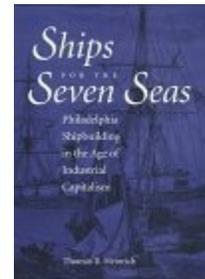


# H-Net Reviews

in the Humanities & Social Sciences

Thomas R. Heinrich. *Ships for the Seven Seas: Philadelphia Shipbuilding in the Age of Industrial Capitalism*. Baltimore: Johns Hopkins University Press, 1997. x + 290 pp. \$39.95 (cloth), ISBN 978-0-8018-5387-6.

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Forty or more years ago, business, economic, and technological historians took a great interest in ships, maritime trade, and shipbuilding, topics of seminal works by Robert G. Albion, Howard I. Chapelle, Louis C. Hunter, John G. B. Hutchins, Samuel Eliot Morison, David B. Tyler, and others. After the fertile work of this World War Two generation of scholars, academic historians turned away from the sea just as earlier Americans did following the War of 1812. But the popular interest in maritime history remains strong on many levels, as evidenced by: the present craze over the *Titanic*, resurgent interest in maritime museums, Jack Aubrey's continuing chain of victories over Napoleon's naval might, and the improbable success of a twelve-volume maritime history encyclopedia. Little wonder. So much of maritime history consists of those transforming events that offer dramatic narratives: humans' epic struggles with the sea, the rise of successive maritime powers, voyages from old worlds to the New, and technological transformations from wood to iron and steel ships and from sail to engine-driven vessels.

So, popular interest in maritime history continues, despite the waning of academic studies. Analysis has dethroned narrative in the work of professional historians, perhaps one reason for their apparently declining interest in maritime topics. But the moment is ripe for a new cadre of Morisons who combine the two approaches. A good story always interests general audiences—indeed a powerful tale can even sway the most rarefied intellectual. Furthermore, many of the analytical approaches and insights of the past forty years of land-based scholarship should travel well. In going to sea they offer new departures for maritime history.

Thomas Heinrich demonstrates this potential for a new maritime history in his *Ships for the Seven Seas*. Written for a broad range of readers, the book provides a “history of iron and steel shipbuilding in metropolitan Philadelphia . . . from the Civil War to the 1920s” (pp. 2-3). Heinrich takes the stance of an industrial historian—combining threads from political, labor, business, economic, and technological history. This multi-faceted approach is one of the book's major strengths. For instance cogent summaries of merchant and naval history in each shipbuilding epoch provide admirable technological and economic context about the markets in which the shipbuilders operated. The book is well-designed, nicely illustrated, and free of most proofing errors (although misspelled proper nouns crop up too often). Heinrich tells a good story, and the book deserves the broad readership that its publisher wisely targeted.

Academic historians will find many rewards here too. Throughout the book Heinrich leavens his narrative with analysis, applying to his study of maritime industry the insights offered by labor process studies, Chandlerian business history, and accounts of batch production by Scranton and Zeitlin. On balance, however, Heinrich favors narrative over analysis—a wise choice given the limitations and problems of the original sources available to him. In sum, this is a finely-crafted book on a fascinating period when technical transformations, political compromises, broad economic changes, and world power aspirations reconfigured American shipbuilding. With its skillful blending of narrative and analysis, it is far more comprehensive and insightful than David Tyler's *The American Clyde*, written forty years ago, which covered the same period and firms.

Philadelphia-area builders created the American metal shipbuilding industry, they dominated the trade until 1900 or so, and some of the city's firms remained major players until after World War Two. So Heinrich has ample justification for his geographic focus. The book's organization places a thematic approach within a chronological narrative. Chapter One provides an overview of wooden shipbuilding. The wooden builders enjoyed notable success for a century-and-a-half, but sank after the 1850s under combined weight of rising British iron shipping (sail and steam), trade disruptions during the Civil War (when Northern shippers registered their vessels under neutral foreign flags), and the broad shifts in investment capital from shipping to railroads, commerce to manufacturing.

