provided by the state to the company created a unique growth environment, protecting Lloyd for a long time from much national competition and offering it strong advantages on the international scene. On the other hand, these political and economic advantages had evident effects in redefining the company's nature, which tended progressively to switch from a private enterprise to a proper extension of the Austrian Empire at sea. This full state commitment towards the success of a single steam navigation company ultimately affected the whole development of the Hapsburg merchant marine, making Lloyd the virtual sole actor in the empire's steam shipping until the end of the nineteenth century. Thus, studying Austrian Lloyd means observing the main dynamics which characterized the transition from sail to steam in the Hapsburg dominions.

Within this context we will attempt to describe the main traits of this development, providing an analysis based on three interdependent aspects that determined both the evolution pattern of Austrian Lloyd and its impact on Austrian steam shipping until the First World War. The first part will focus on the complex conjuncture of economic interests, entrepreneurship, and political needs that merged in the foundation of the company, generating specific premises that would eventually mark its evolution trajectories for the whole nineteenth century. Consequently, we will then turn our attention to the main changes that occurred in relations between Austrian Lloyd and the

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state, entangling a broad periodization of the core steps of Vienna's protectionist maritime policy with the shifts of power in the company's management. Finally, this primarily economic and political foreground will be contextualized in the framework of Austrian Lloyd's operations by analysing the developments of its shipping services and the company's fleet, and relating them with the general evolution of the Austrian merchant marine up to the beginning of the twentieth century.

2 The Origins of Austrian Lloyd

2.1 *The Triestine Interest*

The main protagonists in the foundation of the Austrian Lloyd Steam Navigation Company were the same actors that, some years before, had joined their interests in the common project of a maritime intelligence agency, created under the same name (*Prima Sezione del Lloyd Austriaco*).[1] They were a representative part of Trieste's multicultural economic elite,[2] that had long specialized and invested in the insurance sector,[3] while at the same time they were dynamic merchants of a *porto franco*.[4] This second feature determined their zest for the potential of steam navigation, which had already shown convincing performances in Adriatic waters. In 1818, John Allen, a naturalized citizen of Trieste of American origin, launched the locally-built steamer *Carolina*, employing it on a regular line between Trieste and Venice. Vienna supported the pioneering service by granting the entrepreneur the exclusive privilege to

1 This first section of the Austrian Lloyd was created in 1833, following the proposal of the representatives of four of the main insurance companies in Trieste: Karl Ludwig von Bruck (*Azienda Assicuratrice*), Angelo Gianichesi (*Adriatico Banco*), Giuseppe Padovani (*Amici Assicuratori*) and Luigi Pezzer (*Compagnia Levantina*). The purpose of the organization—originally inspired by the British Lloyd's—was to gather and offer to its members reliable information on traffic and navigation in the main European and Levantine ports. See Loredana Panariti, "Assicurazione e banca. Il sistema finanziario triestino (secc. XVIII–XIX)," in *Storia economica e sociale di Trieste,* vol. 2: *La città dei traffici* (*1719–1918*), eds. Roberto Finzi, Loredana Panariti, Giovanni Panjek (Trieste: LINT, 2003), 420–422.

2 See Anna Millo, "La formazione delle élites dirigenti," in *Storia economica e sociale di Trieste,* vol. 1: *La città dei gruppi* (*1719–1918*), eds. Roberto Finzi, Loredana Panariti, Giovanni Panjek (Trieste: LINT, 2001), 381–410. For a comprehensive picture of the multicultural landscape of Trieste between the eighteenth and the nineteenth centuries, see the section "I gruppi," in *Storia economica*, vol. 1, 441–612.

3 For a description of the Triestine insurance sector, see Panariti, "Assicurazioni e banca," 369–460.

4 For a detailed analysis of Trieste as a free-port between the eighteenth and the nineteenth centuries, see Giovanni Panjek, "Una 'commercial officina' fra le vie di mare e di terra," in *Storia economica*, vol. 2, 235–282.

carry passengers and goods on steamers on that line. Although Allen left the business just a year later, his partner William Morgan managed to get rewarding results from the enterprise.[5] Although this can be considered a rather small-scale example, since the second decade of the nineteenth century, the Austrian government had also begun to show a growing interest in the creation of an Austrian steam navigation company on the river Danube, which would eventually materialize with the foundation of the Danube Steamboat Shipping Company in 1829.[6]

Both the Adriatic and the Black Sea areas represented attractive economic targets for Trieste. The commercial interests of Trieste entrepreneurs, in the first quarter of the 1800s, were still strongly related to their traditional maritime traffic of the Adriatic, the Ionian Sea, the eastern Mediterranean and the Black Sea, that had developed since the eighteenth century.[7] Thus, the readiness of the Austrian government to support initiatives related to steam navigation on these routes[8] played a stimulating role in defining the proposal for the creation of an Austrian Lloyd Steam Navigation Company, presented for the first time in Trieste in October 1835.[9]

5 Giuseppe Stefani and Bruno Astori, *Il Lloyd Triestino. Contributo alla storia italiana della navigazione marittima* (Verona: A. Mondadori, 1938), 44–55.

6 The Danube Steamboat Shipping Company started its activity in 1830 but radically implemented it only in 1835, after the Ottoman Empire yielded to Russian pressure to implement river navigation on the Danube. See Miroslav Šedivýý, "From hostility to cooperation? Austria, Russia and the Danubian principalities 1829–40", *The Slavonic and East European Review*, no. 89.4 (October 2011): 630–661; 644–650, available at: https://doi.org/10.5699/slaveasteurorev2.89.4.0630. For a detailed analysis of steam navigation on the Danube and the role played by Austria, see Constantin Ardeleanu, *International Trade and Diplomacy at the Lower Danube. The Sulina Question and the Economic Premises of the Crimean War (1829–1853)* (Brăila: Editura Istros, 2014), 17–49.

7 According to the data provided by G. Panjek, in the three years between 1827 and 1829 the average yearly value of the goods entering and leaving Trieste by sea from, or to, the Ottoman Empire, the Black Sea, and Egypt constituted 17.3% of the total value of the goods mobilized in the Austrian port; the Austrian Littoral, the Ionian Islands and the Dalmatian coast constituted 9%. See Panjek, "Una 'commercial officina'", 286–287.

8 In July 1835, three representatives of Austrian Lloyd, during their stay in Vienna, obtained from the Prince of Metternich, the Minister of the Interior, Franz Anton von Kolowrat, and the President of the Chamber of Finance, Peter Joseph von Eichhoff, the informal approval for the creation of the steamship company; they consequently submitted a petition to the Emperor on the matter. See Ronald E. Coons, *I primi anni del Lloyd Austriaco. Politica di governo a Vienna ed iniziative imprenditoriali a Trieste* (translated by Virgilio Giormani, Paola Giormani) (Bologna: Del Bianco, 1982), 49.

9 For an overview on the Triestine insurer-merchants' involvement in the foundation of Austrian Lloyd, see Ugo Cova, *Commercio e navigazione a Trieste e nella monarchia asburgica da Maria Teresa al 1915* (Verona: Del Bianco, 1992), 151–162.

2.2 *The Core of the Starting Capital: Salomon Rothschild*

When, in 1836, Austrian Lloyd (*Seconda Sezione del Lloyd Austriaco*) was eventually established, it was organized as a joint stock company.[10] While this form of business entity was still uncommon in the Austrian Empire, Trieste was already versed in it, since most of the prosperous insurance companies of the city had formerly adopted this shareholding structure in their own organizations.[11] Nevertheless, the chronic lack of capital that characterized Trieste's economic landscape[12] would never enable local entrepreneurs to engage in an expensive venture such as the creation of a steam navigation company. Moreover, the few private banks existing in the port from the second decade of the nineteenth century, were not powerful enough to support the project, as they were mostly devoted to providing limited commercial credit to the city's maritime merchants.

Yet, even the wider banking sector of the Habsburg state offered restricted possibilities for access to credit for private enterprises. The main bank of the empire, the Austrian Bank, founded just twenty years earlier, provided its services almost exclusively to the government and to a small group of selected banking houses.[13] The latter, in their turn, granted little credit to the private sector, as they were primarily involved in speculations on the state's public debt.[14]

The solution that ultimately allowed Austrian Lloyd to raise the necessary capital established by its first statute—1,000,000 florins, in 1,000 shares of 1,000 florins each[15]—was the extensive support of Salomon Mayer von Rothschild, who personally acquired 600 shares.[16] The reasons why Rothschild decided to

10 Although the name may suggest otherwise, the Austrian Lloyd Steam Navigation Company was legally established as an autonomous company, formally separated from the maritime intelligence agency created in 1833. In this contribution, unless otherwise specified, the denomination "Austrian Lloyd" always refers to the steam navigation company.

11 Coons, *I primi anni del Lloyd Austriaco*, 54.

12 During the eighteenth and first half of nineteenth century, in Trieste, the credit for local investments was largely provided by real estate properties, used as collaterals for transactions. This is one of the main reasons that explain the lack of available monetary capital. For a view on Trieste's financial system between the eighteenth and nineteenth century, see Panariti, "Assicurazione e banca".

13 See Richard R. Rudolph, *Banking and Industrialization in Austria Hungary. The Role of Banks in the Industrialization of the Czech Crownlands, 1873–1914* (New York: Cambridge University Press, 2008), 68.

14 Panariti, "Assicurazione e banca", 409.

15 *Statuti della Seconda Sezione del Lloyd Austriaco*, 1836, *Archivio storico del Lloyd Austriaco* (hereafter *ASLT*) 4138.

16 Other branches of Rothschild's family were involved in the venture: for example, the first two steamships ordered in Britain by the company were built with the

support Austrian Lloyd so generously can be explained by the different levels of interest, and the different connections he had with Trieste, the Austrian state, and with the emerging steam-driven technology.

Firstly, the local credit institute Morpurgo-Parente in the Adriatic port, established in 1834, had strong relations with the Viennese branch of the Rothschild family: one of its founders, Marco Parente, had been Rothschild's agent in Trieste since the beginning of the century.[17] As Parente was among the main founders of Austrian Lloyd, he probably had an important role in attracting Rothschild's capital to the venture. Secondly, a possibly greater attraction was represented by the investment in the relatively new steam technology, an entrepreneurial risk Salomon Rothschild was already motivated to undertake, considering his leading role in the construction of the Austrian Nordbahn railway since 1830.[18] Projects like Nordbahn and Austrian Lloyd, with their implicit public interest, represented both a potentially remunerative short-term investment[19] and a rather familiar way to protect and extend his interests connected with the state, as it would be clearly evident from the very first period of activity of the steam navigation company.

2.3 *The State's Expectations*

For the Austrian government, the establishment of a regular steam navigation service in the eastern Mediterranean represented an important political issue.[20] As early as 1721, Austria was the first foreign power to obtain from the Ottomans the right to establish a regular postal service between the imperial embassy in Istanbul and Vienna. This first basic service, almost entirely unchallenged by other foreign competitors, gradually evolved and branched out during the eighteenth century, becoming the favourite channel for mail entering and going outside the Ottoman Empire. The nearly unrivalled supremacy of the Austrian post service, however, risked to come to an end at the first third of

collaboration of Nathan Mayer Rothschild of London (*Protocollo di Sessione del Consiglio di Amministrazione della Società di navigazione a vapore* (hereafter *PCA*) no. 1, 16 June 1836, *ASLT* 4138).

17 See Miguel A. Lopez-Morell, *The House of Rothschild in Spain, 1812–1941* (Farnham: Ashgate, 2013), 348–350.

18 See Niall Ferguson, *The House of Rothschild: Money's Prophets 1798–1848* (New York: Penguin, 1999), 358–362.

19 For the first 1,000 shares, the company pledged to pay 5% of interest yearly (*PCA* no. 17, September 27, 1836, *ALTS* 4138).

20 On the importance of the post service for European powers between the eighteenth and the mid-nineteenth century, see Daniel R. Headrik, *When Information Came of Age: Technologies of Knowledge in the Age of Reason and Revolution, 1700–1850* (New York: Oxford University Press, 2000), 182–189.

the following century, when France, Great Britain, and the newly-born Greek Kingdom obtained similar concessions on Ottoman lands.[21] The French case was particularly alarming for Vienna: in 1835, the French Parliament was discussing a project for the creation of a steam navigation company devoted to a mail service with the Levant. The plan, which would eventually have materialized two years later with the opening of two connected regular lines between Marseilles-Istanbul and Piraeus-Alexandria, was a state initiative and, as such, fully supported by state capital.[22]

In the Austrian case, the conjuncture generated by entrepreneurial dynamism in Trieste and the availability of the conspicuous capital investment provided by Rothschild, drove the state onto a different path. In 1837, the *Hofkammer* finalized a contract with Austrian Lloyd providing rates to be paid by the state for every mail carried by the company to and from the ports of the Ionian Sea, the Greek Kingdom, the Ottoman Empire, and Egypt.[23] In this way, the state hoped to strengthen its influence in the Levant without fully bearing the onerous costs of maintaining a steam fleet that, in the thinking of Vienna, would have been mostly covered by commercial gains in a traditionally profitable area.

However, this rather optimistic view was not entirely shared by the circle of Triestine entrepreneurs, who probably expected, on the contrary, to earn significant profits from the postal contract.[24]

3 Relations with the Austrian State

3.1 *The Discreet Presence of Vienna, 1837–55*

An analysis of the economic and political assumptions that accompanied the foundation of the Austrian Lloyd reveals the salient characteristics that would

21 See Stanford J. Shaw and Ezel K. Shaw, *History of the Ottoman Empire and Modern Turkey,* vol. 2: *Reform, Revolution and Republic: The Rise of Modern Turkey, 1808–1975* (Cambridge: Cambridge University Press, 2002), 229.

22 Marie-Françoise Berneron-Couvenhes, *Les Messageries Maritimes. L'essor d'une grande compagnie de navigation française, 1851–1894* (Paris: PUPS, 2007), 43–50.

23 *PCA* no. 59, 21 June 1837, *ASLT* 4138.

24 While discussing these first agreements with the government, by November 1836 the board of directors of the company observed that "being limited by a small amount of freights on goods, and a circumscribed amount of passengers, our main source of gain must be granted by the transport of mail" (*PCA* no. 23, 16 November 1836, *ASLT* 4138). For an overview on the limits of steamers in this period, see Daniel Headrick, *The Tentacles of Progress. Technology Transfer in the Age of Imperialism, 1850–1940* (New York: Oxford University Press, 1988), 23–25.

determine the future development of the company. We will now attempt to provide, in a broad overview, some pivotal landmarks to define the two main phases that characterized the relations between Austrian Lloyd and the state.

By taking the decision not to be directly involved in the management of a maritime postal service in the eastern Mediterranean, the Austrian government tied its political interests to a private enterprise. Vienna was then inevitably forced to back its development, albeit not granting, at least at the beginning, any direct financial support.

For this reason, since 1837, state concessions came through indirect but important advantages, such as granting the company a monopoly on the Trieste-Venice line.[25] Also, Austrian Lloyd's steamers enjoyed the same fiscal privileges as the Austrian imperial navy, and followed the same quarantine procedures for company's ships coming from the Levant.[26] If these special favours already placed Austrian Lloyd in a very privileged position compared to other private enterprises, the confirmation of its peculiar status came in 1838–39, when it was hit by an early financial crisis.[27] On this occasion, Vienna accepted to subscribe as guarantor of a loan of 500,000 florins offered by Salomon Rothschild to Austrian Lloyd,[28] thus tying the state economic interests with the company's survival.

These privileges, together with progressive improvements in the conditions of postal contracts[29] and with several other loans obtained through the involvement of the state, kept the company sheltered from both local and international competition. A tangible outcome of the concessions for the postal service was the increasing amount of mail carried by the company: during the first nineteen years of activity it underwent a spectacular growth, going

25 It was an extension of the contract originally granted to Allen and Morgan, and acquired by Austrian Lloyd at its foundation, in 1836. Later additions granted other privileges, such as the exclusive transport of tax money from Venice to Trieste on company steamers. See: *Congresso Generale della Società di navigazione a vapore del Lloyd Austriaco* (hereafter *CGLA*), 1840, *ASLT* 4288.

26 See *CGLA*, 1839, *ASLT* 4288. For an analysis on the complex debates that led the government to grant these privileges see Coons, *I primi anni del Lloyd Austriaco*, 88–97.

27 Ibid., 97–99.

28 *CGLA*, 1839, *ASLT* 4288. For more details on the operation, see Coons, *I primi anni del Lloyd Austriaco*, 113–116. The loan was similar to the one Rothschild granted to the Nordbahn railway in the same period. See Ferguson, *The House of Rothschild*, 361–362.

29 In 1840, Austrian Lloyd subscribed a contract for the transport of mail between Trieste, Venice, the Dalmatian coast, and Ancona, granting its ships the formal status of Austrian postal steamers. See *La Società di Navigazione a Vapore del Lloyd Austro-Ungarico dalla sua fondazione fino ai giorni nostri, 1836–1886* (Trieste: Tipografia del Lloyd Austriaco, 1886), 12. The renewal of the postal contract with Vienna, in 1845, granted the company the entire earnings from the transport of mail (*CGLA*, 1846, *ASLT* 4288).

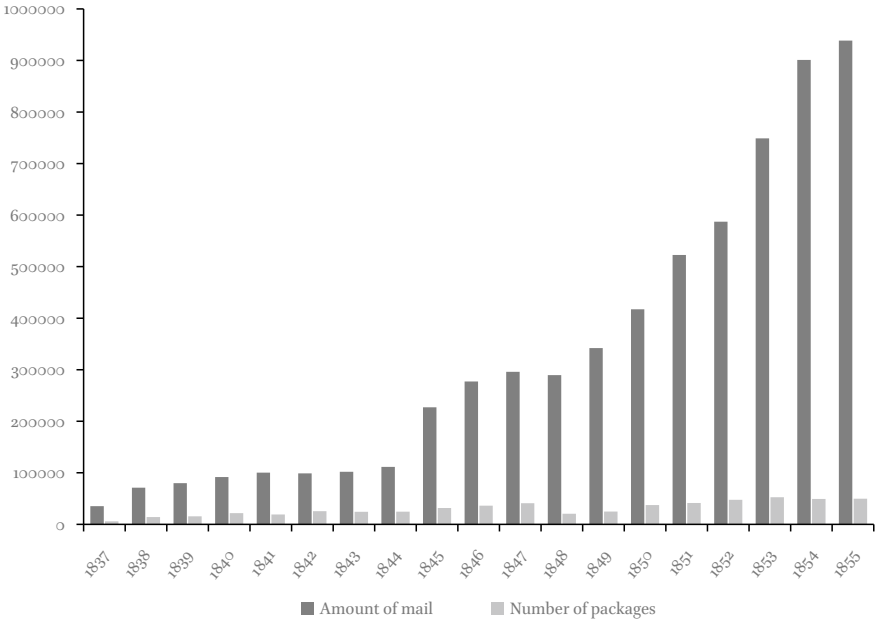


CHART 15.1 Mail traffic by Austrian Lloyd, 1837–1855
SOURCE: CONGRESSO GENERALE DELLA SOCIETÀ DI NAVIGAZIONE A VAPORE DEL LLOYD AUSTRIACO (HEREAFTER CGLA), YEARS 1837–1855, ARCHIVIO STORICO DEL LLOYD AUSTRIACO (HEREAFTER ASLT)

from 35,205 letters in 1837 to 938,623 in 1855 (see Chart 15.1); in the same period, postal packages similarly increased from 5,787 to 49,787. While enlarging their services, Austrian Lloyd's executives in Trieste were able to retain extensive independence in the management of the company's affairs, maintaining their entrepreneurial initiative despite the veiled presence of Vienna.[30] The advantages provided to Austrian Lloyd that contributed to its maritime expansion laid on the autonomous synergy between the board of directors' decision-making and the relatively unobstructed support of the government. The overall positive results of this first period of operations is clearly depicted in the balance sheets. During the period between 1840 and 1844 the company's net profit registered a slight growth, that significantly improved after the beginning of activities on the Danube and the Black Sea in 1845 (see Chart 15.2).

30 See Coons, *I primi anni del Lloyd Austriaco*, 211.

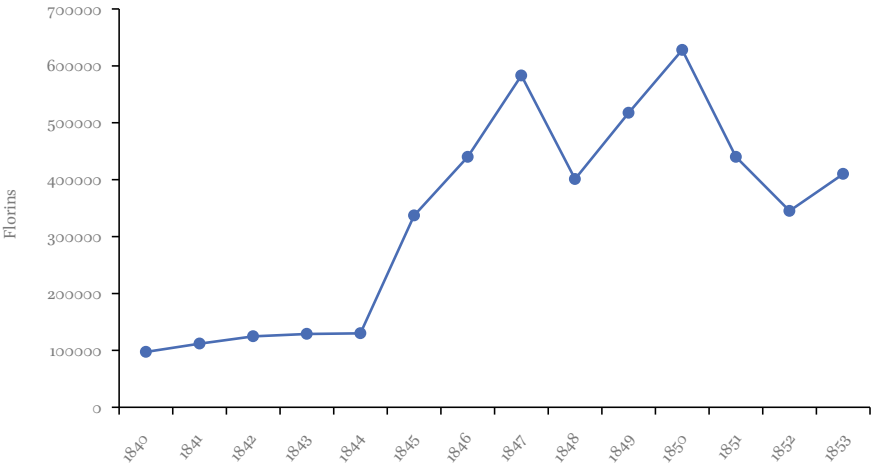


CHART 15.2 Austrian Lloyd's annual net profit, 1840–1853
SOURCE: CGLA, YEARS 1840–1853, ASLT

3.2 *A State-Subsidized Company, 1855–1918*

The middle of the nineteenth century was a crucial time in the development of relations between steam navigation companies involved in subsidized postal services and their respective governments. Evidence of the high costs of the new technology persuaded most of the European powers that postal services by steamers were too difficult to maintain, if unsupported by both state intervention and commercial capital. This had been, for example, the case with Austria's old major rival in the Levant: France. Paris' original plan of 1835 had proved a failure, mostly due to the lack of investments and the inadequacy of its steamers, that were built more as warships than merchant ships.[31] However,

31 In 1851, the French government finally resolved to create the *Compagnie de Messageries Nationales*, a *societé anonyme* that took over French mail carrying in the Mediterranean, receiving in return fixed state subsidies for each regular line covered. This path, already tried by the British, who in the 1850s were supporting several companies in the same way, would be followed by other powers, such as Russia, with the Russian Steam Navigation and Trading Company (1857), and Spain, with the *Compañía transatlántica Española* (1861). On the *Compagnie de Messageries Nationales*, see Couvenhes, *Les Messageries Maritimes*; on British companies, see Grosvenor M. Jones, *Government Aid to Merchant Shipping*, 53–55; on the Russian Steam Navigation and Trading Company, see Sergey I. Illovaiskiy, Исторический очерк пятидесятилетия Русского Общества Пароходства и Торговли [*History essay on the Russian Steam Navigation and Trading Company: 1857–1907*] (Odessa: Tipographia Aktsionernogo Yuzhno-Russkogo Obshchestva Pechatnogo Dela, 1907), 30; on the *Compañía Transatlántica Española* see Jones, *Government Aid to Merchant Shipping*, 193–194.

even the solution adopted by the Austrian Empire was not optimal; despite the results achieved in the first years of activity, the involvement of Vienna would ultimately prove too limited to guarantee long-term economic stability for Austrian Lloyd.

The year 1854 finally brought the problems to light. While the company was going through a period of expansion, it had to suddenly face the effects of the outbreak of the Crimean War. The rise of the cost of coal[32] and the interruption of the Danube routes caused a deficit of 949,405 florins, driving the board of directors to demand, for the first time, direct financial support from Vienna.[33] The result of the request was the new postal contract of 1855, that introduced, also for the first time, a subsidy for specific shipping lines.

According to the executives' view, this would be just a transient phase; once they had recovered from the crisis, Austrian Lloyd would eventually be able to rely again "only on its own strength".[34] In fact, this agreement inaugurated a second, long period in the history of the company, that saw the private Trieste-based entrepreneurial initiative gradually fade, in favour of increasingly centralized control by Vienna over the management of Austrian Lloyd.

From 1858 on, an annual subsidy was determined by a fixed rate of florins per league on a fixed number of voyages at a certain speed, defined by the government on an average ten-year basis. In addition, since 1871, the state agreed to refund the duties paid for the passage of the Suez Canal for steamers under postal contract.[35] The subsequent dependence for the company's development on the direct participation of the Austrian state is evident when observing the net profits earned by Austrian Lloyd in the period 1856–1914, together with the state subsidies received in the same period (Table 15.1). However, at first glance, the direct involvement of the Austrian state seems much inferior than that of many other European powers similarly engaged in supporting private steam navigation companies. For instance, in 1885, the subsidy per mile granted by the Italian Kingdom to the *Società Generale Italiana* was 93% higher than that of Austrian Lloyd's; the one granted by the French government to *Messageries*

32 The general expenses for navigation, including coal, dramatically rose from 2,777,517 florins in 1853 to 5,285,320 florins in 1854. Although this increase was partially due to the addition of thirteen new steamers in the fleet, in the words of the board of directors, it was largely caused by the increase in freight rates for the transport of coal in the Mediterranean. The Danube line marked a loss of 1,247,472 florins from the previous year. See *CGLA*, 1855, *ASLT* 4209.

33 The Trieste executives were aware that the war was just a passing issue, but they recognized that stronger intervention by the state was a necessary condition for the company to survive the new international competition. See *CGLA*, 1855, *ASLT* 4209.

34 *CGLA*, 1855, *ASLT* 4209.

35 *CGLA*, 1872, *ASLT* 4229.

Maritimes was 275% above Vienna's allowance.[36] Nevertheless, it is necessary to consider that the privileges obtained by the company in the first 30 years of activity partially counterbalanced the comparatively limited subsidies.[37]

In this framework of growing economic dependence on the state, it is relevant to observe how a deep political change, such as the creation of the dual monarchy of Austria-Hungary in 1867, radically affected the subsidy policy toward the Lloyd. The separation of the Hapsburg Empire into two political entities under the same monarch generated sharp conflicts between Vienna and the Hungarian parliament concerning the economic support to be given to Austrian Lloyd (Austrian-Hungarian Lloyd from 1867 to 1891), triggered by the minimal interest of the Hungarians in supporting what they perceived as a pre-eminently Austrian tool of power. The situation caused several delays in the renewal of the company's postal contracts that were eventually stipulated separately, according to the specific needs of the two parts of the empire.[38] A solution was finally found in 1891, when the company passed under the exclusive authority of the Cisleithanian[39] government, and Budapest diverted its subsidies to the Adria Steam Navigation Company, based in the Hungarian port of Fiume.[40]

Direct state intervention brought further limitations to Austrian Lloyds' management. Regarding maritime operations, the above-mentioned delays of new contracts added to a general tendency by the government to tighten its control on the company's affairs. One of the apogees of this trend was the contract of 1891, that required the approval of the Ministry of Commerce for alterations to the company's freight rates, and the mandatory purchase of a significant proportion of Austrian coal for the steamers.[41] By that time, even the shareholders' revenues had long been partially subordinated to the ultimate decisions of the government: as early as 1865, Vienna had to be consulted

36 See Giovanni A. Di Demetrio, *Studi comparativi sul Lloyd Austro-Ungarico* (Trieste: Tipografia del Lloyd Austro-Ungarico, 1886), 22.

37 For an overview of the policies adopted by different governments during the nineteenth and the early twentieth century in support of navigation, see Jones, *Government Aid to Merchant Shipping*, 9–26.

38 The absence of a Hungarian contribution to the Austrian-Hungarian Lloyd is reflected in the diminishment of the Austrian subsidies in the period 1870–90 in Table 15.1.

39 After the creation of the Dual Monarchy, Cisleithania was the common denotation of the northern and western part of the empire, with Vienna as capital.

