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Ian Johnston and Ian Buxton, *The Battleship Builders: Constructing and Arming British Capital Ships*. Annapolis: Naval Inst. Press, 2013. Pp. 320. ISBN 978-1-59114-027-6.

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Though it dominated naval combat for only a few decades, the dreadnought battleship has spawned hundreds of books by military historians. *The Battleship Builders*, however, is unique among them in offering a thorough history of British-built capital ships, from the HMS *Dreadnought* (launched 1906) to the HMS *Vanguard* (launched 1946), the last such vessel ever built. But there are no battles in its pages, few admirals, no crewmen, and not a single violent death. Instead, eminent naval historians Ian Johnston and Ian Buxton describe the rise and fall of the famous firms that built the ships—Vickers-Armstrong, John Brown, Swan Hunter—and the landscapes and workforces they created.

The book begins with a short, fifty-page history of the shipbuilding industry starting in 1860, because until then the Royal Navy had built nearly all its warships in the Royal Dockyards and armed them with cannon cast at the Royal Gun Factory. Dramatic new technologies, however—steam power, the screw propeller, iron- and steel-clad ships—put the dockyards in an awkward position. Although their highly skilled workers led the world in making wooden ships, they could not build the new ships the navy needed. So a private firm, the Thames Iron Works, built HMS *Warrior*, the first iron-hulled and armor-plated warship, near London in 1860. Her sister ship HMS *Black Prince* was built in Glasgow the following year. By the time HMS *Dreadnought* was launched, most battleship construction had migrated north to the banks of the Tyne and the Clyde, broad rivers suited to launching increasingly long ships within easy reach of iron, coal, and cheaper labor than was available in southern England.

Nine thematic chapters follow. Some—Builders, Buildings, Facilities, Money, and Manpower—concern the companies themselves, the rest the technologies—Powering, Armament, Armour, and Steel—that went into the ships. Johnston and Buxton give readers enormously detailed information—virtually ignored in most naval histories—on the ships, their weapons and, especially, the firms that made them. The drawback here is that the main story, first laid out in the introduction, is told again and again.

Chapter 2, “An Upward Trajectory, 1860–1919,” tells how the British came to dominate the global warship industry as they had textile manufacturing and railroad construction. From 1905 to 1916, Britain built the ships that fought in World War I, pouring vast sums into a naval arms race to create a fleet half again as big as Germany’s, its nearest rival. Chapter 3, “Retrenchment and Revival, 1920–1945,” tells a less triumphant tale. After the war, arms limitation treaties and then a worldwide depression drained Great Britain of both the political will and the capital to produce many warships. It built just two new battleships in the 1920s and sent most of the armada of the Battle of Jutland to the shipbreakers. This caused a grave problem when, in 1935, with ominous signs coming from both Tokyo and Berlin, London suddenly wanted to build a new generation of battleships. During the interwar period, the largest shipbuilders had survived by making freighters and liners or by merging,¹ but many firms folded and their specialized workforces dispersed. The Royal Navy never got all the battleships it ordered before World War II, because the requisite armor plate and heavy guns could not be produced on time.

The strengths of *Battleship Builders* are the fantastic quantity of information it gathers and the sheer beauty of its illustration program. The authors list not only every battleship built during the relevant period, but also which firm made the heavy guns for each. Drawing extensively on the files of the companies involved, they even specify the cost of each type of gun and ton of armor plate. But they go well beyond guns, turbines, and armor. Each big shipyard crane that hoisted these heavy components into the hulls is

1. In 1927, the Bank of England enabled two leaders to form Vickers-Armstrong Ltd.

described and illustrated! Such details will appeal to historians of industry and technology, who will learn, too, what Vickers's profit margins were on various types of ships. Two appendices further detail contracts and costs. Although students of naval history or technology may find much of this mind-numbing, the authors have done a great service by presenting in a coherent way the records (often handwritten) from dozens of firms, large and small, scattered in public and private collections.

The book's hundreds of sharp black-and-white photographs show every phase of a ship's life, from the laying of its keel to its sad reduction to a pile of scrap. Even those familiar the standard works² on the subject will be pleasantly surprised by the many new illustrations here. The authors have astutely chosen photographs that best depict what precisely they wish to explain: thus we have pictures of HMS *Hercules* and *Howe*—neither of which saw much action—rather than the tired images of the more frequently written about HMS *Tiger* or *Hood*. Besides photographs, there are lovingly detailed half-tone diagrams of each shipyard.³

Fans of traditional battleship books may miss the usual combat narratives and information about the performance of, say, the 15-inch gun in the world wars. But Johnston and Buxton know that, while other books meticulously describe the qualities of ships, guns, and armor in combat,⁴ none concentrates so intently on just who made the ships or how profitable they were.

