

## International Journal of Naval History

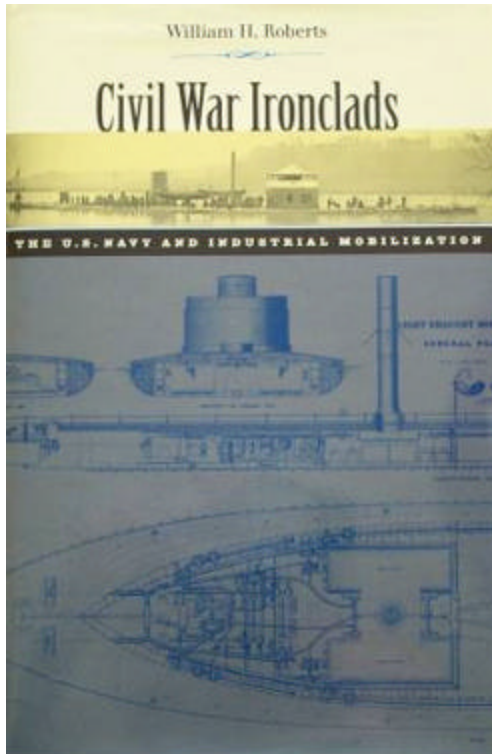
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**William H. Roberts,**  
*Civil War Ironclads: The U.S. Navy and Industrial Mobilization*  
(Baltimore: The John Hopkins University Press, 2002), \$46.95

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Make no mistake, this is the most important work on American Civil War ironclads, specifically the monitors, in recent years. Although media attention was properly drawn to the salvaging of the original *Monitor's* revolutionary steam-powered armored gun turret this summer, coupled with recent publications such as James Tertius deKay's *Monitor: the Story of the Legendary Civil War Ironclad and the Man Whose Invention Changed the Course of History* (1999), David Mindell's *War, Technology and Experience Aboard the USS Monitor* (2000), and *The Monitor Chronicles: One Sailor's Account, Today's Campaign to Recover the Civil War Wreck* (2000), edited by William Marvel, William H. Roberts has explored in satisfactory detail a crucial portion of the entire Union ironclad program inexplicably neglected by comparison. To be sure, it is not the last word on the subject. But *Civil War Ironclads* marks the culmination of Roberts's own research,

beginning with his Ohio State University doctoral thesis, several published essays, and the Naval Institute Press *USS New Ironsides in the Civil War* (1999).

In that book, Roberts made clear enough his disdain for the monitors as a class of warship, the product of “politics, desire for commercial advantage, and ‘*Monitor* mania’” (xii). As a result, he concluded then, “the United States forfeited the advantages it might have gained over the European navies from its extensive combat experience” by “failing to develop the seagoing ironclad,” (125). Now his views are more focused and perhaps better reasoned—though his judgments are in no way less severe. In fact, by implicitly

renewing one of American naval history's great debates (one which began when John Ericsson famously argued the merits of his "sub-aquatic system of warfare" to the highly sceptical Ironclad Board of 1861) Roberts rather insidiously does a better job of undermining today's glorification of this distinctly American icon than did many of Ericsson's bitter contemporaries. To accomplish this, *Civil War Ironclads* concentrates on two of the most embarrassing episodes of monitor construction during the war; the *ad hoc* attempt to expand Union shipbuilding in the West with super-advanced *Canonicus* (or as Roberts prefers, "Tippecanoe-class") monitors and the fiasco of General Inspector of Ironclads Alban C. Stimers's "light-draft" variants.

