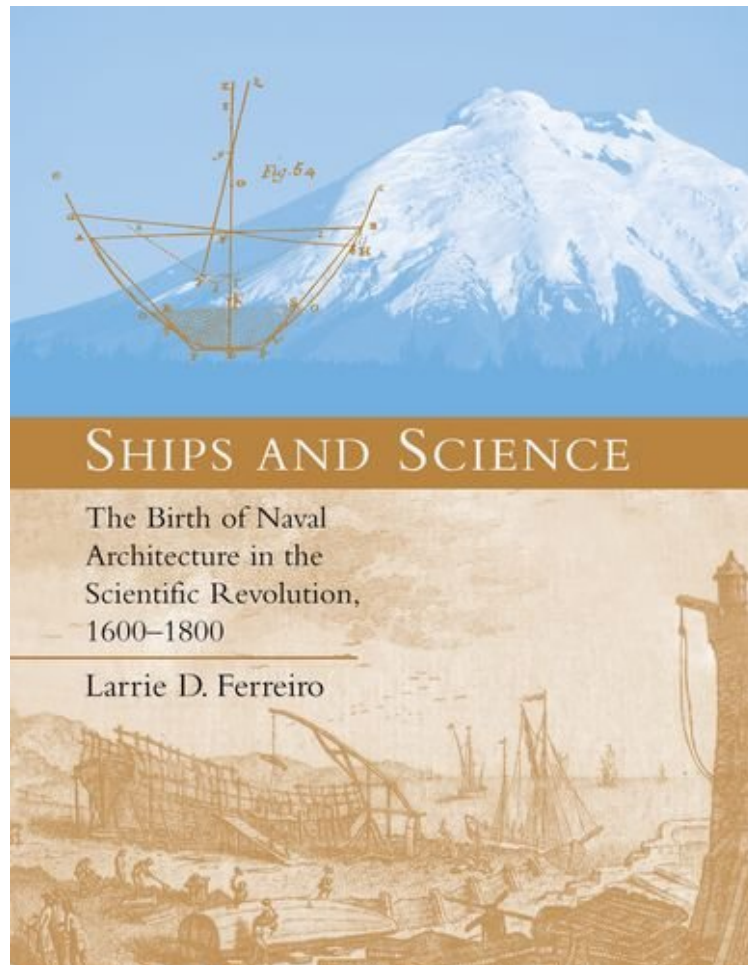


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Ships and Science: The Birth of Naval Architecture in the Scientific Revolution, 1600-1800 (Transformations: Studies in the History of Science and Technology)

Larrie D. Ferreiro

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Larrie D. Ferreiro : Ships and Science: The Birth of Naval Architecture in the Scientific Revolution, 1600-1800 (Transformations: Studies in the History of Science and Technology) before purchasing it in order to gage whether or not it would be worth my time, and all praised Ships and Science: The Birth of Naval Architecture in the Scientific Revolution, 1600-1800 (Transformations: Studies in the History of Science and Technology):

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people found the following review helpful. Aubreys enthusiasmBy Alexander T. GaffordIn the movie *Master and Commander*, there is a scene where Captain Aubrey is looking at a model of a fast new American built frigate and exclaims to the effect that we are living in an age of technological progress. Aside from the perhaps anachronistic use of the word technology, these words seem to express the impact of the Scientific Revolution on the minds of the talented professionals at the turn of the nineteenth century. The question considered in this book is whether these enthusiasms were justified in fact and did the Scientific Revolution begun with Galileo and Newton lead to a scientific approach to naval architecture by the end of the eighteenth century?The author was faced with the choice of writing a technically informed piece of history or a historically informed piece of technology and he chose the former approach. To a considerable extent the story is framed around the life of Pierre Bouguer who lived from 1698 until 1756 and wrote the influential work *Treatise of the Ship* which created the format for the study of naval architecture to the present day. These seems a wise choice as it is apparent from the text that there was insufficient general mathematical physics knowledge in the ranks of educated professionals to scientifically approach this subject until the early part of the eighteenth century. As Ferreiro makes clear, of the three areas covered by eighteenth century naval architecture, maneuvering and control, ship speed and resistance, and ship stability, only the last was actually placed on a physically and mathematically sound basis during this time. The other two had to wait until the following century to be covered by the authors next intended work, which I look forward to reading.All in all, I really liked this book. The focus on person and personal history gives us some meaningful insight into the life of people like ourselves (I am an engineer myself) in a very different time and place. The treatment of the technical content is clear and thorough enough though perhaps assuming a bit too much knowledge of solid and fluid mechanics for the general public. Indeed the reason this book was rated four stars instead of five is that it seems rather narrowly focused on an academic/technical audience and is unlikely to really be found captivating to a more casual layperson. To find a way to communicate satisfactorily to both worlds is difficult indeed.