40 Astori and Stefani, *Il Lloyd Triestino*, 368–370.

41 The mandatory purchase of coal from national mines was not a novelty for Lloyd; already in 1877 in Trieste there raged a debate regarding the evident lack of convenience of Austrian-Hungarian coal over English coal. See, for example, "L'importazione dei carboni e le esigenze del governo," *L'Indipendente*, 15 June 1877.

before granting the annual dividends.[42] But one of the fields where the state's presence proved most evident was the company's administration. From 1865, two of the seven members of the board of directors had to be elected among the shareholders residing outside Trieste, and the president of the company had to be subject to government approval.[43] In 1878, Vienna obtained a direct choice over two members of the Board;[44] in 1891, the appointment of the president became an imperial prerogative.[45] Finally, from 1907, the yearly shareholders' general assembly was moved from Trieste to the empire's capital.[46]

This progressive loss of influence by the Trieste establishment over the company coincided with a broader decline of the city's elite in its leading entrepreneurial role. The main reason for this development is related to the economic transformation of the Adriatic city from a commercial port to a transit port, and the consequent reduction of Trieste's traditional role as a maritime emporium. This was the result of a complex conjuncture of economic factors, such as the new commercial needs of the influential industrial capitalists of the inner regions of the empire, and the infrastructural development of both internal and international railway connections. This shift in economic dominance towards these rising industrial elites, gradually restricted the opportunities of the local merchant-insurers of Trieste, giving way to new leading economic and financial actors supported by the state.[47]

The effects of these changes were already visible in Austrian Lloyd's executives since 1865, when a member of the board of directors, appointed in compliance with imperial requests, was Leopold von Wertheimstein, Rothschild's agent involved in the creation of the *K. k. priv. Österreichische Credit-Anstalt für Handel und Gewerbe* (Imperial Royal Privileged Austrian Credit Institute for Commerce and Industry), founded in 1855.[48] Predictably enough, the

42 Astori and Stefani, *Il Lloyd Triestino*, 240.

43 Ibid., 242.

44 Ibid., 352.

45 Ibid., 392.

46 Dieter Winkler and Georg Pawlik, *Die Dampfschiffahrtsgesellschaft Österreichischer Lloyd, 1836–1918* (Graz: H. Weishaupt Verlag, 1986), 38–39.

47 See Nereo Salvi, "La crisi di trasformazione dell'emporio di Trieste in porto di transito (1856–1865)," in *La crisi dell'Impero austriaco dopo Villafranca*, ed. Istituto per la storia del Risorgimento italiano, Comitato di Trieste e Gorizia (Trieste: Monciatti, 1961), 201–265; Daniele Andreozzi, "La Filadelfia d'Europa e il suo porto. Crescita, poteri e miti a Trieste," in *VisibileInvisibile: percepire la città tra descrizioni e omissioni. VI Congresso AISU*, eds. Salvatore Adorno, Giovanni Cristina, and Arianna Rotondo (Catania: Scrimm Edizioni, 2014), 1052–1055.

48 *CGLA*, 1866, *ASLT* 4222. For Leopold von Wertheimstein, see Barbara Staudinger, *Salon Austria. Die großen Köpfe österreichisch-jüdischer Kultur* (Wien: Metroverlag, 2014), 39–41.

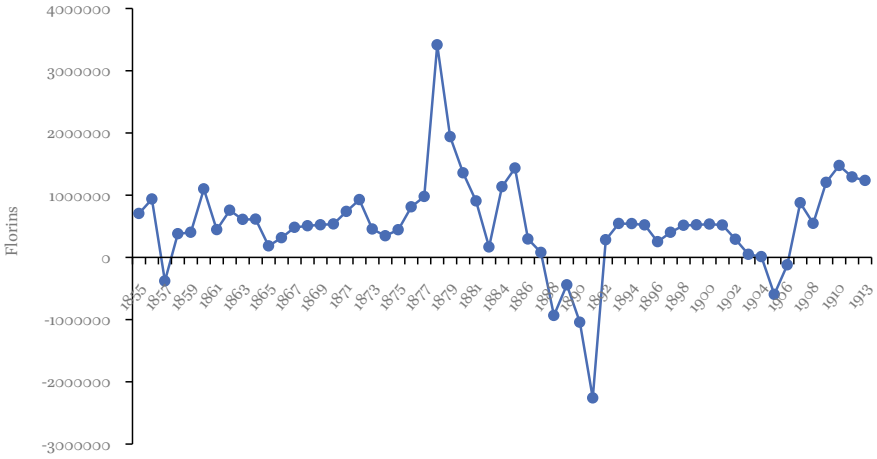


CHART 15.3 Austrian Lloyd's annual net profit, 1855–1913
SOURCE: CGLA, YEARS 1855–1913, ASLT

managerial changes occurring in this period of transformation were combined with the growing presence of private Austrian credit institutions, even among the company's shareholders. A significant example is the Union Bank, that played an important role in the recapitalization of Austrian Lloyd in 1905, and in 1906 had one of its managers elected to the company's board of directors. The bank was, at the same time, a powerful provider of credit for Austrian industry, and the owner of sugar refineries that, by the beginning of the twentieth century, represented one of the strongest Austrian exporters.[49] Thus, the case of the Union Bank summarizes several relevant factors that were at the root of the changes that took place within Austrian Lloyd during the last decades before the First World War.

The effects of the state's economic involvement in Lloyd's fortunes can be seen in the company's balance sheets. According to the figures provided in the annual shareholders' meetings between 1856 and 1914, this period was characterised by a low growth trend,[50] that went through two moments of major crisis between 1886 and 1891, and 1901–1906 (Chart 15.3), when substantial capital was absorbed by the expansion of the fleet (cf. Chart 15.8). Although both crises could have theoretically endangered the very existence of the company, they did not mark the end of Austrian Lloyd, in fact they both generated a

49 Rudolph, *Banking and Industrialization*, 256 (note 21).

50 The only exception are the years between 1878 and 1880, when Lloyd earned exceptional income transporting Austrian troops destined for Bosnia-Herzegovina and numerous Circassian forced migrants from Constantinople to the Anatolian and Syrian coasts.

TABLE 15.1 Average annual net profits (including state subsidies) and state subsidies, 1855–1910

Period	Average annual net profit (florins)	Average annual State subsidies (florins)
1855–60	523,528	1,420,588
1861–65	520,937	2,011,070
1866–70	472,423	1,995,906
1871–75	581,487	1,912,000
1876–80	1,699,772	1,782,016
1881–85	909,808	1,737,022
1886–90	−409,230	1,807,523
1891–95	−74,819	3,125,059
1896–1900	444,483	3,597,259
1901–1905	54,559	4,123,904
1906–1910	796,501	5,117,819

SOURCE: *CGLA*, YEARS 1855–1910, *ASLT*; COMPANY'S BALANCE SHEETS, YEARS 1887–1910

stronger state response, through an increase in subsidies (see Table 15.1) that allowed Austrian Lloyd to survive, but not to prosper.

This condition represents well the accomplishment of a transformation that began in 1855. The progressive participation of Vienna ultimately reshaped the company as an extension of the Austrian state at sea, subordinating its success to the political and economic priorities of the whole empire.

4 Services and Fleet

4.1 *The Regular Lines*

Even before 1855, most of Austrian Lloyd's maritime activities were carried out on regular lines. The very first contract with the state, in 1837, required it to make two monthly voyages between Trieste, Constantinople, and Alexandria, calling at Corfu, Patras, Piraeus, Syros, Smyrna, and Crete. However, this request was shaped by the original plans of the founders, who had planned to offer scheduled services both in the Adriatic Sea and in the Levant. These were, then, the two first axes in the company's line evolution. In the Adriatic, the old Venetian line, originally ran by Allen and Morgan and acquired in 1836 by Lloyd, was immediately joined by a second to Kotor, which would later expand into the

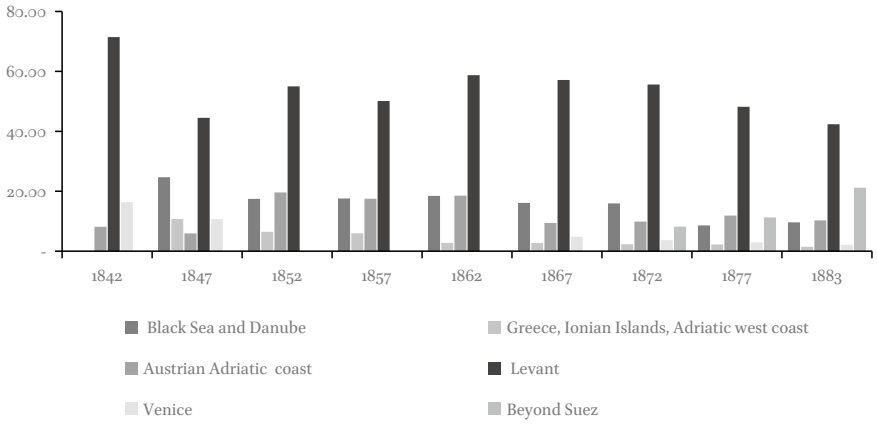


CHART 15.4 Percentage distribution of the yearly regular navigation income of Austrian Lloyd by geographical area, 1842–1883
SOURCE: CGLA, YEARS 1842, 1847, 1852, 1857, 1862, 1867, 1872, 1877, 1883, ASLT. NB: THE GEOGRAPHICAL AREAS ARE MOSTLY PRESENTED ACCORDINGLY TO THE SUBDIVISION ORIGINALLY PROPOSED BY THE COMPANY IN THE YEARLY REPORTS TO ITS SHAREHOLDERS. HOWEVER, SOME MINOR CHANGES HAVE BEEN MADE IN ORDER TO STANDARDIZE THEM AND TO OFFER A CLEARER GENERAL PICTURE

Dalmatian-Albanian line. In the Levant, Constantinople and Syros quickly become the pivots of the company's regular connections: from the Ottoman capital there branched the secondary lines for the Anatolian coast, Syria, and Egypt, while Syros gained a primary role in the network of shipping lines linking mainland Greece, Crete and, more directly, Alexandria. With the acquisition of the Danube Steamboat Shipping Company in 1845, even the Black Sea opened up to Austrian Lloyd; at least since 1855, their steamers regularly called as far as Varna and Trabzon.[51]

In order to have an overview of the most relevant factors on income in this first period of the company's activity, we can compare the figures in Chart 15.4 with the those of Table 15.2, providing the percentages of goods, passengers, and specie transported by Austrian Lloyd in the different geographical areas in the years 1842, 1847 and 1852. The Levant was by far the main operational area for the company; it held the record on the transport of goods and specie, while

51 For a detailed description of the lines in the Levant and in the Black Sea, see Umberto Del Bianco, *Il Lloyd Austriaco e gli annulli marittimi dell'Austria-Ungheria.* vol. 2: *Le linee del Levante, l'attività postale sul Danubio e le rotte tra la Turchia e l'Austria* (Milano: Sorani Editore, 1978), 295–419.

MAP 15.1 The Austrian Lloyd's regular lines in 1844
SOURCE: TRIESTE, CIVICO MUSEO DEL MARE

competing with the Venetian line for passenger traffic. Since 1845, goods transported on the Black Sea and Danube lines constituted a significant addition to Austrian Lloyd's activities.

In this pre-subsidized period, the remarkable privileges granted by the government, in exchange for comparatively limited obligations, allowed the company to independently pursue its expansion strategies and modify its services according to commercial opportunities. Nevertheless, the boundaries of this autonomous growth were defined by the limits of the company's own capital; in 1845, Austrian Lloyd managed to counterbalance the expensive effects of the Danubian takeover only thanks to a generous loan granted by the Austrian treasury.[52] In 1852, the brief opening of a river shipping line on the Po and a lake shipping line on Lago Maggiore,[53] were equally financed by external credit.[54]

52 Astori and Stefani, *Il Lloyd Triestino*, 118.
53 *La società di navigazione del Lloyd Austro-Ungarico*, 31.
54 Coons, *I primi anni del Lloyd Austriaco*, 205.

TABLE 15.2 Percentages of the distribution of Austrian Lloyd's traffic in the years 1842, 1847, and 1852

Year	Area	Goods	Passengers	Specie
1842	Levant	78	41	43
	Venice	16	43	47
	Austrian Adriatic	5	9	5
	Other	1	7	5
1847	Levant	40	21	36
	Venice	5	22	29
	Austrian Adriatic	2	21	7
	Black Sea	46	14	19
	Other	7	22	7
1852	Levant	44	20	36
	Venice	10	25	28
	Austrian Adriatic	4	29	15
	Black Sea	35	10	11
	Other	7	16	10

SOURCE: *CGLA*, YEARS 1842, 1847, 1852, *ASLT*

In this context, as previously noted, the end of the 1850s represents an important turning point in the evolution of both the port of Trieste and Lloyd itself. In 1857, the Südbahn railway finally reached the city, connecting it to its hinterland up to Vienna.[55] This development overlapped with the beginning of direct state intervention over the company. From that moment onwards, the dependence of Austrian Lloyd on imperial subsidies drove the major developments on the company's regular lines.

While the postal contract of 1855 only forced Lloyd to keep the lines already open, the reorganization of the subsidy terms, in 1858, brought stricter bounds. The agreement signed with the government imposed Lloyd to run 25 regular lines, granting subsidies for a total of 518 voyages to the western Adriatic,

55 For an overview on Trieste and its railways connections up to the First World War, see Giacomo Borruso, Giuseppe Borruso, and Cristina Bradaschia, "Le infrastrutture di trasporto terreste a sostegno dei traffici portuali triestini," in *Storia economica e sociale di Trieste*, vol. 2, 775–800.

Greece, Egypt, the rest of Ottoman Empire's Mediterranean coasts, and the Black Sea, while asking the company to perform another 1,601 voyages at its own expense in Austrian waters.[56] One of the main outcomes of these requests was the opening of two fast lines dedicated to passengers for Constantinople and Alexandria, and the establishment of a slower regular service in the Levant for the transport of goods on a new Greek-Oriental line. Similar conditions, renewed in 1865, did not cause major changes to this structure.

Meanwhile, Lloyd's board of directors was discussing the opportunities that the imminent opening of the Suez Canal would offer the company. Nevertheless, a prompt initiative in this direction was hampered by the advent of the Dual Monarchy in 1867, that delayed state support for the new Indian lines, thus forcing Austrian Lloyd to open, without any support, an early connection with Bombay. Only in 1872 was the company finally granted a contract that allowed the inauguration of a regular monthly line to the Indian port, with a subsidy of 190,000 florins and a refund on duties for the Suez Canal.[57] Chart 15.4 indicates that during the first ten years after the opening of the Asian ocean lines, the operations beyond Suez gradually gained importance, representing 23% of the company's income by 1883. This matched with the increase of goods transported by Lloyd beyond the Canal: between 1872 and 1883 the percentage of the company's total traffic rose from 5% to 13% (see Table 15.3).

The slow but tangible growth of influence in Asia by Austrian commerce corresponded with a similarly slow expansion of the lines.[58] In 1877, services were regularly extended from Bombay to Ceylon, Calcutta, and Singapore; in 1880–81 to Hong-Kong and Shanghai. Although these achievements in the East appear belated compared to those of other major international competitors, such as *Messageries Maritimes* or the Peninsular and Oriental Company, they need to be seen alongside the different political and economic interests that France and Great Britain had in Asia. Both these European powers were developing their Asian colonial possessions; this, in turn, granted French and British steam navigation companies a definite flow of traffic on their regular lines. The case of Austrian Lloyd was rather different; at the opening of Suez, Austria had no direct commercial relations with Asia,[59] and certainly no colonies.

56 Astori and Stefani, *Il Lloyd Triestino*, 240–241.

57 Ibid., 345–346.

58 For a general view of Austrian commercial relations with Asia, see Fulvio Babudieri, *Trieste e gli interessi austriaci in Asia nei secoli XVII e XIX* (Padova: CEDAM, 1966); Giovanni Bussolin, *Della Imperiale Privilegiata Compagnia Orientale del secolo scorso e del Lloyd austro-ungarico nel secolo presente* (Trieste: Tipografia del Lloyd Austro-Ungarico, 1882).

59 In the middle of the nineteenth century, imports and exports from and to Asia were still completely absent in Trieste. See Panjek, "Una 'commercial officina'", 287–289.

TABLE 15.3 Percentages of the distribution of Austrian Lloyd's traffic in the years 1872, 1877, and 1882

Year	Area	Goods	Passengers	Specie
1872	Levant	45	31	45
	Venice	8	8	6
	Austrian-Hungarian Adriatic	11	41	29
	Black Sea	26	14	16
	Red Sea, India	5	4	0
	Other	5	1	4
1877	Levant	45	33	50
	Venice	8	5	3
	Austrian-Hungarian Adriatic	12	39	35
	Black Sea	16	11	7
	Red Sea, India	8	4	2
	Other	11	2	3
1883	Levant	43	32	39
	Venice	5	5	2
	Austrian-Hungarian Adriatic	12	35	48
	Black Sea	17	14	6
	Red Sea, India, China	13	7	2
	Other	10	7	3

SOURCE: *CGLA*, YEARS 1872, 1877, 1882, *ASLT*

The beginning of the 1880s was marked by Lloyd's attempts to regularly connect with the American continent, resulting in the establishment of a Brazilian line in 1882. This was the only western line kept by the company after 1891, when new agreements between Austria and Hungary assigned to Austrian Lloyd only the services for the eastern Mediterranean and Asia; the regular maritime voyages going west—both the Mediterranean and America—were almost totally assigned to the Hungarian company Adria.[60]

60 The connections with Brazil were kept by both companies alternately. See Astori and Stefani, *Il Lloyd Triestino*, 369. On the Hungarian company Adria, see Pelles Márton and Zsigmond Gábor, *A fiumei magyar kereskedelmi tengerészet története (1868–1918)/ The Hungarian Maritime Trade History of Fiume (1868–1918)* (Pécs: Pro Pannonia Kiadói Alapítvány, 2018), 86–119.

TABLE 15.4 Percentages of the distribution of Austrian Lloyd's traffic in the years 1892, 1897, and 1902

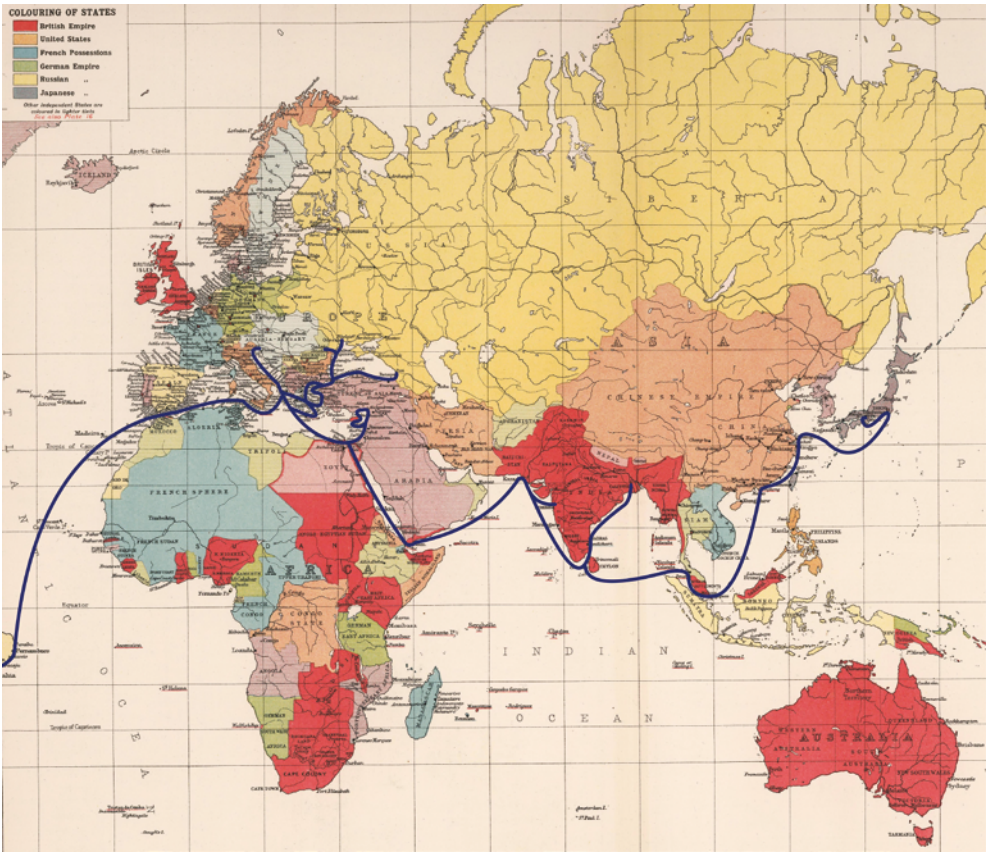
Year	Area	Goods	Passengers	Specie
1892	Levant	48	30	44
	Venice	2	7	2
	Dalmatia	10	35	41
	Black Sea	10	12	6
	Red Sea, India, China	20	4	6
	Other	10	12	1
1897	Levant	38	37	35
	Venice	2	9	6
	Dalmatia	5	30	40
	Black Sea	14	10	9
	Red Sea, India, China, Japan	21	4	9
	Other	20	10	1
1902	Levant	31	30	71
	Venice	1	6	1
	Dalmatia	4	40	2
	Black Sea	11	11	5
	Red Sea, East Africa, India, China, Japan	33	7	20
	Other	20	6	1

SOURCE: *CGLA*, YEARS 1892, 1897, 1902, *ASLT*

From 1891, the Lloyd's expansion trajectories were thus even more oriented to the east. Further growth brought the Asian lines to their maximum extent in 1893 with a connection to Japan, and the opening of a line to Durban and the east African coast in 1899–1902.[61] In the same period, the Indian service underwent a general improvement to meet the rising demands from the Austrian sugar industry,[62] that, since the end of the nineteenth century, constituted

61 On the problems related to the east African line, see Astori and Stefani, *Il Lloyd Triestino*, 375.

62 As already noted, between the end of the nineteenth century and the first years of the twentieth century, the influence of the Austrian sugar industry was tangible inside Austrian Lloyd. For the production of Austrian-Hungarian sugar and its export at the beginning of the twentieth century, see Frank R. Rutter, *International Sugar Situation.*



MAP 15.2 Main axes of Austrian Lloyd's regular lines in 1909

one of the main exports on Austrian Lloyd's steamers bound for the Indian continent.[63]

The last overview of the traffic on Lloyd's lines in the three years 1892, 1897, and 1902 (Table 15.4) shows this further eastward shift in the company's operations. It shows, for the first time after the opening of the Black Sea lines back in 1845, a gradual decrease in the importance of the Levant for the transport of goods, combined with an evident increment of 13% on the lines beyond the Suez Canal between year 1892 and 1902. Nevertheless, regarding the movement of passengers and the specie transported, the data still underlines the

Origin of the Sugar Problem and its Present Aspects under the Brussel Convention (Washington: Government Printing Office, 1904), 37–47.

63 See Antonello Brandi, *Il Lloyd Triestino e i traffici con l'India: merci, passeggeri, scambi tra Trieste e l'oriente indiano* (MA diss., Univeristy of Trieste, 1995–96), 161–163.

dominance of the Dalmatian coast and the Levant, confirming the consistent importance of these two areas in these crucial sectors of Austrian Lloyd's activities, even at the beginning of the twentieth century.

4.2 *The Occasional Voyages*

Although most of the company's activities developed on regular lines, unscheduled voyages constituted an increasingly important part of Austrian Lloyd's operations. During the period from 1845 to 1899, their economic impact on profits registers an important rise, with a peak of nearly 17% in the five years between 1876 and 1880, and a significant 12% at the end of the century (Chart 15.4).

Under the wide umbrella of unscheduled voyages were grouped various kind of services that, due to their occasional nature, were not organized on a scheduled basis. In the long period of Austrian Lloyd's existence, we can broadly identify three categories of voyage corresponding to these characteristics.

The first one was constituted by tramp shipping activities that the company added to its regular lines. These were alternatively used to estimate the commercial potential of future maritime connections,[64] to compensate for losses caused by economic and political events,[65] or to seize a sudden market opportunity in an area not adequately covered by regular services. An example of the latter case is constituted by the above-mentioned Austrian sugar export boom on the eve of the twentieth century. From 1897, Lloyd employed additional steamers on their Indian line to meet the extraordinary request of tonnage from Trieste.[66]

The second category was related to contracts occasionally signed with foreign governments for specific tasks, such as the transport of troops, supplies, migrants, and pilgrims. One of the privileged partners of these agreements was the Ottoman Empire, that provided several remunerative opportunities for the company. During the Crimean War, Ottoman troops were transported on Lloyd's ships; in the 1870s, the Sultan's regiments leaving Constantinople for Yemen travelled on a special monthly line provided by the company;[67] in 1885,

64 This was the case, for example, with the already mentioned early unsubsidized voyages to India, or the single explorative voyage to Melbourne in 1881: Astori and Stefani, *Il Lloyd Triestino*, 355.

65 During the Russo-Turkish War of 1877–78, for example, the complex political situation brought a sudden stop to the Danubian and Black Sea lines, that was balanced by the company with an increase in unscheduled activities, such as the temporary opening of a Karamanian service on the Anatolian coast: *CGLA*, 1878, *ASLT* 4238.

66 *CGLA*, 1898, *ASLT* 4257.

67 *The Bradford Observer*, 12 November 1874, 8.

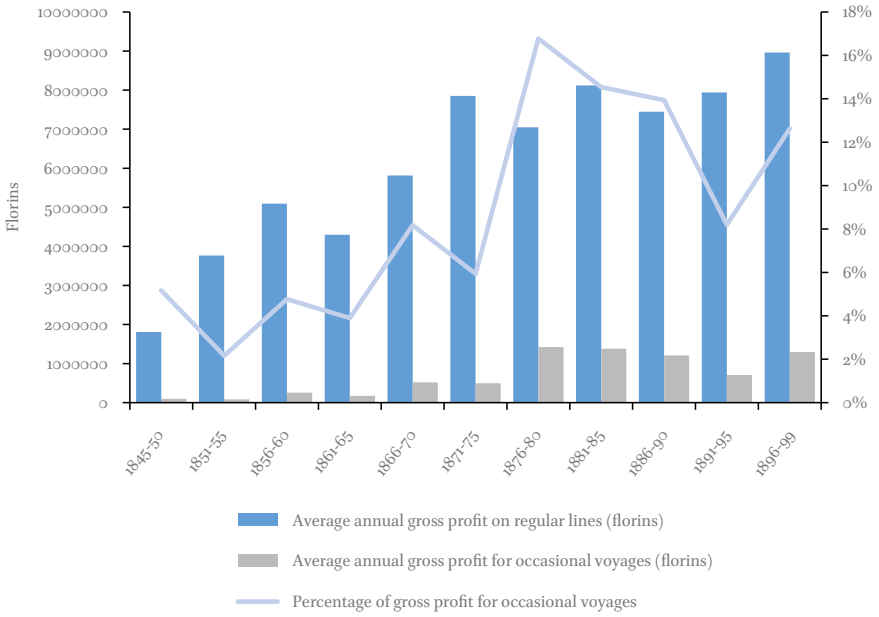


CHART 15.5 Austrian Lloyd navigation incomes on regular lines and occasional voyages, 1845–1899
SOURCE: CGLA, YEARS 1845–1899, ASLT

the mobilization of Ottoman soldiers for the Serbo-Bulgarian War extensively involved Lloyd's steamers.[68] Even the maximum annual number of passengers ever transported by the company, reached in 1878 (Chart 15.5), was mostly the result of the mass movement of roughly 136,000 Circassian forced migrants, who Austrian Lloyd agreed, with the Ottoman government, to transport from Constantinople to the Anatolian and Syrian coasts.[69]

The third kind of activity was connected to the articles signed in the postal contracts with Vienna, and had essentially the same political-military nature. Lloyd had to provide the state with extraordinary services in case of need, which were paid in addition to the regular subsidy. For example, the importance of these assignments become particularly remarkable with the opening of military operations in Bosnia-Herzegovina in 1878. In the same year, the company carried, in addition to soldiers, 8,000 horses and 90,000 tons of supplies for

68 *The Morning Post*, 12 October 1885, 5; *The Citizen*, 9 November 1885.
69 *CGLA*, 1879, *ASLT* 4239.

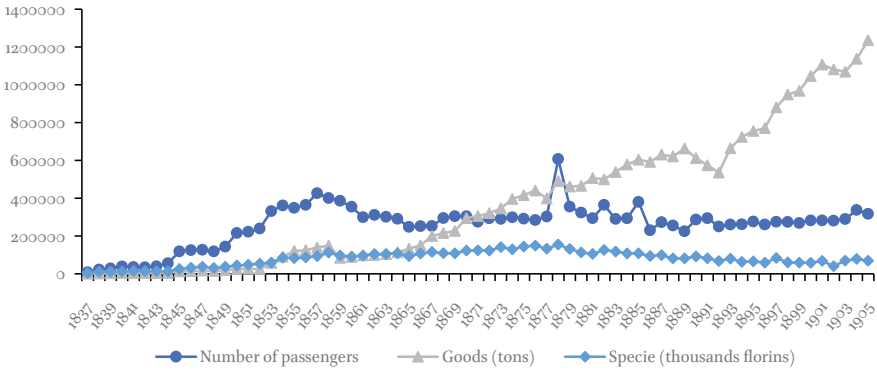


CHART 15.6 Passengers, goods and specie transported by Austrian Lloyd, 1837–1905
SOURCE: CGLA, YEARS 1837–1905, ASLT

FIGURE 15.1 Postcard depicting the Austrian Lloyd steamer the *Leopolis* docked in Trieste (*c.1910*)

the Austrian Imperial Army.[70] Four years later, Lloyd had nine of its steamers constantly employed for the transport of troops in southern Dalmatia.[71]

The significance of the two last categories described was not limited to their effects on the company's fortunes. The existence of an Austrian steam fleet

70 Ibid.
71 *Nottingham and Midland Counties Daily Express*, 1 February 1882, 8.

with an important political and military role, not just for the empire itself, but for other powers on the international chessboard, projected the empire's influence overseas, thus partially compensating for its lack of colonial possessions.