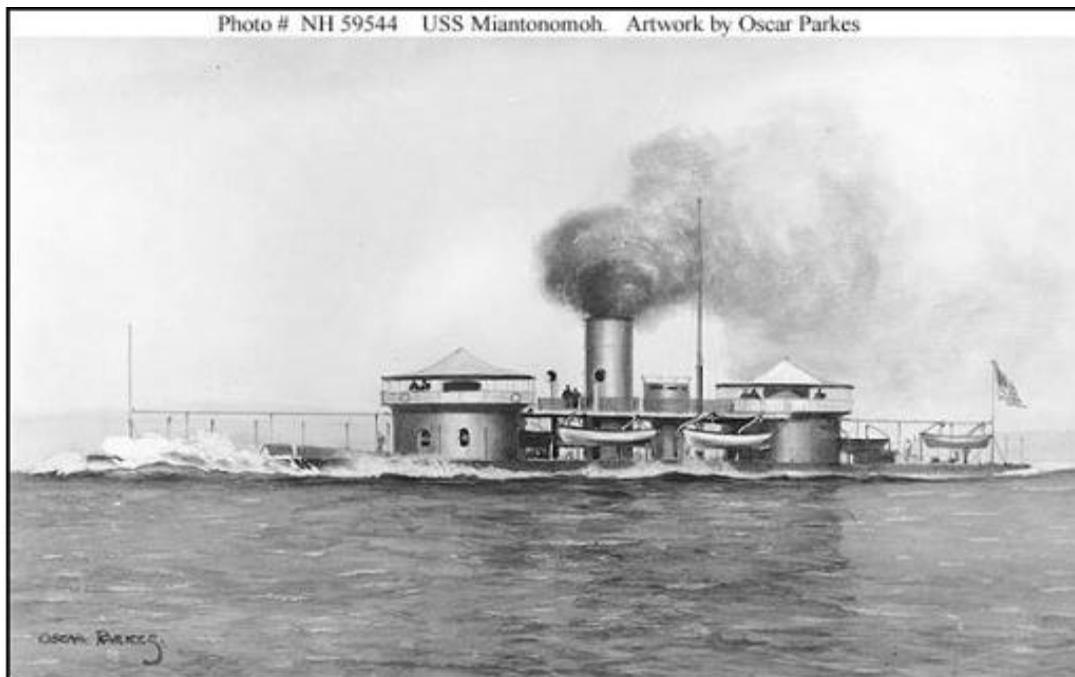


The results of these particular Union Navy efforts almost speak for themselves. Experienced commercial shipbuilders in the East had trouble enough coping with the unprecedented burden placed on them by both the circumstances of a great, desperate civil war, and the complex industrial demands of Ericsson's radical high technology. As Roberts repeatedly points out, U.S. Navy Yards were simply not prepared for ironclad construction. The same could be said, however, for the French and even British navies at this time, who also relied heavily upon private contractors frequently unable to meet deadlines and who were often ruined by the enterprise. Andrew Lambert noted that expectations to launch the Royal Navy's first seagoing ironclad, the magnificent *Warrior*, were "hopelessly over-optimistic"; "various design alterations to *Warrior* and the sheer novelty of the undertaking, created problems" (*Warrior: The World's First Ironclad, Then and Now*, 1987, 27-8). If this confronted the world's greatest industrial and maritime power, during nothing more than a naval arms race with her continental neighbor, what could be said for the brave firms in 1862-Cincinnati and Pittsburg?

Similarly, as Ericsson's biographer William Conant Church emphasised in 1890, Gideon Welles, the Secretary of the Navy, and his Assistant, Gustavus V. Fox, had every reason to trust in Ericsson's engineering wizardry and vision. The man was, simply, a *genius*. But Stimers was not, and only when the light-draft monitors came under his direct supervision and responsibility—were redesigned from Ericsson's specifications—was the notion of creating a permanent Bureau of Ironclad Steamers contemptuously thrown aside. Roberts pinpoints this very well:

If professional advancement in the Engineer Corps had been Stimers's sole personal goal, Ericsson's original light-draft design would have provided a perfect vehicle. By concentrating on producing simple, cheap ships and giving Fox the light-draft monitors he craved in 1863, the general inspector could have cemented his reputation as a man who got results. As an additional benefit, building the ships to Ericsson's design would have insulated Stimers from any technical failure. (112)

So was the monitor program itself a failure? Again, this is not a comprehensive work on Civil War (Union) ironclads *per se*, and not even a survey of the monitors in total. Enough controversy surrounds the original prototype, which protected the Union blockade from the continuing ravages of the fearsome C.S.S. *Virginia*, but which also foundered (like so many other vessels) in a gale off Cape Hatteras. Roberts also concedes the ten Passaic-class improvements as nominally successful. Contrast this with duds like the *Galena*, the *Keokuk*, and even the John Lenthall/Benjamin Isherwood Navy-inspired turret-ship conversion, the *Roanoke*. Likewise, the monster seagoing monitors *Dictator* and *Puritan* are repeatedly ignored by the author as "Ericsson's Pets", to say nothing for the privately-built double-turreted *Onondaga*, the four superlative Navy-designed seagoing monitors of the Monadnock-class, or the even more formidable Kalamazoo-class monitors which were never completed in time but nevertheless said much for the potential of these types of ironclads to take full advantage over broadside-and-sail European models. Instead, the 3<sup>rd</sup> generation single-turret monitors of the Tippecanoe-class are regarded as some sort of violation of maxims in ship construction Roberts employs like "Better is the enemy of good enough", "There's never time to do it right but always time to do it over", "Know when to quit", and even, "If the elephant wants peanuts, feed the elephant peanuts". By choosing to feed the Union naval elephant super-peanuts, as such, the elephant nearly starved, or so Roberts argues.