In Chapter Two, Heinrich lays out the Civil-War-era foundations for Philadelphia shipbuilders in shifting from sail to steam and wood to iron. In a well-cast and original analysis, he argues that Philadelphia firms' wartime success in building steam-driven ironclads established embryonic but valuable skills that later served in building iron steamers for the civilian merchant marine. Philadelphia's strengths in mechanical engineering and metalworking and its proximity to the iron regions provided further advantages to the city's early iron steamer industry.

Chapter Three focuses on the business history of the leading Philadelphia shipbuilders following the war. Here Heinrich contrasts proprietary capitalism (dominating at the shipyards) with the new corporate managerial capitalism introduced by the railroads. As he observes, the two forms of business organization became mutually dependent when the shipping subsidiaries of major railways became major customers for the shipyards' iron steamers. Perhaps more insightful are this chapter's discussions of the integration of marine engineering (design and construction of power plants for vessels) with shipbuilding—a unique attribute of the Philadelphia firms—as well as their disintegrative strategy of relying on extensive sub-contracting.

In his fourth chapter, Heinrich sketches the growing scale of iron shipbuilding firms circa 1875-1885. The American industry never approached the size, specialized capacities, efficiency, or sophistication of its counterpart in Britain. As a result, "American steamship operators paid 25-35 percent more for iron tonnage than their British rivals" circa 1880 (p. 78). But such U.S. builders as Roach, Cramp, and Harlan and Hollingsworth nonetheless achieved growth in this period. Naval con-

struction did not yet amount to much, but Congress gave US shipbuilders a protected market, requiring American-built ships in the coastwise trade (i.e.: all marine freight and passenger traffic within U.S. borders).

Although wooden sailing vessels carried most domestic marine commerce, Philadelphia-built iron steamers had few viable competitors in niche markets: oil tankers on routes from Texas to the East coast, overnight passenger steamers on Long Island Sound and Chesapeake Bay, coastwise towboats in the coal trade, and ocean freighters laden with passengers and Hawaiian sugar. On international routes, some American-owned shipping lines chose to buy U.S. vessels, notwithstanding their higher price. Having sketched the "anatomy of a shipbuilding boom" circa 1880 in this chapter, Heinrich then gives an able description of the labor processes involved in iron shipbuilding and marine engineering. From this he briefly considers labor-management relations and class formation in the industry.

By 1885 or so, American iron shipbuilders had established themselves, yet cheap wooden sailing vessels from Maine limited their ability to penetrate the domestic carrying trade, while cheap iron steamers from British yards took most international commerce. So builders like Cramp and Roach turned to the United States Navy after 1885—the subject of Chapter Five. Here Heinrich ably describes naval procurement policies and the shipbuilders' lobbying efforts to create a military-industrial complex that would finance plant expansions and the acquisition of subsidiaries while sustaining their yards when the civilian market evaporated, as it often did. Heinrich takes a critical view of naval shipbuilding and its effect on the yards, arguing that builders "preferred private contracts because they involved fewer organizational problems and were usually more profitable." The yards had little choice—naval work was better than none—but the "potpourri of high-technology naval construction and low-quality commercial shipbuilding was not terribly efficient" for yard managers, workers, or systems (p. 120).

The history of commercial shipping, naval procurement, and steel shipbuilding from 1898 to 1914 occupies Chapter Six. Here themes of earlier chapters are largely reprised: a growing scale of operations despite boom and bust markets, enhanced skill requirements among the workers needed to operate technically-sophisticated production machinery, further innovations in the yards' products, the challenges of complex and ever-evolving naval work, and the inefficiencies of generalist produc-

tion in American yards. New issues in the industry circa 1900 included: the rise of competitors (in Philadelphia and elsewhere) seeking to capitalize on America's new aspirations as a naval power, labor activism and management's vehement counter thrusts, and a new corporate model of shipyard management. Narrative dominates in the chapter, leaving this reader wishing for a bit more analysis. For instance, Heinrich details a number of problems with the new managerial capitalism adopted at the Cramp shipyard after 1900. Yet he never really offers a verdict on the suitability of corporate management practices in this industry with its vast sales fluctuations, high skill requirements, and circumscribed influence over markets.