4.3 *The Austrian Lloyd Fleet and the Austrian Merchant Marine*

The evolution of Austrian Lloyd's fleet during the 78 years of its activity between 1836 and 1914, saw different recognizable steps which defined the pattern of the company's growth. Before presenting them, it is useful to take a broad view of the composition of the fleet during its whole history. Of a total of 229 steamers employed by Lloyd, 59% were built in Austrian shipyards, while 31% were built in Great Britain, and the residual 10% were of French, German, Dutch, and Swiss production. These general figures were reflected in the distribution of tonnage built in Austrian and foreign shipyards; as visible in Chart 15.7, foreign construction represented 33% of the total gross tonnage of the fleet between 1836 and 1913. Nevertheless, the proportion of home-built and foreign-built steamers underwent significant changes during the long history of the company, related both to the growing ability of Lloyd to construct its own ships, and with Austrian state pressures to encourage national shipbuilding.

In the first fifteen years of its activity, Lloyd purchased only 8% of the tons of its fleet from foreign markets, against 92% tons of Austrian provenance. The limited size of steamships in this period allowed the company to rely on small Trieste shipyards for the construction of hulls,[72] while importing the engines for their ships from Great Britain.[73] However, the limited building capacity of local facilities, combined with the high costs of the materials,[74] become evident when Lloyd underwent an important expansion of its fleet in the decade 1850–60. At that time only 29% of the 31,100 tons added to the fleet was produced in Austrian shipyards, while the rest was mostly acquired on the British market.

During the same years, Lloyd started the construction of its own shipyard in Trieste, considering it a necessary investment in order both to answer the increasing demand for highly specialized maintenance of steamship

72 From 1847, the hulls were occasionally built in the San Marco shipyard, rented out by Austrian Lloyd for the refurbishment of the fleet. See Fulvio Babudieri, *Squeri e cantieri a Trieste e nella regione giulia dal Settecento agli inizi del Novecento* (Trieste: LINT, 1986), 22.

73 Since 1836, Austrian Lloyd had owned a forge in Trieste, acquired from Morgan's steam company. In 1839, it was transformed into a workshop equipped to repair steamers' machines, but was unable to produce anything other than cylinders for the engines. See Daniele Andreozzi, "Gli 'urti necessari'. Dalla manifattura all'industria (1718–1914)," in *Storia economica e sociale di Trieste*, vol. 2, 608.

74 Babudieri, *Squeri e Cantieri*, 29.

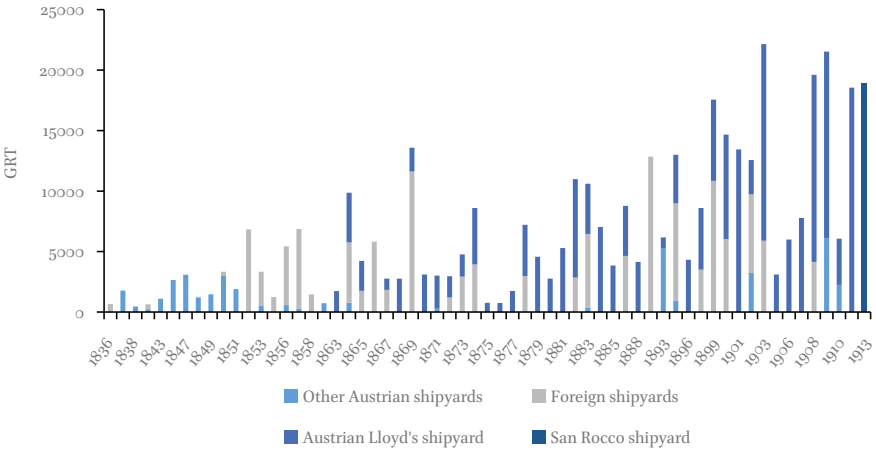


CHART 15.7 Provenance of Austrian Lloyd's gross registered tonnage, 1836–1913
SOURCE: ELABORATED FROM WINKLER AND GEORG PAWLIK, DIE DAMPFSCHIFFAHRTSGESELLSCHAFT ÖSTERREICHISCHER LLOYD, 1836–1918 (GRAZ: H. WEISHAUPT VERLAG, 1986), 131–136

technology,[75] but also to gain independence in the construction of maritime engines. While during the first period from its opening, in 1861, Lloyd's shipyard started to both repair and produce new steamers for the fleet, its role in the growth of tonnage between 1861 and 1874 remained secondary in comparison with its foreign purchases, which still represented 54% of the added gross tonnage. But the next great expansion, in 1878–88, was characterized by a leading role for Lloyd's constructions: 74% of the 65,227 new fleet's tonnage was built in the company's docks in that period. The growth of production at the Lloyd's shipyard can be largely explained by the favourable access to credit provided to Austrian Lloyd, which allowed it to invest in home-construction despite the high expenses. The new shipbuilding programme of the 1880s, in fact, was initially founded on an extraordinary state loan of 3,000,000 florins, accorded to cover the unbalanced investment in the new ships.[76]

The latter part of the nineteenth century, and the beginning of the twentieth, were marked by a strong commitment by Vienna to Lloyd, both in terms of economic support for its shipbuilding and for a direct influence on the fleet's

75 See *CGLA*, 1853, *ASLT* 4205.

76 Astori and Stefani, *Il Lloyd Triestino*, 366. Vienna's weight in the fortunes of Austrian Lloyd's shipyard is evident when compared with the modest Austrian shipbuilding activity of the second half of the nineteenth century, and with the general trend of foreign purchases of the Austrian merchant marine. See Babudieri, *Squeri e Cantieri*, 32–33; Andreozzi, "Gli 'urti necessari'", 611.

FIGURE 15.2 Celebrations for the laying of the foundation stone of Austrian Lloyd's shipyard (*30 May 1853*)
SOURCE: TRIESTE, CIVICO MUSEO DEL MARE

development strategies. The postal contract of 1891 granted an interest-free state loan of 1,500,000 florins specifically designated to the fleet's renewal, then utilised alongside two other massive loans of 4,200,000 florins (1895) and 18,000,000 crowns (1901) at 4% interest. One of the last agreements with Vienna, in 1906, provided another 6,000,000 crowns loan for the fleet's expansion, bounding the company to an increase in its total tonnage of 120,000 tons until 1919.[77] The result of this policy was a substantial growth in Lloyd's fleet, which doubled its gross registered tonnage between 1891 and 1913, passing from 122,321 tons to 237,222 tons (Chart 15.8). Out of the total of the newly-acquired gross registered tonnage in that period, 75% had been built in Austrian shipyards, and 67% came from Austrian Lloyd's docks.[78]

77 Astori and Stefani, *Il Lloyd Triestino*, 395.

78 In this percentage is included the tonnage built for Austrian Lloyd by the San Rocco shipyard in 1913. San Rocco was founded in 1910 with a great equity participation by Austrian

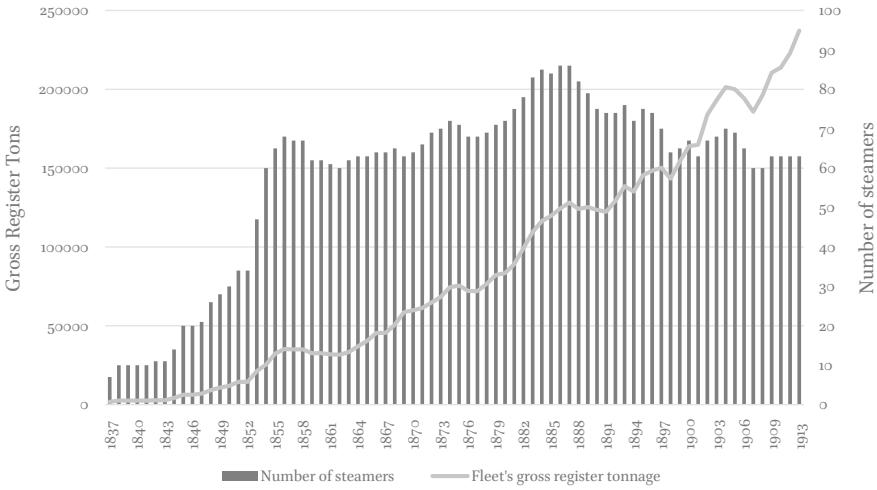


CHART 15.8 Growth of Austrian Lloyd's fleet, 1837–1913
SOURCE: CGLA, YEARS 1837–1903, ASLT

Concluding this analysis on the development of Austrian Lloyd's fleet, it is necessary to relate the growth of the company to the general development of the Austrian merchant marine within the framework of the transition from sail to steam navigation.

If we observe the distribution of net tonnage in the Austrian merchant marine during the period 1881–94, when the sail definitively lost its predominance over steam (Chart 15.9), we can see that the overtaking of steamers from sailing ships is led exclusively by the steady increase in Austrian Lloyd's tonnage, which, in 1894, still represented 85% of the total steam tonnage of the merchant marine (Chart 15.9). These figures underline how the high costs of steam technology, and the exclusive privileges granted by the state to Austrian Lloyd both in national and foreign waters, ultimately excluded other Austrian actors from the exploitation of steam. Moreover, between the 1880s and the first half of the 1890s, the extensive economic aid offered by Vienna to the company allowed Austrian Lloyd to undertake a path of development for its fleet which was in clear contrast with the general negative growth trend of the

Lloyd, which decided to move all its construction activities to this new shipyard, reserving the old one for repairs only. See Babudieri, *Squeri e Cantieri*, 23.

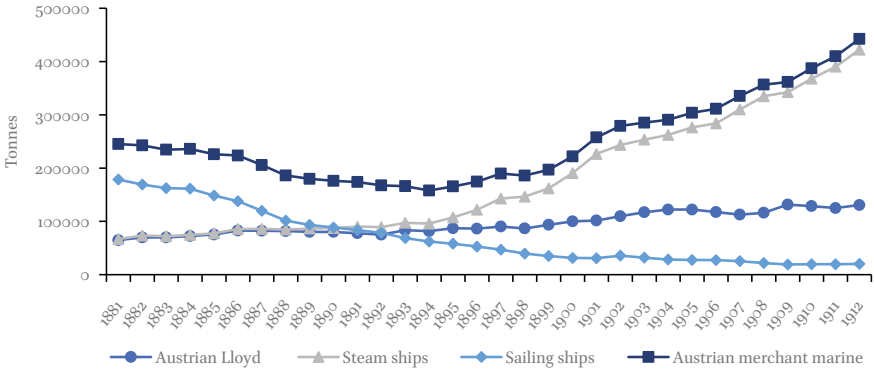


CHART 15.9 Development of the net tonnage of the Austrian merchant marine, 1881–1912
SOURCE: I. R. GOVERNO MARITTIMO, ANNUARIO MARITTIMO, YEARS 1881–1912

Austrian merchant marine (Chart 15.9), thus emphasizing even more Lloyd's role in the decline of sailing ships.[79]

The predominance over Austrian steam shipping enjoyed by Lloyd since its foundation, only saw a progressive decay from the second half of the 1890s as a result of the new state's aid policy, that for the first time embraced extensively all the Austrian merchant marine. The introduction of tax exemptions on trade, income, shipbuilding, and ship purchasing, together with a grant of several large amounts that did not apply to ships operating under postal contracts,[80] boosted a rapid increase in the merchant steam tonnage, quickly reducing Lloyd's all-encompassing presence. In 1912, on the eve of the First World War, steamers composed 95% of the whole merchant fleet (Chart 15.9), mostly acquired at competitive prices from foreign markets[81] by the other 34 steam navigation companies that flourished in the previous decade.[82] By then, Lloyd retained only 26% of the total merchant steam net tonnage,[83]

79 See Giulio Mellinato, *Crescita senza sviluppo: l'economia marittima della Venezia Giulia tra Impero asburgico ed autarchia (1914–1936)* (San Canzian d'Isonzo: Consorzio Culturale del Monfalconese, 2001), 33–34.

80 See Jones, *Government Aid to Merchant Shipping*, 89–93.

81 See Babudieri, *Squeri e cantieri*, 31–32.

82 I. R. Governo Marittimo, *Annuario marittimo per l'anno 1905, compilato per cura dell'Imperial Regio Governo Marittimo in Trieste* (Trieste: Tipografia del Lloyd Austriaco, 1905), cxvi–cxxi.

83 I. R. Governo Marittimo, *Annuario marittimo per l'anno 1913, compilato per cura dell'Imperial Regio Governo Marittimo in Trieste* (Trieste: Tipografia del Lloyd Austriaco, 1913), cxxii–cxxiii, cliv.

having finally lost its overwhelming role as sole actor in Austrian merchant steam shipping.

5 Conclusions

The motto of Austrian Lloyd, *Vorwärts* ("forward" in German), could be taken as a fitting metaphor that ultimately summarizes the all-encompassing role of the company in shaping the dynamics of the transition from sail to steam in the Austrian Empire on multiple levels. Vienna's exclusive reliance on Lloyd's activities, joined with the interests of new Austrian industrial actors, determined the almost lonely ascent of the company in the Austrian steam merchant marine business. Thus, the affirmation of the new technology in the empire's merchant fleet, until the last quarter of the nineteenth century, was driven by a single, powerful actor, able to push all national maritime competitors out of the steam business. This almost monopolistic role had, in turn, a wide range of implications that deeply characterized all of Austria's maritime landscape during the long transition from wind power to steam.

It is noteworthy that, in the Austrian case, much of this slow technological process ultimately depended on state intervention. Given the weight of Vienna's aid on the fortunes and, finally, on the very existence of the company, the political motive of imperial support constituted one of the cornerstones in the development of Austrian Lloyd. The general recognition of the company as a powerful steam navigation business, and its identification with the Hapsburg Empire's presence on the seas, represented a necessary tool for the state in order to affirm its influence in international theatres. Clear evidence of the company's political role is provided by the fact that its agents in the Levantine ports were frequently designated as Austrian consuls,[84] and, at the beginning of the twentieth century, were often considered as "quasi-envoys of a foreign power", in the words of an Austrian parliament member.[85] Furthermore, the particular importance of this influence in the Ottoman Empire was often proved in practice. For example, the unfulfilled Austrian colonial aspirations

84 See Rudolf Agstner, "Die Errichtung eines österreichischen General-Consulats in Constantinopel hat auf sich zu beruhen—Zur Geschichte der österreichischen (österreichisch-ungarischen) Konsulate in der Türkei 1718–1918," in *Österreich in Istanbul*, eds. Rudolf Agstner and Elmar Samsinger (Wien: LIT, 2010), 137–174.

85 Arthur Breycha-Vauthier, *Österreich in der Levante, Geschichte und Geschichten einer alten Freundschaft* (Wien-München: Herold, 1972), 95.

on the Anatolian peninsula[86] were nevertheless actively supported and legitimized through Lloyd's presence, while the empire's progressive annexation of Bosnia-Herzegovina[87] was largely sustained by the logistical support of Lloyd's services.

In the light of the profound economic changes brought by industrialization,[88] the lone presence of Lloyd on the landscape of steam shipping, alongside Trieste's uniqueness as the only outlet to the sea from the Cisleithanian part of the empire, made Lloyd one of the targets for the new capitalism emerging in the nineteenth century. Both the early participation of Salomon Rothschild as main shareholder, and the further progressive marginalization of Trieste's elite in the management of the company, marked a clear trajectory of the affirmation of Austrian industrial capitalism over Trieste's traditional merchant capitalism. As we have seen, the influence of banking and industrial actors from the empire's hinterland over Lloyd, consolidated together with a policy of state subsidy, displayed the strong correlation in interests between the Austrian government and the new leading economic protagonists of the empire. In this sense, the definitive transfer of the shareholders' yearly assembly to Vienna, in 1907, represents the final convergence point of the centripetal movements that began more than half a century earlier.

86 See Roy Bridge, "Tarde Venetibus ossa: Austro-Hungarian colonial aspirations in Asia Minor (1913–1914)," *Middle Eastern Studies*, no. 6.3 (October 1970): 319–330.

87 On the colonial nature of the Austrian intervention in Bosnia-Hergezovina, see Clemens Ruthner, "Habsburg's only colony? Bosnia-Herzegovina and Austria-Hungary, 1878–1918," *SEEU Review*, no. 13.2 (18 January 2019): 2–14, available at https://doi.org/10.2478/seeur-2018-0002.

88 For an overview of the economic development of the empire in the second half of the nineteenth century, see Scott McNeil Eddie, "Economic policy and economic development in Austria-Hungary, 1867–1916," in *The Cambridge Economic History of Europe,* vol. 8: *The Industrial Economies: the Development of Economic and Social Policies*, eds. Peter Mathias and Sidney Pollard (Cambridge: Cambridge University Press, 1986), 814–886.

CHAPTER 16

The Russian Steam Navigation and Trading Company: The Transition from Sail to Steam in the Russian Black Sea (1856–1914)

Anna Sydorenko

1 Introduction

In the early nineteenth century, the Russian Empire of the five seas, following the exodus to the Black Sea, wished to strengthen its position in the region and to conquer new markets. This consolidation in the region required, among other things, the development of the Russian merchant fleet, and the shipping industry. Imperial policy in the field of foreign trade and maritime transport, until the mid-nineteenth century, was characterised by contradictions, and was subject to the constant influence of international political processes and structural changes in international shipping. Policy alternated between the development of continental strategy, and that of merchant shipping, and was characterised by successive swings between protective and more liberal tendencies.

The above circumstances, combined with the absence of a vigorous business and maritime tradition in the region, led to the predominance of foreign merchants and shipowners. The situation in the region altered following the Crimean War with the establishment of the Russian Steam Navigation and Trading Company (hereafter RSNTC): a state-subsidised steamship company set up to reflect the model of other European steam shipping companies.[1] RSNTC became the main actor for the introduction of steam technology and

1 Apostolos Delis, "Modernizing Seaborne Communication in Nineteenth-Century Greece: the Role and the Contribution of the Hellenic Steam Navigation Company, 1857–93," in the present volume; Matteo Barbano, "Steamers for the empire: Austrian Lloyd and the Transition from Sail to Steam in the Austrian Merchant Marine (1836–1914)," in the present volume; Marie-Francoise Berneron-Couvenhes, *Les Messageries Maritimes. L'essor d'une grande compagnie de navigation française 1851–1894*, (Paris: PUPS, 2007); David Howarth and Stephen Howarth, *The Story of P & O: The Peninsular and Oriental Steam Navigation Company*, (London: Weidenfeld and Nicolson, 1995); Crosbie Smith and Anne Scott, "Trust in Providence": Building Confidence into the Cunard Line of Steamers," *Technology and Culture*, 48, no. 3, (July 2007): 471–496; Ronald E. Coons, *Steamships, Statesmen, and Bureaucrats: Austrian Policy towards the Steam Navigation Company of the Austrian Lloyd 1836–1848*,

- 978-90-04-51419-5

navigation in the Russian Black Sea waters during the second half of the nineteenth century. Furthermore, the company, for the first time, developed in the region a significant merchant steamship fleet under the Russian flag. The present work aims to analyze the fundamental contribution of the company to the transition from sail to steam shipping in the Black Sea region, this topic remaining still completely untouched by international historiography. Based mainly on primary, previously unexplored Russian and Ukrainian archival sources and secondary bibliographies, the paper will analyse the company's development strategies in terms of fleet, routes, and cargo. Firstly, the analysis will focus on the first attempts to establish steam powered routes and companies in the region during the first half of the nineteenth century. Secondly, the paper will examine the historical evolution of the RSNTC as a main factor of technological change, and economic development in the Black Sea region following the Crimean War. The company's critical relationship with the state will be examined through geostrategic priorities in the region, imperial expansion policies, and an effort to control the shipping market. And finally, emphasis will be placed on changes to the Black Sea transport market, as a result of the formation of the company.

2 The Boldness of Failure: The Birth of Steamship Routes in the Black Sea

The Russians achieved the dream of Peter the Great with an exodus to the Black Sea, warm and ice-free waters, and ultimately Russia's gateway to the Mediterranean. Russian access to the Black Sea permitted it to enter coveted Mediterranean trade, previously exploited by the Ottoman Greeks, Venetians, Neapolitans, and French merchants. The grain export trade, the predominant trade of the southern ports, was conducted by the Mediterranean fleets.[2] Until 1820, the Russian merchant fleet was not a separate sector of the empire's economy; rather, political priorities placed greater emphasis on the construction of a naval fleet. The only key development in the Russian merchant fleet was the construction of sailing vessels, which began in the Black Sea ports

Veröffentlichungen des Instituts für europäische Geschichte Mainz, vol. 74, (Wiesbaden: Franz Steiner Verlag, 1975).

2 Gelina Harlaftis, *Ιστορία της Ελληνόκτητης Ναυτιλίας* [*A History of Greek-Owned Shipping*] (Athens: Nefeli, 2001); Victor Zakharov, "Foreign merchant communities in eighteenth-century Russia," in *Merchant Colonies in the Early Modern Period*, eds. Victor Zakharov, Gelina Harlaftis, and Olga Katsiardi-Hering (London: Pickering and Chatto Publisher, 2012), 103–125.

during the 1810s—this was mainly for short-distance shipping.[3] It is noteworthy, that in 1841, the Russian Black Sea merchant fleet numbered 545 vessels of a total capacity of approximately 66,500 tons, of which only 22% could make long voyages.[4] About 84% of ships that departed from southern Russian ports in 1846, proceeding to foreign markets, were under a foreign flag, with only 16% registered in Russia. In addition, passenger traffic to and from the ports of the northern Black Sea coast were very problematic, and again, were carried out mainly, by merchant ships under foreign flags.[5]

The most important commercial and shipping centre of the region during the first half of the nineteenth century was Odessa (see Fig. 16.1). Although one of the newest among the European port cities, since foundation in 1794, it was clearly established, along with many other port-cities on the northern Black Sea coast, following annexation by the Russian Empire at the end of the eighteenth century. The Black Sea port-cities gradually formed an integrated market that became the largest grain-exporting region in the world. The Black Sea coast had been transformed into an international market source with links to the Mediterranean, and northern Europe. Among other port-cites, Odessa became the main exporting grain gateway of the northern Black Sea coast, and a crucial actor in shaping the commercial and shipping market of the region.[6]

Although Russia had lost the opportunity to create a Russian merchant sailing fleet in the Black Sea, Odessa became the centre of technological innovation in maritime transport in the region. The Baltic Sea was first connected with regular steamships in 1816, while in the Black Sea the first regular steamship line was established in Odessa in 1828. Political imperatives in the

3 The main shipbuilding centres of southern Russia in the first half of the nineteenth century were the port-cities of Kherson and Taganrog: *Державний Архів Одеської Області* [*State Archive of Odessa region, DAOO*], fond 3, opis 1, delo 74a; fond 1, opis 248, delo 2772; fond 1, opis 191, delo 30.

4 Mykola Stolbunenko, *Зовнішньополітичні та зовнішньоекономічні чинники розвитку морського торгового флоту та судноплавства на Півдні України* (*кінець XVIII–перша половина XIX ст.*) [Foreign Policy and External Economic Factors of the Development of the Merchant Fleet and Shipping in the South of Ukraine: End of the 18th–first half of the 19th century] (Odessa: Odes'kiy Derzhavniy Universitet im. I.I. Mechnikova, 1997), 11.

5 Государственная внешняя торговля в разных ее видах за *1846* год [Foreign Trade of the State in its Various Forms, for 1846] (St. Petersburg: Departament vneshney torgovli, 1847), 121, 137.

6 For the development of Odessa as a port-city see: Patricia Herlihy, *Odessa. A History* (*1797–1914*), (Cambridge MA: Harvard Ukrainian Research Institute, Harvard Series in Ukrainian Studies, 1986); Pavel Chechovitch, *Материалы для описания русских коммерческих портов и истории их сооружения. Одесский порт* [*Essays on the Description of Russian Commercial Ports and the History of their Construction. Odessa Port*], vol. 27 (St. Petersburg: Ministrstvo Putey Soobsheniya, 1895).

FIGURE 16.1 The port of Odessa. Postcard, late nineteenth century

Caucasus and the Ottoman Empire, where the Russians needed to establish safe and regular postal connections in the Black Sea region, also determined the increased interest in steamship connections apart from trade, passenger, and transport operations. The main protagonist for the idea of a steamship connection with the port of Odessa was the most powerful politician of the region, the Governor-General[7] of southern Russia, Earl Mikhail Vorontsov. The first steamship was built with state funding in Nikolayev, with a 70-hp engine constructed in St. Petersburg. The steamer, named *Odessa*, with a capacity of 65 passengers, operated between Odessa, the Crimean ports, and Redout Kale in the Caucasus, once a week. Emperor Nicholas 1's (1825–55) policy of consolidating the Russian position and influence in the Black Sea was reflected through the establishment of a regular steamship line between Odessa and Constantinople. The transport of mail, passengers, and cargo was fulfilled by the 225-ton steamer *Neva*, constructed in St. Petersburg and owned by the Ministry of Finance, which began operations in 1831. However, the first steamships only completed a few voyages, with significant financial losses. The major obstacles in maintaining these routes were the underpowered engines, and the technological limitations of the ship's hull, especially in relation to movement of the ship in adverse weather conditions. In addition, the inadequacy of coal

7 The Governor-General was an appointed high-ranking officer as head of the Governorate-General, that is an administrative-territorial division of the Russian Empire.

and wood as a fuel, combined with high costs, and lack of storage on board, prohibitively increased the cost of operating the routes. Eventually, after the first voyages, the two state-owned steamships stopped serving the regular routes, and continued to serve state and military needs only.[8]

However, the municipal authorities and merchants of Odessa had been lobbying for the creation of a steamship joint stock company since 1830. The first joint stock company of regular steamship lines in the Black Sea was established in 1833 under the name The Black Sea Shipping Company (hereafter the BSSC). The duration of BSSC operations was initially agreed as lasting for ten years. The company, with an initial fleet of three ships, including the *Neva*, served the Odessa-Istanbul line. The BSSC was given privileges by the state, and profits until 1835 were shared equally between shareholders and the state. The company's fleet increased to six steamships, which were constructed using state funds. The company fleet began to serve the ports of Crimea and the Sea of Azov. However, the development of the company was limited by inferior hull construction, and the technological deficiency of the engines, resulting in constant repairs and indeed, accidents. Following significant losses, the imperial government awarded a three-year subsidy to the company in 1839, however, the state was no longer involved in administration. Simultaneously, the poor financial position of the company led to discussions between the Minister of Finance, Egor Kankrin, the commander of the Black Sea fleet, Mikhail Lazarev, and Earl Mikhail Vorontsov, for the creation of a state-run steamship entity that would serve the same lines as the BSSC; the three men had realised the inadequacy of the BSSC operation. In fact, the deficiencies of the company were so obvious that a French trading house (Gave) had tried to fill them by proposing to the Russian government, the establishment of an Odessa-Marseilles route, although the proposal was promptly rejected.[9]

The policy of geostrategic and commercial entities in the Black Sea, which were espoused by Russian rulers, eventually led to the creation of a purely state-run steamship company in 1843. A fleet of six steamships, constructed in British shipyards, in an attempt to improve the technological characteristics of the ships, were equipped militarily in case of war—where they would transfer to the jurisdiction of the navy. The commander of the Black Sea fleet and the Governor-General of southern Russia would determine the company's strategy for commercial, financial, and passenger functions. The company, which

8 Nikolay Zalesskiy, *"Одесса" выходит в море: возникновение парового мореплавания на Черном море, 1827–1855* ["Odessa" Goes to Sea: the Emergence of Steam Navigation on the Black Sea, 1827–1855] (Leningrad: Sudostroenie, 1987), 20–33.

9 Zalesskiy, *"Одесса» выходит в море*, 45, 47.

in 1845 was named the Shipping Expedition of Novorossiya (hereafter SEN), extended operational lines beyond Constantinople and the ports of the Black and Azov Seas, to the ports of the Danube.[10] Simultaneously, the BSSC was liquidated as the ten-year period had expired. The Crimean War halted efforts to develop regular steamship connections in the Black Sea. The SEN, at the beginning of the war had only eight steamships of a total capacity of 2,588 tons.[11] In addition, on the eve of War, in 1853, the Russian merchant fleet of the Black and Azov Seas numbered only fifteen steamships (including the SEN steamships). Their share in transportation terms did not exceed 2.8% of the total cargo turnover in the Black Sea region; thirteen steamships were owned by the state, and only two by independent sources. It seems that the Russian steamship merchant fleet was left behind, it could not compete with the new emerging maritime power of the Austrian Empire, which in 1852, had 56 steamers.[12] This meant that in the first half of the nineteenth century, the limited Russian merchant fleet was powered by sail, despite the efforts of the state to develop a steamship presence. The introduction of steam in the Black Sea in the first half of the nineteenth century passed through an experimental stage, and eventually collided with insurmountable obstacles, including insufficient capital, and a lack of experienced, technically qualified shipbuilders and managers. As the merchant fleets of the European powers continued to dominate the seas, the desire for the creation of a strong commercial fleet in southern Russia, as often declared by Tsarist political figures, remained a dream.