The book shows a more serious deficiency in its handling of the politics of the arms industry. A short passage in the introductory history considers the tremendous costs Great Britain incurred during its buildup to World War I:

This highly concentrated period of capital ship construction, lasting a little over ten years, accelerated the development of battleship design at an astonishing rate. Where pre-dreadnought battleships had remained at between 14,000 to 18,000 displacement tons for the last ten years of their development, under the impetus of the Anglo-German naval race dreadnought battleships at the same time scale increased displacement by 50 per cent. Battlecruisers doubled in displacement.... All of this was delivered at great cost to the country, but the evidence suggests that this was done with the bulk of the population in support and who [sic], moreover, took enormous pride in the Royal Navy as defender of the nation. (16–18.)

The topic is revisited later, in the chapter on Money:

From 1909, when the naval building programme expanded significantly to meet the German fleet expansion, new construction made up about 30 per cent of the Admiralty's budget. Battleships and battlecruisers made up two-thirds of that total, although the longer term average from 1895 was about half. Hence battleship building was the largest element of British government expenditure up to the start of the First World War, and commanded great political and public interest, in much the same way that health service expenditure does today in the UK. Britain's financial system was robust enough to be able to sustain such levels of defence expenditure, on the strength of its ability to raise tax revenues (e.g. income tax) and to borrow on reasonable terms. For rivals Germany, France and Russia, their economies were less able to finance such a large navy, especially as their armies took a greater share of their defence budgets than Britain. (235)

This is remarkable: a single item—constructing battleships—accounted for the majority of government spending for a decade. Yet Johnston and Buxton do not name any prime minister or political party, indicate whether this huge expenditure was controversial, or refer readers to works on the topic. Their bland assurance that “the evidence suggests that this was done with the bulk of the population in support” (18) begs for support. Another hotly debated matter gets even shorter shrift: the notion that big arms-makers, like Krupp and Vickers, instigated and encouraged the pre-World War I arms race. Writing about the 1936 investiga-

2 E.g., R.A. Burt, *British Battleships of World War One* (Annapolis: Naval Inst Pr, 2012), and Robert O. Dulin Jr. and William H. Garzke Jr., *Battleships: Allied Battleships in World War II* (Annapolis: Naval Inst Pr, 1980).

3 E.g., the legend for the drawing of Palmers Shipbuilding & Iron Company Ltd. identifies not only each building and dock but even a warship tied up alongside the East Jetty in the River Tyne—the battlecruiser *Queen Mary*, then (1912) fitting out, shown to scale.

4 E.g., Norman Friedman, *Naval Weapons of World War One: Guns, Torpedoes, Mines and ASW Weapons of All Nations: An Illustrated Directory* (Barnsley, UK: Seaforth, 2011).

tion of bribery and kickbacks in contracts for Japanese warships built in the UK before World War I, the authors note that

The Royal Commission had been set up partly in response to claims that the private manufacture of arms fomented war scares, bribed public officials, influenced public opinion, organised rings (cartels), prolonged wars by supplying arms to both sides, and endangered world peace. This point of view was encapsulated in a 1934 book entitled *The Merchants of Death* by H.C. Engelbrecht and F.C. Hanighen.⁵ There was an element of truth in some of these accusations, while a large number of organisations submitted evidence, not all of it well informed. (234)

Again, we would like to know more. *The Merchants of Death* is a dated, journalistic book that vilifies all arms-makers and dealers—from Bofors to Maxim—with a leftist, pacifist bias. There are excellent studies of how politicians, both Liberal and Conservative, debated the issue of spending on dreadnoughts and the role the press in those debates.⁶ *The Battleship Builders*, with its excellent notes, bibliography, and index, should have made room for at least some references to such material.

5. Subtitle: *A Study of the International Armament Industry* (NY: Dodd, Mead, 1934).

6. E.g., Rhodri Williams, *Defending the Empire: The Conservative Party and British Defence Policy, 1899–1915* (New Haven: Yale U Pr, 1991), and A.J. Anthony Morris, *The Scaremongers: The Advocacy of War and Rearmament 1896–1914* (Boston: Routledge, 1984).