"Naval architecture was born in the mountains of Peru, in the mind of a French astronomer named Pierre Bouguer who never built a ship in his life." So writes Larrie Ferreiro at the beginning of this pioneering work on the science of naval architecture. Bouguer's monumental book *Traité du navire* (*Treatise of the Ship*) founded a discipline that defined not the rules for building a ship but the theories and tools to predict a ship's characteristics and performance before it was built. In *Ships and Science*, Ferreiro argues that the birth of naval architecture formed an integral part of the Scientific Revolution. Using Bouguer's work as a cornerstone, Ferreiro traces the intriguing and often unexpected development of this new discipline and describes its practical application to ship design in the seventeenth and eighteenth centuries. Drawing on previously untapped primary-source and archival information, he places the development of naval architecture in the contexts of science, navy, and society, across the major shipbuilding nations of Britain, France, Spain, the Netherlands, Sweden, Denmark, and Italy.Ferreiro describes the formulation of the three major elements of ship theory (the science of explaining the physical behavior of a ship): maneuvering and sail theory, ship resistance and hydrodynamics, and stability theory. He considers the era's influential books on naval architecture and describes the professionalization of ship constructors that is the true legacy of this period. Finally, looking from the viewpoints of both the constructor and the naval administrator, he explains why the development of ship theory was encouraged, financed, and used in naval shipbuilding. A generous selection of rarely seen archival images accompanies the text.

The history of naval architecture is a fascinating adventure. Ferreiro's book takes the reader on a journey through time, exploring how the science and engineering developed. A myriad of topics are included such as the important prerequisite of stability. It is a marvelous voyage of discovery, written in a very readable manner which will appeal to all, from the curious to those of us actively practicing the profession. (Stephen M. Payne, OBE, Vice President and Chief Naval Architect, Carnival Corporate Shipbuilding, designer of the *Queen Mary 2*) *Ships and Science* is a meticulously researched, scholarly book...Any maritime historian or maritime architecture scholar should benefit from reading this erudite, thought-provoking book. (Louis Arthur Norton *The Northern Mariner*)This volume should be required reading for all students of naval architecture. (Marine Technology)Naval architecture has been a rarity among the sciences, having no written history worthy of the name -- until now. In this book, Larrie Ferreiro has produced a work worthy of the discipline he has practiced and studied with equal ability. For the first time the many and varied theoretical and practical traditions of European ship design have been analyzed as part of the scientific and intellectual world in which they developed. The result is a work of the highest importance, linking science, ships, and sea power. (Andrew Lambert, Laughton Professor of Naval History, King's College London)This is a superb volume, and is likely to be regarded in coming years as the starting point of the now fast growing study of the foundations of applied science and engineering. (Fred M. Walker *Mariner's Mirror*)Highly recommended. (Choice)This important book offers counterpoint to Kenneth Alder's *Engineering the Revolution*. With great skill and imagination, Langins exploits an eighteenth-century controversy over fortification design to illuminate the nature of engineering, the tension between theory and practice, the contrast between the lone genius and institutionalized professionalism, and the relationship between engineering and revolution. (Alex Roland, Professor of History, Duke University)About the AuthorLarrie D.

Ferreiro is a naval architect and historian. He trained and worked as a naval architect in the U.S., British, and French navies and the U.S. Coast Guard, and has served as technical expert for the International Maritime Organization. He has a Ph.D. in the History of Science and Technology from Imperial College, London.