3 Limited Success: The New Age for Steam Shipping in the Black Sea

The crucial military and diplomatic defeats of Russia in the Crimean War had triggered a new era of socio-economic modernisation in the country. The administrative reforms, economic growth, and strategic formation, were

10 *DAOO*, fond 1, opis 251, delo 1; *Одесский Вестник* [*Odessa Herald*], May 5, 1845, n. 36; Zalesskiy, "Одесса» выходит в море, 52–53.

11 *Российский Государственный Исторический Архив* [*Russian State Historical Archive, RGIA*], fond 107, opis 1, delo 4, list 16 verso–23 verso; *Одесский Вестник* [*Odessa Herald*], Jule 21, 1857, n. 58. Yuriy Konovalov, "Морской торговый флот России в период промышленного капитализма, 60-е–середина 90-х гг. XIX в." (На материалах Черноморско-Азовского бассейна)" ["The Russian Merchant Marine Fleet During the Period of Industrial Capitalism, 60s–mid 90s. XIX Century." (Based on the materials of the Black Sea-Azov basin)"] (PhD diss., Odessa State I.I. Mechnikov University, 1981), 13.

12 *Annuario Marittimo del Lloyd Austriaco* [Austrian Lloyd Maritime Yearbook] (Trieste: Tipografia del Lloyd austriaco, 1853), 208.

the main vectors of the new policy of the organisation of the empire.[13] The expansion of the transport sector, that became one of the principal features of economic development, had taken place in a period of rapid technological change, where the Russians had failed to compete with other western European powers. The state became the main driving force in the development of the transport sector because of both economic and strategic significance. During the first decades following the Crimean War, large companies with state involvement were established in the railway and steamship sectors. The construction of a railway network, and the creation of a steam merchant fleet, apart from their strategic military importance, was clearly related to the economic expansion of the empire. By developing a merchant fleet, Russia intended firstly, to avoid the restrictive clauses of the Treaty of Paris (1856) to maintain naval forces in the Black Sea; secondly, to construct a fleet that could be used for military needs; and thirdly, to develop the economic resources that would make the empire a great power.[14]

3.1 *Establishment of the Russian Steam Navigation and Trading Company*

The creation of the merchant marine under the Russian flag, and the development of Russian navigation in the Black Sea was an idea which originated from the Minister of the Marine, the most important adviser to the new emperor, Alexander II, that is, his younger brother, Grand Duke Constantine Nikolaevich. One month before the end of the Crimean War, the Minister of the Marine presented to Alexander II a report in which he emphasised that: "in the event of the conclusion of the treaty, it would be very useful to establish on the Black Sea, the largest private shareholding steamship company, which would constantly maintain the largest possible number of large steamers built, so that, when necessary, the government could rent or buy them to transport troops and turn them into warships … For this, it is necessary to provide the aforementioned company with such privileges that would induce Russian capitalists to invest significant capital immediately that would ensure the constant commercial navigation of the company's steamships".[15] In fact, these

13 Mara Kozelsky, *Crimea in War and Transformation*, (New York: Oxford University Press, 2019); Ben Eklof, John Bushnell and Larissa Zakharova (eds.), *Russia's Great Reforms, 1855–1881*, (Bloomington and IndiaNapless: Indiana University Press, 1994), W. Bruce Lincoln, *The Great Reforms. Autocracy, Bureaucracy and the Politics of Change in Imperial Russia*, (De Kalb: Northern Illinois University Press, 1990), W.E., Moose, *Alexander II and the Modernization of Russia*, (London: I.B. Tauris & Co Ltd, 1993).

14 *RGIA*, fond 107, opis 1, delo 14, list 1–4.

15 *RGIA*, fond 107, opis 1, delo 14, list 1–2.

words formed the basis of the formation of the Russian Steam Navigation and Trading Company, which reflected the policy of the empire in the Black Sea region: the need for the development of a maritime transport infrastructure in the strategically important southern waters, as well as the establishment of political, military, and economic influence in the region.

On 3rd August 1856, the statute of the Russian Steam Navigation and Trading Company was signed by Emperor Alexander II. The new joint-stock liner steamship company was based largely on the business models of the Russian-American Company[16] and the *Messageries Impériales*, and was one of the first companies with a state-private partnership in the Russian Empire.[17] The organisation of the company was granted to Grand Duke Constantine Nikolaevich, and to an experienced naval captain of the first rank, Nikolay Arkas. The latter chose as his partner the Collegiate Councillor[18] Nikolay Novoselskiy, a person widely known in commercial circles as the organiser of the Volga river steamship company. The two men completed significant work on the project in a short timeframe, which they presented to the Minister of Finance (including a committee of ministers), however, their proposal was criticised as conservative and introvert, and was changed. The capital of the company was agreed as 9 million rubles (in silver), of which 6 million were to be raised immediately. It was divided into shares of 300 rubles, of which the government acquired 6,670 of 20,000 shares in total. Government share interest was ceded to the company for a period of five years, as an alternative to a direct loan that the founders requested of the government.[19] The main shareholders were the most important entrepreneurs of St. Petersburg and

16 Andrei Grinev, "Steamships of the Russian-American Company, 1839–1867," *The Mariner's Mirror*, 102, no. 4 (2016): 417–425.

17 *RGIA*, fond 107, opis 1, delo 70, list 1.

18 Collegiate Councilor: was a civil rank of 6th class in the Russian Empire, according to the Table of Ranks introduced by Peter the Great in 1722. It was equal to those of Colonel in the Army and Captain 1st rank in the Navy. Angelo Segrillo, *A First Complete Translation into English of Peter the Great's Original Table of Ranks: Observations on the Occurrence of a Black Hole in the Translation of Russian Historical Documents*, LEA Working Paper Series No. 1, (Sao Paulo: History Department University of Sao Paulo, Brazil, November 2016).

19 It is significant to note that the RSNTC could not resort to bank financing for its operations, since the first commercial bank in the Russian Empire was only established in 1864, following the abolition of serfdom and the formation of a capital market, for more see: Valeriy Bovikin, "Становление системы акционерных коммерческих банков в России во второй половине XIX–начале XX века и в 90-е годы XX века" ["The formation of the system of joint-stock commercial banks in Russia in the second half of the 19th–early 20th century and in the 90s of the 20th century"], Экономическая История [*Economic History*], 3 (1999): 381–395.

Moscow, along with merchants and shipowners from Odessa and Taganrog (see Table 16.1). Despite the most pessimistic expectations, the open subscription to RSNTC shares was a huge success. By 15th September 1856, a significant portion of the shares had been purchased. The total number of shareholders by the first general meeting amounted to 307 people.[20]

TABLE 16.1 The biggest shareholders of the RSNTC (November 1856)

Shareholders	**Number of shares**	**Number of votes**
Government	6,670	46
Kokarev V.A.	1,987	15
Rodocanachi F.I. (merchant of the first guild[a] and shipowner of Odessa)	1,200	10
Grand Duke Constantine Nikolaevich	1,000	8
Merchant house Simon Jacobi & Co. (Moscow)	810	8
Gisiko A.A. (merchant of the third guild of St. Petersburg)	495	5
Carr M.E. (merchant of the first guild of St. Petersburg)	410	4
Zhadimirovskiy I.I. (merchant of the first guild of St. Petersburg)	250	3
Alfieraki N.D. (State Councillor in Taganrog)	164	3

a The estate category of merchants of the Russian Empire were divided into three guilds in which anyone who wanted to exercise the trade profession had to register and pay the guild tax. Alfred J. Rieber, *Merchants and Entrepreneurs in Imperial Russia* (Chapel Hill: University of North Carolina Press, 1982), xxiii.

SOURCE: MIKHAIL BARYSHNIKOV, "Русское Общество Пароходства и Торговли: учреждение, функционирование, перспективы развития (1856–1864 гг.)" ["RUSSIAN STEAM NAVIGATION AND TRADING COMPANY: ESTABLISHMENT, OPERATION AND PROSPECTS OF DEVELOPMENT (1856–1864)"], Экономическая История [*ECONOMIC HISTORY*], 13, NO. 2 (2015): 110; VLADIMIR V. MOROZAN, Деловая жизнь на Юге России в *XIX*–начале *XX* века [*BUSINESS LIFE IN THE SOUTH OF RUSSIA IN 19TH–20TH C.*] (SAINT PETERSBURG: "DMITRII BULANIN", 2014), 547

20 *Устав Русского общества пароходства и торговли* (*1856*) [*Charter of the Russian Steam Navigation and Trading Company*] (St. Petersburg: Typography D. Kesnevil, 1856), 18; Denis Stepanov, "Учреждение Русского Общества Пароходства и Торговли (1856–1857)" ["The Establishment of the Russian Steam Navigation and Trading Company"], Вестник Челябинского государственного университета [*Bulletin of Chelyabinsk State University*], 46, no. 22 (2011): 33–35.

Company operational activities would be managed by a board of six directors, two of whom would be nominated by the government, while four others would be elected by a majority vote of all shareholders holding not less than 50 shares. Apart from the above "geopolitical shadow reasons" for the formation of the company, the mercantile and postal preamble would formally justify the foundation of the company. The first clause of the statute defined the aim of the company; it was "established to promote the development of trade in the southern region of Russia, and the commercial and postal shipping connections of this region with Russia and foreign powers". Hence, following a detailed study by Novoselskiy, of all foreign liner steamship companies that were operating in the Mediterranean, it was decided to establish regular connections on eleven specified routes that would serve four maritime regions, linking the main Black and Azov Sea port-cities with the north-eastern, south-eastern, and central regions of the Mediterranean (for more on these lines, see Appendix 16.1 and Map 16.1). In order to support such extensive operations and their enormous costs, it was decided that the government should pay a subsidy (per mile) for the first twenty years after the commencement of the service. The subsidy varied in the first decade from 2 rubles, 50 ½ kopecks (per mile), for the Black Sea routes, to 5 rubles, 22 kopecks (per mile), for the eastern Mediterranean service. For the second decade, the subsidy was to be reduced by 5% each year, so that in the final year it would be paid at half the original rate.[21]

Furthermore, the company was to enjoy a number of extensive privileges that would support organisational and economic development, and the material and technical infrastructure of the RSNTC. The company was granted the right to five years duty-free import of ships, engines, and necessary equipment, along with customs exemptions for goods transported on company ships. An annual payment of 64,000 rubles for the purposes of maintenance and repair was offered, in addition to the free use of unoccupied state lands for the purpose of forming necessary installations and depots. In order to fund the most expensive cost of steamship operation, that is, coal, the RSNTC was granted land in a region of the Don River for anthracite mining. The lack of mining expertise, and skilled seafarers for steamships was another important issue that administrators were required to solve. This was overcome by permission to hire officers from the mining corps department, together with mechanics, engineers, and sailors from the imperial navy.[22]

21 *RGIA*, fond 107, opis 1, delo 70, list 1–40; *Устав …* (*1856*), 8–9.

22 *Устав …* (*1856*), 7–9.

MAP 16.1 The RSNTC lines
SOURCE: *GUIDE. CRIMÉE. CAUCASE. LEVANT. COMPAGNIE RUSSE DE NAVIGATION A VAPEUR ET DE COMMERCE*, (1913)

3.2 *Crisis and Reorientation of the Operations of the RSNTC*

On 22 April 1857, the first vessel, which was sourced in Britain, anchored at Odessa. The residents of the city witnessed a great celebration, and a solemn blessing of the ships of the RSNTC.[23] The two founders and directors of the company, Nikolay Arkas and Nikolay Novoselskiy, expanded operational activity in the first year from nine to eleven routes using a fleet of eighteen vessels (see Chart 16.1). The beginning of the company was quite dynamic and even impressive, nevertheless, the first year of operations also revealed a number of crucial issues that required early resolution, including: a lack of proper shipbuilding and repair facilities; a shortage of labour and administrative personnel; the absence of a reliable source of fuel supply; and most importantly, the infrastructural inadequacies of the Black Sea port-cities for the mooring of company steamships. The paradox with this venture, was that the Russians established a steamship company of which the operating driving force was new technology, but did not properly support this ground-breaking venture, ignoring previous experience. The problems, which should have been solved

23 "Известия из портов" ["News from the ports"], *Морской сборник* [*Marine collection*], no. 7 (July 1857): 45–47.

prior to initial operations, now required funds—the company was unable to source these funds, leading to serious internal disputes. The strategy of commercial development and the private orientation of the RSNTC, through the commencement of unscheduled routes that did not receive a subsidy (as suggested by Nikolay Novoselskiy), contrasted with the suggestion (by Nikolay Arkas) to operate the RSNTC based only on subsidies, and to remove the commercial functions of the company.[24]

During 1858, and despite these problems, investment operations intensified sharply. The company continued to purchase new ships, almost doubling fleet numbers (see Chart 16.1). The company commenced the construction of a shipyard, a quay, and a mechanical plant in Sevastopol, a foundry reconstruction in Odessa, and the modernisation of the port infrastructure of four port-cities in the Crimea (Evpatoria, Sevastopol, Theodosia, and Kerch). Furthermore, the company developed an anthracite mine in the region of the Don River, a venture that would ensure the constant provision of coal for company steamships. The costs of the office in Odessa and the agencies in the different port-cities increased dramatically, with the administrative corpus of the company reaching 1,500 employees. At the end of 1859, in order to cover increasing expenses, the company announced a share issue (10,000 shares), with the possibility of initial payment in part, at half the nominal price.[25] Moreover, administrative disagreements and increased costs led to a decline in net profit by 45.8%. Shareholders dividends also decreased by 33.2%, with a subsequent fall of share value (by 40%) on the St. Petersburg stock exchange. Trust in the company evaporated, causing shareholder panic and Nikolay Novoselskiy resigned in March 1859. Nikolay Arkas, following an unsuccessful litigation case between

24 *RGIA*, fond 95, opis 1, delo 34, list 1–38verso.

25 After the Crimean war, the port infrastructure of the northern shore of the Black Sea was almost non-existent, including only wooden quays and warehouses, for more see: Anna Sydorenko, "Οικονομική ανάπτυξη των πόλεων-λιμανιών της Κριμαίας, β΄ μισό του 19ου–αρχές 20ου αιώνα. Ευπατορία, Σεβαστούπολη, Θεοδοσία" ["The Economic Development of the Crimean Port-Cities, Second Half of the 19th, Beginning of the 20th Century. Evpatoria, Sevastopol, Theodosia"] (PhD diss., Ionian University, 2017), 118–144; *Отчет Высочайше утвержденного Русского Общества Пароходства и Торговли за 1858–1859* гг. [*Report of the Russian Steam Navigation and Trading Company Which Received Imperial Approval, 1858–1859*] (St. Petersburg: I. Shumakher's Typography, 1859); Sergey I. Illovaiskiy, *Исторический очерк пятидесятилетия Русского Общества Пароходства и Торговли* [*History essay on the Russian Steam Navigation and Trading Company: 1857–1907*] (Odessa: Tipographia Aktsionernogo Yuzhno-Russkogo Obshchestva Pechatnogo Dela, 1907), 44.

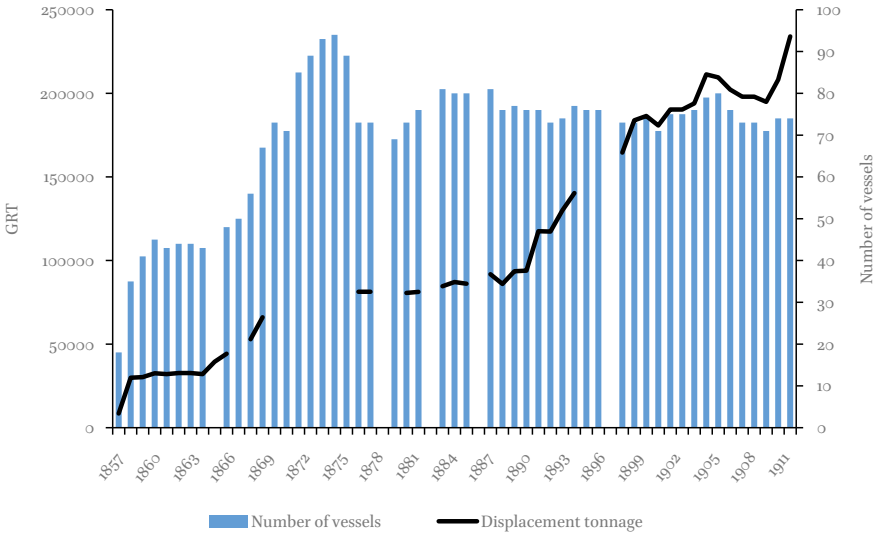


CHART 16.1 Development of RSNTC fleet, 1857–1913
SOURCE: PROCESSED DATA FROM Отчет Русского Общества Пароходства и Торговли, *1856–1913* [*ANNUAL REPORTS OF THE RUSSIAN STEAM NAVIGATION AND TRADING COMPANY, 1856–1913*] (ST. PETERSBURG: TYPOGRAPHIA ARIGOLDA, 1857–1913)

the RSNTC and the contractor who had undertaken the construction of the shipyard in Sevastopol, also resigned from his post in September 1859.[26]

In order to manage this situation, the company decided to temporarily suspend the acquisition of new steamers. The shareholder Annual General Meeting (AGM) in 1861 sought to define the development strategy of the RSNTC, namely either to follow the commercial route or to base operational activity on subsidies and geopolitical priorities. A majority of 99 out of 107 shareholders voted for the commercial option. As a result, organisational changes were significant: firstly, the executive director was agreed as a single individual in order to avoid disagreements; and secondly, company headquarters were transferred from St. Petersburg to Odessa. The new executive director was named as Nikolay Chikhachev, an individual with views close to Nikolay Novoselskiy. Management duties were shared between the new director, members of the board, the supervisory board, and shareholders. In addition, subsidies became unified for all routes: 4.30 ¼ rubles per mile for the second decade, with an annual reduction of 5%; a decision was also taken to purchase company shares, a policy that would permit higher dividend payments. Furthermore, a

26 *Отчет Высочайше ... за 1860*, 1–2; *RGIA*, fond 95, opis 1, delo 34, list 1–38verso.

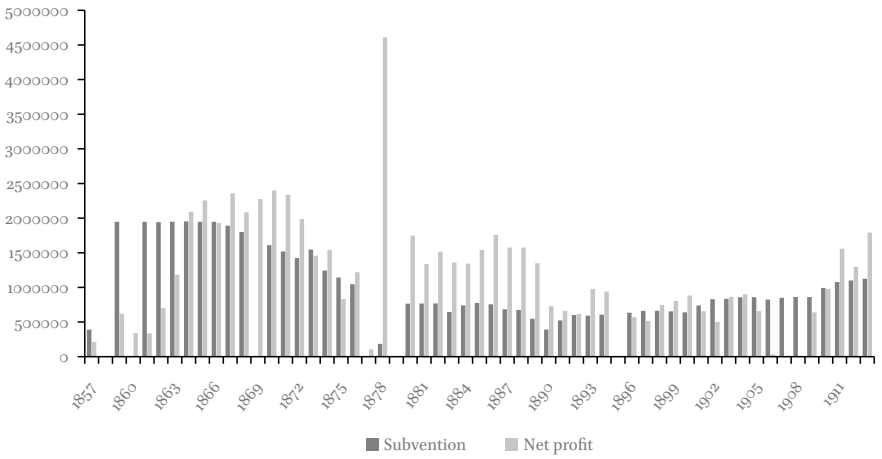


CHART 16.2 Ratio of the net profit with subsidies, 1857–1913 (in silver rubles)
SOURCE: *PROCESSED DATA FROM* Отчет Русского Общества Пароходства и Торговли, *1856–1913* [*ANNUAL REPORTS OF THE RUSSIAN STEAM NAVIGATION AND TRADING COMPANY, 1856–1913*] (ST. PETERSBURG: TYPOGRAPHIA ARIGOLDA, 1857–1913)

reserve fund was established—this was financed by a deduction from net profits, with the aim of purchasing new, and repairing old steamers. The profitability of each route was also revaluated, with the regular connections between Athos-Thessaloniki, Taganrog-Istanbul, and Redout Kale-Trabzon, terminated. The predominance of commercial and private initiatives in the development of the company marked the most radical change of the period. In 1864, the government decided to sell 5,470 shares to the company, withdrawing from ownership of the RSNTC. The above measures generated impressive results immediately: for example, in 1864, for the first time since formation, company net profits surpassed subsidies granted, a trend that continued until 1873 (see Chart 16.2).[27]

27 Illovaiskiy, *Исторический очерк*, 71–86; *Отчет Высочайше ... за 1862, RGIA*, fond 95, opis 1, delo 34, list 40–125; *Устав Русского общества пароходства и торговли (1866)* [*Charter of the Russian Steam Navigation and Trading Company*] (St. Petersburg: Obshchestvennaia polza, 1866); Mikhail Baryshnikov, "Русское Общество Пароходства и Торговли: учреждение, функционирование, перспективы развития (1856–1864 гг.)" ["Russian Steam Navigation and Trading Company: establishment, operation and prospects of development (1856–1864)"], *Экономическая История* [*Economic History*], 13, no. 2 (2015): 122.

4 The Main Actor of the Black Sea Steamship Market: The Expansion of Routes by the Russian Steam Navigation and Trading Company

The new beginnings of the company proceeded in parallel with the economic development of southern Russia. The grain trade, and an export-oriented policy, determined the growth of the region (see Chart 16.3). The second half of the nineteenth century was a period of specialisation in the southern Russian region, based on cultivation and the commercial production of cereals. The port-cities of the northern and eastern coasts of the Black Sea increasingly became the dynamic knots between the domestic cereal-producing hinterland and the industrialised European markets. During the second half of the nineteenth century, the export of grain from the twelve southern Russian port-cities was approximately 80% of the total export activity of the region. Grain exports were stimulated by the extended railway system, which was constructed between 1865 and 1888, connecting the port-cities of the south with the productive hinterland, and industrial centres of northern Russia.[28] The grain trade was operated by the 'classic' Greek diaspora, alongside those of Jewish origin,[29] and was carried out mainly by ships under a foreign flag. For example, in 1864, of the 3,805 ships that departed, only 709 were under the Russian flag, covering 20.7% of the total capacity of transported goods.[30]

The economic penetration of the sea transport market associated with grain, was the ardent desire of the RSNTC, as will be demonstrated. Firstly, however, it is important to indicate the geography of company routes, together with the strategy of their expansion, and the profitability of operations. Appendix 16.1 indicates the main routes of the RSNTC through the lifetime of the company. The earlier period of operation covered the maritime routes from the Black Sea to the south-eastern and central Mediterranean, and northern Europe.

28 Sydorenko, "Οικονομική ανάπτυξη, 68–72, 83, 91–110.

29 The region of Southern Russia was conquered and added to the Empire at the end of the 18th century. The newly acquired territory was sparsely populated, but vast. The colonization policy, apart from internal immigrants from the central provinces of the empire, was focused on attracting foreign settlers, who were experienced in specific economic activities, for example, Italians, French, Germans, Swiss, and Jews; and also, Christians from the Ottoman Empire, such as Greeks, Armenians, Serbs, and Bulgarians. At first, Greek based merchant and shipping family business networks, and Jewish management, helped to develop and control the grain (sea) export trade of the region, connecting the Black Sea port-cities with western European markets. Harlaftis, *Ιστορία της Ελληνόκτητης*; Zakharov, "Foreign merchant communities"; E. Sifneos, "Merchant enterprises and strategies in the Sea of Azov ports," *International Journal of Maritime History* 22, no. 1 (June 2010): 259–268.

30 *Виды внешней торговли России за 1864 год* [*Categories of Russian External Trade, 1864*], vol. 2, (St. Petersburg: Departament vneshney torgovli, 1865), table 23.

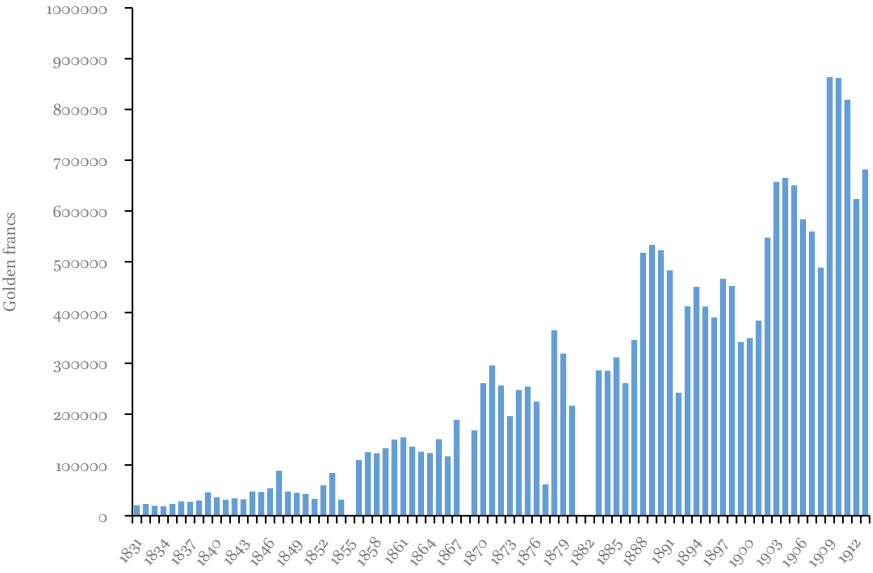


CHART 16.3 Export of main cereals (wheat, rye, barley, oats) from the South Russian port-cities, 1831–1914, (in golden franks)
SOURCE: SOCRATIS PETMEZAS, GEORGE KOSTELENOS AND ALEXANDRA PAPADOPOULOU (EDS.), WITH THE COLLABORATION OF MARIOS EMMANOUIL, *THE DEVELOPMENT OF 24 BLACK SEA PORT-CITIES. A STATISTICAL APPROACH*, BLACK SEA HISTORY PROJECT WORKING PAPERS, VOL. 8, (CORFU: IONIAN UNIVERSITY, FORTHCOMING), WWW.BLACKSEA.GR

Later, in 1871, the company extended services to Indian ports and China, and from 1901, company ships operated in the Persian Gulf. For the first time in Russian history, the country managed to regularly connect the Black Sea, the eastern and western Mediterranean, northern Europe, and Asia. Certainly, the Russian flag could now compete for cargo and passenger transportation in the Mediterranean and Black Seas, with the British, French, and Austrian steamship companies.

It should be noted that the nature of the formation of the company created a variety of operational characteristics on the routes. The development of passenger traffic for the company was the most controversial issue, since it was difficult to evaluate the passenger market; the only certain market flow was pilgrim transportation. Russian pilgrims regularly visited the holy sites in Palestine, and it was acknowledged that this passenger market was not only a profitable business model for the company, but also, a matter of prestige for the imperial government. The transportation of Russian and Greek pilgrims,

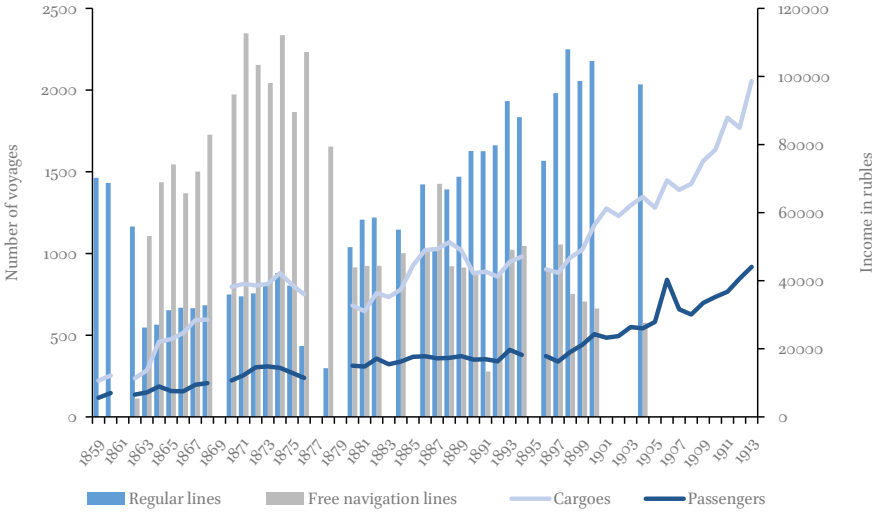


CHART 16.4 Comparative view of income and lines of RSNTC, 1859–1913
SOURCE: *PROCESSED DATA FROM* Отчет Русского Общества Пароходства и Торговли, *1856–1913* [*ANNUAL REPORTS OF THE RUSSIAN STEAM NAVIGATION AND TRADING COMPANY, 1856–1913*] (ST. PETERSBURG: TYPOGRAPHIA ARIGOLDA, 1857–1913)

and also Muslim pilgrims, would create significant competition with Austrian Lloyd, as the latter was already the main carrier in this market.[31]

For the RSNTC, passenger traffic became a constant source of revenue, as demonstrated in Chart 16.4, reaching approximately 30% of company income. More specifically (see Appendix 16.2), the routes with the most passenger throughput were linked to Alexandria, which, from the beginning, was established for the transportation of pilgrims. Contrary to the expectations of the founders, the Black Sea internal coastal routes also demonstrated extremely high numbers of passenger traffic. Almost all internal routes, which included the connections between the Russian port-cities of the Black and Azov Seas, and river routes, provided important income (the Caucasus route was the leading source of passenger income). The Caucasus route held a geostrategic significance, in a region that became part of the Russian Empire between 1828 and 1878. The steamship route contributed to the colonisation process of the region, through transportation of post, and of public and military servants. In 1888, the commercial importance of the route also increased following the connection of the main port on the eastern coast of the Black Sea, Novorossiysk,

31 *RGIA*, fond 107, opis 1, delo 70, list 2–25.