This is tricky in more ways than one. Select hindsight unfortunately plays too great a role in *Civil War Ironclads*. Had the war lasted another year, the nine Tippecanoe-class monitors probably would have been completed in time for service (five of them actually were), “significantly improved”, as Donald Canney observes in *The Old Steam Navy Volume Two: The Ironclads, 1842-1885* (1993), “over the *Passaic* class,” (84). They were better protected, better armed, better ventilated and faster than their predecessors. Who can say which was more decisive, Quality or Quantity? At what point should the Union Navy have ‘drawn the line’ on advancing ironclad designs? Another Roberts adage: “Good, cheap, fast—pick any two”; “Fox and Stimers tried to have all three and ended up barely getting one.” “Given that the monitor program was the country’s first high-tech mobilization, it is hard to fault them for their failure to foresee the difficulties, although it is somewhat easier to fault their failure to recognize and deal with those difficulties when they arose,” (201-2). These difficulties included establishing (especially Western) industries from scratch to produce iron plating and marine engines, insufficient investment capital, spiralling war-time inflation, increasing labour and material shortages, and other contingencies of the Civil War itself. When some of the turrets of the *Passaic* monitors jammed in the assault on Charleston Harbor (April 7, 1863), for example, enemies of the Union ironclads (namely their commander-in-chief, Rear-Admiral Samuel F. Du Pont) proved willing to turn their technical imperfections into a dangerous political attack on President Abraham Lincoln’s administration, if only to save their personal reputations. Just as the Army demanded more troops and better supplies, the Navy had to contribute better ironclads as free from complaint by their own officers and crews as possible, let alone able to withstand *enemy* fire—and continue to act as the nation’s primary deterrent force against European naval intervention.

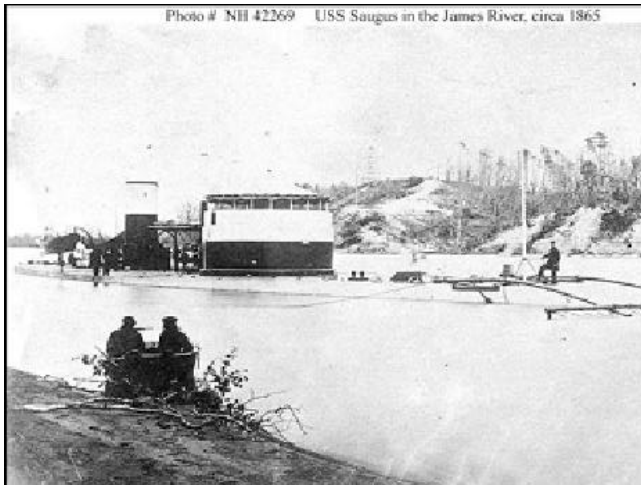


Photo # NII 44519-KN Union leaders of the Civil War. Artwork by the Creative Arts Studio



"Painting by Creative Arts Studio, prepared for use in an official film on Naval history, circa the early 1960s... President Abraham Lincoln is standing, at right, holding a map of the war zone. Lieutenant General Ulysses S. Grant (left) and Secretary of State William H. Seward (right) are seated in the foreground. On the other side of the table, at left, are (from left to right): General Winfield Scott; Secretary of War Simon Cameron; Assistant Secretary of the Navy Gustavus V. Fox; and Secretary of the Navy Gideon Welles." ([www.history.navy.mil/branches/nhcorg11.htm](http://www.history.navy.mil/branches/nhcorg11.htm))

This last consideration is an important one largely overlooked by Roberts—but certainly not by Ericsson, Fox, Welles and Lincoln—when assessing their “faults” and “failures”. He is riveted by the apparent obsessive ironclad policy of “continuous improvement” which increasingly stretched the mobilization of the nation’s industrial, financial and maritime resources to the breaking point, and finally jeopardized ironclad construction itself. “Civil War experience clearly showed...[this]...would produce ships only in time for the next war, not the current one,” (206). Perhaps, to some extent, this *was* the point. Hence the *Kalamazoos*, the *Dictators*, and even the original *Monitor*—intended, as Ericsson wrote, to

“startle” and “admonish” Downing Street as well. Just as the British Admiralty was complaining of the unreliability of private contractors to build its ironclads, the lack of direct control, and was preparing Royal Dockyards like Chatham to build improved *Warriors* like the *Achilles*, Welles was pressing Congress for the establishment of a first-class naval facility to assemble “a formidable Navy, not only of light draught vessels to guard our extensive and shallow coast, but one that with vessels always ready for service, and of sufficient size to give them speed, can seek and meet an enemy on the ocean,”

(Annual Report, December 1, 1862). The significant establishment of League Island, Philadelphia as a means to this end is therefore not mentioned by Roberts, nor is the powerful influence of the *Trent* Affair upon Union political and naval leaders. The trees, but not the forest...