World War I occupies Chapter Seven. Beyond the predictable expansions in wartime, here the story centers on Philadelphia's massive Hog Island Yard. This wartime emergency plant represented a government-funded experiment in standardized ship construction. With its fifty building ways, Hog Island was the world's largest shipyard. But intractable problems discredited this attempt to produce ships in volume: inadequate transportation from inland fabricating shops to the yard, coordination difficulties once materials did arrive, and an overburdened market for shipbuilding labor in the Philadelphia area. Heinrich has sifted through a multitude of government reports, and he tells this story well.

The book closes out with an eighth chapter on the 1920s depression. The yards came on hard times when the predictable postwar glut in merchant shipping was matched by the novel Washington Naval Disarmament Treaty of 1922 that closed off naval work for a number of years. The shipbuilding depression reached around the world; in Philadelphia the yards responded by further diversifying into non-marine work (the Cramp yard pioneered this strategy circa 1900). Heinrich uses Cramp as an anchor throughout the book, so when that old-line firm dies in 1927, he conducts a detailed autopsy. His verdict: Cramp lost its viability after Averell Harriman merged the builder into his ocean shipping empire. When the Harriman shipping lines foundered, they dragged down Cramp as well. Heinrich also points to excessive competition in the industry and "the lack of an intelligent [federal] merchant marine policy" (p. 212).

A short Epilogue ends the book, wherein Heinrich summarizes his three main analytical points: 1. Naval demand laid foundations for metal steamship construction; thereafter it provided a useful but problematic market, 2. The American merchant marine and its supporting ship-

builders suffered because the federal government failed to pass maritime policies that offered "incentives for investment" for private American firms engaged in international shipping (p. 221), 3. In the absence of those policies, U.S. metal shipbuilders pursued a generalist policy, building whatever tugs, sand barges, passenger liners, or battleships that their markets demanded. This century's slow withering of America's merchant marine and the Philadelphia yards closes out the story.

In ways that may not be immediately apparent in this sketch of its contents, Heinrich has pulled off something of a gamble in this book. Despite the fact that essentially no business papers survive from Philadelphia's metal shipyards, the author has produced a comprehensive history. He builds his portrait from exhaustive searches of periodical records, newspapers, trade and professional society journals, union periodicals, government documents, insurance surveys, and all relevant secondary sources. It is a monumental effort. Still the lack of internal business papers leaves the book with only scattered insights into profits or losses, work force fluctuations and pay rates, capital/labor ratios, the bidding process, cost accounting controls, the quality and severity of price competition, etc.

If the archives had been more forthcoming, it is possible to project a different explanation of American shipbuilders' inefficiencies. Heinrich explains their shortcomings by pointing to the lack of federal support for U.S. firms in international shipping. This in turn limited the overall market and forced shipyards into an inefficient generalist approach in production. Charles Cramp and other builders made a similar argument in calling for subsidies during the Gilded Age.

While this view has merit, one could advance an argument that I think is equally plausible: namely that the yards' inefficiencies arose from those federal policies that protected shipbuilders by targeting their chief customers, the shipping lines engaged in domestic commerce. The statutory requirement for American-built ships in coastwise and inland navigation chiefly benefited New England's wooden yards since their cheap wooden sailing vessels took most of the business. But such slow schooners were simply unsuited to many trades: passenger service, high-value freight traffic, transport of bulk oil, the Hawaiian sugar trade, etc. Through 1900 or so, ship owners seeking metal steamers for these trades had little choice but to deal with the Philadelphia yards. Without protection, these American pioneers in metal shipbuilding would never have begun; with it they never

approached the performance of the world's leading yards in Britain.

Testing this alternate argument would require the sort of internal business papers that simply do not survive. Equally, this perspective and Heinrich's argument may both be valid. I only raise the point to underscore

how the lack of hard data and extensive sources renders any authoritative analysis problematic. Notwithstanding these difficulties, Heinrich has written a detailed, compelling account of iron and steel shipbuilding—an industry vital to America's economic growth and its rise to world-power status.

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