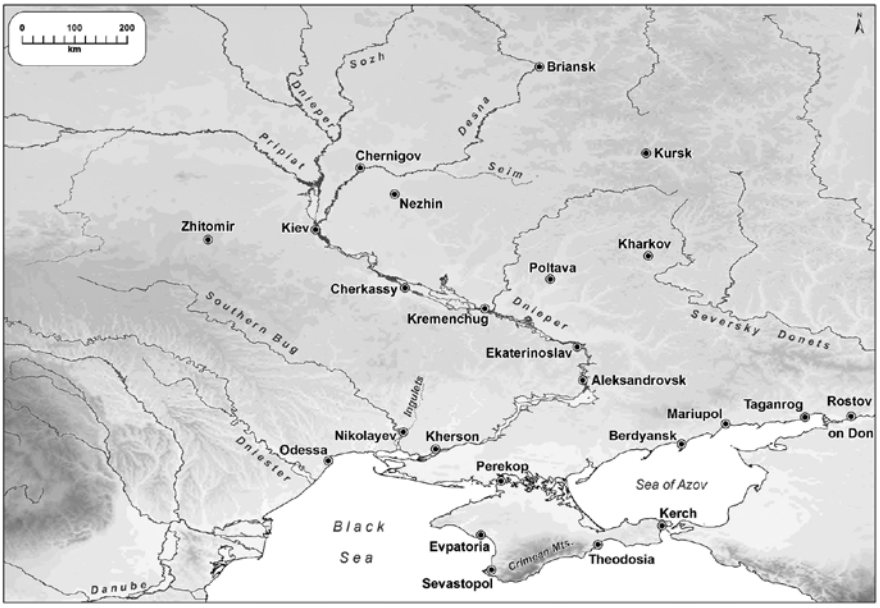
with the main railway network. This opened up the region to the rest of the Russian Empire. Profits of cargo and passenger activity in the region doubled compared to the previous period (see Appendix 16.2).[32]

As a result of Russian coastal policy, the turnover of coastal routes reached notable levels during the period under examination. As demonstrated above, the export trade in the southern ports of the empire was operated mainly by foreign merchants, a trend established in the first half of the nineteenth century. During the period of reform, the state decided to apply a protectionist policy to support the predominance of the Russian flag in Black Sea operations. It was recognised that to displace foreign flags, and establish the RSNTC as the dominant flag carrier, was a difficult venture. Therefore, the state decided, as a first step, to ban the use of foreign flags in coastal trade and transportation. The RSNTC took advantage of steam, covering the transport routes from Odessa to Batoum, including all the Russian port-cities in the Black Sea, while also serving all the rivers of the region (see Map 16.2.). For example, in 1862, 34% of total income came from the northern and eastern Black Sea coastal routes, including the services of the Dniester, Dnieper, Bug, and Rioni rivers. This was followed by the second most profitable line, Great Britain, with 22% of income (see Appendix 16.2).[33]

Apart from the leading position of the RSNTC in the coastal maritime market, a focus on the commercial development of external routes was evident post 1864, when net profits surpassed state subsidies, while distances covered by occasional voyages increased by 26.9%. Occasional voyages were unscheduled voyages that the company operated on almost all routes. They were not included in the statute of the RSNTC. Some of the routes were based completely on occasional voyages, and were related to tramp shipping activities. The registration by the company of regular and occasional voyages in numbers per year, rather than miles covered by ships (with only a few exceptions) does not provide a clear picture for the operational period of the company. The research can only offer broad trends, as is evident from Chart 16.4, that,

32 *RGIA*, fond 107, opis 1, delo 388, list 3; Mikhail Baryshnikov, "Русское Общество Пароходства и Торговли и развитие транспортной инфраструктуры Черноморского побережья Кавказа (1856–1864 Гг.)," ["The Russian Steam Navigation and Trading Company and the development of the infrastructure of the Black Sea coast of the Caucasus (1856–1864)"] *Университетский научный журнал* [*University Scientific Journal*], no. 29 (2017), 13–24.

33 *Исторический обзор правительственных мероприятий для развития торгового мореходства* [*Historical Overview of Government Activities for the Development of Merchant Shipping*] (St. Petersburg: Typographia Ministrestva finansov, 1895), 236–245; Leonid Grankov, *Русское судоходство: коммерческий флот России* [*Russian Shipping: Russian Commercial Fleet*] (Moscow: Marin-Press, 2004), 96–117.



MAP 16.2 Port-cities and rivers of the southern Russia
© MITTIA FRUMIN

after 1862, the number of regular voyages indicates a steady and significant decline. The most profitable route for cargo transportation was the English line, specifically orientated around unscheduled voyages. In 1862, the RSNTC made sixteen unscheduled voyages to Great Britain, reaching 32 voyages in 1872. Company vessels on this route mostly carried bulk cargo, for example, wheat and flour from the Black Sea region, and on inward voyages, iron and coal.[34] An increase in the share of wheat exports was one of the main goals of the commercial development strategy of the company; especially since cereal exports had turned the southern Black Sea waters into one of the main commercial routes of the Mediterranean, prior to the formation of the RSNTC. The company was required to compete with traditional Greek and Jewish grain trade networks, which were operating in southern Russia from the first half of the nineteenth century. In order to respond to growing competition in the grain export sector—newly influenced by the construction of the railway, which connected grain production with ports—the RSNTC decided to invest in the rail business. In 1870, the RSNTC obtained the right to operate the railway line between Odessa and Balta—this was based on an 81-year concession. The Odessa railway was formed as a separate company to the RSNTC, simple

34 *RGIA*, fond 107, opis 1, delo 363, list 1–79.

in order to protect the latter. The aim of operational expansion was the formation of a combined transport system (rail and steamship), in order to transport grain in an efficient and profitable manner. The RSNTC lowered railway tariffs, in order to increase the flow of cargo into Odessa, leaving other ports in the region at an economic disadvantage. Following six years of operational activity, the state treasury had yet to receive due payments under the bond capital guarantee, the consigners constantly complained about delayed shipments, and shareholders received dividends only once. The venture collapsed, the RSNTC had failed to succeed in the formation of a grain market logistical chain in southern Russia. Consequentially, the British line, which served as a grain export route, closed in 1879 for profitability reasons.[35]

The Suez Canal created a desire for the Russian Empire to extend its presence in the Far East. From the beginning, the RSNTC intended to pursue this goal, and it is no coincidence that the company, from 1866, established a connection with Port Said. Thus, in 1869, the company sent a research mission (an agent from Messina, Egor Baranovskiy) to evaluate trade possibilities. He commenced his trip in the industrial centres of northern Russia in order to record the types of goods that were in demand, from India and China. He continued by visiting London and Marseilles to observe in detail, British trade with colonies in the Far East, together with an evaluation of trade connections between France and India through the *Messageries Impériales* and other steamship companies. He completed his journey in Bombay and Calcutta. As part of this assessment of trade connections, important aspects of the research included: the type of steamships used; the type of operations and transport conditions utilised for specific goods; and the ethnic structure of the crews used by competitors.[36] The outcome of the research mission were well received, and the RSNTC were able to ameliorate the existing service. For example, a cargo of tea from Haikou via Siberia required thirteen months to reach Moscow and St. Petersburg, while a cargo of cotton from India (via sail) required one annual navigation period to reach the northern Russian ports. The RSNTC, from 1871, offered the transport of cargo over a much shorter period of time from India and China, to Odessa, and subsequently by railway to Moscow. However, the company could not compete on specific routes with the British, Austrian, and French companies, even though they received a subsidy for the Bombay line

35 *DAOO*, fond 1, opis 223, delo 195, list 1–12; *RGIA*, fond 107, opis 1, delo 560, list 1–6; Illovaiskiy, *Исторический очерк*, 120–126.

36 *RGIA*, fond 107, opis 1, delo 343, list 12–42.

(this was in the form of a return of the Suez Canal duty). Eventually, the routes to India and China were discontinued in 1876, as they were not profitable.[37]

5 Decline and the New Developmental Stage of the Black Sea Region

The period post 1873 can be characterised as a crisis phase for the Black Sea port-cities, as well as for the rest of Europe and America. The long depression which started in 1873, with a decline in world prices and an economic recession, which affected the Russian market, in combination with a severe drought followed by crop failures in southern Russia, led to a 23.56% drop in the export of grain. Later, as a consequence of the Russian-Ottoman War (1877–78), exports (in 1877) plunged by 72.52% compared with the previous year (see Chart 16.3). Under the circumstances of economic crisis, the RSNTC did manage to maintain control of the situation. To prevent a collapse of the share price, the company stabilised dividend payments for the following three years using reserve capital.[38] Apart from the involvement of the company in the railway sector, as described earlier, the expansion to the Far East required new vessels. As a result, during the period 1873–75, the company invested 1.5 million rubles in technological modernisation, which included the purchase of new ships (see Chart 16.1).[39]

During the Russian-Ottoman War, the RSNTC became an active part of state apparatus; it was a main carrier of troops, artillery, and coal. In addition, it offered four ships to the Russian Navy without compensation, and also, rented five ships for the Danube flotilla. Many routes were closed, with a dramatic decline in revenue. Following the end of the war, company net profits increased by 378% compared to the last pre-war year results (see Chart 16.2). The impressive increase in net profit can be explained by the fact that the steamers of the RSNTC carried troops and government cargo following the war, together with cargo stocked in warehouses, and passengers, who waited almost one year before finally being able to use RSNTC services.[40]

During the 1880s, there was a continuous shrinkage of the operation of external routes, the administration of the company focused on the development of coastal lines. After the closure of the English route, in 1887, the

37 *RGIA*, fond 107, opis 1, delo 343, list 49; fond 107, opis 1, delo 373, list 1; fond 107, opis 1, delo 543, list 1.

38 Illovaiskiy, *Исторический очерк*, 141.

39 Ibid., 147.

40 Ibid., 164–165.

Roumeli connection was also closed, as a result of the political situation in Bulgaria. Only the Anatolia and Alexandria routes showed significant operational activity in cargo shipment, as well as passenger transport. It was evident that the company needed new freight to cover the gap created by the collapse of grain cargo.

The 'new' freight source was undoubtedly oil. The "oil fever", as it was called by the Russian press of the time, gripped the eastern coast of the Black Sea and Caspian Sea at the end of the 1860s. The RSNTC recognised the value of transporting the new "gold" of the Black Sea region. In 1868, the company approached one of the first Russian oil drilling companies, based in Kerch, and offered the oil merchant Novosiltsov, a loan.[41] However, the most profitable oilfields were in Baku, on the Caspian Sea coast, therefore, the company decided to expand operations in this area. In 1887, the first ships began transportation, mainly of kerosene. The progress of the oil business required storage space, thus, the RSNTC invested in the construction of an oil mole, which was completed in the port of Odessa during 1895. Odessa became the hub of the Baku-Batoum-Odessa route. In 1892, the oil route accounted for 14.6% of the total cargo revenues of the company, competing with one of the most profitable lines of the RSNTC, that is, Alexandria, which during the same year reached 16.68% of cargo revenue. The oil route continued to operate until the end of company operations.[42]

As indicated in Chart 16.1, post 1900, the displacement tonnage of the RSNTC fleet shows an important upward trend, which continued until 1913. The company invested in larger ships for the opening of the state-subsidised routes to the Far East, and to the Persian Gulf. In 1901, the Odessa-Vladivostok route was opened, and in the first year, 4,508 Russian immigrants travelled to Vladivostok. The colonisation policy of Russia in the Far East, and economic expansion to China, were supported not only by the Volunteer Fleet (in Russian, the *Dobro Flot*), but also, by the RSNTC. Together with cargo and passengers, the RSNTC also transported troops, assisting in the Russian intervention in China. This

41 The oilfields in the Kerch Peninsula attracted interest not only from Russian entrepreneurs, but also, of foreign companies, see Anna Sydorenko "Controlling the straits: The development of the port of Kerch," in *Between Grain and Oil from the Azov to Caucasus: The Port-Cities of the Eastern Coast of the Black Sea, late 18th–early 20th century*, eds. Gelina Harlaftis, Victoria Konstantinova, Igor Lyman, Anna Sydorenko and Eka Tchkoidze, Black Sea History Working Papers, vol. 3, (Rethymnon: Centre of Maritime History, IMS/FORTH, 2020), 116–117, https://books.blacksea.gr/en/18/ (accessed 17 December 2021); *RGIA*, fond 107, opis 1, delo 318, list 8.

42 *RGIA*, fond 107, opis 1, delo 834, list 1–74.

was the second time the company aided the state, by supporting the Russian Navy in military affairs.[43]

Nevertheless, not only was commercial and political expansion to the Far East a strategic tenet of foreign policy for the empire, but in addition, the south of Persia also interested Russia. The already established commercial relations with northern Persia were not considered enough. The main exporter to the south of Persia was Great Britain, followed by France, and Germany, as the Ministry of Finance reported: "… there seems to be no reason why Russia could not take part in this trade, since among the goods it produces there are those that can be sold in the ports of the Persian Gulf". The main exponent for Russia, to further create trade links with the south of Persia, was the RSNTC. It opened a line in 1901, carrying kerosene from Baku, sugar from Odessa, wood from Kherson, manufactory goods from Moscow, and mail to Persian port-cities. Cotton and dry fruits were imported from southern Persia, mainly towards Moscow, through Odessa. However, the Persian route was not profitable: for example, in 1904, the total state subsidy was 200,000 rubles, while total revenue from cargo and passengers reached only 195,973,44 rubles. It seems that the Russian market was not ready to sustain such trade networks, even with state support.[44]

Prior to the First World War, the Russian Black Sea maritime transport market experienced significant transformation. Chart 16.5 shows that the tonnage of steamships in the Russian merchant fleet in the Black Sea, surpassed that of sailing ships after the 1870s. Unfortunately, the publication of Russian maritime statistics was very sporadic, thus it is not possible to trace the exact moment this change occurred. However, it is clear that Russia succeeded in realising the transition from sail to steam in their merchant fleet; in the earliest known year from this transitional period, 1895, steamship tonnage increased by more than 50% compared to 1873.

The RSNTC was the main actor in the technological and economic development of the Russian Black Sea region. It would, however, be an exaggeration to say that the RSNTC played a critical role in the development of the region, as it never managed to drive out the traditional Greek and Jewish merchant houses and shipping companies from the market, as is evident in the case of the grain

43 Igor Lukoyanov, *"*Не отстать от держав …*"* Россия на Дальнем Востоке в конце *XIX*–начале *XX* вв. [*"Keeping up with the Powers …" Russia in the Far East in the Late XIX–Early XX Centuries*] (St. Petersburg: Nestor-Istoriia, 2008), 125–126; Illovaiskiy, Исторический очерк, 312–318.

44 *RGIA*, fond 107, opis 1, delo 1592, list 1–146.

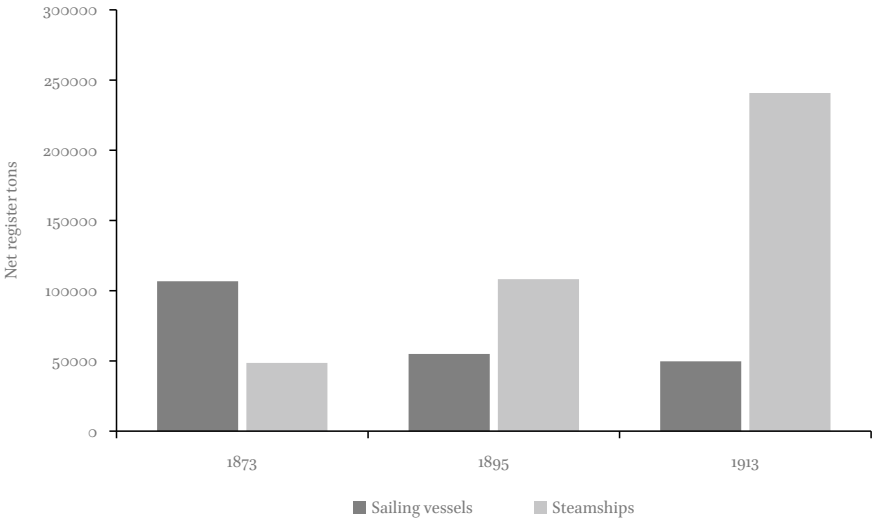


CHART 16.5 Comparative view of sailing vessels and steamships of the Russian merchant fleet in the Black Sea (in net register tons)
SOURCE: PROCESSED DATA FROM *Список Судов Российского Флота Военного и Торгового* [*LIST VESSELS OF THE RUSSIAN FLEET, NAVY AND COMMERCIAL*] (ST. PETERSBURG: OBSHECHESTVENNAIA POLZA, 1873), 14–24; Русский Торговый Флот, Список Судов к *1* Января *1896* г. [*LIST OF MERCHANT FLEET, LIST OF VESSELS TILL 1ST OF 1896*] (ST. PETERSBURG: KIRSHBAOUM, 1896), 7; Русский Торговый Флот, Список Судов к *1* Января *1914* г. [*LIST OF MERCHANT FLEET, LIST OF VESSELS TILL 1ST OF 1914*] (ST. PETERSBURG: KIRSHBAOUM, 1914), 10

trade, the most important economic sector in southern Russia. However, the contribution of the company from the technological perspective of changes in maritime transport, is undeniable. As observed in Chart 16.6, the RSNTC brought steam to this maritime region, and the transitional era from sail to steam was dominated by the company, almost until the end of the 1890s.

6 Conclusions

The Russian Steam Navigation Company, from foundation until the Russian Revolution, managed to balance the geostrategic and political priorities of the empire, and the desire for private commercial development. The company, which originated during radical changes in the economy and wider society, was able to evolve from a state-subsidised company to a profitable business for extended periods, and at the end of the commercial experiment returned

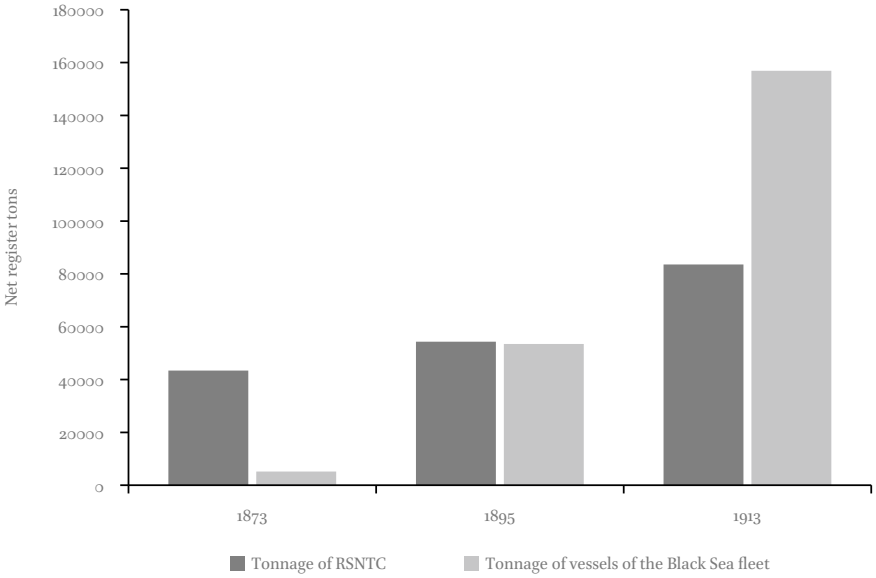


CHART 16.6 Comparative view of steamships of the RSNTC and Russian merchant fleet in the Black Sea (in net register tons)
SOURCE: PROCESSED DATA FROM Список Судов Российского Флота Военного и Торгового [*LIST VESSELS OF THE RUSSIAN FLEET, NAVY AND COMMERCIAL*] (ST. PETERSBURG: OBSHECHESTVENNAIA POLZA, 1873), 14–24; Русский Торговый Флот, Список Судов к *1* Января *1896* г. [*LIST OF MERCHANT FLEET, LIST OF VESSELS TILL 1ST OF 1896*] (ST. PETERSBURG: KIRSHBAOUM, 1896), 7; Русский Торговый Флот, Список Судов к *1* Января *1914* г. [*LIST OF MERCHANT FLEET, LIST OF VESSELS TILL 1ST OF 1914*] (ST. PETERSBURG: KIRSHBAOUM, 1914), 23

to state protection, which following the Russian Revolution, became crucial for the Soviet merchant fleet. However, the great success of the company was the introduction of the new era of steam into the Russian Black Sea region; it was also the first steamship liner company that connected the inner sea with the Mediterranean, including northern European routes, and in addition, the Far East, under the Russian flag. Ultimately, the goal was reached: the Russian Steam Navigation Company created the first reliable Russian merchant fleet, which could compete with the largest maritime powers of Europe.

APPENDIX 16.1 Lines of the Russian Steam Navigation and Trading Company, 1856–1913

A. Black and Azov Sea

Crimea-Caucasus Line

Odessa-Evpatoria-Sevastopol-Yalta-Aloushta-Soudak-Theodosia-Kerch-Anapa-Novorossiysk-Dzhougba-Touapse-Sochi-Adler-Goudaout-Noviy Aphon-Soukhoum-Ochemchiri-Poti-Batoum

Dnieper-Bug line

Odessa-Nikolayev line

Odessa-Kherson line

Azov Line

Kerch-Berdyansk-Marioupol-Taganrog-Rostov

Black Sea-Bulgaria (*east coast of the Black Sea*)

Odessa-Galatz-Varna-Burgas

Odessa-Istanbul line

Anatolian line

Odessa-Istanbul-Inebolu

B. North-eastern Mediterranean and South-eastern Mediterranean

Alexandria line (*direct*)

Odessa-Istanbul-Izmir-Piraeus-Alexandria

Alexandria line (*circular line*)

Odessa-Istanbul-Dardanelles-Athos-Thessaloniki-Izmir-Chios-Rhodes-Lemessos-Larnaka-Mersin-Tripoli-Beirut-Jaffa-Port Said

C. Central Mediterranean

Marseilles line

Odessa-Messina-Catania-Livorno-Genova-Marseilles

D. Northern Europe

English line

Black-Baltic Sea line

Odessa-Libava-Riga-Revel-St. Petersburg

E. Persia

Odessa-Istanbul- Dardanelles-Izmir-Beirut-Jaffa-Port Said-Suez-Jedda- Hodeida-Djibouti-Aden-Muscat- Bandar Abbas-Linga-Bushire-Khorramshahr-Basra

SOURCE: Отчет Русского Общества Пароходства и Торговли, *1862–1904* [*ANNUAL REPORTS OF THE RUSSIAN STEAM NAVIGATION AND TRADING COMPANY, 1856–1913*] (ST. PETERSBURG: TYPOGRAPHIA ARIGOLDA, 1863–1905)

APPENDIX 16.2 Income from cargo and passenger activity of the Russian Steam Navigation and trading Company (per line, in rubles)

Lines	1862		1872		1882		1892		1904	
	Cargo	Passenger	Cargo	Passenger	Cargo	Passenger	Cargo	Passenger	Cargo	Passenger
Internal coastal lines										
Crimea	44,907,82	89,436,73	298,252,36	284,633,20	459,825,78	189,589,68	–	–	–	
Crimea-Azov	–	–	–	–	–	–	406,852,31	1,228,02	648,874,48	1,276,47
Crimea-Caucasus	–	–	–	–	–	–	813,147,67	857,283,42	1,668,838,53	976,848,14
Azov	19,620,71	50,462,39	353,943,39	149,113,50	495,126,91	84,195,30	43,554,80	41,866,59	86,729,61	67,005,23
Kherson	15,599,66	45,143,96	79,212,97	84,016,30	135,201,33	96,848,80	166,580,63	95,990,62	114,654,07	132,519,11
Nikolayev	7,836,74	25,746,52	35,147,47	60,940,34	70,070,81	100,306,40	74,471	122,049,18	96,463,76	189,957,52
Caucasus	89,442,67	66,836,25	229,219,05	408,699,30	495,917,17	502,250,84	–	–	–	–
Galatz	7,562,06	27,555,74	2,665,65	5,974,51	2,549,89	33	–	–	–	–
Black Sea-Bulgaria	–	–	–	–	–	–	–	–	63,347,84	29,301,89
Internal river lines										
Dnieper ferry	11,260,81	7,548,55	26,681,22	85	–	–	–	–		–
Taman ferry	7,165,10	5,391,51	14,864,09	8,016,32	30,170,61	15,375,93	16,035,72	11,171,90	29,171,98	12,592,73
Dniester ferry	–	–	24,011,70	13,550,90	–	–	–	–	–	–
Bug river	15,333,98	455,16	49,087,17	46	21,624,29	15,50	3,167,37	150,50	9,050,74	144,75
Dnieper river	75,529,80	2,895,45	238,152,00	533	305,909,84	1,666,35	295,261,36	119,90	6,329,69	–
Dniester river	62,62	13	154,661,02	5	121,645,99	–	193,017,50	130,50	–	–
Rion river	1,544,60	3,495,53	336,42	32	–	–	–	–	–	–
Kuban river			20,155,44	4,428,45	–	–	–	–	–	–

APPENDIX 16.2 Income from cargo and passenger activity of the Russian Steam Navigation and trading Company (per line, in rubles) (*cont.*)

Lines	1862		1872		1882		1892		1904	
	Cargo	Passenger	Cargo	Passenger	Cargo	Passenger	Cargo	Passenger	Cargo	Passenger
External lines										
Istanbul	85,375,76	36,872,99	169,008,18	83,097,35	118,368,97	55,321,47	–	–		–
Istanbul-Sevastopol					72,400,53	25,465,10	18,320,38	15,743,17	58,066,55	46,405,15
Taganrog-Istanbul	32,412,99	18,706,03	9,111,24	583,00	–	–	16,564,73	75,49	–	–
Anatolia	58,858,59	37,117,58	390,081,27	170,557,90	246,058,89	148,994,09	189,148,82	71,863,46	88,852,56	54,922,70
Thessaloniki	25,500,08	36,761,49	–	–	–	–	–	–	–	–
Rumeli	–	–	–	–	96,106,22	32,750,90	–	–	–	–
Alexandria	153,408,15	143,489,61	261,613,87	107,557,60	474,598,47	206,046,50	601,570,83	154,732,40	732,935,09	288,991,50
Alexandria (round)	–	–	–	–	251,385,04	146,153,50	241,323,46	123,388,89	444,496,64	239,252,02
Macedonia-Alexandria	–	–	–	–	–	–	–	–	251,777,44	127,581,42
Marseilles	108,590,78	2.649,36	20,232,20	17,711,90	–	–	–	–	–	–
English	368,405,63	4.546,44	1,125,675,13	5,344,69	–	–	6,913,00	–	–	–
India	–	–	83,880,38	8,643,90	–	–	–	–	–	–
China	–	–	267,056,67	3,921,10	–	–	–	–	–	–
Oil line	–	–	–	–	–	–	526,459,55	161,73	249,286,49	–
Black-Baltic Sea	–	–	–	–	–	–	–	–	895,178,06	–
Persia	–	–	–	–	–	–	–	–	150,737,92	45,235,52

SOURCE: *PROCESSED DATA FROM Отчет Русского Общества Пароходства и Торговли, 1862–1904* [*ANNUAL REPORTS OF THE RUSSIAN STEAM NAVIGATION AND TRADING COMPANY, 1856–1913*], (ST. PETERSBURG: TYPOGRAPHIA ARIGOLDA, 1863–1905)

PART 4

Informatics, Semantic Networks and History

CHAPTER 17

Building and Exploring a Semantic Network of Maritime History Data

Pavlos Fafalios, Georgios Samaritakis, Kostas Petrakis, Korina Doerr, Athina Kritsotaki, Anastasia Axaridou and Martin Doerr

1 Introduction

A vast area of research in historical science concerns the quantitative analysis of empirical facts extracted from historical sources, their description, and the interpretation of possible causes, influences, and evolutionary trends. This kind of research requires a holistic data management approach that supports historians in all the different activities involved in their research processes, from digitizing the (usually hand-written) archival sources, to curating the transcribed data and performing quantitative analysis and exploration.