Still, this book, frankly, should be acquired by any serious student of the naval history of the Civil War. The research is impeccable; original, detailed, and with scope. Chapters 3 and 4 are particularly fascinating, providing rich descriptions of the mechanics of monitor construction and many of its inherent problems.

While Roberts overplays a ‘conspiracy’ angle of the “Monitor Ring”, he is less willing to place Ericsson on the witness stand. Indeed, if Ericsson, Fox, and Stimers formed a “triumvirate” as Roberts calls it, why is there no photo of Ericsson present in *Civil War Ironclads*? Monitors successfully dominated the Union ironclad program arguably for good reason; if the United States during the Civil War could barely fabricate the world’s largest force of small coastal defence ironclads it could hardly be expected to contend with Great Britain in the

construction of a fleet of gigantic seagoing *Warriors*. A single paragraph, moreover, compares obviously ‘imperfect’ Northern efforts with those of the South, and William N. Still Jr.’s classic studies in this area are omitted in Roberts’s “Essay on Sources”.

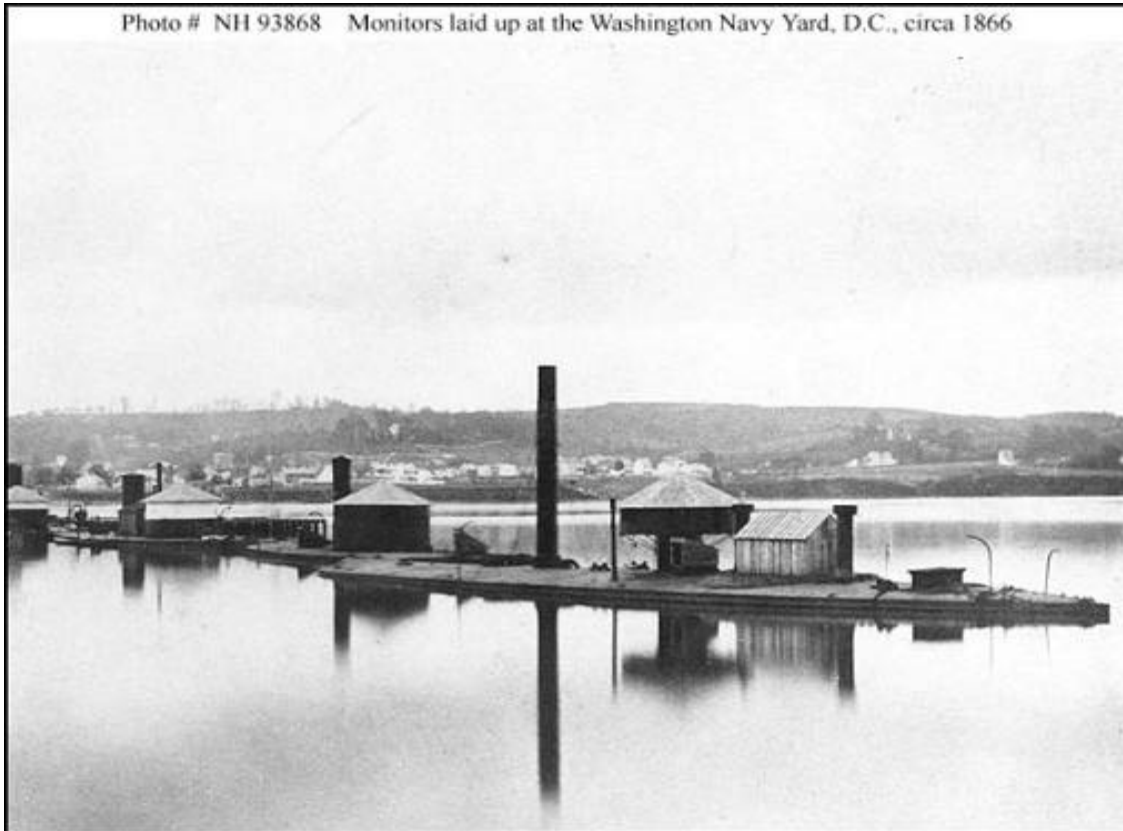
What is missing in this work, fundamentally, are conclusions worthy of the research displayed. Many of the arguments are specious. A case in point is the issue over laminated armor plating. Ericsson wanted to employ thicker, homogenous plates, or slabs, but the North simply could not produce rolled iron thicker than 2½-inches. Hammered plates took longer; bending them was another problem; so was maintaining quality welding within the plate itself at greater thicknesses—a problem European naval powers continually faced. Even the mass production of 1-inch plates for hull and turret armor was difficult; by Roberts’s own reasoning, how could private contractors be expected to invest in the machinery (rolling mills, planing machines, steam hammers, cranes, etc.) necessary to produce even thicker iron in time? Far from neglecting these realities, Ericsson anticipated them better than most, devising a scheme of joint-overlapping, curved, laminated (today known as “compound”) armor which provided a natural shock absorption to impact, was more easily repaired if damaged, and which at any rate was never penetrated throughout the Civil War despite hundreds upon hundreds of close-range hits from both low-velocity smoothbore and higher-velocity rifled solid shot and shell. The “Monitor Ring” was also able to persuade the Secretary of the Navy of the inherent vulnerability of the now-famous Bureau ‘Turret-Ship’ Design (see James P. Baxter’s seminal work, *The Introduction of the Ironclad Warship*, 1933) which relied