Current practice nearly exclusively uses spreadsheets or simple relational databases to organize the data as rows with multiple columns of related parameters, such as prices for kinds of goods in certain harbours at certain times, for the case of maritime history. This form offers itself to direct quantitative analysis under varying parameters, and can consequently be used for the scholarly interpretation of causes and impacts. However, it makes difficult: i) the collaborative curation and analysis of the transcribed data; ii) the combination of data coming from different and diverse sources; iii) the documentation of information on provenance (important for verification and long-term validity); and in general iv) the exploitation of the transcribed data beyond the context of a particular research problem.

To cope with these problems, in this chapter we describe a data management approach and a set of tools that support historians in collaboratively digitizing, curating, and exploring their unique information sources. The proposed approach is focused on semantic interoperability,[1] making easy the integration of data coming from diverse data sources, the description of provenance information, and the storage and publication of all data in a form that makes their

1 Aris M. Ouksel and Amit Sheth, "Semantic interoperability in global information systems," *ACM Sigmod Record* 28, no. 1 (1999): 5–12.

future exploitation easier.[2] This is achieved by enabling the description of rich metadata about the data and the use of standard models for describing and storing the data.

For supporting historians in digitizing and curating their historical information sources, we have introduced the FAST CAT system. FAST CAT is a browser-based system that supports both online and offline data entry with the possibility of automated synchronization when the researcher gets online. In FAST CAT, data from different information sources can be transcribed as "records" belonging to specific "templates", where a "template" represents the structure of a single data source. A record organizes the data and metadata into tables (similar to spreadsheets), offering functionalities like nesting tables and selection of term from a vocabulary. The curation of the transcribed data can be performed through FAST CAT TEAM, a special environment of FAST CAT that allows the collaborative management of "entities" (persons, locations, ships, legal entities) and "vocabulary terms" (like ship type, profession, etc.) that appear in the transcribed records. An important characteristic here is that this curation activity does not alter the data in the records as transcribed from the original archival sources, which is very important for maintaining the transcribed data as close to the original sources as possible. FAST CAT is innovative in the sense that it supports features like nested tabular structures for data entry, embedded instance matching and vocabulary maintenance processes, as well as provenance-aware data curation. These are important features that are not currently supported by existing data management systems.

The transcribed and curated data, together with their metadata, are then transformed into a rich semantic network using a data model compatible to CIDOC-CRM, a reference ontology and standard for the representation of cultural heritage information. Finally, the semantic network is available for exploration by historians and other interested parties through a Web application that supports users in building complex queries and visualizing the results in various ways, like tables, charts, or in a map. For example, historians can inspect a bar chart showing "the distribution of the embarkation locations of seamen that were crew members at ships of type brigantine".

The context of this work is the SeaLiT project,[3] a European (ERC) project of maritime history which studies the transition from sail to steam navigation and its effects on seafaring populations in the Mediterranean and the Black

2 Martin Doerr and Dolores Iorizzo, "The dream of a global knowledge network—A new approach," *Journal on Computing and Cultural Heritage* (*JOCCH*) 1, no. 1 (2008): 1–23.

3 http://www.sealitproject.eu/ (accessed 11 October 2021).

Sea between the 1850s and the 1920s.[4] The project investigates the maritime labour market, the evolving relations among ship-owners, captain, crew, and local societies, and the development of new business strategies, trade routes, and navigation patterns, during the transitional period from sail to steam. The information sources used in SeaLiT range from hand written ship log books, crew lists, payrolls and student registers, to civil registers, business records, account books, and consulate reports, gathered from different authorities and written in different languages, including Spanish, Italian, French, Russian, and Greek. We showcase the use of the described tools using these data sources.

Below, we start by describing how the archival sources can be transcribed and curated using FAST CAT and FAST CAT TEAM, then we detail the modelling and transformation of the transcribed and curated data into a rich semantic network, and finally we describe the data exploration functionalities of the ResearchSpace system.

2 Data Digitization with FAST CAT

The FAST CAT system was designed with the objective to support historians in faithfully cataloguing historical data sources for use as a primary source for research and for long-term validity and reuse, beyond the objectives of a particular research problem or project. The focus is to enable historians to transcribe as much relevant information as possible and as exact and fast as possible.

In FAST CAT, the first step before starting the digitization process is the creation of the "templates", each one representing a distinct archival source. This is performed in a pre-processing step, in close collaboration between historians and data engineers. This collaboration is necessary for better designing the structure of the data entry forms in a template, in a way that enables historians to accurately and fast digitize the archival data. During the configuration of a template, we need to provide the structure of the tables that all together constitute the template. Each table has a title and consists of a set of columns. A column accepts values of different types, in particular: i) "entity" (the value is the name or an attribute of an entity, e.g., the name or birth date a person); ii) "vocabulary term" (the value is a term from a controlled vocabulary); iii) "literal" (the value is a literal, e.g., a free text, a number, or a date); or iv) "nested table" (the value is another table). Also, a set of columns can be configured to accept multiple values in a single table row (e.g., for providing

4 Apostolos Delis, "Seafaring Lives at the crossroads of Mediterranean maritime history," *International Journal of Maritime History* 32, no. 2 (2020): 464–478.

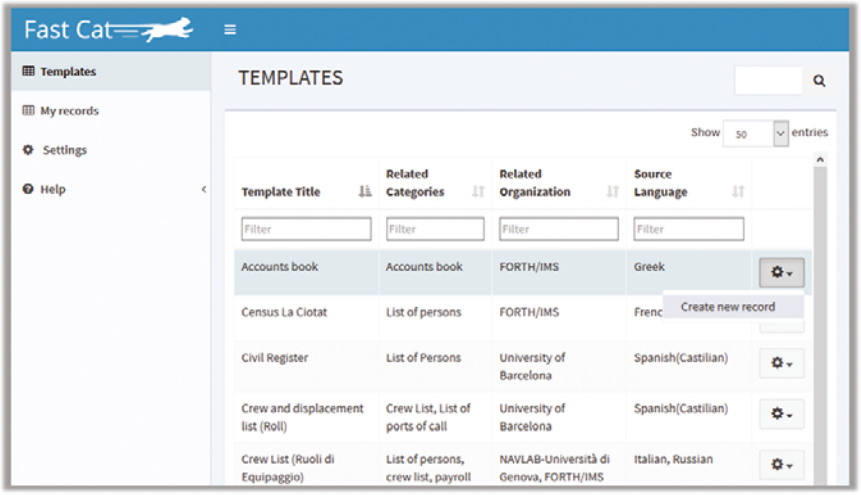


FIGURE 17.1 The home page of FAST CAT

multiple ship owners in a row describing information about a single ship). After having configured the templates, historians are able to start the digitization process by creating "records", each one corresponding to a particular template.

Fig. 17.1 shows the home page of FAST CAT, where the user is shown a table containing all the available templates. For each template, the table provides some basic information, in particular the "title" of the template, "related categories" (keywords that represent the type of the included information), "related organizations" (responsible for the data entry process), and the "source languages". The user can select a template and create a new record to start digitizing a particular archival source. For creating the record, the user first needs to provide some basic information by filling a small form. This information is different for each template. For instance, for a record of type "Logbook" the user must provide the following information: Type of Ship, Name of Ship, Date of Document (From/To), Author of Record, the latter being the name and surname of the historian performing the data entry.

After filling the form, the record is created and the user can start entering the data in the record tables. Fig. 17.2 shows an example of a record of template "Logbook". The first two tables of each record contain some basic metadata information about the record and the archival source. In the first table, entitled "FastCat Record Information", the user can provide the name and role of each historian performing the data entry, while the record ID, creation date, and last modification date are automatically filled by the system. In the second table, entitled "Source Identity", the user can provide information about the archival source, like the name and location of the archive or library, the collection title,

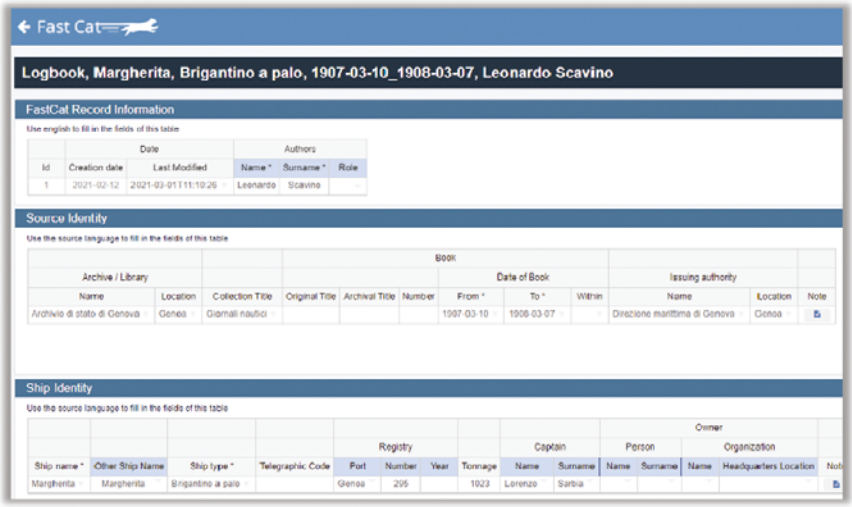


FIGURE 17.2 An example of a FAST CAT record belonging to the template "Logbook"

the book title and date, and the name and location of the issuing authority. The remaining record tables are different for each different archival source. For instance, for the case of logbooks, the template contains two additional tables: "Ship Identity" and "Voyage Calendar". In the "Ship Identity" table, the user can provide information like ship name, ship type, telegraphic code, registry port, tonnage, captain, owner, etc., while in the "Voyage Calendar" table, the user can provide information about the recorded voyages of the logbook, like the route and duration of each voyage or its analytical calendar. For the analytical calendar, the user can provide the data in a separate nested table, as shown in Fig. 17.3.

When the user has finished the data entry in a particular record, she/he can share it on FAST CAT TEAM and start data curation (more below). The user can also export the transcribed data of a record in Excel or XML format, e.g. for offline analysis.

FAST CAT is currently used in the SeaLiT project by around 30 historians from five organizations in five countries (Greece, Spain, Italy, France, Croatia). The number of configured templates is currently twenty, representing twenty different types of archival sources, while the total number of records is more than 600. Note here that some templates are shared by historians of different countries since the corresponding archival sources share a similar structure. Indicative examples of records are available online.[5]

5 https://www.ics.forth.gr/isl/fast-cat (accessed 11 October 2021).

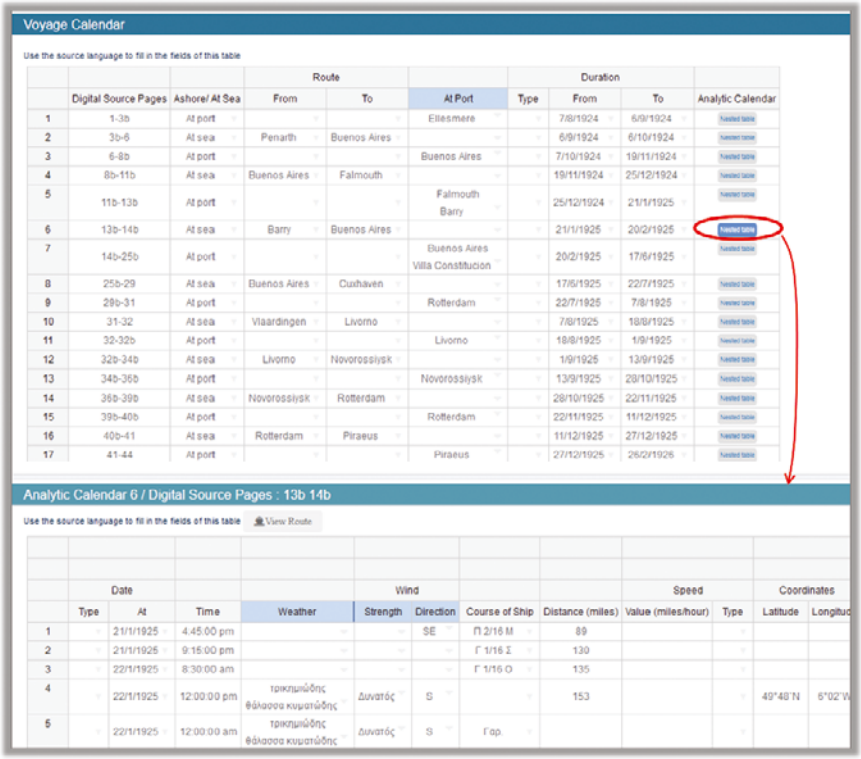


FIGURE 17.3 An example of a nested table in FAST CAT

3 Data Curation with FAST CAT TEAM

After finishing the digitization of the different archival sources, historians need to curate the transcribed data and sometimes enrich them with additional information, in order to integrate them into a common form from which historical research and quantitative analysis can be carried out correctly and efficiently. This involves several steps, including:

- applying corrections in entity names, like names of persons or locations
- adding missing entity information, or enriching with additional data, e.g., adding coordinates in the locations for enabling map visualizations
- maintaining vocabularies of terms for certain types of data that appear in the transcripts, e.g., a vocabulary containing preferred and broader terms for "ship types"
- dealing with varying entity identity assumptions; a problem known as *instance matching*

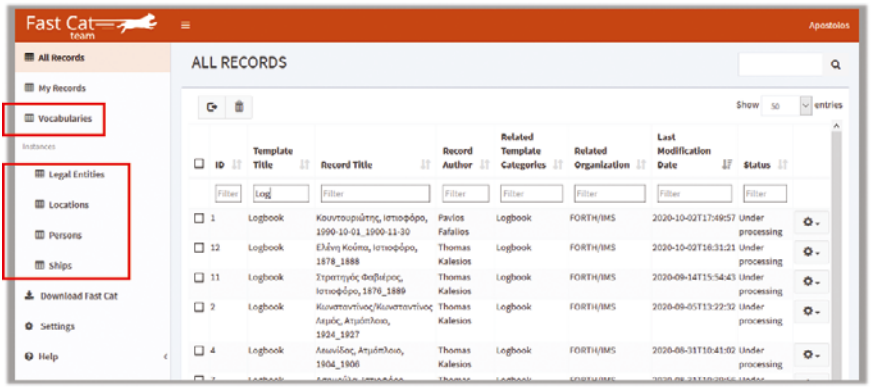


FIGURE 17.4 The home page of FAST CAT TEAM

An important requirement here is that all these curation steps must not alter the original transcribed data; historians must be able to go back at any time and check how a particular piece of information appears in the original transcripts. This is crucial for reliability of the research results as well as validation.

FAST CAT offers a special environment, called FAST CAT TEAM, through which the historians can collaboratively perform the above curation steps without changing the original transcribed data.

Fig 17.4 shows the home page of FAST CAT TEAM. In the home page, the user is shown a table containing all the publicly shared FAST CAT records whose data can be curated. The curation steps are organized into two categories, accessible through the left menu: i) management of vocabularies; and ii) management of entity instances (Legal Entities, Locations, Persons, and Ships, in our case).

When visiting the "Vocabularies" menu item, the user is shown a table with all vocabularies whose terms appear in the transcribed data (Fig. 17.5). For each vocabulary, the table shows its title, its source languages, the templates in which it is used, and the related organizations (responsible for the templates). Next to each vocabulary title, the table also shows the approximate number of vocabulary terms. The user can select a vocabulary from the table and edit or export it (in JSON format). By selecting to edit a vocabulary, the user is redirected to a web page showing a table with all terms of the selected vocabulary (Fig. 17.6). For each term, the table shows its value as it appears in the transcribed record(s), its preferred value (in English), and its broader term. The preferred term value and the broader term can be filled by the user by clicking on the "Edit term" option. The user can also directly inspect and visit the FAST CAT records in which the term appears by clicking on the information icon at

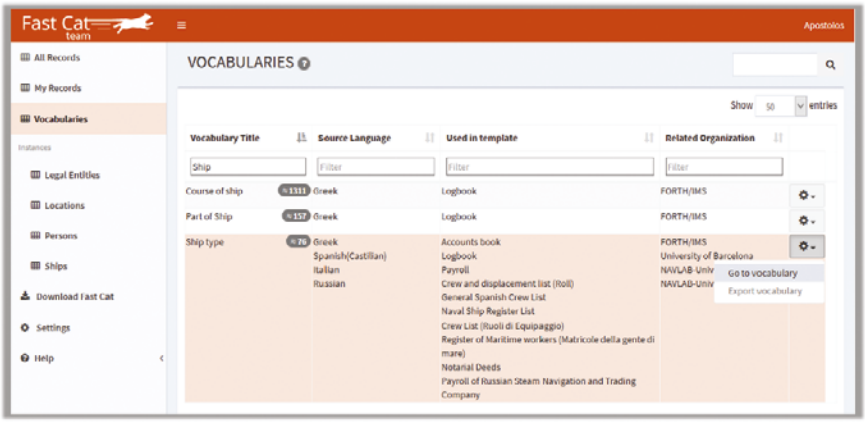


FIGURE 17.5 Management of vocabularies in FAST CAT TEAM

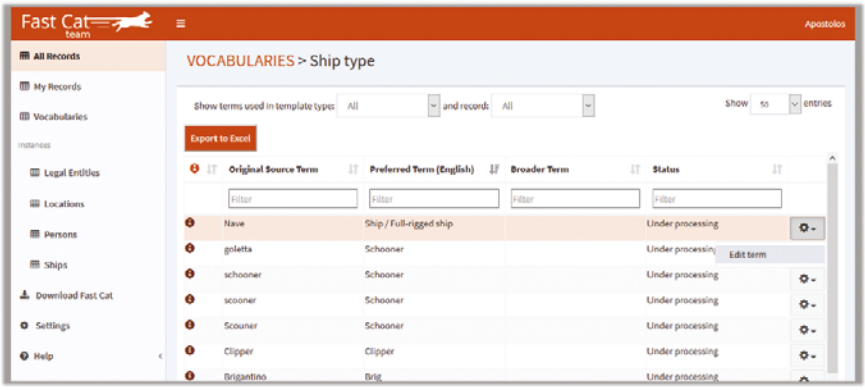


FIGURE 17.6 Inspecting the terms of a vocabulary in FAST CAT TEAM

the left of each term (Fig. 17.7), thereby getting additional context information that can help the user to disambiguate or better understand the term.

The curation of vocabularies is very important for supporting more accurate analysis services and more effective data exploration services. For example, by knowing that the preferred terms "captain", "steward", "guardian", and "able seaman" of the vocabulary "profession"—that might have been written in different languages or in different forms in the original sources—have the term "sailor" as a broader term, we can use the term "sailor" for handling collectively all these narrower terms, e.g., in a search service ("show me all crew members of profession sailor"), or when performing quantitative analysis ("show me the number of crew members per profession").

For the curation of the entity instances that appear in the transcribed data (in our case: Legal Entities, Locations, Persons, and Ships), users can select

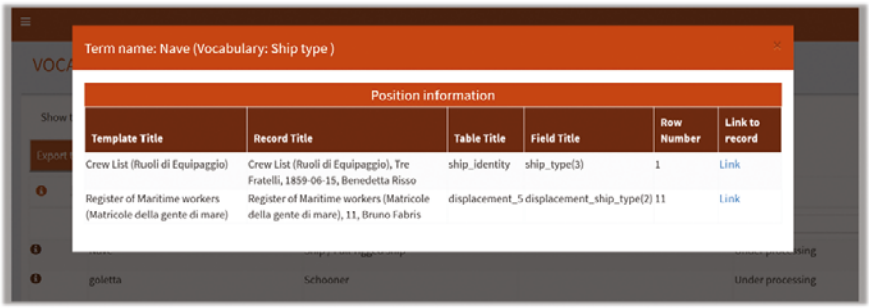


FIGURE 17.7 Inspecting the FAST CAT records in which a vocabulary term appears

the corresponding menu item (see Fig 17.3) and inspect a table with all the instances of the selected entity type. For each different entity type, the table displays different information and the user has different curation options.

For Persons, the table shows the following attributes: name, surname A, surname B, maiden name, father's name, place of birth, date of birth, date of death, registration number, status/capacity/role. Note here that some of these attributes might be empty if there is no such information in the transcribed records. The user can select a person and change the value of one of its attributes, select two or more persons and indicate that they correspond to the same person (manual instance matching), also allowing the indication of the preferred value if there is a conflict in the name or one of the attributes, or mark as different one or more already matched person instances (Fig. 17.8). Giving the same identity to different person references (like "A.M. Micheletti" and "Achille Marius Michelletti") for which we learn (through historical research) that they correspond to the same individual, is very important when performing historical quantitative analysis, like computing the number of sailors per birth place (since in this way we avoid misleading statistics and errors in the analysis results), while it is also very important in qualitative terms, e.g., when constructing biographical trajectories. For the same reasons, it is important to give different identities to similar person references that we learn correspond to different individuals (like two different persons with the same name).

For "Ships", the user is shown with the following attributes: name, previous name, type, call signal, construction location, construction date, telegraphic code, flag, owner company, registration list, registration number, registration location. Similar to the case of persons, the user can correct one of the ship attributes, select two or more ships and indicate that they correspond to the same ship, or mark as different one or more already matched instances. For Legal Entities, the system only shows the name of the legal entity as it appears in the record(s), allowing the user to change its value and set a preferred

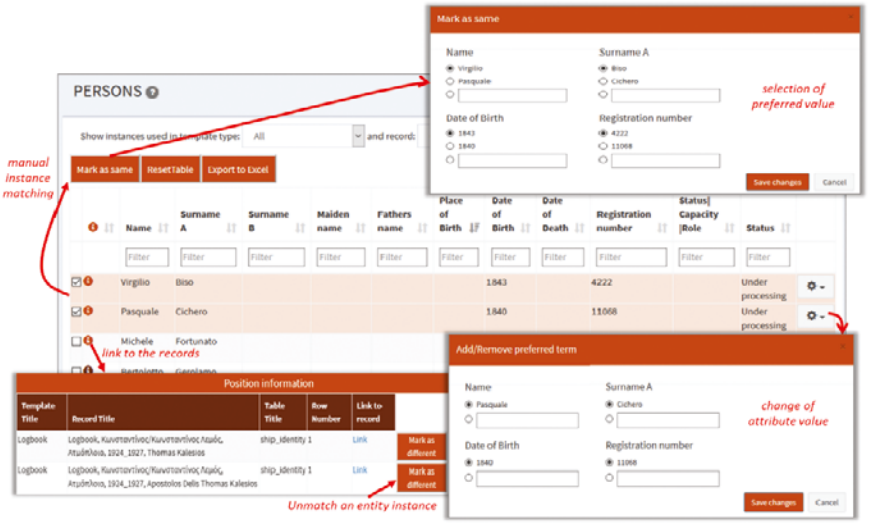


FIGURE 17.8 Curation of "Person" instances in FAST CAT TEAM

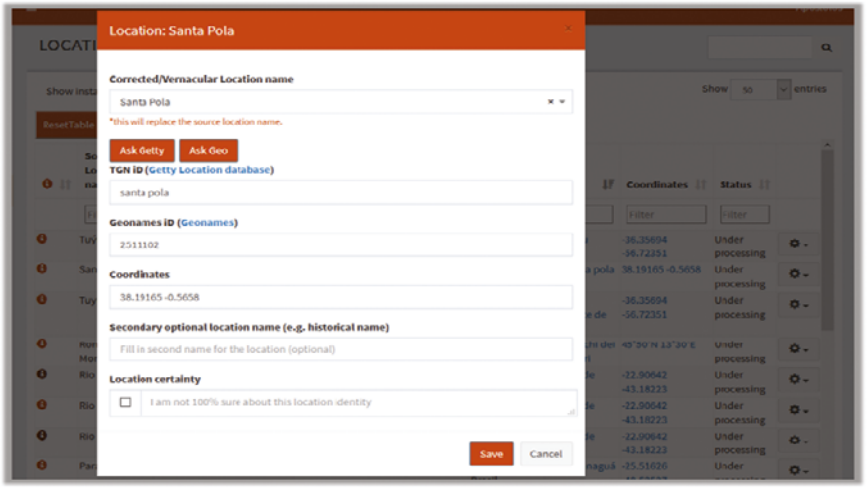


FIGURE 17.9 Curation of "Location" instances in FAST CAT TEAM

one. The user can also select two or more legal entities and indicate that they correspond to the same entity, or mark as different one or more already matched instances.

Finally, for "Locations" the system shows the following data: source location name, corrected/vernacular location name, other location name, location type, broader location name, ID (TGN or Geonames ID), coordinates. The user can select a location and correct or provide one of its attributes, as shown in

Fig. 17.9. Here the system offers the capability to directly query external geolocation services, in particular Getty Thesaurus of Geographic Names (TGN)[6] and Geonames,[7] and get the unique ID of the location as well as its coordinates. When querying these services, the system retrieves and shows a list with the relevant locations, allowing the user to select the correct one. When selecting one of the retrieved locations, the system shows the location on a map, helping the user to directly check if the location is correct, and the coordinates are automatically filled. If the user is not sure about the exact location, she/he can tick the checkbox "Location certainty" and optionally include a comment. Linking the locations to coordinates is very important for enabling the visualization of the transcribed data on a map.

In the context of the SeaLiT project, the total number of vocabularies available for curation is currently 52. Examples include: ship type, flag, marital status, religion, military service status, nationality, profession, reason of death, wind direction, and wind strength. As regards the number of entity instances, there are currently 72,093 person instances, 7,638 location instances, 1,876 ship instances, and 1,137 legal entity instances. Since the investigation process is still open and new records are created, and also the manual instance matching process made by the historians is still in progress, the number of distinct instances in each entity type is expected to be different at the end of the data entry and curation processes.

4 Data Modelling and Transformation to a Semantic Network

The transcribed and curated data is now ready for transformation into a rich semantic network of "Linked Data"[8] that will allow for advanced exploration and analysis of the historical information that appears in the archival sources. The objective is to model and semantically represent the curated data and metadata using established and standard data models, for supporting data exchange, interoperability, and long-term validity and reuse. For this, we need:

a) to decide on the domain schema (ontology) to use for representing the data of the FAST CAT records
b) to create the schema mappings for each template in FAST CAT, which map the table columns of a template to classes and properties in the domain ontology

6 http://www.getty.edu/research/tools/vocabularies/tgn/ (accessed 11 October 2021).
7 https://www.geonames.org/ (accessed 11 October 2021).
8 Tom Heath and Christian Bizer, "Linked data: Evolving the web into a global data space," *Synthesis lectures on the semantic web: theory and technology* 1, no. 1 (2011): 1–136.

c) to run the transformations considering the designed schema mappings and the domain ontology, and then ingest the produced semantic data (RDF triples[9]) to a semantic repository (RDF database), from where data analysis and exploration can be initiated

4.1 *The Domain Ontology*

As the domain ontology, we created a data model compatible with the CIDOC Conceptual Reference Model (CRM).[10] CIDOC-CRM is a high-level, event-centric ontology (ISO standard 21127:2014)[11] of human activity, things and events happening in spacetime, providing definitions and a formal structure for describing the implicit and explicit concepts and relationships used in cultural heritage documentation.[12] It is intended to be used as a common language for domain experts and implementers to formulate requirements for information systems, providing a way to integrate cultural heritage information of different sources. CIDOC-CRM has been used in a plethora of projects and data management activities related to (mainly) cultural heritage, history, and archaeology.[13]

The data model, which we call "SeaLiT Ontology", is under constant evaluation as long as new archival sources are analysed. It currently allows describing information about "Ships", "Ship voyages", "Crew payments" and "Actors" (like persons or organizations).

Fig. 17.*10* shows how these main concepts are related. A "Ship" made a "Voyage" which was carried out by "Actors" in particular roles (e.g., captain), while a "Crew Payment" was made for a particular "Voyage" and was carried out by "Actors" in specific roles (e.g., employer and employee). The classes "Ship", "Voyage", and "Crew Payment" are newly introduced classes of the SeaLiT Ontology, extending classes of CIDOC-CRM.

Fig. 17.11 depicts how information about a ship is modelled in the SeaLiT Ontology. First, a "Ship" is the result of a "Ship Construction" that took place at a particular "Place" and in a particular "Time-Span", and which gave the "Ship Name" to the ship. A "Ship" also has some characteristics, like "Horsepower", "Tonnage" and "Crew Number Capacity", and is registered during a "Ship Registration" activity by a "Port of Registry", with a ship flag of a particular "Country" and with a particular "Ship ID". The "Ship Registration" is

9 https://www.w3.org/TR/rdf-concepts/ (accessed 11 October 2021).
10 http://www.cidoc-crm.org/ (accessed 11 October 2021).
11 https://www.iso.org/standard/57832.html (accessed 11 October 2021).
12 Martin Doerr, "The CIDOC conceptual reference module: an ontological approach to semantic interoperability of metadata," *AI magazine* 24, no. 3 (2003): 75–75.
13 http://www.cidoc-crm.org/useCasesPage (accessed 11 October 2021).

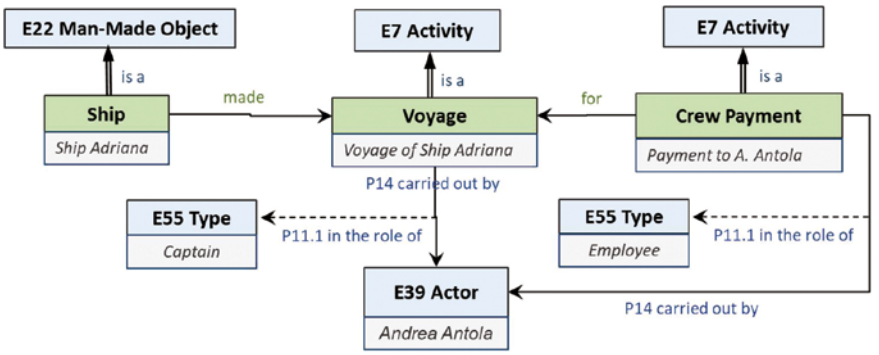


FIGURE 17.10 The main concepts of the SeaLiT Ontology

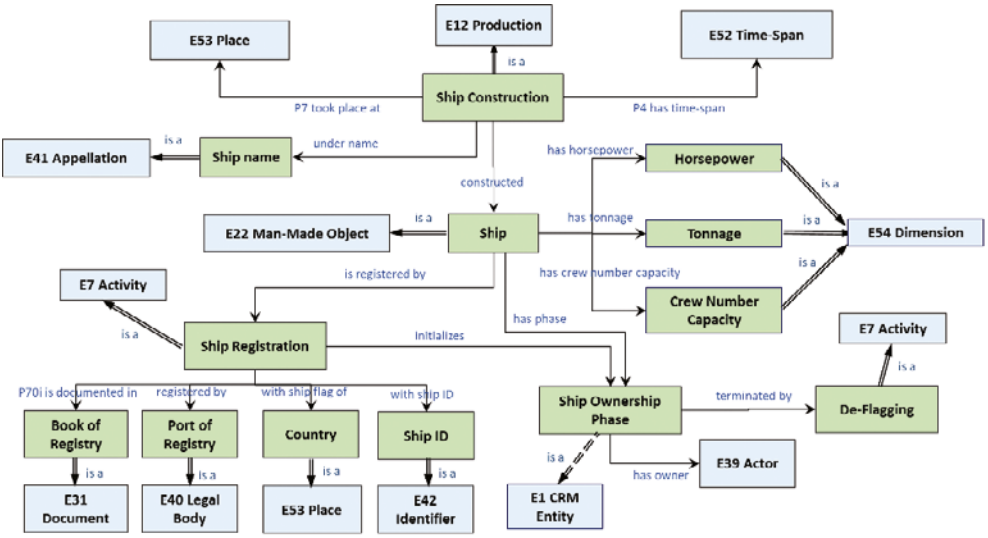


FIGURE 17.11 Modelling information about a ship

documented in a "Book of Registry". Finally, a "Ship" has one or more "Ship Ownership Phases" which can be terminated by a "De-Flagging" activity.

Fig. 17.12 shows all different activities related to a "Ship" that have been modelled in the ontology. This includes "Ship Construction", "Ship Registration", "Ship Ownership Phase", "Voyage", "Ship Repair", "Ship Destruction", and "De-Flagging". De-Flagging can be the result of a "Ship Destruction", "Purchase or Transfer of Custody". Note that each of these classes allows for the describing of further information about the corresponding activity, like time-span, locations, involved actors, identifiers, etc.

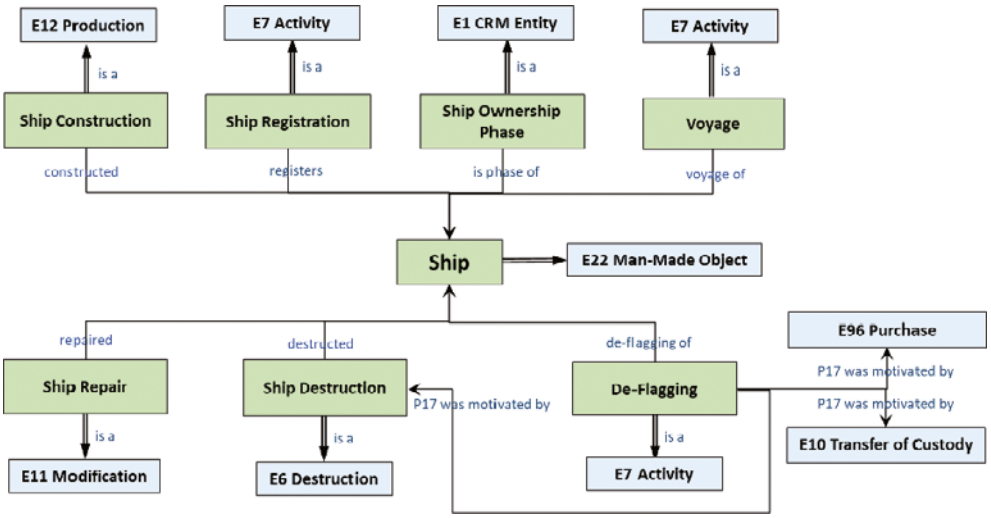


FIGURE 17.12 Activities related to a ship

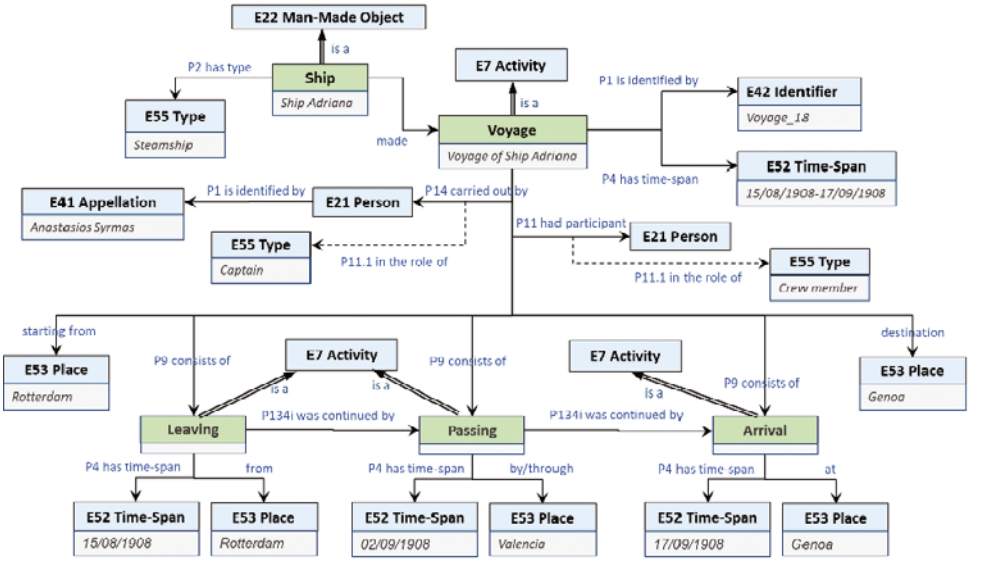


FIGURE 17.13 Modelling information about a ship voyage

Fig. 17.13 depicts how we model information about a ship voyage. A "Voyage" refers to a particular "Ship" and has a particular "Time-Span". It has been carried out by some "Persons" and has some other "Persons" as participants. It has a starting "Place", a destination "Place", and also consists of one or more sailing activities, like "Leaving" a place, "Passing" by a place, or "Arriving" at a place in a particular "Time-Span". These activities can be connected through

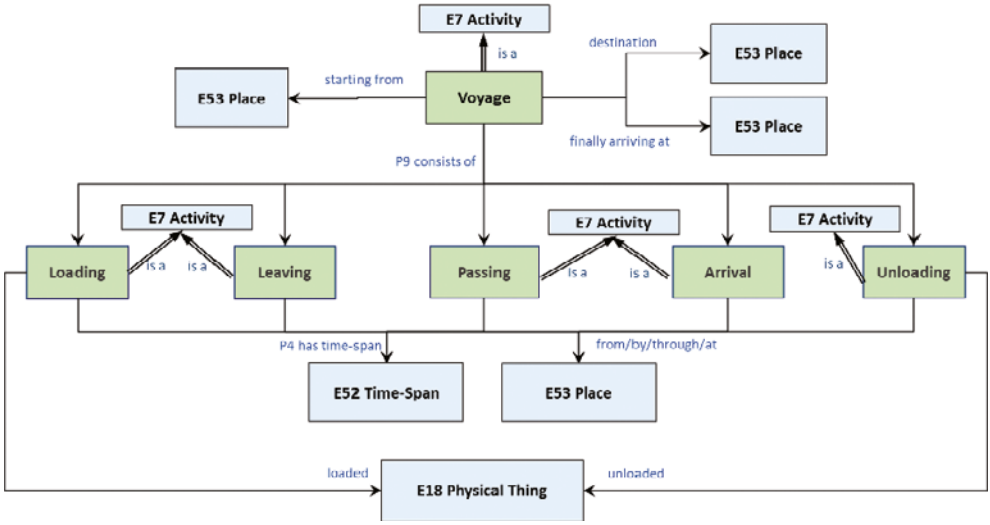


FIGURE 17.14 Activities related to a ship voyage

the CIDOC-CRM property "P134i was continued by", thereby enabling modelling their sequence (since we may know the sequence of the activities but not the time-spans of all of them). Fig. 17.14 shows all different activities and properties related to a ship voyage. This includes "Loading" and "Unloading" things, "Leaving" a place, "Passing" by or through a place, and "Arrival" at a place. Note also that, apart from the "starting from" and "destination" places, the voyage can be connected to a "finally arriving at" place, since arriving at a different place from the one originally planned is quite common in historical voyages.

Fig. 17.*15* shows how we model information about payments and employments. A "Crew Payment" activity concerns a particular "Voyage", has a particular "Monetary Amount", has been carried out by some "Actors" (like the person who received the payment and the person who gave the payment), took place within a particular "Time-Span", and has been agreed in a "Payment Contract". A "Crew Payment" is also connected to particular "Ship Crew Employment", carried out by some "Actors" (like the employer and the employee), started by a "Recruitment" activity and ended by a "Discharge" activity, each one linked to a particular "Time-Span". Each of these classes allows describing additional information, like connected places, persons, or other activities.

Fig. 17.16 shows how we model information about a person. A "Person" is identified by an "Appellation" (like first name and last name), was born at a particular "Place" and within a particular "Time-Span", can be a current or former member of a "Legal Body", and has some attributes, like "Social Status", "Language Capacity", "Literacy Status", "Sex Type", and "Religion Status". Each of these attributes can receive values from a dedicated vocabulary or thesaurus of

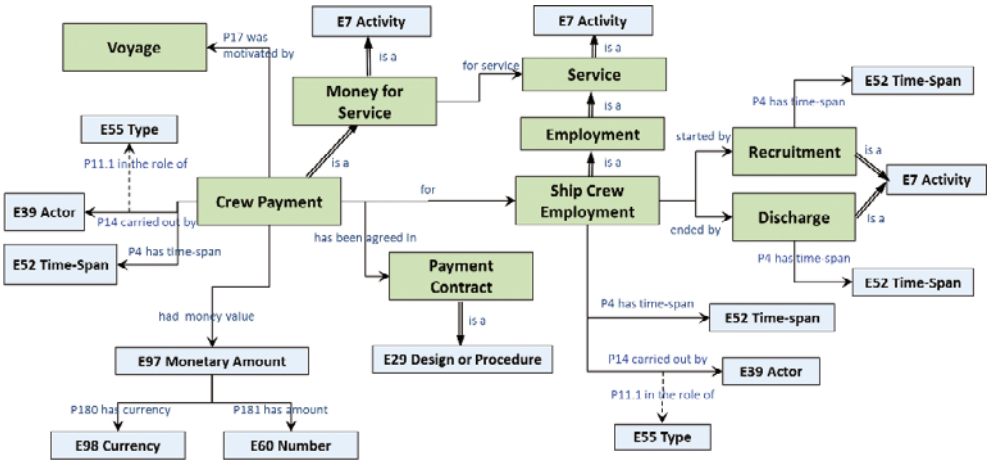


FIGURE 17.15 Modelling information about a crew payment

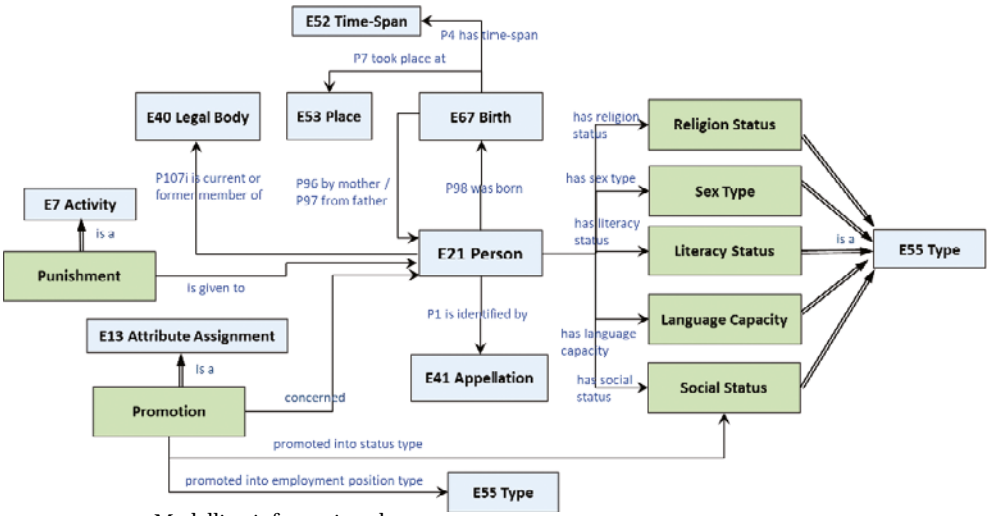


FIGURE 17.16 Modelling information about a person

terms in an information management system (as we do in FAST CAT). Finally, a "Person" can be connected to a "Promotion" (i.e., into a new social status or employment position) or "Punishment" (which is common for crew members during voyages).

4.2 *Data Transformation*

After defining the domain ontology to use for representing the data in the FAST CAT records as a semantic network, we need to create the schema mappings that associate equivalent concepts and relationships from the source schemata

FIGURE 17.17 The home page of 3M editor

(FAST CAT templates, in our case) to the target schema (the SeaLiT ontology). For this, we make use of the X3ML framework and the X3ML mapping definition language, a declarative, XML-based and human readable language that supports the cognitive process of schema mapping definition.[14] X3ML separates schema mappings from the generation of proper resource identifiers (URIs), so it distinguishes between activities carried out by the domain experts and data engineers, who know the data, from activities carried out by the IT experts who implement data transformation.

The definition of the mappings is a time-consuming process that can last for several weeks and can require many revisions as long as the data engineer better understands the data or changes are made to the FAST CAT templates. This process is supported by 3M Editor, an X3ML mapping management system suitable for creating and handling the mapping files. It offers a user interface and a variety of actions that help experts manage their schema mappings collaboratively. Fig.17.17 shows the home page of 3M Editor. The user can search for an existing mapping, create a new mapping, select a mapping from the list and view it, or edit one of the available mappings. When creating a new mapping, the user needs to upload a part of the source data (an XML file of the record data that can be obtained through FAST CAT) as well as the target schema (i.e., the SeaLiT Ontology).

Fig. 17.18 shows a screen dump of a mapping definition for the FAST CAT template "Crew List (Ruoli di Equipaggio)". We see that the "ship name" field of the source schema (first column of the table "Ship Identity"; see Fig. 17.2)

14 Yannis Marketakis, Nikos Minadakis, Haridimos Kondylakis, Konstantina Konsolaki, Georgios Samaritakis, Maria Theodoridou, Giorgos Flouris, and Martin Doerr, "X3ML mapping framework for information integration in cultural heritage and beyond," *International Journal on Digital Libraries* 18, no. 4 (2017): 301–319.

FIGURE 17.18 A part of a mapping definition in 3M editor for the template crew list (*Ruoli di Equipaggio*)

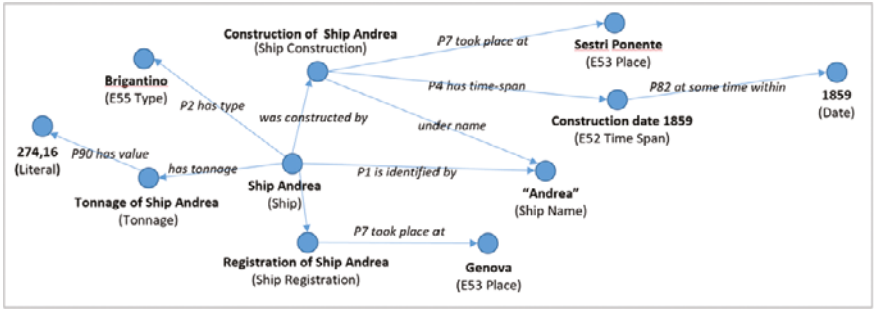


FIGURE 17.19 A small part of the derived semantic network

is mapped to the paths "Ship—was constructed by—Ship Construction—under name—Ship Name" and "P1 is identified by—Ship Name" on the SeaLiT Ontology. Likewise, the "ship type" field of the source schema is mapped to the path "Ship—P2 has type—E55 Type", the "ship tonnage" field to the path "Ship—has tonnage—Tonnage—P90 has value—Literal", the "construction location" field to the path "Ship—was constructed by—Ship Construction—P7 took place at—E53 Place", the "construction date" field to the path "Ship—was constructed by—Ship Construction—P4 has time-span—E52 Time-Span—P82 at some time within—Date", and the "registry port" field to the path "Ship—is registered by—Ship Registration—P7 took place at—E53 Place". Fig. 17.19 shows the corresponding part of the derived semantic network.

5 Semantic Network Exploration

When the transformation process is completed, the derived semantic network is loaded to a semantic repository (database of RDF data) and is made available for analysis and exploration by other applications. Here, the user-friendly exploration of a semantic repository can be performed through two main general access methods:

i) Keyword Search: the user submits a free text query and gets back a ranked list of results that are relevant to the query terms[15,16]

ii) Interactive Access: the user explores the data through intuitive interactions with a data access system, e.g., through a data browsing system,[17] a faceted search interface,[18] or an assistive query building system[19]

In the context of the SeaLiT project, we make use of ResearchSpace,[20] an open source platform built on top of the metaphactory platform.[21] ResearchSpace combines a variety of access methods, including data browsing and assistive query building, as well as a variety of visualization methods, such as tables, charts, or visualization on a map.

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15 Giorgos Kadilierakis Pavlos Fafalios, Panagiotis Papadakos, and Yannis Tzitzikas "Keyword search over RDF using document-centric information retrieval systems," in *The Semantic Web, 17th International Conference, ESWC 2020, Heraklion, Crete, Greece, May 31–June 4, 2020, Proceedings* eds. Andreas Harth, Sabrina Kirrane, Axel-Cyrille Ngonga Ngomo, Heiko Paulheim, Anisa Rula, Anna Lisa Gentile, Peter Haase, and Michael Cochez (Cham: Springer, 2020), 121–137.

16 Nikas, Christos, Giorgos Kadilierakis, Pavlos Fafalios, and Yannis Tzitzikas, "Keyword Search over RDF: Is a Single Perspective Enough?," *Big Data and Cognitive Computing* 4, no. 3 (2020): 22.

17 Aidan Hogan, Andreas Harth, Jürgen Umbrich, Sheila Kinsella, Axel Polleres, and Stefan Decker, "Searching and browsing linked data with swse: The semantic web search engine," *Journal of web semantics* 9, no. 4 (2011): 365–401.

18 Yannis Tzitzikas, Nikos Manolis, and Panagiotis Papadakos, "Faceted exploration of RDF/S datasets: a survey," *Journal of Intelligent Information Systems* 48, no. 2 (2017): 329–364.

19 Vangelis Kritsotakis, Yannis Roussakis, Theodore Patkos, and Maria Theodoridou, "Assistive Query Building for Semantic Data," in Proceedings of the Posters and Demos Track of the 14th International Conference on Semantic Systems *co-located with the 14th International Conference on Semantic Systems* (*SEMANTiCS 2018*), eds. Ali Khalili and Maria Koutraki, 2018, http://ceur-ws.org/Vol-2198/ (accessed 20 December 2021).

20 Dominic Oldman and Diana Tanase, "Reshaping the Knowledge Graph by connecting researchers, data and practices in ResearchSpace," in *The Semantic Web-ISWC 2018. 17th International Semantic Web Conference, Monterrey, CA, USA, October 8–12, 2018, Proceedings*, eds. Denny Vrandečić, Kalina Bontcheva, Mari Carmen Suárez-Figueroa, Valentina Presutti, Irene Celino, Marta Sabou, Lucie-Aimée Kaffee and Elena Simperl (Cham: Springer, 2020), 325–340.

21 Haase, Peter, Daniel M. Herzig, Artem Kozlov, Andriy Nikolov, and Johannes Trame, "Metaphactory: A platform for knowledge graph management," *Semantic Web* 10, no. 6 (2019): 1109–1125.

5.1 *Data Browsing*

Fig. 17.20 shows how the user can start browsing the data of the semantic network. The interface displays the main types of entities in a left menu (Ships, Voyages, Persons, Organizations, Places, Crew Employments, and Payments). By selecting to view one of these entity types, the user is shown a table with all instances together with additional information about each instance. In particular, for a ship, the table shows the following information: ship type, tonnage, registration port, registration number, construction location, construction date, owner. For a voyage, it shows the name of the ship, the destination, the starting and ending date, its duration and the name of the corresponding data source. For persons, it shows: first name, last name, father name, serial number, birth date, and residence place. For an organization, it shows its name and location. For a place, it shows the type (e.g., region, port, etc.) and its coordinates, while for crew employments and payments it shows: employee name, serial number, recruitment place, starting date, discharge place, ending date, profession, ship, pension fund, wage, duration, and data source name. For places, the user can also inspect a map of all places referred to in the archival sources, thereby allowing them to get an overview of the covered areas. In SeaLiT, for instance, almost all places are in Europe.

The user can select one of the entity instances shown in the table and start exploring the associated data, taking advantage of the Linked Data concept. Fig. 17.21 shows an example where the user has selected to browse the data of the voyage of the ship *Mardocheo*. We can inspect information like the timespan of the voyage and the crew members, while, by selecting to explore further one of the displayed entities (e.g., one of the crew members), the user can start browsing information about that entity. Since the ship voyages are connected to places (like embarkation ports), the user can also inspect a map with all these places, as shown in Fig. 17.22. For example, we see that the voyage of the

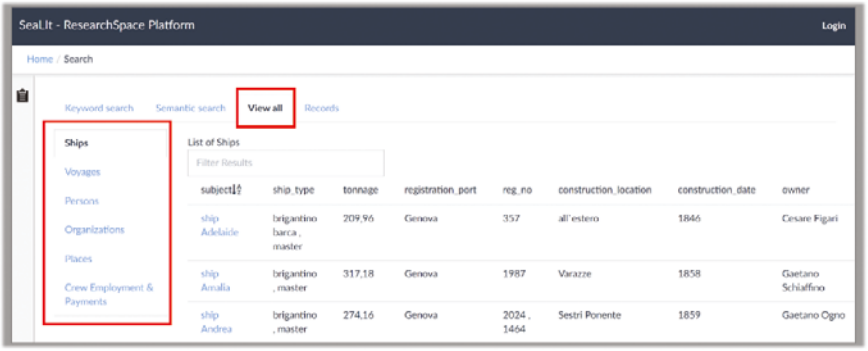

FIGURE 17.20 Browsing the main entities that appear in the transcribed and curated data in ResearchSpace

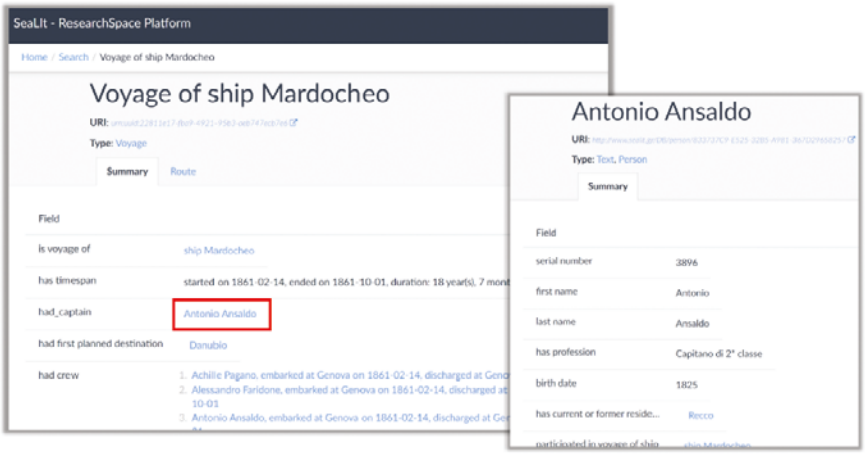

FIGURE 17.21 Browsing the data of a ship voyage in ResearchSpace

ship *Mardocheo* is connected to four places (Spezia, Malta, Constantinople, and Sulina). Each place spot on the map provides information in the context of the current voyage, like the departure and/or the arrival date, as well as useful links for further exploration of the place.

5.2 *Assistive Query Building*

The second data exploration functionality offered by ResearchSpace is an assistive query building interface, called "Semantic Search". The principal idea behind this mechanism is the definition of the fundamental entity categories and relationships among these categories.[22] A relationship between two entity categories is defined as a path that connects the entities in the semantic network. Based on that, the user can define a complex information need (query) that involves different types of entities and associations. Specifically, the user is guided to build the query through an intuitive user interface and then can inspect the results through a variety of visualization methods, including table, charts, or in a map.

Fig. 17.23 displays an example of how we can build a semantic search query. In this example, the user first selects the entity type "Person" as the target searching entity ("I am looking for persons"). The user is then shown a list of entity types that are associated to persons, and selects "Ship" and the

22 Katerina Tzompanaki and Martin Doerr, "Fundamental Categories and Relationships for intuitive querying CIDOC-CRM based repositories," *ICS-FORTH Technical Report 429* (2012).

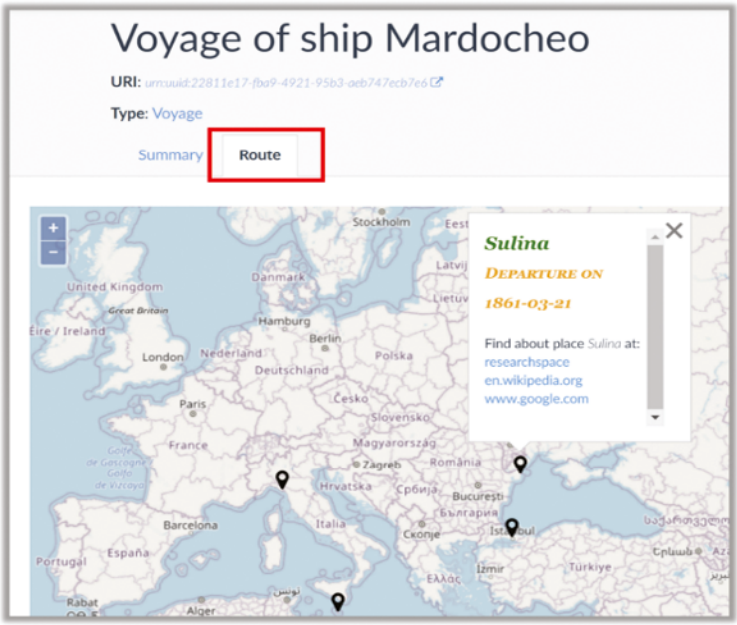

FIGURE 17.22 Inspecting the places connected to a ship voyage on a map in ResearchSpace

relationship "was crew at" ("I am looking for persons that were crew at ships"). Then, the user starts typing the ship name "*Andrea*" and selects the instance "Ship *Andrea*" from the list ("I am looking for persons that were crew at the ship *Andrea*"). In a similar way, the user can further connect ships to an arrival place or other types of entities related to ships, or connect the initial target entity persons to additional types of entities (e.g., birth place or birth date). If the entity type is a location, i.e. it has coordinates, the user can also set the area of interest directly on the map (Fig. 17.24).