on Coles turrets but also required a much higher freeboard, like the *Roanoke* conversion. Higher freeboard, or broadside, meant more area to be plated, more cost, more delay, and greater susceptibility to penetration and derailment of Coles's turret mechanism than with a low-freeboard monitor. Either Ericsson and his backers were self-seeking 'opportunists' bent on making a profit, as Roberts has suggested from the beginning, *or they actually believed their class of ironclad was the best overall response to the Union Navy's unique requirements.*

Roberts also advances a "variation-selection" theory to go with "continuous improvement"; the Union failed to progress its ironclad designs maturely, "under wartime conditions...urgency overwhelmed theory," (18). Though the Ironclad Board of 1861 did approve three different designs, *Galena*, *New Ironsides* and *Monitor*, Roberts admits, the events at Hampton Roads (March 8-9, 1862) 'hypnotized' Fox (an eye-witness) with the performance of the latter ironclad, when the Navy should have instituted a "'parallel development' program," i.e., built more seagoing broadside-ironclads. "Under the circumstances, it was natural for Fox to overlook the *Monitor's* faults," (22). This was not the case (nor are these "faults" described). Fox drew up a long list of suggested improvements, based on his own observations as well as those of the officers and crew of the ironclad, which he directed at Ericsson on 18 March. The difference was that his criticism was constructive, his attitude was positive, and his conception of Union strategic and tactical requirements was always in focus. The same could not be said for Lenthall and Isherwood, Du Pont and (Captain Percival) Drayton. Perhaps if the *Monitor* was not present at Hampton Roads, or was sunk by the *Virginia*; or perhaps if the *New Ironsides* was present instead and accomplished at least as much as the *Monitor*; maybe these types of suggestions would float.

Despite a determined effort on the part of the author, including analogies to World War II submarines and even the Polaris Missile program, *Civil War Ironclads* cannot sink a monitor, nor should it have tried. Stimers may have wrecked the light drafts, and delayed still further the full completion of the Tippecanoe-class, but this did not fully discredit the entire monitor program by the end of the war—nor can it somehow be held responsible for "redirecting technological momentum" backwards following the war, the 'Dark Ages' of the U.S. Navy, as Roberts claims. On the contrary, monitors played key roles in all the closing actions of the Civil War, from Mobile Bay to Fort Fisher to the James River, and carried the flag around South America and all over Europe in the years following. Demobilization, war-weariness, the troubles with Reconstruction; these are the factors which set the Navy back. For a more reasonable study which also benefits from a larger perspective, see Kurt Hackemer's *The U.S. Navy and the Origins of the Military-Industrial Complex, 1847-1883* (2001) stressing a continuity in relations between private industry and the Navy despite the colossal challenges both faced during the interval of the 19<sup>th</sup> century's greatest conflict. A recent insightful work from Jerry Harlowe, *Monitors: The Men, Machines and Mystique* (2001), also reminds "the monitors were pure and simple expressions of the national government of the United States, instruments of political will to help assure that the nation would remain whole," and that "the fate of the monitor concept from 1865 to 1895, when the first oceangoing battleship *Indiana* hoisted colors was decreed by its successful embodiment of inward-looking national values. The

*Monitor* was a naval guarantor, as well as the physical protector, of parochial America,” (6, 95). If it is difficult to imagine how much better the Union would have fared if it had not committed itself to ironclad-monitors, which this work ultimately asks the reader to consider—with undeniable importance—it is much easier to imagine how much more imperilled the Union would have been without them—or, indeed, with anything else instead.



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