Fig. 17.*25* shows an example of a semantic search query where the user has selected to search for "persons that were crew at ships that arrived at Livorno". The results (21 person instances) are displayed in the same page, while the user has different options on how to visualize them. By default, the user is shown a list of the matched instances, together with additional information for each instance (Fig. 17.*25*; lower part). If we are searching for persons, for example, the results show the following information for each person instance: first name, last name, father name, serial number, birth date, and residence location. Here the user can start browsing the data of a particular instance and inspect further information related to the selected instance, as previously described.

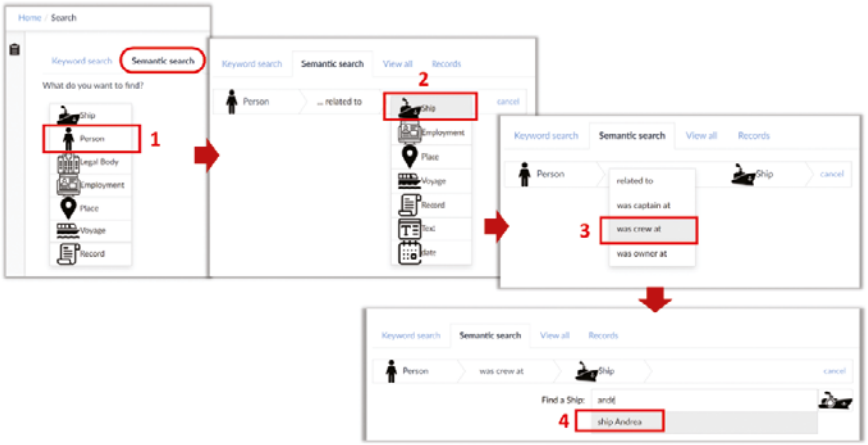

FIGURE 17.23 An example of how the user can build a semantic search query in ResearchSpace

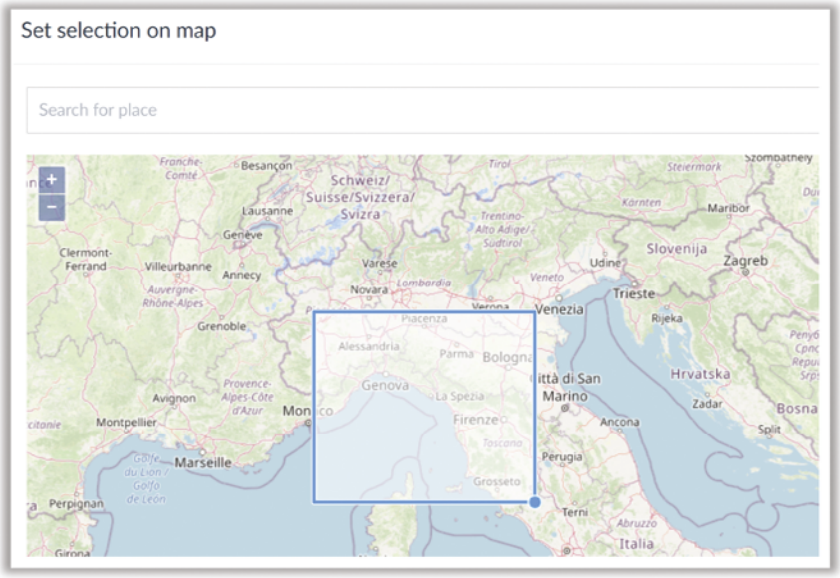

FIGURE 17.24 Selecting an area of interest directly on the map in ResearchSpace

The user can also select to visualize the results in a chart, like a bar chart or a pie chart, by first selecting the visualization context to consider aggregating the results. The options here are different for each type of entity. For example, if the search results are persons, we can select visualization contexts like

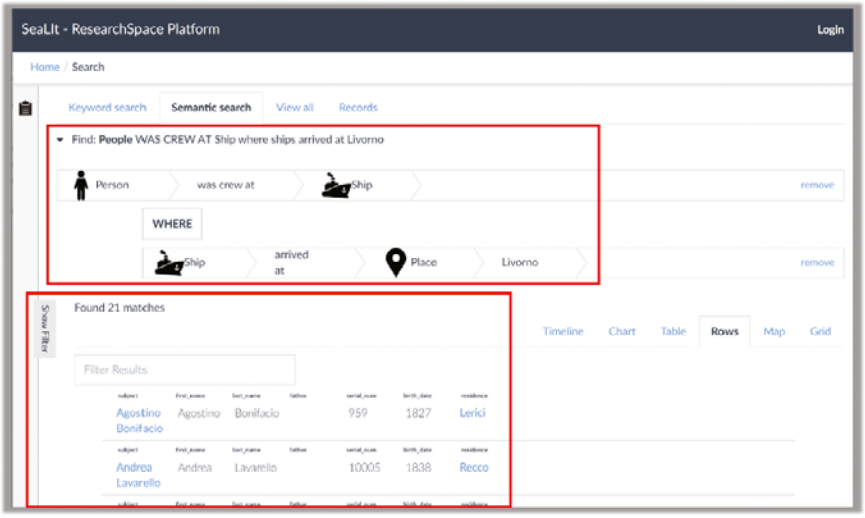

FIGURE 17.25 An example of a semantic search query and its results in ResearchSpace

"embarked at (Place)", "embarked in (Date)", "discharged at (Place)", "location of residence (Place)", "was crew at (Ship)", "was captain in (Ship)", etc. Fig. 17.26 depicts an example in which the user selected the visualization context "embarked at (Place)". We see that, in this example, the embarkation places are four (Genova, Livorno, Constantinople, Marsiglia), while the majority of crew members embarked at Genova.

Fig. 17.27 shows another example in which the user is searching for places. In particular, the query searches for "places that were the construction place of ships of type brigantino". In this case, the results can also be visualized on a map, since the target entities are locations and the coordinates are available.

The results of a semantic search query, as well as the data of a chart diagram, can be downloaded in a CSV format, which is compatible for use in a spreadsheet application like Excel (see the download icon and the "Download CSV" button in Fig. 17.26). This means that the user can download the data, open it in an application like Excel, and make modifications, further analysis, or create other charts.

Another functionality offered by ResearchSpace is the "filter" option which allows filtering of the displayed results based on one or more entity properties or associations. For instance, if the displayed results are persons, the user can select to show only persons who were crew members in a particular ship, or who had a particular place as residence. Fig. 17.28 shows an example in which the user has set the filter "was born in 1830–1838 AD". By setting this filter, the

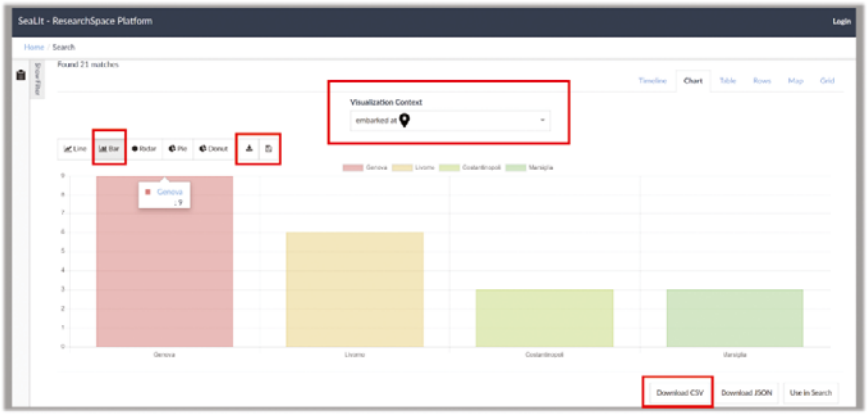

FIGURE 17.26 Inspecting a bar chart of the results in ResearchSpace by selecting a particular visualization context

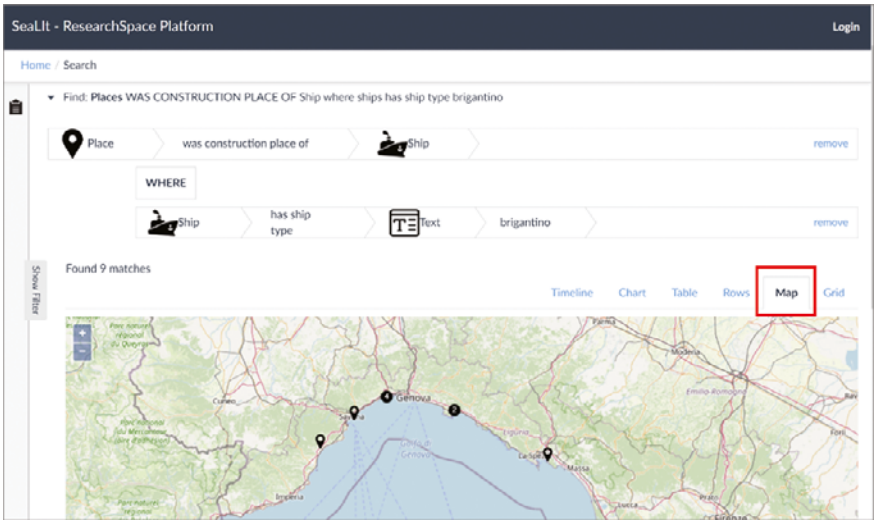

FIGURE 17.27 Visualizing the results on a map in ResearchSpace

displayed persons (returned by the semantic search query) are filtered to only those with a birth date between 1830–38 (nine in total). The user can add more filters on demand, or remove an already applied filter. After any such action, the displayed results are instantly updated to reflect the selected criterion. The filters can also help the user to better understand the distribution of the results in the different filter values. For example, when inspecting the values of the filter "had location of residence" (Fig. 17.29), we notice that most of the persons

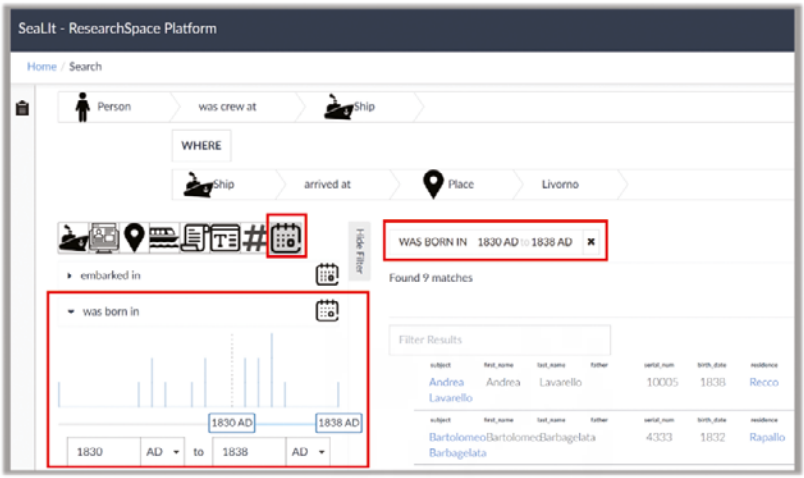

FIGURE 17.28 Filtering the displayed results based on an entity property in ResearchSpace

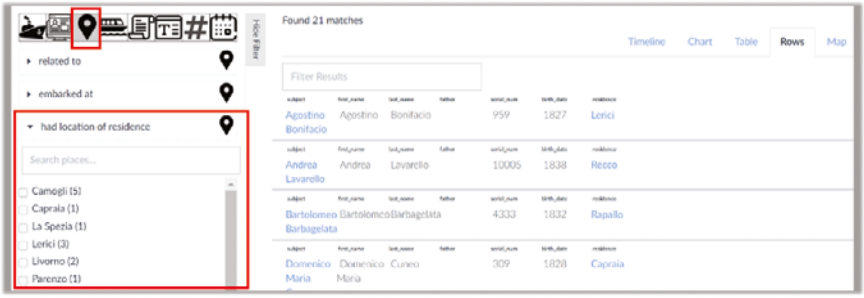

FIGURE 17.29 Inspecting the values of the filter "had location of residence" in ResearchSpace

are from Camogli, while we also see the name of the other cities together with the corresponding number of persons.

6 Conclusions

We have presented a process and a set of Web-based tools for the holistic management of archival sources of maritime history. First, the historical sources can be transcribed and curated collaboratively by historians using the FAST CAT system. FAST CAT supports innovative features, like nested tabular structures for data entry, embedded instance matching and vocabulary

maintenance processes, as well as provenance-aware data curation and enrichment. The transcribed and curated data are then transformed and integrated into a rich semantic network (RDF graph) using the X3ML data transformation framework and a specially-designed ontology, called "SeaLiT Ontology", which is compatible with existing standards for cultural heritage documentation, in particular CIDOC-CRM. Finally, the derived semantic network can be explored using the ResearchSpace platform. ResearchSpace offers a user-friendly interface for browsing the integrated data of the semantic network, as well as building complex queries and visualizing the results in different forms, like tables, charts, or in a map. All described tools are configurable, in the sense that they can be used for digitizing, curating, and exploring other data sources, beyond the case of maritime history.

Acknowledgements

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Conclusions

Apostolos Delis

Mediterranean Seafarers in Transition brings new light to multiple questions concerning the effects of the industrialization of shipping and the consequent transition to steam in the Mediterranean and the Black Sea. In maritime labour one of the most substantial changes was the deskilling of sailors in a process that transformed seafarers with navigation skills to plain sea workers, as stated by Garcia-Domingo in the Spanish case, and demonstrated by Lo Basso in the Italian one.[1] This effect is also reflected in the wages and the new hierarchy on board steamers. The gradual reduction of sail area on the steamships rendered the nautical skills of the deck personnel less important, while at the same time increased the importance of engine personnel of all ranks. In fact, evidence by Lo Basso, Delis, Garcia-Domingo, and Scavino reveals that in the cases of three countries—Italy, Greece, and Spain—engineers earned as much, if not more than the captain and the masters, and engine middle and lower crew more than the deck crew of the respective ranks.[2] Despite that, steamship captains in all the examined countries saw their wages increase by up to three to four times more than they would have earned on sailing ships, however, as Scavino states: "losing their peer-to-peer relationship with shipowners … their vertical mobility was severely affected by the shrinkage of the ship owning ranks."[3] In parallel, the salary differential among the ranks on the steamers was much higher between upper, middle, and lower crew. Middle deck officers, like the boatswain and the rank of seamen, were those mostly economically affected in the transition to steam. Their salaries in all examined cases—Italy, Greece, and Spain—were those with the lower rate of increase of all ranks on board, indicating the reduced importance of nautical skills in the new working environment of the steamers.

The deepening of the hierarchies, that is reflected in the inequalities of the wages on board the steamers, was another consequent effect between

1 Enric García-Domingo, "The impact of mechanization" and Luca Lo Basso "The Evolution of Maritime Labour in Italy" in the present volume; See also, for the deskilling of Nordic seamen, Jari Ojala, Jakko Pehkonen and Jari Eloranta, "Deskilling and decline in skill premium during the age of sail: Swedish and Finnish seamen, 1751–1913," *Explorations in Economic History*, no. 61 (2016): 85–94.

2 Compare especially, Apostolos Delis chapter 12, table 12.9, García-Domingo, chapter 1, table 1.4 and Leonardo Scavino chapter 9, table 9.5 in the present volume.

3 Scavino, "Camogli as a maritime" in the present volume.

the upper, middle, and lower crew, which also affected their career and social mobility. The opportunities for advancement decreased in steamers compared to sailing ships, as Lo Basso demonstrated in the case of Ligurian sailors.[4] Similarly, Delis has shown that on Greek steamers the rate of advance in the rank of the crews was around 10% of the totally employed men. Moreover, men usually advanced only one rank and always within their own group among lower crew or among middle officers or high officers, and never managed to climb to the next group. One of the factors for this low mobility was also the high turnover of the crews, who very often served for only one or two voyages.[5] The industrialization of labour on board affected not only wages but also career and social mobility and led to the proletarianization of seafaring workers, or as Lo Basso stated: "The gradual growth of wage labour, which excluded the lower ranks from a share of the profits and eliminated the right of carrying *paccottiglia* (a quantity of goods to trade on their own account), had proletarianised the lower crew members, who faced a difficult and dangerous job with shrinking remuneration."[6]

The response to these radical changes from the seafarers was the organization of trade unions across the Mediterranean. In the early twentieth century, trade unions sprang up in Spain and Italy and conflicts broke out, especially within the crews of large liner shipping companies, from the various compartments, deck, engine, and catering personnel.[7] The further specialization, division of labour, and industrialization of work on board transformed the working environment of the ship into a floating factory, as García–Domingo has described it. This in turn made labour relations impersonal between employees and employers, especially in liner shipping companies with a large number of workers, but also in tramp shipping with the high turnover of sea workers, as we saw in the case of Greek steamers. The breaking of the guild systems and the technical changes affected other maritime jobs, like dockworkers and fishermen, with the introduction of mechanized capitalist modes of production in Spain.[8] Loss of the control of the means of production and the proletarianization of the labour force in both sectors, led to various forms of fragmented unionism divided either by specialization (type of merchandise

4 Lo Basso, "The Evolution of Maritime Labour in Italy" in the present volume.

5 Delis, "Ship operation" in the present volume.

6 Lo Basso, "The Evolution of Maritime Labour in Italy" in the present volume.

7 Luca Lo Basso, "The evolution of maritime labour in Italy", in the present volume, 63–67; García-Domingo, "The impact of mechanization", in the present volume, 36–37.

8 Jordi Ibarz, "Dock workers"; Daniel Muntané, "Associationism and labour conflicts", both in the present volume.

loading and unloading, type of fishing method) or by the geographical area of the members of the association.

Shipping industrialization also had transformative effects on the population in occupational and demographic terms. In Barcelona, a large sailors' recruiting centre, only a small proportion of the recruited crews were born locally after the advent of steam navigation, most of those previously employed at sea shifted to factory employment.[9] In Barceloneta, the maritime district of the port, the transition to steam and the establishment of factories, transformed it into an industrial district. The occupational character of the maritime community was altered since the number of seafaring professions were reduced, with negative effects on population trends and standards of living.[10] Similar transformations also took place in La Ciotat. This maritime community that had engaged in a mixture of seafaring and agricultural occupations, became wage dependent on the sole industry of the town, that of the shipyards of the *Messageries Maritimes*. However, in this case, the industrialization of the port created pull factors attracting immigrants also from Italy, similar to the abovementioned case of the industrialization of Barcelona, where the population from the Catalan maritime communities were attracted into the factories of the big city. The maritime character of the La Ciotat community, as happened in Barceloneta, was altered but on the whole, as Vasilaki wrote "the prestige of the seafaring population was reaffirmed through an industrial career pattern that kept its bounds to the sea."[11] The reverse pattern, or the activation of push factors, is observed in the case of the traditional maritime communities that did not make the transition to steam, like those in Camogli and Galaxidi. In both cases the ship owning class of the towns in the twilight of the sailing ship, continued to invest in progressively larger sailing ships, and to employ these ships in even more marginalized trades.

The decline of the sailing ship economy led the population of these communities to emigrate to bigger cities like Piraeus, in the case of Galaxidi, to Genoa, or even abroad to South America, like in the case of Camogli. Piraeus, Genoa, Barcelona, and other large ports profited by attracting the seamanship of the small and scattered maritime communities in their areas. Emigration was the outcome for another maritime community which did not make the transition to steam either: Muslim captains and sailors of Ottoman Chania. Despite that, the port became an important part of the lines of powerful passenger companies. Its local seafaring class not only did not invest in steam navigation but also had to gradually abandon Chania due to the growing tensions between the

9 García-Domingo, "The Impact of Mechanization" in the present volume.

10 Eduard Page Campos "The metamorphosis of Barceloneta" in the present volume.

11 Vasilaki, "The port of La Ciotat" in the present volume.

Christian and Muslim populations on Crete, a phenomenon already observable in the last decades of the nineteenth century. Furthermore, an entire socio-economic and cultural system disintegrated within these maritime communities and around them, where the population of other places also depended on. In Galaxidi, wooden shipbuilding activity, a flourishing business for the community, vanished with the eclipse of the large merchant sailing ship. In Camogli, instead, this eclipse affected shipbuilding activity in the surrounding areas that provided ships to the town, like Varazze, which had the largest shipyards of Liguria, thus impacting almost at a regional scale the economy of the sailing ship. In Catalonia, as already mentioned, the disintegration of the support for shipping activities, like shipbuilding, in coastal communities like Mataró, Blanes, or Arenys de Mar led to the abandonment of these activities altogether and to emigration to Barcelona. In Chania and Crete, the exodus of the Muslim population, adept in maritime activities, was never replaced, since the Asia Minor Christians who came with the population exchange were mostly farmers.

The introduction of steam navigation opened the way to new forms of shipping services, like the passenger/liner, and profoundly changed the centuries-old practices of tramp and cargo shipping. The case of Greek tramp shipping proved illustrative of these deep changes in the structure and the operation of the business. Greek shipping firms and their fleets were not only reduced in numbers during the transition to steam—as in the case of the Spanish merchant marine, "Each new steamship replaced several disappearing sailing ships"[12]—but also changed their ownership structure and form. The high capital demanded for the construction or purchase of a steamship could no longer be obtained within the boundaries of the local community, but needed the establishment in great ports and access to financial markets and institutions. Piraeus in Greece, Istanbul in the Ottoman Empire, and London or Cardiff in the UK, were among the most important ones, where Greek firms established their headquarters. Greek shipowners, in order to construct their fleet, expanded their horizons from the local or regional wooden shipyard to the British shipbuilding market. This new market orientation created new relationships with British shipbuilders, similar to those of the previous age of sail: the entrustment to build a series of vessels; the purchase of shares of the new ships by the shipbuilders; and the naming of the vessels with names of the shipbuilder's family. The difference in this case is that these new relations were cultivated within a far more expanded and internationally integrated market. This is also proven by examining the Ship Operation Services, the network of

12 García-Domingo, "The Impact of Mechanization" 18, in the present volume.

partners that supplied, provided the services, and repaired the ships in various ports during the voyage.[13]

Greek steamers in the early twentieth century already had a far more global network of such partners compared to the period of sail. Such a type of shipping business was no longer based on the age of sail of the 24 shares Mediterranean system of ownership.[14] The 100 shares system replaced it, and along with it, the far more sophisticated business structure of the shipping firm. The evolution of the accounting system from sailing ships to steamers reflects this development in the complexity of ship operation. Shipping operations extended considerably with the advent of steam, and new trade routes were included in the ship's voyages. Greek shipowners profited from the benefits of the higher turnaround of steamers and access to the British market, established new voyage patterns carrying Black Sea cereals to north-western European and British ports, and coal from Britain to the Mediterranean.

After the First World War the routes expanded further, from Britain and western Europe to South America often without entering the Mediterranean and homeports for years, as shown by Delis' analysis of accounting operations and the routes of Greek sailing ships and steamers.[15] This analysis of data on the routes of Greek ships, with the assistance of the voyage maps created through the "Ship Voyages" application, illustrates the difficulties, vagaries, and limitations of sailing ships, as well as the improvements in many aspects of navigation obtained with the advent of the steamship.[16] Steamships had a quicker turnaround time, shorter stays at shore, straighter courses, and less manoeuvring in sailing against the wind, and industrialized the rhythms of ship operation and navigation. However, this navigation analysis not only corroborates the expansion of trade routes and the improvements brought by the new technology of steam, but also illustrates the increasing marginalization of the sailing ship from the last quarter of the nineteenth century in more competitive markets with steamers, like the Black Sea. In fact, the evidence shows that, in this period, Greek shipowners sought less competitive alternatives in the Atlantic Ocean, like the West African palm and peanut trade route. This is a relatively unexplored aspect of Greek sailing ship operations—which seems to have been confined to Mediterranean waters—that needs further investigation, and opens new research questions on Greek-owned shipping.

Before becoming efficient as a cargo carrier, the steamship, thanks to its regularity and speed, also proved ideal for scheduled voyages, and introduced

13 https://sealitproject.eu/node/595.

14 Scavino, "Camogli as a maritime" and Delis, "Ship operation" in the present volume.

15 Delis, "Navigating in the age of transition" in the present volume.

16 https://sealitproject.eu/ship-voyages.

the passenger/liner service. However, the high investment and running costs of such services, as well as the interest by states in investing and profiting from the advantages the steamship could offer in war and peace, meant state support or initiative was a *sine qua non* prerogative for the foundation and establishment of steam ship companies, at least up to the middle of the nineteenth century. The examination of three cases—*Lloyd Austriaco*, the Russian Steam Navigation and Trading Company (RSNTC), and the Hellenic Steam Navigation Company (HSNC)—provides further evidence for the support behind these schemes. These three companies, like others in Britain, France, or Spain, were created or supported in order to become a kind of instrument of domestic and foreign policy, deeply integrated in the sphere of public affairs.

The development of seaborne communication and the unification of national territory was another objective and contribution of the steamship, as shown in the case of the HSNC. In the cases of Russian and Austrian empires, a fleet of steamships was also necessary for the implementation of penetrative policies in foreign waters, and for the capture of foreign seaborne communications and trade. The continuous expansion of the lines of these two imperial companies across the Mediterranean, the Black Sea, and beyond, in line with the steamship policy of other great powers of the period (Britain, France, and Germany) proves this state objective. However, the adherence by the companies to the orders of the state, their involvement in the implementation of public policy, and the pursuit of profit, along with the high costs and investments required for steamship navigation, were incompatible, and therefore not sustainable without state support and subsidies. In fact, *Lloyd Austriaco* was constantly at losing money without it, while the HSNC was in deficit most years even with the subsidy. The only exception to this pattern was the RSNTC, that, despite receiving the state subsidy and being integrated into state mechanisms, also had the freedom to pursue a commercial policy aiming only at profitable lines.

All three companies also became the bearers of technical change and were crucial in the introduction of a new shipping era in their respective countries. Not only did they introduce a regularity in scheduled voyages, but also introduced industrial shipbuilding and new forms of metalworking, as well as new processes and new professions. The establishment of Lloyd's Arsenal in Trieste and that of HSNC in Syros in the same year, 1861, or the creation of the *Talleres Nuevo Vulcano* of the *Compania catalana de vapor* in 1834 in Barcelona, are tangible examples of this important industrial breakthrough in the Mediterranean.[17] These state-supported companies were also an

17 Martin Rodrigo Alharilla, *La marina mercante de vapor en Barcelona (1834–1914)* (Barcelona: MMB, 2017).

important training ground for future deck, engine, catering, and shipyard personnel. *Lloyd Austriaco* was almost the exclusive employer of steamship personnel in the Austrian Empire until the end of the nineteenth century, attracting men (sailors, engineers for the arsenal, and the ships) not only from the traditional channels of seafaring communities, but also from the Nautical and Commercial Academy of Trieste. In Greece, too, in the arsenal and on the steamers of the HSNC, Greek engineers and technicians were trained under the guidance of British, French, and other foreign engineers and specialized craftsmen, who provided this essential transfer of knowledge. Overall, the establishment of steam navigation in the early stages of the technical development of the steamship, when she was hardly a viable commercial proposition, owes a lot to state support and initiative, with the less industrially-developed Mediterranean and Black Sea countries being the par excellence examples of this policy.

The transition from sail to steam navigation in the Mediterranean and the Black Sea altered or ended centuries-old practices, customs, and the socio-economic structures of the sailing ship economy and its culture. The effects of this revolutionary phenomenon were felt across all the three interrelated axes of our analysis: labour, shipping, and communities. The industrialization of maritime labour that made sailing seamanship gradually redundant caused occupational and demographic changes in the communities where these labourers lived. In the best of cases, in the communities that made the transition to steam, like Andros, seamen were recruited under different conditions and capacities, on deck or in the engine room in the steamers. In others, the maritime population had either to emigrate to nearby large ports or abroad, as in Galaxidi and Camogli, or to work in factories, as in Barcelona and La Ciotat. While in the latter cases, there was a readjustment to more shore-based maritime activities, like shipyards and engineering industries, in the former, there was a severe decline and disappearance of all such communities that did not recover economically and demographically before the advent of mass tourism from the 1960s. However, even the owners of the means of production felt the impact of these changes. Many of them previously owned sailing ships either became waged workers on steamship companies or ended their involvement in shipping. Others, who continued in the steamship business, also had to emigrate to larger financial and maritime centres to have better access to resources. At the same time, those fewer shipowners that continued also became more powerful in comparison to those from the sailing ship era. Industrialization made shipping a highly capitalized business, which favoured oligopolies, undermining the social mobility of *Seafaring Lives* and altering their maritime landscape forever.

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